PORT OF STOCKTON
WEST COMPLEX DEVELOPMENT PLAN

Final Environmental Impact Report

May 2004

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TABLE OF CONTENTS

PORT OF STOCKTON WEST COMPLEX DEVELOPMENT PLAN – FINAL ENVIRONMENTAL IMPACT REPORT

1.0 INTRODUCTION 1-1
- 1.1 Overview 1-1
- 1.2 CEQA Final EIR Process 1-3
- 1.3 Organization of the Document 1-3

2.0 EXECUTIVE SUMMARY 2-1
- 2.1 Introduction 2-1
- 2.2 Project Description 2-1
- 2.4 Minor Changes to the Proposed Project 2-4
- 2.5 Summary of Environmental Impacts 2-4

3.0 COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT REPORT 3-1
- 3.1 List of Commentors 3-1
- 3.2 Comments Letters 3-2

4.0 RESPONSES TO COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT REPORT 4-1
- 4.1 Introduction 4-1
- 4.2 Land Use and Agriculture 4-8
- 4.3 Transportation and Circulation 4-14
- 4.4 Air Quality 4-25
- 4.5 Noise 4-61
- 4.6 Geology and Soils 4-84
- 4.7 Hydrology and Water Quality 4-86
- 4.8 Biological Resources 4-89
- 4.9 Cultural Resources 4-94
- 4.10 Visual Resources 4-94
- 4.11 Hazardous Materials and Public Health 4-96
- 4.12 Public Services and Utilities 4-100
- 4.13 Population, Employment and Housing 4-102
- 4.14 Alternatives to the Proposed Project 4-102
- 4.15 Growth Inducing Effects 4-109
- 4.16 Cumulative Effects 4-112
- 4.17 Environmental Baseline 4-116
- 4.18 Programmatic Nature of the EIR 4-116
- 4.19 Purpose of the EIR 4-118

4.20 Dredging and Placement Operations Project 4-119
4.21 McCloy Avenue, Daggett Road, and Daggett Road Bridge Project 4-135

5.0 MINOR CHANGES AND EDITS TO THE DRAFT ENVIRONMENTAL IMPACT REPORT 5-1
5.1 Overview 5-1
5.2 Minor Changes and Edits to the Draft EIR 5-1

6.0 AUTHORS AND CONSULTANTS 6-1

LIST OF TABLES

2-2 Proposed West Complex Land Uses 2-2
2-3 Summary of Impacts and Mitigation Measures 2-6
3-1 Comment Letters Received on the EIR 3-1
4-1 Index to Comments and Responses 4-2
4-2 Estimated Dredging Emissions in Compliance with Current Regulations 4-45
4-3 Estimated Dredging Emissions with Implementation of 2005 Emission Standards 4-46
4-4 Recalculated 1990 Base Year Emissions Inventory, 1999 Emissions Inventory, and 2002 and 2005 Projected Planning Emissions Inventories 4-61
4-5 Maximum Percent Awakenings Due to a Single Aircraft Noise Event 4-67
4-6 Prevalence of Awakenings Due to a Single Aircraft Noise Event 4-68
4.3-10 Existing Intersection Level of Service with Suggested Improvements 5-6
4.2-2 Summary of Monitoring Data for the Stockton Area, 1996–2003 5-12

LIST OF FIGURES

3-3 West Complex Existing Uses 5-3
4.3-2 Existing Peak Hour Volumes 5-7
4.3-5 Cumulative 2020 Plus Project Peak Hour Volumes 5-9

APPENDIX

Appendix A Extension Requests
Appendix B Construction Emissions
Appendix C Noise Data

CHAPTER 1.0

INTRODUCTION

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INTRODUCTION

1.1 OVERVIEW

The Port of Stockton (Port) has prepared this Environmental Impact Report (EIR) to provide the public and responsible and trustee agencies with information about the potential environmental effects of the proposed West Complex Development Plan (generally referred to in this Environmental Impact Report [EIR] as the Proposed Project). This EIR assesses the environmental impacts associated with the Port's proposed West Complex Development Plan (Development Plan) and the City of Stockton Redevelopment Agency's proposed Rough and Ready Island Redevelopment Plan. These two actions constitute the Proposed Project. This EIR has been designed to function as both a program-level EIR for both the Port of Stockton West Complex Development Plan and the City of Stockton Redevelopment Agency's Rough and Ready Island Redevelopment Plan and a project-level EIR for two identified project-level components. These two project-level components are the proposed dredging of the Stockton Deep Water Ship Channel and the McCloy Avenue, Daggett Road and Daggett Road Bridge Project.

This EIR was prepared in compliance with the California Environmental Quality Act (CEQA) and the CEQA Guidelines (California Code of Regulations, Title 14). As described in the CEQA Guidelines §15121(a), an EIR is a public information document that assesses potential environmental effects of a proposed project, as well as identifies mitigation measures and alternatives to the project that could reduce or avoid adverse environmental impacts. CEQA requires that state and local government agencies consider the environmental consequences of projects over which they have discretionary authority. The EIR is an informational document used in the planning and decision-making process. It is not the purpose of an EIR to recommend either approval or denial of a project.

The procedures required by CEQA "are intended to assist public agencies in systematically identifying both the significant effects of proposed projects and the feasible alternatives or feasible mitigation measures which will avoid or substantially lessen such significant effects (Public Resources Code §21002)." As a general rule "public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects." However, "in the event specific economic, social, or other conditions make infeasible such project alternatives or such mitigation measures, individual projects may be approved in spite of one or more significant effects thereof (ibid)." The lead agency must "certify" the Final EIR. According to the "CEQA Guidelines," "certification" consists of three separate steps. Prior to approving a project, the lead agency shall certify that: (1) the Final EIR has been completed in compliance with CEQA; (2) the Final EIR was presented to the decision-making body of the lead agency and that the body has reviewed and considered the information contained in the Final EIR prior to

approving the project; and (3) that the Final EIR reflects the lead agency's independent judgment and analysis [CEQA Guidelines, §15090(a); see also Public Resources Code, §21082.1(c)(3)].

Under CEQA, a lead agency must make certain determinations before it can approve or carry out a project if the EIR reveals that the project will result in one or more significant environmental impacts. First, before approving a project for which a certified Final EIR has identified significant environmental effects, the lead agency must make one or more specific written findings for each of the identified significant impacts. These findings include and are limited to the following:

(1) Changes or alternations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

(2) Such changes or alternations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.

(3) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the Final EIR.

[See CEQA Guidelines, §15091(a)].

Second, if there remain significant environmental effects even with the adoption of feasible mitigation measures or alternatives, the agency must adopt a "statement of overriding considerations" before it can proceed with the project. The statement of overriding consideration must be supported by substantial evidence in the record (CEQA Guidelines, §15092 and 15093).

These overriding considerations include the economic, legal, social, technological, or other benefits of the proposed project. The lead agency must balance these potential benefits against the project's unavoidable environmental effects when determining whether to approve the project. If the specific economic, legal, social, technological, or other benefits of a proposed project outweigh the unavoidable adverse environmental effects, the lead agency may consider the adverse environmental impacts to be "acceptable" [CEQA Guidelines, §15093(a)]. These benefits should be set forth in the statement of overriding considerations, and may be based on the Final EIR and/or other information in the record of proceedings [CEQA Guidelines, §15093(b)].

Notably, the California Supreme Court, reflecting on this multi-step process for considering project impacts and benefits, has stated that, "[t]he wisdom of approving … any development project, a delicate task which requires a balancing of interests, is necessarily left to the sound discretion of the local officials and their constituents who are responsible for such decisions. The law as we interpret and apply it simply requires that those decisions be informed, and therefore balanced." (See *Citizens of Goleta Valley v. Board of Supervisors* (1990)52 Cal.3d 553, 576.)

1.2 CEQA FINAL EIR PROCESS

The Draft Environmental Impact Report (Draft EIR) was submitted to the State Clearinghouse (SCH # 2002032048) and released for public and agency review on November 14, 2002. This public review and comment period was subsequently extended until January 20, 2003. A notice of availability was published in *The Record*, a newspaper of general circulation in the City of Stockton, on November 14, 2003. A revised notice of availability was published in *The Record* on December 2, 2003.

Prior to the release of the Draft EIR, the Port of Stockton (lead agency) issued a Notice of Preparation (NOP) for a 30-day comment period, between March 8, 2002 and April 10, 2002. The Port of Stockton held two public scoping meeting on April 3, 2002 to receive input on the scope and content of the Draft EIR. In addition, as required by §33333.3 of the California Redevelopment Law, the City of Stockton circulated the NOP to each affected taxing entity. The concerns raised during the scoping process were considered in the Draft EIR (see Appendix B of the Draft EIR).

This document includes comments and responses to comments on the Draft EIR and along with the Draft EIR comprises the Final EIR. After a public hearing on the Development Plan, and the two project-level components, the Port of Stockton will review the Final EIR, Port staff recommendations, and public testimony and decide whether to certify the EIR and whether to approve or deny the West Complex Development Plan and one or both of the project-level components. Under the CEQA *Guidelines* (Section 15132), a Final EIR consists of

(a) The Draft EIR.

(b) Comments and recommendations received on the Draft EIR

(c) A list of persons, organizations, and public agencies commenting on the Draft EIR.

(d) The responses of the Lead Agency to significant environmental points raised in the review and consultation process.

(e) Any other information added by the Lead Agency.

CEQA Statutes Section 21081.6(a)(1), requires lead agencies to "adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment." Throughout the EIR, mitigation measures have been clearly identified and presented in language that will facilitate establishment of a monitoring and reporting program. Any mitigation measures adopted by the Port as conditions of project approval will be included in Mitigation Monitoring and Reporting Program (MMRP). The MMRP will be considered at the same time the Port considers those approvals.

1.3 ORGANIZATION OF THE DOCUMENT

The Final EIR is organized into six chapters. Chapter 2.0, Executive Summary, provides a brief project description and presents a summary table of environmental effects. Chapter 3.0, Comments on the Draft EIR, provides a list of commentors and copies of written comments (coded for reference). Chapter 4.0,

Responses to Comments on the Draft EIR, provides the lead agency responses to the comments in Chapter 3.0, with master responses for each issue area, and summarizes corrections made to the Draft EIR. Chapter 5.0, Minor Changes and Edits to the Draft EIR, includes corrections and additions to the Draft EIR text as a result of comments made on the Draft EIR, any changes to the Draft EIR are indicated by revision marks (underline for new text, and strikeout for deleted text); and, Chapter 6.0, EIR Authors and Consultants, provides a list of individuals involved in the preparation of the Final EIR.

CHAPTER 2.0

EXECUTIVE SUMMARY

CHAPTER 2.0

EXECUTIVE SUMMARY

2.1 INTRODUCTION

The Port's proposed West Complex Development Plan assessed in this EIR provides a programmatic overview of the types of uses that are under consideration by the Port. These uses would include the redevelopment of marine terminals on the existing developed 500 acre portion of the Island and the development of a commercial and industrial park on the existing undeveloped southern 500-acres of the Island. Uses included in the Development Plan are intended to maximize the creation of local family-wage jobs and regional economic growth, while providing for a safe and secure Port facility consistent with current and future Homeland Security objectives. The Stockton Redevelopment Agency has proposed to adopt a Redevelopment Plan for Rough and Ready Island and establish the West Complex Development Plan area as a redevelopment area. The two project-level components examined in the EIR are the proposed dredging of the berths along the Project Area and the McCloy Avenue, Daggett Road and Daggett Road Bridge Project.

2.2 PROJECT DESCRIPTION

PROJECT OBJECTIVES

In preparing the Development Plan for the Project Area, the Port was guided by the following objectives:

- To maximize the creation of local family-wage jobs and regional economic value by enhanced development of existing industrial, commercial, and maritime use of the former military facility under the authority of the Port.
- To maintain the berths at a depth sufficient and consistent with the federally maintained Deep Water Ship Channel to allow full economic use of the Project Area resulting from existing and future international trade and commerce activities contributing to regional economic growth.
- To revitalize and redevelop the Project Area, eliminate blight, create employment opportunities, and develop specific land uses that are anticipated to be associated with industrial, commercial, and maritime activities on the Project Area which enhance regional economic growth.
- To provide for a safe and secure Port facility consistent with current and future Homeland Security objectives while balancing local job creation and regional economic growth resulting from the movement of goods on and off the Project Area.
- To identify any necessary new infrastructure and improvements to existing infrastructure necessary to support the intended land uses.

- To ensure that development of facilities within the project area fulfills the requirements of and is consistent with the California Harbors and Navigation Code.
- To ensure that development within the Project Area fulfills the requirements of and is consistent with the special Congressional legislation (Public Law 104-106, Section 2871) by improving maritime operations which create economic opportunities that benefit the public.

WEST COMPLEX DEVELOPMENT PLAN

The Development Plan was prepared by the Port to help guide future development at the West Complex following and during the public development conveyance for port development, *i.e.*, the transfer of interest and use of the land from the Navy to the Port. The Plan describes the potential development activities that could occur at the West Complex, given specific market or economic conditions for the area. Flexibility in development of the West Complex to allow response to changing market trends and needs is built into the Plan. For this reason, the Plan does not contain a schedule for the phasing for full build-out of the West Complex. The land use types proposed in the Development Plan are shown below in **Table 2-2**. Proposed land uses include:

TABLE 2-2
PROPOSED WEST COMPLEX LAND USES

	Land Use Type	Acreage Totals
1.	Rail to dock	35 acres
2.	Break bulk	50 acres
3.	Private (existing petroleum plant)	23 acres
4.	Commercial and Industrial Park	436 acres
5.	Auto facility and 900’ wharf upgrade	65 acres
6.	Container facility	105 acres
7.	Expanded break-bulk, Roll-on Roll-off, & project cargo	138 acres
8.	Container expansion/intermodal transfer	45 acres
9.	Water-related future expansion area	93 acres
10.	Diversified land use	409 acres
11.	Proposed Immigration and Naturalization Service Facility	60 acres
	Total Acres:	1,459 acres

The entire Project Area is under the control of the Port, with the exception of 23 acres of private property on the northern section of the Island and a 60-acre area at the south west corner of the Island that has been set aside by the Navy for the Immigration and Naturalization Service Northern California Service Processing Center.

The Project Area is divided into the northern, developed portion of the Island, and the southern, undeveloped portion of the Island.

The northern half of the Island is the industrial-developed area previously used by the military. This land contains blight characteristics and will be redeveloped to meet the objectives of the Port. Marine terminal development will occur in three phases on the developed 500-acre northern portion of the Island.

The southern half of the Island consists of primarily vacant, underutilized land that is proposed for industrial and commercial activities. This area is in need of infrastructure improvements including, but not limited to, bridge and roadway reconstruction and widening for commercial and industrial traffic, fire protection, storm drainage, potable water and sewer service expansion. Commercial and industrial park and other diversified land uses that support Port activities will be developed in three phases on the undeveloped southern portions of the Island. The Development Plan addresses future infrastructure needs for the development proposed under the Plan.

Infrastructure improvements to support both the proposed marine terminal and commercial and industrial park development activities are discussed in detail below.

Development activities are anticipated to occur at various locations and at various times relative to each other. The Marine Terminal development will occur in three phases. The phasing of the Commercial and Industrial Park development has an identified phasing order of A through C. However, each of the phasing schemes is completely independent of the others. The actual phasing will be driven by market demand and the timing of each phase may vary. In addition, development of each phase of the Development Plan may occur irrespective of each other phase.

ROUGH AND READY ISLAND REDEVELOPMENT PLAN

As a means of assisting in the revitalization of the Project Area, the Stockton Redevelopment Agency (SRA) intends to adopt a Redevelopment Plan for the entire Rough and Ready Island (Island) and establish the Project Area as a redevelopment area, pursuant to the CRL base closure provisions (Health and Safety Code § 33492-33492.29). Designation of the Project Area as a redevelopment area would provide the SRA with the legal authority to assist the Port in development activities within the redevelopment area for a maximum of 30 years. If adopted, the redevelopment area would primarily serve as a means to obtain funding for blight removal activities within the Project Area. The Redevelopment Plan will not propose land use, building intensity, or infrastructure changes other than those proposed in the Development Plan and analyzed in this EIR.

PROJECT OBJECTIVES

The proposed Redevelopment Plan for the Rough and Ready Island Redevelopment Area recommends the following objectives be attained through redevelopment of the property:

- The elimination of blight conditions within the Project Area.
- The elimination of substandard buildings and those that conflict with uses proposed in the General Plan, as amended and applicable City standards and guidelines.
- The installation of public improvements and public utilities in the Project Area.

- The creation of residential opportunities for all segments of the community, including the provision of housing affordable to low and moderate income households in areas of the City outside of the Project Area.

- A strong industrial incentive program to encourage upgrading of industrial buildings and to attract new industrial users to the area.

PROJECT SPECIFIC COMPONENTS

DREDGING AND PLACEMENT OPERATIONS PROJECT

The Port is proposing to conduct dredging of sediments from docks 14 through 20 (formerly designated A through K) along the waterfront at the Port's West Complex. The purpose of this project is to provide opportunities for economic development at the Port through maritime activities. The primary objective of the dredging is to provide sufficient depth at dock space to provide access to approximately 75% of the shipping fleet in operation at this time. The increased depth at the docks will provide shipping vessels, especially those of larger size and requiring deeper draft, the opportunity to navigate and berth safely at the West Complex.

MCCLOY AVENUE, DAGGETT ROAD, AND DAGGETT ROAD BRIDGE PROJECT

The limits of the McCloy Avenue, Daggett Road, and Daggett Road Bridge Project are from the McCloy Avenue extension to the Navy Bridge west to Humphreys Drive and at the intersection of McCloy Avenue/Daggett Road intersection south (generally along the existing Daggett Road) to the Daggett Road Bridge (over the Burns Cut-Off waterway). The limits include the new bridge and the approach ramps, located on Middle Roberts Island.

2.3 MINOR CHANGES TO THE PROPOSED PROJECT

One minor change to the project description has been made. This change is reflected in **Chapter 5.0 Minor Changes and Edits to the Draft**.

- The following clarification is added to sanitary sewer system description page 3-17:

The existing sanitary sewer system has infiltration issues. An investigation and major renovations will need to be performed. New lines will be required to serve the proposed commercial development site. <u>The investigation shall be performed prior to any major new connections to the existing system.</u>

2.4 SUMMARY OF ENVIRONMENTAL IMPACTS

Table 2-3 presents a summary of project impacts and proposed mitigation measures that would further avoid or minimize potential impacts. In the table, the level of significance of each environmental impact is indicated both before and after the application of the recommended mitigation measure(s). In addition, any revisions to the mitigation measures are shown in italics and are described in **Chapter 5.0, Minor Changes and Edits to the Draft**.

For detailed discussions of all project impacts and mitigation measures, the reader is referred to Chapter 4.0, (Environmental Analysis) of the Draft EIR.

TABLE 2-3
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
Proposed Project					
4.2	**Land Use**				
4.2.1	The Proposed Project will not conflict with applicable land use designations and adopted plans and policies.	LS		No mitigation is required.	LS
4.2.2	Implementation of the Proposed Project will result in the conversion of 272 acres of Prime Farmland.	S		No mitigation is available.	SU
4.3	**Transportation and Circulation**				
4.3.1	Trip Generation rates which result in a substantial number of new vehicle trips.	S	4.3.1	Implement Feasible Travel Demand Measures While the size of the Proposed Project results in the impact being significant and unavoidable, the size of the project also presents opportunities to implement travel demand management (TDM) measures on a scale not feasible with smaller projects. This is especially the case in the high-density employment “Office – Industrial” and “High Tech – Research & Development” portions of the Proposed Project.	SU

Less than Significant = LS | Beneficial = B | Significant = S | Cumulative Significant = CS | Significant and Unavoidable = SU | Potentially Significant = PS

TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
		The West Complex Development Plan does not describe proposed land uses in sufficient detail to allow the preparation of specific TDM measures. Nor is quantification of the effectiveness of the mitigation measures possible at this time. However, the San Joaquin Valley Air Pollution Control District document, Guide for Assessing and Mitigating Air Quality Impacts, presents a description of the types of measures that may apply to the Proposed Project. To the extent feasible, and as appropriate to the specific use, the Port shall implement or shall ensure that its tenants implement the following air district guide measures: ▪ Encourage the provision of transit enhancing infrastructure that includes: transit shelters, benches, etc.; street lighting; route signs and displays; and / or bus turnouts / bulbs. ▪ Encourage the provision of park and ride lots and/or satellite telecommuting centers. ▪ Implement carpool / vanpool program (e.g., carpool ridematching for employees, assistance with vanpool formation, provision of vanpool vehicles, etc. ▪ Establish mid-day shuttle service from worksite to food service establishments / commercial areas.	

Less than Significant = LS Beneficial = B Significant = S Cumulative Significant = CS Significant and Unavoidable = SU Potentially Significant = PS

TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
		▪ Provide shuttle service to transit stations / multimodal centers. ▪ Provide preferential parking (e.g., near building entrance, sheltered area, etc.) for carpool and vanpool vehicles. ▪ Implement parking fees for single occupancy vehicle commuters. ▪ Implement parking cash-out program for employees (i.e., non-driving employees receive transportation allowance equivalent to value of subsidized parking). ▪ Provide transit incentives. ▪ Implement compressed work week schedule (e.g., 4/40, 9/80). ▪ Implement home-based telecommuting program.	

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
				As it relates to traffic impacts associated with the Proposed Project, the Port shall develop an overall TDM Plan for the West Complex Development Plan. In developing the TDM Plan, the above measures would be included as components of the plan to be applied as appropriate to the specific uses developed. Additional measures, appropriate to the Project Area, not listed above may also be included in the TDM Plan. As specific high-density employment projects within the Project Area are proposed, additional measures based upon the TDM Plan shall be developed and implemented, and shall be specifically tailored to address the specific characteristics of each project.	
4.3.2	Trip Generation rates which result in substantial amounts of additional truck traffic.	S	4.3.2	Develop and Implement Truck Travel Control Plan. Until such time that the City, County, SJCOG and Caltrans approve an alternative access plan for the Port that reduces potential conflicts with adjacent residential uses, ~~The~~ the Port shall develop and implement a truck travel control plan to reduce the effects of project-related truck traffic on local roadways within the vicinity of the Project Area. The plan shall identify feasible methods ~~(including signage, suggested travel routes, etc.)~~ to manage truck traffic accessing the Project Area, including the following:	LS

Less than Significant = LS Beneficial = B Significant = S Cumulative Significant = CS Significant and Unavoidable = SU Potentially Significant = PS

TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
				• As alternative access becomes available from the West Complex (i.e., Daggett and McCloy Roads), the Port will direct truck traffic, in coordination with Caltrans and to the extent capacity of Highway 4 allows, to that route; • Additional signage will be provided to direct trucks to only designated truck routes; • Additional signage will be provided to limit truck speeds in residential areas or other areas of potential conflict with pedestrians and/or passenger vehicle traffic; The Port will continue to work with the City, County, and Caltrans on studies of alternative access routes and will coordinate with all agencies in the implementation of the Truck Travel Control Plan.	
4.3.3	Two intersections within the Project Area would continue to operate at acceptable levels of service with implementation of the Proposed Project under the Cumulative (2020) Plus Project Condition.	LS	4.3.3	No mitigation is required.	LS
4.3.4	Increased traffic associated with implementation of the Proposed Project under the Cumulative (2020) Plus Project Condition would contribute to unacceptable levels of service at eighteen intersections within the Project Area.	S	4.3.4	Contribution of Fair Share for Intersection/Roadway Improvements.	SU

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
				The Proposed Project is not the only source of traffic congestion on the roadway facilities that would be affected by implementation of the Proposed Project. Upon establishment by the City of Stockton, San Joaquin County, or other appropriate public agencies of fair share fee programs to fund construction of Intersection/ Roadway improvements identified in Appendix D, the Port will contribute its fair share of funding for the cost of improvements that would be required to improve the levels of service on intersections/roadways affected by the Proposed Project.	
4.3.5	Eighteen freeway facilities would continue to operate at acceptable levels of service with implementation of the Proposed Project under the Cumulative (2020) Plus Project Condition.	LS	4.3.5	No mitigation is required.	LS
4.3.6	Increased traffic associated with implementation of the Proposed Project under the Cumulative (2020) Plus Project Condition would contribute to unacceptable levels of service at thirty-three freeway facilities.	S	4.3.6	No mitigation is available.	SU

Less than Significant = LS Beneficial = B Significant = S Cumulative Significant = CS Significant and Unavoidable = SU Potentially Significant = PS

TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
4.4	**Air Quality**				
4.4.1	Construction-related activities associated with the Proposed Project would temporarily and intermittently increase fugitive dust and combustion emissions that could violate state air quality standards if the air district's standard dust control measures were not implemented. The increase in fugitive dust is considered a potentially significant impact.	PS	4.4.1a	Retain an Air Quality Monitor during periods of Construction-Related Activity. The Port shall comply with the SJVUAPCD's Regulation VIII control measures, and shall retain an onsite air quality monitor during periods of construction-related activity to ensure compliance with the SJVUAPCD's Regulation VIII control measures. The monitor must be familiar with the SJVUAPCD's Regulation VIII Fugitive PM10 Prohibitions, including implementation of all feasible control measures specified in the SJVUAPCD's Guide for Assessing Air Quality Impacts.	LS
			4.4.1b	Further reduction of emissions of construction-related fugitive dust. When the Port approves a project component implementing the West Complex Development Plan, the Port will require compliance with any feasible and appropriate SJVAPCD Enhanced and Additional Control Measures applicable to the particular project component.	
			~~4.4.2~~ 4.4.1c	Minimization of Construction Equipment Emissions. The Port shall require construction contractors to minimize idling time from heavy duty construction equipment (e.g., scrapers, graders, trenchers, earth-movers.	

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
			4.4.1d	Further reduction of exhaust emissions from construction equipment When the Port approves a project component implementing the West Complex Development Plan, the Port will consider the Construction Equipment Mitigation Measures identified by the SJVAPCD, and will implement those Construction Equipment Mitigation Measures that the Port determines are feasible and appropriate for the specific project-component.	
4.4.2	Implementation of the Proposed Project would result in an increase in operational emissions of criteria air pollutants (ROG, NOx and PM10).	S	4.3.1	Implement Feasible Travel Demand Measures.	SU
			4.4.2a	Reduction of Truck Emissions As part of the Proposed Project, the Port has included internal roadway improvements designed to reduce congestion. The Port will monitor roadways within the Project Area and will, to the extent feasible, improve onsite roadways as necessary to reduce congestion and truck idling. The Port also will carry out a truck driver information program aimed at reducing truck-idle emissions.	

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION		MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
		4.4.2b	Reduction of Emissions From Heavy Duty Yard Equipment As equipment is replaced or new equipment is added, the Port shall require that cargo-handling diesel equipment at the West Complex include new engines meeting California emission standards for new diesel engines. Orientation of buildings to the north for natural cooling and the use of appropriate landscaping that maximize the potential of passive solar design principles.	
		4.4.2c	At each time that the Port evaluates a project-specific proposal expected to result in a substantial increase in truck trips, the Port will evaluate the feasibility of adopting a mitigation measure for that project that would implement a program to provide incentives to truck owners to retrofit, repair, or replace diesel engines in trucks which would primarily serve activities within the Port. In addition, on an ongoing basis Port staff will work with regional transportation planning agencies, local governments, and regional and state air quality agencies to determine whether grant money would be available to the Port to fund an incentive program pertaining to diesel truck mitigation, to attempt to obtain such grant money to the extent that it is available and feasibly could be applied to Port-related trucking operations, and to use such grant money to reduce emissions from Port-related trucking operations.	

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
			4.4.2d	Reduction in Emissions from All Off Road Equipment The Port will require that all off-road and portable diesel powered equipment, including harbor craft, to use ARB-certified diesel fuel (non-taxed version suitable for use off-road)	
			4.4.2e	Heavy Duty Vehicle Education Program The Port will provide all port heavy duty vehicle users information regarding the SJVAPCD Heavy Duty Engine incentive (Carl Moyer) programs.	
4.4.3	Mobile emissions generated by the Proposed Project would increase CO concentrations at intersections in the area surrounding the Project Area, but not to a level exceeding the national or state standards.	LS		No mitigation is required.	LS
4.4.4	Implementation of the Proposed Project could result in exposure of nearby sensitive receptors to certain toxic air contaminants from various stationary and mobile sources.	LS		No mitigation is required.	LS

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
4.5	**Noise**				
4.5.1	Construction-related activities associated with the Proposed Project would temporarily and intermittently increase noise levels at nearby sensitive receptor locations.	PS	4.5.1a	Construction activities shall be limited to between ~~6:00~~ 7:00 a.m. and ~~9:00~~ 7:00 p.m. If nighttime construction were required, spot noise monitoring would be required to assure that noise levels from construction activities do not exceed 65 Lmax at the property line of the nearest residence. Measures to reduce nighttime construction noise levels may include using noise barriers or reducing the amount of construction activity until noise levels are below the nighttime significance criterion.	LS
			4.5.1b	Construction equipment noise shall be minimized during project construction by muffling and shielding intakes and exhaust on construction equipment (per the manufacturers' specifications) and by shrouding or shielding impact tools. All equipment shall have sound-control devices no less effective than those provided by the manufacturer.	
			4.5.1c	Material stockpiles and vehicle staging areas shall be located as far as practicable from residences.	
4.5.2	Operation of the Proposed Project would generate increased ambient noise levels and affect the noise environment of nearby sensitive land uses.	PS	4.5.2a	Direct Ships to Berths Furthest Away from Sensitive Receptor Locations.	SU

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
		As feasible, maritime vessels shall be directed away from berths located across from residential areas to other available locations. Ships shall be directed to these available locations at the time that a vessel makes its initial call to the Port.	
		4.5.2b Implement Noise-Reducing Measures at Sensitive Receptor Locations. At the request of any homeowner where noise from Port operations exceeds 60 DNL, the Port will retain a qualified acoustical consultant to evaluate interior noise levels to determine if Port operations are resulting in interior noise that exceeds 45 DNL. Residences with air-conditioning will be evaluated with windows closed; residences with no air conditioning will be evaluated with windows open if that is the normal operating condition. If it is determined that Port operations are resulting in interior noise levels exceeding 45 DNL, the Port will identify building treatments to reduce interior noise resulting from Port operations to 45 DNL or less. Treatments may include installation of air-conditioning, upgrading windows and doors, and eliminating noise flanking paths. The Port will provide construction drawings and specifications for the treatments to the homeowner. The homeowner will then be responsible for receiving 3 bids from qualified contractors to implement the treatments. ~~The Port will reimburse the homeowner for the cost of the lowest bid after treatments are completed. The Port will not implement the treatments unless wall systems are generally in compliance with building codes.~~	

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
		The Port will promptly pay the homeowner for the cost of the lowest bid after treatments are completed and accepted by the homeowner. The Port will pay for normal installation of the treatments but will not pay for any additional work necessary to allow installation of the treatments (e.g., repair of dry rot or termite damage). Although significant ship noise impacts will not occur until the Proposed Project becomes operational, the treatment program for these residences will begin upon issuance of the last permit required for the dredging project to proceed. Depending on the number of requests received for monitoring and the number of residences qualifying for treatment, the Port reserves the right to spread monitoring and treatment over 10 years, using a priority system that addresses the most impacted residences first. Once the program begins, the owner of each impacted residence may select the time at which noise monitoring and, if necessary, treatment, will occur, but the Port will treat each residence no more than once.	
		4.5.2c Stationary land based generators within the marine terminal shall be baffled to the extent feasible in order to minimize increases in the ambient noise level.	

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
4.5.3	Project operations would generate increased traffic on roads leading to the Project Area and would affect noise levels of sensitive receptors on some of the heavily traveled roads.	PS	4.5.3a	Build a Sound Wall Adjacent to Fresno Avenue for ~~Marshall Middle~~ San Joaquin Elementary School. Unfortunately, most of the residences affected by traffic noise are not located where sound walls could be built to reduce traffic noise. There are too many driveways (cutouts) that would reduce the effectiveness of sound walls. Mitigation Measure 4.5-3b provides potential mitigation for these receptors. At the time that the project results in a doubling of traffic on Fresno Avenue adjacent to Marshall Middle San Joaquin Elementary School, the project shall construct a sound wall to mitigate traffic noise at the school. The sound wall shall be designed to provide at least a 5 dBA noise reduction and constructed with the concurrence of the school. Should the school prefer not to have the sound wall built, noise-reduction measures identified in Mitigation Measure 4.5.3b shall be offered to the school.	SU

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
		Doubling of traffic shall mean a 100% increase in the AM peak hour volume on Fresno Ave adjacent to San Joaquin Elementary School compared to pre-project conditions. For the purposes of this measure, pre-project conditions shall be determined by a traffic count conducted by the Port prior to operation implementation of the first project within the scope of the West Complex Development Plan. After the determination establishment of the pre-project conditions, the Port shall conduct a traffic count at least every two years, or according to another schedule developed in consultation with the City of Stockton or County of San Joaquin, until the earliest of the following dates: the year 2020, or the year when it is determined that a 100% increase over pre-project conditions has occurred. The Port may use traffic counts conducted by another public agency on this road segment including, but not limited to, the City of Stockton, San Joaquin County, SJCOG, or the California Department of Transportation, in place of conducting its own traffic counts.	

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION		MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
		4.5.3b	At the time that the project results in a doubling of traffic for the sensitive receptors identified in this impact, the Port will retain a qualified acoustical consultant to evaluate interior noise levels to determine if Port operations are resulting in interior noise that exceeds 45 DNL. Residences with air-conditioning will be evaluated with windows closed; residences with no air conditioning will be evaluated with windows open if that is the normal operating condition. If it is determined that Port operations are resulting in interior noise levels exceeding 45 DNL, the Port will identify building treatments to reduce interior noise resulting from Port operations to 45 DNL or less. Treatments may include installation of air-conditioning, upgrading windows and doors, and eliminating noise flanking paths. The Port will provide construction drawings and specifications for the treatments to the homeowner. The homeowner will then be responsible for receiving 3 bids from qualified contractors to implement the treatments. ~~The Port will reimburse the homeowner for the cost of the lowest bid after treatments are completed. The Port will not implement the treatments unless wall systems are generally in compliance with building codes.~~ The Port will promptly pay the homeowner for the cost of the lowest bid after treatments are completed and accepted by the homeowner. The Port will pay for normal installation of the treatments but will not pay for any additional work necessary to allow installation of the treatments (e.g., repair of dry rot or termite damage).	

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
		Depending on the number of requests received for monitoring and the number of residences qualifying for treatment, the Port reserves the right to spread monitoring and treatment over 10 years, using a priority system that addresses the most impacted residences first. Once the program begins, the owner of each impacted residence may select the time at which noise monitoring and, if necessary, treatment, will occur, but the Port will treat each residence no more than once. Doubling of traffic shall mean a 100% increase in the AM peak hour volume on the road segments identified in Impact 4.5.3 compared to pre-project conditions. For purposes of this measure, pre-project conditions shall be determined by a traffic count conducted by the Port prior to implementation of the first project within the scope of the West Complex Development Plan. After the determination establishment of the pre-project conditions, the Port shall conduct a traffic counts once at least every two years, or according to another schedule developed in consultation with the City of Stockton or County of San Joaquin, until the earliest of the following dates: the year 2020, or the year when it is determined that a 100% increase over pre-project conditions has occurred. The Port may use traffic counts conducted by another public agency on those road segments including, but not limited to, the City of Stockton, San Joaquin County, SJCOG, or the California Department of Transportation, in place of conducting its own traffic counts.	

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
4.5.4	Project operations would generate increased levels of low-frequency noise that would likely produce vibrations in lightweight structures.	PS	4.5.2a	Refer to the mitigation description above.	SU
4.6	**Geology and Soils**				
4.6.1	Implementation of the Proposed Project could expose people and/or structures to potential adverse effects of seismically-induced groundshaking; however local ordinances require implementation of measures that will reduce this risk.	LS	4.6.1	No mitigation is required.	LS
4.6.2	Structures constructed under the Proposed Project could be located on expansive soils, as defined in Table 18-1-B of the Uniform Building Code (1994); however local ordinances require implementation of measures that will reduce this risk.	LS		No mitigation is required.	LS
4.6.3	Throughout implementation of the Proposed Project, new and existing structures and the perimeter levee could be subjected to geologic hazards, including liquefaction, differential settlement, and total settlement. Failure of the levee could result in significant damage to properties from flooding and loss of life.	PS	4.6.3	To ensure the island's perimeter levee (Rough and Ready Island only) would provide sufficient protection in the event of an earthquake, the Port shall establish an annual levee-monitoring and inspection program. The purpose of the program will be to review and, if needed, reinforce the structural integrity of the perimeter levee on an annual basis over the lifetime of the Development Plan in accordance with applicable local, state, and federal requirements. A licensed geotechnical or civil engineer shall prepare levee treatments proposed under the program.	LS

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

ENVIRONMENTAL IMPACT		LEVEL OF SIGNIFICANCE BEFORE MITIGATION		MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
4.6.4	Implementation of the Proposed Project has the potential to result in levee bank and surface erosion.	PS	4.6.4	The annual levee-monitoring and inspection program referred to in mitigation measure 4.6.3 shall include inspection, monitoring, and, where necessary, reinforcement of any segments of shoreline on the north side of the DWSC, across from the West Complex, between the Calaveras River and the eastern leg of the Burns Cut-off that is either inadequately protected, unprotected or eroding in order to protect against levee erosion due to increased tug boat traffic during the lifetime of the Development Plan. A licensed geotechnical or civil engineer shall prepare levee treatments proposed under the program in accordance with applicable local, state and federal requirements. Where there is an existing levee or shoreline maintenance program in place, such as a Reclamation District levee maintenance program, the Port of Stockton shall work with the existing program.	LS
			4.7.1~~a~~	Please refer to Section 4.7, Hydrology and Water Quality for a complete description of this measure.	
			4.7.3b	Please refer to Section 4.7, Hydrology and Water Quality for a complete description of this measure.	
			4.11.3~~a~~	Please refer to Section 4.11, Hazardous Materials and Public Health for a complete description of this measure.	
			~~4.11.3b~~	~~Please refer to Section 4.11, Hazardous Materials and Public Health for a complete description of this measure.~~	

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
4.7	**Hydrology and Water Quality**				
4.7.1	Water Quality – Construction of the project facilities could result in increased erosion and sedimentation, with subsequent impacts to water quality and/or storm drain capacity during construction. Additionally, release of fuels or other hazardous materials associated with construction equipment could impact water quality.	PS	4.7.1	All construction plans and activities shall implement multiple BMPs to provide effective erosion and sediment control. These BMPs shall be selected to achieve maximum sediment removal and represent the best available technology that is economically achievable. BMPs to be implemented as part of this mitigation measure shall include, but are not limited to, the following measures: ▪ Temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover) will be employed for disturbed areas. ▪ Protect the storm drain inlets on the site and in downstream off-site areas from sediment with the use of BMPs acceptable to the Port and City of Stockton. ▪ Sweep dirt and debris from paved streets in the construction zone on a regular basis, particularly before predicted rainfall events.	LS

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
		▪ Establish grass or other vegetative cover on the construction site as soon as possible after disturbance. At minimum, vegetative application shall be done by September 15th to allow for plant establishment. No disturbed surfaces will be left without erosion control measures in place during the period of October 15th to April 15th. While data is scarce regarding the effectiveness of BMPs as erosion and sediment controls, the expected pollutant removal efficiencies given in Table 4.7-1 suggest that multiple BMPs used in combination, properly installed and maintained, can achieve nearly complete sediment removal. Therefore multiple BMPs shall be selected to achieve this result and protect water quality. The final selection and design of erosion and sediment controls shall demonstrate that this result can be achieved. Implementation of this mitigation measure shall be the responsibility of the party carrying out the action, or its contractors. In all cases, these BMPs shall be subject to approval by the Port at its discretion, and the Port and/or tenants shall incorporate into contract specifications the requirement that the contractor(s) comply with and implement these provisions, as well as provisions for monitoring to verify that these standards are met.	

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
				This mitigation measure may be integrated with other regulatory requirements associated with construction activities, such as compliance with the Port's municipal NPDES permit, the General Construction Permit, the City of Stockton Storm Water Management and Discharge Control Ordinance, and the City of Stockton Grading and Erosion Control Ordinance.	
			4.11.3~~a~~	Please refer to Section 4.11, Hazardous Materials and Public Health for a complete description of this measure.	
			~~4.11.3b~~	~~Please refer to Section 4.11, Hazardous Materials and Public Health for a complete description of this measure.~~	
4.7.2	Drainage – Development of the project site could increase drainage flows as a result of the introduction of increased amounts of impervious surfaces, which could exceed the capacity of on-site drainage systems, create localized flooding, or contribute to a cumulative flooding impact downstream.	PS	4.7.2	The Port shall prepare a master Drainage Plan for the Project Area. The Drainage Plan will incorporate measures to maintain runoff during peak conditions to pre-construction discharge levels. The Port will implement measures provided in the Drainage Plan. A detailed drainage report shall be prepared by a registered civil engineer prior to site development. The report shall include the following items:	LS

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
		• An accurate calculation of pre-development runoff conditions and post-development runoff scenarios shall be conducted using appropriate engineering methods. This analysis will more accurately evaluate potential changes to runoff through specific design criteria. The model will account for increased surface runoff. • An assessment of existing drainage facilities within the Project Area, and an inventory of necessary upgrades, replacements, redesigns, and/or rehabilitation. • Design specifications for additional retention basins if needed to attenuate peak flows. Retention basins will be sized to result in no net increase in peak stormwater discharge from the site, taking into account the volume of permanent water held by the basin as discussed in Mitigation Measure 4.7.3. • A description of the proposed maintenance program for the on-site drainage system. • Standards for drainage systems to be installed on a project-specific basis. • The drainage system shall be designed to meet standards in the Stockton Municipal Code and the City of Stockton Department of Public Works Standard Specifications (current edition).	

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

ENVIRONMENTAL IMPACT		LEVEL OF SIGNIFICANCE BEFORE MITIGATION		MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
				The Drainage Plan shall include, and the Port shall implement, a schedule for identified drainage improvements. In addition, when approving specific developments that may result in increased drainage flows on the project site, the Port shall concurrently implement any necessary drainage improvements such that new development does not exceed the capacity of on-site drainage systems and peak stormwater discharge rates are maintained to pre-project levels. The Port, at its discretion, may require such project-specific drainage improvements to be funded and implemented by the developer (i.e., tenant, developer, and/or contractor).	
4.7.3	Water Quality – The Proposed Project could increase both non-storm and stormwater runoff, transporting contaminants to adjacent receiving waters.	PS	4.7.3a	To minimize the amount of pollutants entering the storm drain system, project roadways and parking areas will be cleaned regularly using street sweeping equipment. Additionally, litter and debris that may accumulate on the project site will be regularly collected and properly disposed. These activities shall be the responsibility of the Port.	LS

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION		MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
		4.7.3b	The Drainage Plan described above in Mitigation Measure 4.7.2 will include BMPs to maximize stormwater quality. The Drainage Plan will include both BMPs that will address the project site as a whole, as well as guidance for BMPs to be implemented for specific projects on a project-by-project basis. These BMPs shall be selected to achieve maximum contaminant removal and represent the best available technology that is economically achievable. The BMPs will include a combination of source control, structural improvements, and treatment systems and will be implemented so as to ensure, at minimum no net increase in contaminant releases in comparison with pre-project conditions. BMPs may include but not be limited to the following: • A wet retention basin(s), which holds a volume of stormwater until it is displaced by the next storm event, designed to provide effective water quality control. Wet retention basins have been shown to be more effective at contaminant removal than dry detention basins. Basin features shall include the following: 1. Maximize retention time for settling of fine particles. 2. Establish maintenance schedules for periodic removal of sedimentation, excessive vegetation, and debris that may clog basin inlets and outlets.	

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
				3. Maximize the retention basin elevation to allow the highest amount of infiltration and settling prior to discharge. Wet retention basins are expected to remove, at a minimum, 50 percent of suspended solids and metals, 30 percent of nitrogen and phosphorus, and up to 30 percent of pathogens (EPA, 1999).	
4.7.4	Water Quality – As discussed in Section 4.12, Public Services and Utilities, the wastewater conveyance system on the project site is known to suffer from an inflow and infiltration (I&I) problem. This could result in sewage leaks reaching groundwater and/or surface waters, potentially impairing beneficial uses and violating water quality standards.	PS	4.7.4	Prior to major project-specific development, the Port shall perform an assessment of the wastewater conveyance system. This may be performed as part of a Master Plan for development of the Project Area.	LS
4.7.5	Water Quality – The Proposed Project has the potential to increase the trade of bulk materials that may increase the likelihood of contaminated runoff during wet weather events. In addition, fuel spills, releases of hazardous materials, and other contaminant-laden runoff generated in the warehouse and dock area could result in impacts to water quality.	PS	4.7.5a	As part of the wharf upgrades under Phase I of the Marine Terminal Development, the Port shall install storm drainage facilities that redirect all stormwater runoff from this area into the Project Area's storm drainage system.	LS
			4.7.5b	All stockpiles of bulk materials with potential to adversely impact water quality shall be covered or contained during the rainy season (October 15th – April 15th).	
			4.7.5c	The Port shall ensure the immediate clean-up of any on-site fuel spills or releases of hazardous materials.	

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
			4.11.3~~a~~	Please refer to Section 4.11, Hazardous Materials and Public Health for a complete description of this measure.	
			~~4.11.3b~~	~~Please refer to Section 4.11, Hazardous Materials and Public Health for a complete description of this measure.~~	
4.7.6	Water Quality – The Proposed Project will lead to increases in the frequency and number of ships traveling in the DWSC. Ship traffic has been shown to resuspend sediment in the water column, leading to decreases in water quality. Impacts to dissolved oxygen in the DWSC are of particular concern due to a pre-existing impairment for this constituent in this water body.	PS	4.7.6	The Port shall take ownership and operational responsibility of the aeration device currently owned and operated by the USACOE. The USACOE jet aerator was originally installed to mitigate for deepening of the DWSC from -30 feet to -35 feet. The aeration facility was constructed in 1993 and has been operated as conditions have warranted since then (USACOE, 1999). The USACOE agreed to provide aeration that would attempt to maintain a 0.2 mg/l DO increment above background conditions, whenever background conditions at any station measured by the City of Stockton dropped below 5.2 mg/L during September 1 through November 30. Consequently, the USACOE requirement depends on the San Joaquin River streamflow and existing background DO levels.	LS
4.7.7	Water Quality – The wakes created by the additional ship traffic associated with the Proposed Project could lead to increased rates of bank erosion, with subsequent impacts to water quality.	PS	4.6.3	Please refer to Section 4.6, Geology, Soils and Seismicity for a complete description of this mitigation measure that provides for an annual levee monitoring program.	LS

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
4.7.8	Groundwater – As discussed in Section 4.12, Public Services and Utilities, at buildout, the Proposed Project is anticipated to generate a domestic water demand impact of approximately 1633 af/year. Because the water supplier, Cal Water, relies on groundwater to support demand, this water demand has potential to substantially deplete groundwater supplies in a basin that is already in overdraft.	PS	4.12.7~~b~~	Please refer to Section 4.12, Public Services and Utilities for a complete description of this measure that provides for water system upgrades.	LS
4.7.9	Flooding – The Project Area is protected from 100-year flood events by levees. Although the levees currently provide adequate protection within the Project Area from a 100-year flood event, flood hazards in the long term could result from inadequate levee maintenance, rising sea level, and regional land subsidence. This could potentially lead to flooding of project facilities, causing loss of property or expose people to risk of injury and/or death.	PS	4.7.9	Any new Port development shall allow a 50-foot setback from existing levees to permit continued levee maintenance and improvements as necessary for protection from major floods. The Port shall conduct regular levee maintenance to FEMA standards that are adequate to protect people and property from the 100-year flood event.	LS
4.7.10	Flooding – Many dams are located upstream of the project site. The Project Area could be subject to flooding if one of these dams were to fail. However, the risk of flooding from dam failure is considered very low because the likelihood of dam failure is low (City of Stockton, 1990).	LS		~~With implementation of the mitigation measure listed above, this potential impact would be reduced to a less-than-significant level.~~ No mitigation is required.	LS

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
4.7.11	Seiche, Tsunami, or Mudflow – Tsunamis originating in the Pacific Ocean would dissipate in the San Francisco Bay, and therefore pose a negligible hazard to the project site (City of Stockton, 1990). Seiches, while having no occurrences in San Joaquin County in the historic record, could occur in the San Joaquin River, DWSC, or Burns Cutoff, and therefore pose a slightly higher risk to the Project Area as they could overtop levees or lead to levee failure. However, because the outboard side of the levees on the Project Area are reinforced with rip-rap, the risk of levee failure as a result of a seiche is considered low. Further, the risk of a seiche of sufficient magnitude to overtop the levees is low enough to be considered to be below significance thresholds. Finally, the Project Area is nearly level, with little risk of mudflow.	LS	No mitigation is required.	LS

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
4.8	**Biological Resources**				
4.8.1	Construction activities in the Project Area could potentially result in direct and indirect impacts to "waters of the United States," including wetlands.	S	4.8.1a	The Port shall apply for a Department of the Army permit for all impacts to "waters of the U.S.," and shall comply with all conditions of permits received. Permanent impacts to waters of the U.S. covered under this permit will be mitigated at a minimum 1:1 ratio through the purchase of mitigation credits at a USACOE approved mitigation bank, or through other habitat restoration or compensation measures proposed by the Port and approved by the USACOE.	LS
			4.8.1b	Staging areas for construction activities in the Project Area shall be located in developed areas or disturbed habitat; staging areas will be prohibited within "waters of the U.S." All staging areas shall be delineated on detailed plans and reviewed by a qualified biologist. Temporary stockpiling of excavated or imported material shall occur only in these approved construction staging areas. Excess excavated soil shall be disposed of at a regional landfill or at another approved and/or properly permitted location. Stockpiles that are to remain on the site through the wet season shall be covered or otherwise protected to prevent erosion.	
			4.8.1c	The Port shall require the use of silt fences and/or straw bales and any other standard and appropriate BMPs by construction contractors in an effort to prevent accidental fill of "waters of the U.S." because of construction activities.	

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
			4.8.1d	Standard precautions will be employed by construction contractors to prevent the accidental release of fuels or other hazardous materials associated with construction equipment.	LS
4.8.2	Construction activities and project operations in the Project Area could result in adverse impacts to special status species covered under the SJMSCP.	S	4.8.2a	The proponents of future development activities resulting from the Proposed Project, including an increase in maritime traffic in the DWSC, shall comply with the terms of the SJMSCP, or	LS
			4.8.2b	Upon determination of final project configuration and before any construction activities, a qualified biologist shall delineate all SJMSCP-listed special-status species habitat occurring within the vicinity of proposed project sites and DWSC. If it is determined that any special-status species may be affected by proposed construction activities or increased maritime traffic in the DWSC, the proponents of future development activities resulting from the Proposed Project shall implement pertinent avoidance and mitigation measures commensurate with those described in Sections 5.2 and 5.3 of the SJMSCP (see Appendix K), subject to review and approval by the appropriate regulatory agencies. Mitigation measures may include, but are not limited to, the following: 1. Specified construction timing to avoid impact to migratory or seasonal species. 2. Replacement of habitat at a 1:1 ratio.	

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
				3. Transplantation of special-status plant species to protected areas.	
				4. Purchase of credits from an approved mitigation bank.	
				5. Maintain buffers from special-status species habitat	
				6. Construction monitoring by a qualified biologist.	
				7. Complying with Mitigation Measures 4.7.5a and 4.7.5b.	
4.8.3	Future development activities resulting from the Proposed Project could result in direct or indirect impacts to habitat for special status species not covered under the SJMSCP (soft bird's beak, round-leaved filaree, Sacramento perch, river lamprey, Kern Brook lamprey, Pacific lamprey, Central Valley fall/late fall-run and spring-run chinook salmon, Central Valley steelhead, and salt-marsh harvest mouse).	S	4.7.5a	Please refer to Section 4.7, Hydrology and Water Quality for a complete description of this measure.	LS
			4.7.5b	Please refer to Section 4.7, Hydrology and Water Quality for a complete description of this measure.	
			4.8.1a	Refer to the mitigation description above.	
			4.8.1b	Refer to the mitigation description above.	
			4.8.1c	Refer to the mitigation description above.	

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION		MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
		4.8.1d	Refer to the mitigation description above.	
		4.8.3	Upon determination of final project configuration and before any construction activities, a qualified biologist shall evaluate proposed construction areas (including rights-of-way and staging areas) for round-leaved filaree and soft bird's beak habitat. If suitable habitat occurs within proposed construction areas, surveys for these species shall be conducted by a qualified biologist during the appropriate time of year to identify each species (March through May for round-leaved filaree and July to November for soft bird's beak). Surveys shall conform to "Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities" (CDFG, 2000). If either species is detected within construction areas, the project shall buffer with orange fencing and avoid all identified specimens and notify the appropriate regulatory agency (i.e., USFWS for federally listed species, and CDFG for state rare plants and plants identified by CNPS). If sensitive plants cannot be avoided by the project, additional measures will be developed in consultation with the appropriate regulatory agencies. These measures may include, but are not limited to the following:	

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
				• Minimize impacts by restricting removal of plants to a few individuals of a relatively large population; • Relocating plants to suitable habitat outside the project area; • Monitoring affected populations to document potential project-related impacts; • Restoring or enhancing occupied habitat on-site or at another regional location; and/or • Protecting occupied habitat for the species on-site or at another regional location.	
4.8.4	Future development activities resulting from the Proposed Project may result in the alteration of, or disturbance to sensitive natural communities within the Sacramento San Joaquin Delta associated with an increased release of non-native aquatic organisms from ships.	PS	4.8.4	Continued Implementation of existing Ballast Water Management Plan	SU
4.8.5	The Proposed Project may result in impacts to heritage trees as defined in the Stockton Municipal Code.	LS		No mitigation is required.	LS
4.8.6	Construction activities in the Project Area could conflict with the SJMSCP.	S	4.8.2	Refer to the mitigation description above.	LS

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
4.9	**Cultural Resources**				
4.9.1	Implementation of the Proposed Project may affect unknown, potentially significant prehistoric and historic resources.	PS	4.9.1	Pursuant to CEQA Guidelines 15064.5 (f), "provisions for historical or unique archaeological resources accidentally discovered during construction" should be instituted. Therefore, in the event that any prehistoric or historic subsurface cultural resources are discovered during ground disturbing activities, all work within 50 feet of the resources shall be halted and the Port shall consult with a qualified archaeologist or paleontologist to assess the significance of the find. If any find is determined to be significant, representatives of the Port and the qualified archaeologist and/or paleontologist would meet to determine the appropriate avoidance measures or other appropriate mitigation. All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and a report prepared by the qualified archaeologist according to current professional standards. If the discovery includes human remains, CEQA Guidelines 15064.5 (e)(1) shall be followed, which is as follows: (e) In the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps should be taken:	LS

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
		(1) There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until: (A) The coroner of the county in which the remains are discovered must be contacted to determine that no investigation of the cause of death is required, and (B) If the coroner determines the remains to be Native American: 1. The coroner shall contact the Native American Heritage Commission within 24 hours. 2. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American. 3. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98, or	

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
			(2) Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance. (A) The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission; (B) The descendant identified fails to make a recommendation; or (C) The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.	
4.9.2	The demolition of existing structures on Rough & Ready Island and development of new facilities within the potentially eligible historic district will substantially affect a historic resource.	S	No mitigation beyond recordation is available.	SU

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
4.10	**Visual Resources**				
4.10.1	Implementation of the Proposed Project will not affect scenic vistas and scenic resources.	LS		No mitigation is required.	LS
4.10.2	Implementation of the Proposed Project does not conflict with adopted Plans and Policies relating to visual resources.	LS		No mitigation is required.	LS
4.10.3	The Proposed Project has the potential to alter the existing visual character of the site and its surroundings.	LS		No mitigation is required.	LS
4.10.4	The Proposed Project could increases sources of light and glare that would adversely affect day or nighttime views in the area.	PS	4.10.4a	Stationary overhead light fixtures shall be shaded and directed away from adjacent residential areas.	SU
			4.10.4b	Exterior lighting shall only be used where necessary for safety and security purposes.	

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
4.11	**Hazardous Materials and Public Health**				
4.11.1	Construction activities in the Project Area or other facility improvements could result in the disturbance of contaminated soil and/or groundwater.	PS	4.11.1a	Detailed information about the past and current uses, records of known contamination and hazardous materials usage and hazardous waste generation of the specific area(s) proposed for development and improvements should be reviewed prior to site preparation and construction activities. If contamination has occurred, the site(s) should be characterized to determine the nature and extent of contamination that is present before construction activities proceed at the site(s). Should further investigation reveal high levels of hazardous materials in the soil or groundwater beneath the site(s), a qualified professional, in consultation with appropriate regulatory agencies (i.e., DTSC, RWQCB, SJCEHD, and Stockton Fire Department) shall then develop an appropriate method to remediate the contamination. If necessary and allowed, a remediation plan in conjunction with continued construction shall be implemented. In addition, a contingency plan to dispose of any contaminated soil or groundwater shall be developed through consultation with the DTSC, RWQCB, SJCEHD, and the Stockton Fire Department.	LS

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
			4.11.1b	If unidentified contaminated soil and/or groundwater is encountered or if suspected contamination is encountered during any construction activities, work shall be halted in the area, and the type and extent of the contamination shall be identified. A qualified professional, in consultation with appropriate regulatory agencies (i.e., DTSC, RWQCB, SJCEHD, and Stockton Fire Department) shall then develop an appropriate method to remediate the contamination. If necessary and allowed, a remediation plan in conjunction with continued construction shall be implemented. In addition, a contingency plan to dispose of any contaminated soil or groundwater shall be developed through consultation with the DTSC, RWQCB, SJCEHD, and the Stockton Fire Department.	
4.11.2	Construction activities in the Project Area could result in potential interference with properties undergoing soil and/or groundwater contamination clean-up activities.	PS	4.11.2	During project-specific development review, the Port and other appropriate regulatory agencies (i.e., DTSC, RWQCB, SJCEHD, and Stockton Fire Department) should evaluate each project to ensure that all easements or accesses for operation of investigative or remedial systems are maintained. At that time a decision should be made as to what type of construction activities and development can occur on the sites evaluated. As a result, this impact potential would be reduced to less-than-significant.	LS

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
4.11.3	Construction and renovation activities would involve the use and storage of hazardous materials such as gasoline and diesel fuels, oils, and solvents. The potential for an accidental release exists during handling and transfer from one container to another. Depending on the relative hazard of the hazardous material, if a spill were to occur of significant quantity, the accidental release could pose both a hazard to construction employees and the environment.	PS	4.11.3	The Port shall ensure through its construction permitting process or through enforcement of contractual obligation for its own projects, that all contractors immediately control the source of any leak and immediately contain any spill utilizing appropriate spill containment and countermeasures. If required by any regulatory agency, contaminated media shall be collected and disposed at an off-site facility approved to accept such media.	LS
4.11.4	Risk of damage to overhead and underground utilities.	PS	4.11.4a	The Port shall ensure through its construction permitting process or through enforcement of contractual obligation for its own projects, that proper precautions will be taken (such as keeping a distance of at least 10 feet from aerial lines) in operating heavy equipment, moving long tools and sections of metal pipe, the location of scaffolding, etc. to avoid contact with aerial lines.	LS
			4.11.4b	The Port shall ensure through its construction permitting process or through enforcement of contractual obligation for its own projects, that prior to any construction activities the areas planned to be disturbed would be marked in white paint and all utility owners contacted so that utilities can be identified and avoided. The utility owners will be responsible for the timely removal or protection of any existing utility facilities located within construction areas. This procedure would protect the excavator from personal injury and underground facilities from being damaged.	

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
4.11.5	Exposure of individuals to the existing and/or potential future use of hazardous materials and generation of hazardous wastes.	LS			LS
4.11.6	Implementation of the Proposed Project could result in exposure of individuals to asbestos-containing dust and lead-based paint.	PS	4.11.5	The Port shall ensure through its construction permitting process or through enforcement of contractual obligation for its own projects, that all SJVUAPCD and NESHAP regulations for the handling and disposal of asbestos-containing materials, and all DHS and Cal/OSHA requirements for lead-related construction will be implemented.	LS
			4.11.6	The Port The Port shall ensure through its construction permitting process or through enforcement of contractual obligation for its own projects, that all SJVAPCD and NESHAP regulations for the handling and disposal of asbestos-containing materials, and all DHS and Cal/OSHA requirements for lead-related construction will be implemented.	
4.11.7	Implementation of the Proposed Project will not result in the exposure of individuals to PCBs.	LS		No mitigation is required.	LS

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
4.12	**Public Services and Utilities**				
4.12.1	Implementation of the Proposed Project would not necessitate a new or expanded fire station; however the Proposed Project may necessitate upgrades to the existing non-potable water system.	PS	4.12.1a	Prior to major project-specific development, the Port shall perform an assessment of the non-potable water system, and if deemed necessary complete any needed upgrades to the system. This may be performed on a project-by-project basis or as part of a Master Plan for development of the entire Project Area. The assessment will test for leaks in the non-potable water system, establish the ability of the system to provide sufficient flow for fire-fighting throughout the island, and identify any areas where upgrades, replacement, and/or rehabilitation is necessary to provide ~~sufficient~~ fire flows which conform to adopted Building Code Fire Safety Standards and support the City of Stockton's existing Class 1 ISO rating. ~~and to~~ All system improvements shall conform ~~with~~ to the City of Stockton Department of Public Works Standard Specifications ~~(current edition)~~ and the Stockton Municipal Code. The assessment shall include, and the Port shall implement, a schedule that performs system improvements prior to or concurrent with new development and/or increased intensity of land use such that it does not exceed the capacity of the on-site system, and adequate fire protection flows continue to be provided.	LS

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
			4.12.1b	After the upgrades performed under Mitigation Measure 4.12.1a have been completed, if it is determined that any subsequent project-level action (e.g., a new land use or development) would require fire flows in excess of the system capacity, the Port shall require an upgrade of the system to accommodate these fire flow requirements as a condition of project approval.	
4.12.2	Implementation of the Proposed Project would not substantially affect law enforcement services and would not necessitate new or expanded governmental facilities for provision of police services.	LS		No mitigation is required.	LS
4.12.3	Implementation of the Proposed Project would not substantially affect parks.	LS		No mitigation is required.	LS
4.12.4	Implementation of the Proposed Project would not substantially affect schools.	LS		No mitigation is required.	LS
4.12.5	Implementation of the Proposed Project has the potential to impact wastewater service.	LS		No mitigation is required.	LS
4.12.6	Implementation of the Proposed Project has the potential to result in impacts to the potable water supply.	PS	4.12.6	Prior to approving specific developments associated with the Proposed Project, the Port shall perform a detailed assessment of the water demands associated with these developments. To ensure that water usage from the Proposed project does not exceed baseline water levels. As outlined below, the Port shall implement the following mitigation measures, if applicable:	LS

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
		For project-related water demands that bring the cumulative demand for potable water above the 2001 annual average of 86 AF/year, the Port shall utilize one or more of the following options: 1. Implement water conservation measures that bring cumulative demand within the Project Area at or below 86 AF/year. 2. Supply the development by utilizing any unused portion of the water historically supplied for non-potable uses (i.e., agriculture, fire flows and the golf course), estimated at 868 AF/year. This option may be carried out in a variety of ways. For instance, the Port may choose to dual plumb their water system within the Project Area such that non-potable demands are supplied from these existing surface water diversions and freeflow system. Alternatively, the Port could build a water treatment plant for potable use of such water.	

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
				3. For project-related domestic water demands which may not be filled using the above two options, or bring the cumulative demand on the Project Area above the total historic water use of 954 AF/year, the Port shall not approve any development until a firm water supply has been secured, and all agreements and financing for such a supplemental water supply are in place. This supplemental supply shall not contribute to any worsening in the overdraft condition of the aquifer. Options for such a water supply include obtaining new water rights, performing in-lieu and/or direct recharge to the aquifer, entering into contracts for water transfers, and water reclamation/reuse. As discussed in the setting above, under buildout conditions, the Proposed Project could produce approximately 0.7 mgd (788 AF/year) of wastewater that may be available for reuse, assuming it received treatment to Title 22 standards. This could account for a projected shortfall of approximately 679 AF/year at buildout.	
4.12.7	Implementation of the Proposed Project could result in impacts to the water distribution infrastructure system.	PS	4.12.6	Refer to the mitigation description above.	LS

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
			4.12.7~~a~~	After the upgrades performed under Mitigation Measure 4.12.6 have been completed, if it is determined that any subsequent project-level action (e.g., a new land use or development) would require water supplies in excess of the system capacity, the Port shall require an upgrade of the system to accommodate these supplies as a condition of project approval.	
4.12.8	Implementation of the Proposed Project would not result in insufficient capacity at an existing landfill.	LS	4.12.8	In compliance with the California Integrated Waste Management Act (AB 939), the Proposed Project shall implement specific source reduction measures that require mandatory pre-processing of all solid waste generated within the Project Area. Pre-processing methods would include one or more of the following source reduction measures: on-site recycling or reuse programs, composting, and/or funding off-site sorting activities by a private waste management company. Source reduction measures shall be coordinated with the City of Stockton Public Works Department, Division of Solid Waste.	LS

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
4.13	**Population, Employment and Housing**				
4.13	Implementation of the Proposed Project has the potential to result in an increase in both temporary construction-related and permanent operations-related employment for the City of Stockton and surrounding area.	B		No mitigation is required.	B
Proposed Project Components					
5.0			**Dredging Project**		
5.4.3a	Adverse Effects on Navigation and Safety of Vessels on the Water during Dredging Activities.	PS	5.4.3a	Minimize equipment exposure in the DWSC and provide posted warnings.	LS

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		The dredger would be located adjacent to the Project Area and move gradually as sections of the Project Area have been dredged to the desired depth. The body of the dredger may extend into the DWSC, but it would not restrict the capacity of boat traffic. The dredge operator would coordinate with the Port Police and post restricted speed limits for recreational watercraft passing the Project Area. The dredge operator shall post large signs on the dredger that emphasize safe boat speeds and travel directions. The skiff and tugboat would be used as needed for crew transport, maintenance, and operations associated with the dredging. The dredged-material pipeline would remain in the water at the southern edge of the San Joaquin River and would proceed upland at Roberts Island to the specific DPS. When the dredger is operating, the pipeline would rest on the bottom of the river, but when it is not operating or when it is filled with only water, it would float approximately 2 inches above the surface. The dredge operator would post floating markers indicating the path of the pipeline and the importance of avoiding it even when it is submerged.	

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact		Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
5.4.3b	Increased Demand for Permanent Parking and Interference with Regional Transportation Plans.	LS		No mitigation is required.	LS
5.4.4a	Adverse Effects on Air Quality as a Result of PM10 Emissions Associated with Construction Equipment.	PS	5.4.4a	Comply with SJVUAPCD Regulation VIII To control the generation of construction-related PM10 emissions, the project applicant shall comply with SJVUAPCD Regulation VIII, as summarized in Table 5-4.	LS
5.4.4b	Impacts to air quality for NOX emissions.	PS	5.4.4b	Consultation with the SJVUAPCD indicates that the SJVUAPCD's diesel engine permitting requirements will minimize impacts from the operation of the dredge and any other diesel motors during the dredging process (Cadrett pers. comm.) Consequently, the project applicant must ensure that all diesel engines and motors over 50 horsepower must go through the SJVUAPCD's permitting process and have a permit to operate.	LS
5.4.4c	Generation of PM10 as a Result of Wind Erosion of Dried Dredged Slurry Material.	S	5.4.4c	The Port shall take actions to reduce or eliminate the potential erosion of dried sediments due to wind erosion. This may be accomplished, but not limited to one or more of the following actions: Monitor the growth of vegetation and take actions to promote growth if no spontaneous growth occurs; Irrigate the sediments to maintain higher water content and to promote the growth of vegetation;	LS

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
			Hydroseed and/or plant vegetation throughout the DPS location; and Use of a chemical stabilizer/suppressant.	
5.4.5a	Exposure of Residences to Noise from Dredging Operations.	LS	No mitigation is required.	LS
5.4.7a	Short-Term Near-Field Effects on Dissolved Oxygen.	LS	No mitigation is required.	LS
5.4.7b	Short-Term Far-Field Effects on Dissolved Oxygen.	LS	No mitigation is required.	LS
5.4.7c	Impacts to water quality as a result of suspending sediments and contaminants into the water column during dredging.	LS	No mitigation is required	LS

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
5.4.7d	Impacts to Water Quality Resulting from Return Flows from the DPS.	PS	5.4.7i	The Port will hold all decant water until it has been determined through analysis that the water will meet all water quality objectives and will not pose a threat to aquatic biota. The bioassay testing method will be adopted as part of the Port's sampling plan. However, because this is an impaired water, the Port suggests that the survival criteria should be established in consideration of the survival rate at a regional reference site using the MSD method. Decant water that has a survival rate within 20% of that at the reference site would be considered to meet water quality objectives. Based on the recommended bioassay tests, decant water will be sampled prior to discharge and held if samples do not meet the water quality requirements. In addition to the bioassay testing described, additional sampling will include specific analysis for arsenic, barium, cadmium, copper, lead, mercury, nickel, organochlorine pesticide "Endosulfan II", and polyaromatic hydrocarbons. Decant water containing unacceptable concentrations of any of these constituents will not be discharged. Decant water that meets the requirements would be discharged at an approximate rate of 2 mgd.	LS
5.4.7j	Long-Term/Short-Term Near-Field/Far-Field Effects on Groundwater.	LS		No mitigation is required.	LS
5.4.7k	Acid Generation Potential.	LS		No mitigation is required.	LS

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SUMMARY OF IMPACTS AND MITIGATION MEASURES

ENVIRONMENTAL IMPACT		LEVEL OF SIGNIFICANCE BEFORE MITIGATION		MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
5.4.7l	Long-Term, Far-Field Reduction of Dissolved Oxygen in the San Joaquin River.	~~CS~~LS	~~5.6.1~~	~~The Port shall take ownership and operational responsibility of the aeration device currently owned and operated by the USACOE. The USACOE jet aerator was originally installed to mitigate for deepening of the DWSC from -30 feet to -35 feet. The aeration facility was constructed in 1993 and has been operated as conditions have warranted since then (USACOE, 1999). The USACOE agreed to provide aeration that would attempt to maintain a 0.2 mg/l DO increment above background conditions, whenever background conditions at any station measured by the City of Stockton dropped below 5.2 mg/L during September 1 through November 30. Consequently, the USACOE requirement depends on the San Joaquin River streamflow and existing background DO levels.~~ See Mitigation Measure 5.6.1 for mitigation of cumulative impacts.	LS
5.4.7m	Erosion of Shorelines by Wakes from Dredging Vessels.	LS		No mitigation is required.	LS
5.4.8a	Potential to remove habitat and/or directly impact listed species.	LS		No mitigation is required.	LS
5.4.8b	Loss of Spawning and Rearing Habitat Area.	LS		No mitigation is required.	LS
5.4.8c	Impeded Migration and Movement from Change in Hydraulic Residence and Dissolved Oxygen Conditions.	LS		No mitigation is required.	LS

Less than Significant = LS Beneficial = B Significant = S Cumulative Significant = CS Significant and Unavoidable = SU Potentially Significant = PS

TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact		Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
5.4.8d	Mortality from Exposure to Contaminants Mobilized during Dredging and Removal of Accumulated Objects.	LS		No mitigation is required.	LS
5.4.8e	Mortality from Exposure to Suspended Sediment Mobilized during Dredging and Removal of Accumulated Objects.	LS		No mitigation is required.	LS
5.4.8f	Mortality from Exposure to Contaminants in the Discharge of Decant Water.	LS		No mitigation is required.	LS
5.4.8h	Mortality from Entrainment in the Suction Dredge Head.	LS		No mitigation is required.	LS
5.4.8h	Mortality of Benthic Invertebrates.	LS		No mitigation is required.	LS
5.4.9	Implementation of the Proposed Project may affect unknown, potentially significant prehistoric and historic resources.	PS	5.4.9	If buried cultural resources, such as chipped or ground stone, historic debris, building foundations, or human bone, are inadvertently discovered during ground-disturbing activities, work will stop in that area and within ~~100~~ 50 feet of the find until a qualified archaeologist can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with the Port and other appropriate agencies.	LS

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
		If human remains of Native American origin are discovered during project construction, it is necessary to comply with state laws relating to the disposition of Native American burials, which fall within the jurisdiction of the NAHC (Pub. Res. Code Sec. 5097). If any human remains are discovered or recognized in any location other than a dedicated cemetery, there will be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until: a The coroner of the county has been informed and has determined that no investigation of the cause of death is required; and b if the remains are of Native American origin, 1. The descendants of the deceased Native Americans have made a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98, or 2. The NAHC was unable to identify a descendant or the descendant failed to make a recommendation within 24 hours after being notified by the commission.	

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
			According to California Health and Safety Code, 6 or more human burials at one location constitute a cemetery (Section 8100), and disturbance of Native American cemeteries is a felony (Section 7052). Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the California NAHC.	
5.4.10	The Proposed Project will not substantially alter the visual character of the site, affect views of scenic vistas or scenic resources, or introduce new sources of light and glare that would adversely affect views of the area.	LS	No mitigation is required.	LS

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

ENVIRONMENTAL IMPACT		LEVEL OF SIGNIFICANCE BEFORE MITIGATION		MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
5.6.1	Long-Term, Far-Field Reduction of Dissolved Oxygen in the San Joaquin River.	~~PS~~CS	5.6.1	The Port shall take ownership and operational responsibility of the aeration device currently owned and operated by the USACOE. The USACOE jet aerator was originally installed to mitigate for deepening of the DWSC from -30 feet to -35 feet. The aeration facility was constructed in 1993 and has been operated as conditions have warranted since then (USACOE, 1999). The USACOE agreed to provide aeration that would maintain a 0.2 mg/l DO increment above background conditions, whenever background conditions at any station measured by the City of Stockton dropped below 5.2 mg/L during September 1 through November. Consequently, the USACOE requirement depends on the San Joaquin River streamflow and existing background DO levels. ~~The mitigation load requirement can be calculated from the following equation:~~ See Section 5.6. ~~• DO load (lb/day) = 5.4 * Flow (cfs) * Incremental DO Concentration (mg/l)~~	LS

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
		~~The USACOE aerator was designed to deliver 2,500 lbs of oxygen per day (USACOE, 1999). Therefore, the USACOE aerator is capable of increasing DO in about 2,300 cfs by the required 0.2 mg/L increment, which is a streamflow rate substantially higher than average and historical low-flow conditions in the San Joaquin River. At the average monthly flow of 500 cfs, the USACOE is required to provide only 540 lbs/day of oxygen when the background DO is less than 5.2 mg/L.~~ ~~**Figure 5-5**~~ ~~shows a typical year when the water quality objectives are not being achieved, and the operation and oxygen input provided by the USACOE jet aerator. The plot indicates that the USACOE aerator capacity is sufficient to generate an excess amount of oxygen compared to the mitigation requirements throughout the summer and fall low-DO period. Similar devices have proven to adequately disperse the oxygenated water nearly completely both laterally and vertically across the DWSC within 24 hours (Jones & Stokes, 2003)~~ ~~Although the SJR DO TMDL Stakeholder Process has yet to define the protocols and mechanism for assigning a load allocation for DO depletion and subsequent mitigation, the Port shall implement this mitigation measure under the following recommended system of the TMDL Process. Specifically, the Port shall operate the jet aerator under the following guidelines:~~	

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
		~~• The Port shall own and maintain the aerator facility in good working condition. The Port will maintain a fiscal budget that includes the maintenance and operation of the facility.~~ ~~• The Port shall permit representatives from the SJR DO TMDL Stakeholder Process to conduct field trials (at the expense of the Process and/or their applicants) of the device in order to measure and improve efficiency.~~ ~~• The Port shall continue to operate the device at their expense per the guidelines set forth by the previous operating principles outlined in the USACOE CEQA document and described above.~~	

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
		~~• In addition to the previous operational guidelines, the Port shall operate the device all year long in order to provide a 0.2 mg/l DO increment above background conditions using the same formula above: DO load (lb/day) = 5.4 * Flow (cfs) * Concentration (mg/l) as warranted whenever the DO concentration drops below the target threshold of at least 5.2 mg/l during any period of the year measured as a daily mean from either reference station, but not to exceed up to 2,500 lbs. of oxygen per day. Additionally, the Port will provide a maximum of up to 250,000 lbs. of oxygen per year using this approach. This volume is equivalent to one-fourth of the calculated 1,000,000 pounds of dissolved oxygen deficiency that may occur in any given year based upon existing conditions of flow alteration, oxygen depletion, and channel morphology ;~~ ~~• The Port shall maintain an administrative record of device maintenance, operation, and performance. The Port will perform these tasks at least once per month between the months of June through November.~~ ~~• The Port shall provide a self-compliance report, which includes the records of maintenance, operation, DWSC flow, DO measurements, and aeration performance, to the RWQCB on a monthly basis from June to November.~~	

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE BEFORE MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
		~~• Performance measurements will be made by direct measurement of oxygen inputs and direct measurement actual diffusion into the water. This may be accomplished with a number of techniques and will be performed locally to the device as well as upstream or downstream in order to establish background conditions.~~ ~~• The Port will continue with this activity indefinitely as practicable to address the DO deficit in the San Joaquin River. The Port will cease if the DO deficit in the water is addressed by some other means (i.e., reduction of DO depleting substances upstream, incorporation of more efficient aeration technology, etc.).~~ ~~As a result of these actions, the Port will maintain involvement in a regional solution to the DO deficit in the San Joaquin River. These measures will ensure that the DO concentration is maintained at a level greater than that experienced in the river since the initial dredging of the DWSC by the USACOE. This action may also provide a regional mechanism for additional stakeholders to eventually participate in the aeration of the water. For example, the system may eventually be expanded, operated longer, and operated more efficiently.~~	

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
6.0	**McCloy Ave, Daggett Rd, and Daggett Rd Bridge Project**				
6.3.2a	Consistency with applicable land use designations and policies.	LS		No mitigation is required.	LS
6.3.2b	Agricultural land conversion.	LS		No mitigation is required.	LS
6.3.2d	Removal of residence.	LS		No mitigation is required.	LS
6.3.3a	Temporary Reduction in Roadway LOS Below Acceptable Levels.	PS	6.3.3ai	The Daggett Rd/SR4 intersection shall be initially improved to provide two lanes on the southbound Daggett Rd approach (1 left-turn lane and 1 right-turn lane), two lanes on the eastbound SR 4 approach (1 left-turn lane and one through lane), and two lanes on the westbound SR 4 approach (1 right-turn lane and one through lane). This intersection shall also be signalized.	LS
			6.3.3aii	The Port shall annually monitor the LOS on Daggett Rd and at the Daggett Rd / SR 4 intersection. Improvements to Daggett Rd south of Burns Cut-off and the Daggett Rd / SR 4 intersection including at a minimum increasing the number of through lanes on Daggett Rd from 2 to 4 and improving the Daggett Rd/SR 4 intersection to provide for lane configurations and lane lengths as shown in Figures 6-9 and 6-10 shall be completed prior to levels of service on these Roadways reaching unacceptable levels or prior to development of the West Complex above the 25 percent level whichever comes first.	

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
6.3.4a	Fugitive dust generated during future project construction activities could be substantial and would contribute to intermittent ambient respirable particulate matter concentrations that could violate state PM10 standards. ~~The SJVUAPCD requires that all construction activities implement fugitive dust control measures in accordance with Regulation VIII. With the implementation of these measures for project-specific activities, a less-than-significant impact is expected.~~	~~LS~~PS	4.4.1	~~No mitigation is required.~~ Refer to program mitigation.	LS
6.3.6a	In the event of a major earthquake in the region, seismic groundshaking could injure people and cause collapse or structural damage to existing and proposed structures; however, local ordinances require implementation of measures that will reduce this risk.	LS		No mitigation is required.	LS
6.3.6b	Structures constructed under the Proposed Project could be located on expansive soils; however local ordinances require implementation of measures that will reduce this risk.	LS		No mitigation is required.	LS
6.3.6c	The Project Area could be subject to geologic hazards, including liquefaction, differential settlement, and total settlement.	PS	4.6.3	~~No mitigation is required.~~ Refer to program mitigation.	LS
6.3.6d	Implementation of the proposed project has the potential to result in levee bank and surface erosion.	PS	4.7.1 4.7.3b	~~No mitigation is required.~~ Refer to program mitigation.	LS

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
6.3.7a	Water Quality – Construction of the project facilities could result in increased erosion and sedimentation, with subsequent impacts on water quality and/or storm drain capacity during construction. Additionally, release of fuels or other hazardous materials associated with construction equipment could impact water quality.	~~LS~~PS	4.7.1 4.11.3	~~No mitigation is required.~~ Refer to program mitigation.	LS
6.3.7b	Water Quality – The Proposed Project could increase both non-storm and stormwater runoff, transporting contaminants to adjacent receiving waters.	~~LS~~PS	4.7.3a 4.7.3b	~~No mitigation is required.~~ Refer to program mitigation	LS
6.3.8a	Effects on rare, threatened, or endangered species.	LS		No mitigation is required.	LS
6.3.9a	Implementation of the proposed specific project would not affect known prehistoric or historic resources.	LS		No mitigation is required.	LS
6.3.9b	Implementation of the proposed specific project may affect unknown, potentially significant prehistoric and historic resources.	PS	4.9.1	~~No mitigation is required.~~ Refer to program mitigation.	LS
6.3.10a	The proposed project will not substantially alter the visual character of the Project Area.	LS		No mitigation is required.	LS
6.3.11a	Construction and renovation activities would involve the use and storage of hazardous materials, such as gasoline and diesel fuels, oils, and solvents.	~~LS~~PS	4.11.3	~~No mitigation is required.~~ Refer to program mitigation.	LS

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TABLE 2-3 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact		Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
6.3.11b	Risk of damage to overhead and underground utilities.	~~LS~~PS	4.11.4a 4.11.4b	~~No mitigation is required.~~ Refer to program mitigation.	LS

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CHAPTER 3.0

COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT REPORT

CHAPTER 3.0

COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT REPORT

3.1 LIST OF COMMENTORS

Table 3-1 provides a list of individuals and representatives of organizations and agencies that submitted comments on the Draft EIR during the 68-day public review period. **Table 3-1** also provides page numbers for each letter as it appears in the chapter.

TABLE 3-1
COMMENT LETTERS RECEIVED ON THE EIR

Responsible Party	Date	Letter Number	Page Number [a]
Agency Comments			
Department of Water Resources - Floodway Protection Section	December 5, 2003	A1	3-5
San Joaquin County - Community Development Department	December 11, 2003	A2	3-7
Delta Protection Commission	December 16, 2003	A3	3-9
California Department of Food and Agriculture	January 5, 2004	A4	3-13
United States Environmental Protection Agency	January 6, 2004	A5	3-15
City of Stockton - Stockton Fire Department	January 13, 2004	A6	3-17
State Lands Commission	January 14, 2004	A7	3-19
Regional Water Quality Control Board, Central Valley	January 20, 2004	A8	3-21
San Joaquin County - Community Development Department	January 20, 2004	A9	3-27
San Joaquin County - Public Works	January 20, 2004	A10	3-31
Stockton, City of - Community Development Department	January 20, 2004	A11	3-33
San Joaquin Valley Air Pollution Control District	January 20, 2004	A12	3-39
State of California - Department of Transportation	January 22, 2004	A13	3-41
Public Works - Johnson, Wendy	February 13, 2004	A14	3-47
Public Comments			
Alexander, Dean	December 26, 2003	P1	3-49
Ingraham, Blanche L.	January 14, 2004	P2	3-51
Conrad, Luzanne	January 15, 2004	P3	3-57
Rishwain, D.D.S., Raymond J.	January 15, 2004	P4	3-59
Thomas, Thomas A.	January 15, 2004	P5	3-61
Shields, Jim	January 16, 2004	P6	3-63

Responsible Party	Date	Letter Number	Page Number [a]
Shields, Sherry	January 16, 2004	P7	3-69
Hackett, Richard C.	January 17, 2004	P8	3-123
Lawson, Mr. and Mrs.	January 17, 2004	P9	3-127
Moreno, Stephen and Marcia	January 17, 2004	P10	3-129
Thomas, Donna G.	January 17, 2004	P11	3-131
Benninger, Alyce and Bruce	January 18, 2004	P12	3-137
F., Bishop Mark	January 18, 2004	P13	3-139
Faso, Joe	January 18, 2004	P14	3-141
Foclo, Michael	January 18, 2004	P15	3-143
Gifford, D.D.S., David G.	January 18, 2004	P16	3-145
Hackett, Richard C.	January 18, 2004	P17	3-147
Jones, Paul and Kathleen E.	January 18, 2004	P18	3-149
Larson, Bob and Kathleen	January 18, 2004	P19	3-151
Celle, Larry	January 19, 2004	P20	3-157
Flaherty, Christopher M.	January 19, 2004	P21	3-159
Jones, Gina	January 19, 2004	P22	3-161
Jones, Matt	January 19, 2004	P23	3-163
Rafert, Peter J. and Kerry L.	January 19, 2004	P24	3-165
Shute Mihaly Weinberger - Friends of the Riviera Cliffs	January 19, 2004	P25	3-167
Phyllis J. Fox, Ph.D	January 20, 2004	P25a	3-205
Acoustic & Vibration Group	January 19, 2004	P25b	3-585
Chargin, Ann M.	January 20, 2004	P26	3-663
Freeman, Maxwell M.	January 20, 2004	P27	3-669
McClendon, Dwayne	January 20, 2004	P28	3-673
Shields, Sherry	January 20, 2004	P29	3-675
Organizations			
KPM Katzakian Property Management	January 20, 2004	O1	3-677
DeltaKeeper	January 20, 2004	O2	3-679

Notes: (a) refers to the location in Chapter 3.0 of the Final EIR.

3.2 COMMENT LETTERS

Written comments received on the Draft EIR are reproduced on the following pages. The responses to comments are presented in **Chapter 4.0, Responses to Comments on the Draft Environmental Impact Report**. To assist in referencing comments and responses, each commentor has been assigned a number

and each comment a corresponding number. Responses are coded to correspond to the codes used in the margin of the comment letter.

Where changes to the Draft EIR text result from responding to comments, those changes are presented in **Chapter 5.0** with revision marks (underline for new text, strike-out for deleted text). Comments which present opinions about the project unrelated to environmental issues or which raise issues not directly related either to the substance of the EIR or to environmental issues are noted without response.

Several letters requested an extension of the public comment period for the Draft EIR. These comments are noted in Section 4.0. In addition, requests for an extension that did contain other comments related to environmental issues are presented in **Appendix A**. The Port of Stockton extended the public comment period once, until February 20, as a result of delays experienced by some residents in receiving the notice of availability of the Draft EIR. This resulted in a total comment period of 68-days. The CEQA Guidelines recommend that the public review period should not normally exceed 60-days (Guidelines §15105). Interested persons who did not have the opportunity to present written comments on the Draft EIR will nevertheless have the opportunity to comment on the proposed project at a public hearing.

AGENCY COMMENTS

Letter A1

STATE OF CALIFORNIA -- THE RESOURCES AGENCY

GRAY DAVIS, *Governor*

DEPARTMENT OF WATER RESOURCES
1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

December 5, 2003

RECEIVED
DEC - 8 2003
PORT OF STOCKTON

Gordon Palmer Jr., Deputy Director
Port of Stockton
2201 W. Washington Street
Stockton, California 95202

Staff for The Department of Water Resources has reviewed State Clearinghouse Document 2002032048 "Port of Stockton West Complex Development Plan" and provides the following comments:

Portions of the project as proposed may encroach into the San Joaquin River and Stockton Shipping Channel, both of which are adopted plans of flood control, over which The Reclamation Board has jurisdiction. The California Code of Regulations, Title 23, Waters, Article 3, require that a Board permit be obtained before the start of any work including excavation and construction activities where The Reclamation Board exercises their authority.

Section 8(b)(2) of the Regulations states that applications for permits submitted to the Board must include a completed environmental questionnaire that accompanies the application and a copy of any environmental documents if they are prepared for the project. For any foreseeable significant environmental impacts, mitigation for such impacts shall be proposed. Applications are reviewed for compliance with the California Environmental Quality Act. A1-1

Section 8(b)(4) of the Regulations states that additional information, such as geotechnical exploration, soil testing, hydraulic or sediment transport studies, biological surveys, environmental surveys and other analyses may be required at any time prior to Board action on the application.

If you have any questions, please contact me at (916) 574-0650, or Samuel Brandon at (916) 574-0651.

Sincerely,

Sterling Sorenson
Water Resources Engineering Associate
Floodway Protection Section

cc: Richard Marshall, Chief
Flood Project Inspection Section
3310 El Camino Avenue, Room B-20
Sacramento CA 95821

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Letter A2

SAN JOAQUIN COUNTY
COMMUNITY DEVELOPMENT DEPARTMENT

1810 E. HAZELTON AVE., STOCKTON, CA 95205-6232
PHONE: 209/468-3121 FAX: 209/468-3163

RECEIVED
DEC 12 2003
ENVIRONMENTAL SCIENCE ASSOCIATES

RECEIVED
DEC 12 2003
PORT OF STOCKTON

December 11, 2003

Ray Weiss
Project Manager
Environmental Science Associates
8950 Cal Center Drive, Suite 300
Sacramento CA 95826

Dear Mr. Weiss:

SUBJECT: DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE PORT OF STOCKTON WEST COMPLEX DEVELOPMENT PLAN:

Thank you for sending San Joaquin County the EIR for the above referenced project. The San Joaquin County Community Development Department has reviewed the EIR and has the following comment:

The Community Development Department requests that the environmental review for the proposed subdivision address the potential loss of agricultural land and incorporate mitigation measures to mitigate for the loss of agricultural land.
The San Joaquin County Community Development Department has determined that there are feasible mitigation measures for the loss of agricultural land that could be implemented, including one of the following:

1. By providing water supply for agriculture.
2. By assisting agriculturalists in developing restoration and conservation projects.
3. By purchasing and combing smaller parcels to make agriculture more viable.
4. By conducting or funding flood plain restoration projects that benefit agriculture.
5. By developing or funding buffer zones between urban development and agricultural land.
6. By improving levees to protect agricultural land from flooding.
7. By conducting or funding erosion control projects that benefit agriculture.
8. By clustering development of the "Project" to support efficient use of agricultural land.
9. By conducting or providing funding for techniques that increase production by identifying new processes, new techniques, or new crop potential on heretofore-limited agricultural production lands, i.e., converting grazing land to vineyards.
10. By conducting or funding programs that identify best agriculture management practices to increase efficiencies, such as land adjacent to wetlands, and potentially bring more agricultural land into production.
11. By conducting or funding Urban Limit Line studies that provided for improvement of geometric shape and compactness of urban development that reduces pressure to prematurely convert agricultural lands.

A2-1

Another method to mitigate for the loss of agricultural land is to obtain agricultural conservation easements that assure the availability of agricultural land for the long term. One technique to obtain conservation easements to mitigate for the loss of agricultural land is to establish a mitigation fee. Absent such a fee, the project proponent has the alternative to purchase the

easement directly from a property owner. Another alternative is to work with the American Farmland Trust to establish a mitigation fee. In this case, the fee will be placed in an interest-bearing account for a three-year period of time to allow San Joaquin County to develop a mitigation program for the loss of agricultural land or to select an appropriate mitigation site within San Joaquin County. If San Joaquin County establishes a farmland trust during the three years, the American Farmland Trust will distribute the funds to San Joaquin County. If San Joaquin County has not approved a program for the loss of agricultural land, then the American Farmland Trust will utilize the funds to obtain an easement. A2-1 (Cont.)

Sincerely,

Leanne Mueller

Leanne Mueller
Associate Planner

Letter A3

STATE OF CALIFORNIA—THE RESOURCES AGENCY

DELTA PROTECTION COMMISSION
14215 RIVER ROAD
P.O. BOX 530
WALNUT GROVE, CA 95690
Phone (916) 776-2290
FAX (916) 776-2293
E-Mail: dpc@citlink.net Home Page: www.delta.ca.gov

RECEIVED
DEC 3 1 2003
PORT OF STOCKTON

December 16, 2003

J. Gordon Palmer, Jr., Deputy Director
Port of Stockton
2201 W. Washington Street
Stockton, Ca 95202

Subject: Draft Environmental Impact Report (DEIR) Port of Stockton West Complex Development Plan; SCH No. 2002032048

Dear Mr. Palmer:

I am writing regarding the above-named environmental document for the Port's master plan for development of Rough and Ready Island. The Commission itself has not had the opportunity to review the DEIR so these are staff comments only. They are, however, based on the Delta Protection Act and the Land Use and Resource Management Plan for the Primary Zone of the Delta, the Commission's law and regional plan.

The DEIR covers both short-term and long-term development of Rough and Ready Island including redevelopment of existing structures, construction of new Port structures, construction of a new office park, infrastructure improvements and transportation improvements. The DEIR is programmatic for the long-term development on the Island and project for dredging of the Ship Channel at the existing wharves and for construction of a new bridge at Daggett Road, across Burns Cut.

Project Location and Commission Jurisdiction:
The proposed project is largely located on Rough and Ready Island in the Secondary Zone of the Delta. The Secondary Zone is located outside the Commission's planning area, but the Commission has incorporated recommendations for the Secondary Zone into its regional plan. Commission comments on projects in the Secondary Zone are advisory only.

The construction of a new bridge at Daggett Road and the widening of Daggett Road are located in the Primary Zone of the Delta in San Joaquin County. Projects located in the Primary Zone are in the Commission's planning area. Development, as defined in Public Resources Code Section 29723(a), can be appealed to the Commission by an aggrieved party. Development does **not** include "Projects within port districts, including, but not limited to, projects for the movement, grading and removal of bulk materials for the purpose of activities related to maritime commerce and navigation" (PRC Section 29723

(b)(7). The DEIR states that Daggett Road may eventually be the primary access to and from the Island.

Comment: The proposed bridge and widening of Daggett Road are not within a Port District and are located in the Primary Zone of the Delta and thus are subject to the Commission's planning and appeal authority. The DEIR should describe the Commission's jurisdiction over portions of the proposed project and describe how the proposed project conforms with the Commission's law and regional plan. A3-1

Impacts on Agricultural Uses in the Delta Primary Zone:
One of the key goals of the Commission's law and regional plan is the protection of agricultural land. The proposed project will result in the development of several hundred acres of land on the south side of the Island, across Burns Cut from active farmland in the Delta Primary Zone. The Commission's regional plan recommends the creation of adequate buffers, between 300 and 500 feet wide, between new development and existing land uses in the Delta Primary Zone. Currently, the new development would be separated from agricultural uses by Burns Cut, the levee on the Island and a 50 foot setback from the levee.

The proposed project also includes improvements to Daggett Road, possibly up to five lanes wide in the future, and a new bridge, both located in the Primary Zone. The DEIR indicates that Daggett Road could become the primary point of ingress/egress to the Island, accommodating up to 50,000 vehicle trips per day at full build out.

Comment: Construction of a busy roadway and bridge carrying thousands of commuters and trucks to and from the Port would adversely impact nearby agriculture in the Primary Zone. The Port should include in its roadway design an adequate buffer along the agricultural lands, such as landscaping and a sturdy fence to capture debris. The roadway design should incorporate drainage improvements to ensure that surface runoff from the roadway drains away from the agricultural land and Burns Cut, and into a City drainage system. A3-2

Comment: Construction of the new roadway and bridge will result in the loss of agricultural lands. The DEIR proposes no mitigation to offset this loss. The DEIR should include mitigation, such as purchase of agricultural easements to permanently protect agricultural land, or the donation of funds to a land trust for the purchase of agricultural easements in the Delta. The Commission would be pleased to assist in the delineation of appropriate mitigation sites. A3-3

Impacts on Agricultural Uses in the Delta Primary Zone:
The Commission does not have authority over the Secondary Zone, but notes that the proposed development of offices on the southern half of the Island will result in the loss of hundreds of acres of agricultural land. The DEIR does not propose any mitigation for the loss of this agricultural land.

Comment: Construction of the new office park will result in the loss of agricultural lands. The DEIR proposes no mitigation to offset this loss. The DEIR should include mitigation, such as purchase of agricultural easements to permanently protect agricultural land, or the donation of funds to a land trust for the purchase of agricultural easements in the Delta. The Commission would be pleased to assist in the delineation of appropriate mitigation sites. A3-4

Provision of Recreation and Public Access in New Projects in the Secondary Zone:
The Commission's regional plan includes recommendations regarding public access and recreation in the Secondary Zone:

> *R-3: New projects in the Secondary Zone, adjacent to the Primary Zone, should include commercial and public recreation facilities which allow safe, supervised access to and along the Delta waterways (pedestrian and bike trails, launch ramps including small boat launch ramps, windsurfing access, overlooks, nature observation areas, interpretive information, picnic areas, etc.).*

Comment: The DEIR does not address provision of public access and recreation facilities as part of the West Complex Development Plan. The Port and City should include commitment to include public access and recreation facilities as part of the overall Development Plan. For example, public access trails, benches, and overlooks along the shoreline of Burns Cut near the office development. Public access should not be located where there is a conflict with public safety, such as active shipping loading areas. Where ingress and egress is controlled by the Port, public access could be restricted to appropriate times of day and supervised by Port policing services. A3-5

Thank you for the opportunity to comment on the DEIR for Rough and Ready Island. Please call me if you have any questions about this letter or the Commission and its jurisdiction.

Sincerely,

Margit Aramburu
Executive Director

Cc: Chairman Patrick N. McCarty
Supervisor Leroy Ornellas
Councilmember Augie Beltran
State Clearinghouse

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State of California

Letter A4

Memorandum

Received
Environmental Planning & Facilities

To: Ms. Terry Roberts, Senior Planner
State Clearinghouse
Governor's Office of Planning and Research

Date: January 5, 2004

Place: Sacramento

Phone: (916) 657-4956

Mr. J. Gordon Palmer, Jr.
Port of Stockton
2201 W. Washington Street
Stockton, CA 95203

RECEIVED
JAN 1 2 2004
PORT OF STOCKTON

From: Department of Food and Agriculture - Steve Shaffer, Director
Ag & Environmental Stewardship

Subject: Draft Environmental Impact Report (DEIR) for the Port of Stockton West Complex Development Plan – **SCH #2002032048**

The California Department of Food and Agriculture (CDFA) has reviewed the DEIR for the proposed West Complex Development Plan. The Department's mission is to promote and protect California agriculture, including the natural resources upon which agriculture depends. Based on this mission, we offer the following comments on the DEIR's treatment of project impacts on agricultural land.

The proposed project calls for the development and redevelopment of the 1,459-acre Rough and Ready Island, including the redevelopment of the existing marine terminals on 500 acres of the Island, and the development of a commercial and industrial park on the undeveloped southern portion of the Island. This latter part of the project will result in the conversion of 405 acres of existing agricultural land, including 305 of irrigated, mainly Prime Farmland.

Growth-Inducing Impacts

The DEIR acknowledges that the project will have significant direct and cumulative environmental impacts on the site's agricultural lands. We agree with this conclusion. We recommend that in addition to these impacts, the potential growth-inducing impacts of the project on agricultural land should be characterized. The DEIR notes that the project could have off-site growth-inducing impacts through economic multiplier effects, but discusses these effects only with respect to industrial and commercial, but not agricultural, lands. The effects of the project on the value of, and thus development pressure on, the agricultural land to the south of the project site could be one way that the project's growth-inducing impacts on agricultural land is portrayed. A4-1

Mitigation Measures

The DEIR does not consider potential mitigation measures for the direct, growth-inducing or cumulative impacts posed by the project. The San Joaquin County General Plan 2010 sets forth a number of implementation measures directed towards the conservation of agricultural land. Included is "the study of the feasibility of establishing mitigation fees to be paid when lands are converted from agriculture and/or open space to an urban use." In 2002, the County A4-2

Ms. Terry Roberts
Mr. J. Gordon Palmer, Jr.
January 5, 2004
Page Two

published a "Draft White Paper: Model Agricultural Impact Mitigation Ordinance and Farmland Preservation Program", which considered the adoption of an agricultural mitigation fee. Regardless of the status of this policy, we recommend that the final EIR consider the feasibility of this mitigation measure as one option to address the impacts of this project on agricultural land. This is particularly applicable with respect to the project's cumulative and growth-inducing impacts. A4-2 (Cont.)

Thank you for the opportunity to review and comment on the DEIR for the West Complex Development Plan. If you have questions on our comments, or require information or assistance in responding to them, please call me at (916) 657-4956.

cc: Scott T. Hudson, Agricultural Commissioner
San Joaquin County

bcc: Ed Williams
County Liaison

Letter A5

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

RECEIVED
JAN 08 2004
ENVIRONMENTAL SCIENCE ASSOCIATES

JAN 0 6 2004

Mr. Ray Weiss, Project Manager
Environmental Science Associates
8950 Cal Center Drive, Suite 300
Sacramento, CA 95826

RE: Notice of Availability of Draft Environmental Impact Report for the Port of Stockton Proposed West Complex Development Plan, San Joaquin County, California

Dear Mr. Weiss:

Thank you for the opportunity to review the Draft Environmental Impact Report (DEIR) for the Port of Stockton Proposed West Complex Development Plan. We have reviewed the DEIR and provide the following comments in accordance with the Clean Water Act (CWA) Section 404(b)(1) Guidelines (40 CFR 230).

We believe that the DEIR does not contain adequate baseline information to assess impacts to wetlands and waters of the United States (waters). The DEIR proposes future development on the west side of Rough & Ready Island, which appears to contain waters within jurisdiction of the U.S. Army Corps of Engineers (Corps). The DEIR states that a 1996 wetland delineation identified five large jurisdictional areas, but the document does not contain any detailed information as to their extent or location, and therefore offers no ability for us to provide substantive comments. We understand the DEIR is programmatic, and provides a cursory overview of the development plans, but we believe wetland baseline information should be considered prior to making future land-use decisions. Additionally, the information in the DEIR does not provide adequate detail for permitting purposes, and as stands, the DEIR does not demonstrate compliance with the 404(b)(1) Guidelines. Additional information will be necessary prior to obtaining a permit under Section 404 of the CWA. A5-1

Least Environmentally Damaging Practicable Alternative (LEDPA)

The DEIR does not contain an adequate analysis to determine whether the proposed project is the LEDPA. The Guidelines allow the Corps to issue a permit only when an applicant has clearly demonstrated that the proposed project represents the LEDPA. The LEDPA is the alternative that has the fewest direct, secondary, and cumulative impacts to aquatic resources that still meets project purpose. Identification of the LEDPA is achieved through an alternatives analysis that estimates, direct, secondary, and cumulative impacts to jurisdictional waters from project activities.

Compensatory Mitigation

The DEIR states that permanent impacts to waters of the United States will be mitigated through the purchase of mitigation credits at a Corps approved mitigation bank. Mitigation cannot be considered until the applicant has demonstrated that impacts waters have been avoided and minimized to the

extent practicable. The Guidelines state that discharge of dredged or fill material shall not be permitted unless appropriate and practicable steps have been taken which minimize impacts to the aquatic system (40 CFR 230.10(d)). The 1990 Memorandum of Agreement on mitigation between the Corps and EPA clarified the Guidelines by establishing a mitigation sequence that first avoids adverse effects, then minimizes adverse effects, and finally compensates for unavoidable impacts to waters of the U.S. Compensatory mitigation is required for unavoidable adverse impacts which remain after all appropriate and practicable minimization has been achieved. A5-1 (Cont.)

Solid Waste Agency of Northern Cook County (SWANCC) case and Isolated Waters
The DEIR states that waters identified in the 1996 wetland delineation may no longer be under the U.S. Army Corps of Engineers jurisdiction due to the SWANCC decision. Until the applicant has consulted with the U.S. Army Corps of Engineers and receives a formal determination, this type of information is presumptive and should not be included in the document.

To avoid future permitting complications and to streamline the environmental review process, we encourage the applicant to include information in the final EIR that demonstrates compliance with the 404(b)(1) Guidelines. This information should include a formal wetland delineation verified by the U.S. Army Corps of Engineers, and a commitment to avoiding and minimizing impacts to waters on the project site. This information will be necessary prior to obtaining a permit under Section 404 of the CWA. If you have any questions or further concerns, please have your staff contact me at (415) 972-3464 or Jorine Campopiano at (415) 972-3397.

Sincerely,

Tim Vendlinski, Supervisor
Wetlands Regulatory Office

cc: Michael Jewell, Sacramento Corps District
USFWS
RWQCB, Central Valley
CDFG, Region 2

Letter A6

RECEIVED
JAN 14 2004
ENVIRONMENTAL SCIENCE ASSOCIATES

January 13, 2004

Ray Weiss, Project Manager
Environmental Science Associates
8950 Cal Center Drive, Suite 300
Sacramento, CA 95826

PORT OF STOCKTON PROPOSED WEST COMPLEX DEVELOPMENT PLAN

The following are amendments for the above named proposal:

Page 4.12-1
Public Services
Fire Protection Service: A6-1

Amend – Second paragraph – The Port does not maintain a fireboat staffed by the Stockton Fire Department.

Page 4.12-2

Amend – Second paragraph – The fire department anticipates that the proposed project will require additional staff, specifically fire prevention personnel, to deal with the increased work load. A6-2

Page 4.11-11

Amend – Fire Hazards: A6-3
The Stockton Fire Department HazMat team is located at Station #10, 2903 West March Lane.

Page 2.47

Summary of Impacts and Mitigation Measures:

A6-4

Add - *The owners, developers, and/or successors-in-interest shall install fire hydrants and water distribution facilities which will provide fire flows which are adequate to support the City's existing Class I ISO rating and which conform to adopted Building Code Fire Safety Standards, for all of the uses proposed within the project area.*

Letter A6 (Continued)

If you have any questions, please feel free to contact me at (209) 937-8271.

W. GARY GILLIS, FIRE CHIEF

CARL ECK, DEPUTY CHIEF/FIRE MARSHAL
STOCKTON FIRE PREVENTION DIVISION

CE:mc

cc: David Stagnaro, Sr. Planner
Gary Gillis, Fire Chief

Letter A7

STATE OF CALIFORNIA ARNOLD SCHWARZENEGGER, *Governor*

CALIFORNIA STATE LANDS COMMISSION
100 Howe Avenue, Suite 100-South
Sacramento, CA 95825-8202

PAUL D. THAYER, *Executive Officer*
(916) 574-1800 FAX (916) 574-1810
California Relay Service From TDD Phone **1-800-735-2922**
from Voice Phone **1-800-735-2929**

Contact Phone: **(916) 574-1890**
Contact FAX: **(916) 574-1885**

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Environ
Planning & F

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JAN 21 2004
PORT OF STOCKTON

January 14, 2004

File Ref: SCH# 2002032048

Mr. J. Gordon Palmer, Jr.
Deputy Director
Port of Stockton
2201 W. Washington Street
Stockton, CA 95202

SUBJECT: Draft Environmental Impact Report for the Port of Stockton West Complex Development Plan, San Joaquin County

Dear Mr. Palmer:

Staff of the California State Lands Commission (CSLC or Commission) has reviewed the subject document. The CSLC is a Responsible Agency under the California Environmental Quality Act. We offer the following comments.

The State acquired sovereign ownership of all tidelands and submerged lands and beds of navigable waterways upon its admission to the United States in 1850. The State holds these lands for the benefit of all the people of the State for statewide Public Trust purposes which include waterborne commerce, navigation, fisheries, water-related recreation, habitat preservation, and open space. The landward boundaries of the State's sovereign interests in areas that are subject to tidal action are generally based upon the ordinary high water marks of these waterways as they last naturally existed.
In non-tidal navigable waterways, the State holds a fee ownership in the bed of the waterway between the two ordinary low water marks as they last naturally existed.
The entire non-tidal navigable waterway between the ordinary high water marks is subject to the Public Trust. The State's sovereign interests are under the jurisdiction of the CSLC.

Any activities involving the State sovereign lands in Burns Cut or the San Joaquin may require a lease from the Commission. Please contact Diane Jones, Public Land Manager, at (916) 574-1843 for any questions concerning our leasing requirements. A7-1

Sincerely,

Stephen L. Jenkins, Assistant Chief
Environmental Planning and
Management Division

Cc: Diane Jones

Letter A8

California Regional Water Quality Control Board

Central Valley Region

Robert Schneider, Chair

Terry Tamminen
Secretary for
Environmental
Protection

Sacramento Main Office
Internet Address: http://www.swrcb.ca.gov/rwqcb5
11020 Sun Center Drive #200 Rancho Cordova, CA 95670-6114
Phone (916) 464-3291

Arnold Schwarzenegger
Governor

RECEIVED

JAN 20 2004

PORT OF STOCKTON

20 January 2004

Gordon Palmer
Port of Stockton
2201 W. Washington Street
P.O. Box 2089
Stockton, CA 95201

REVIEW OF DRAFT ENVIRONMENTAL IMPACT REPORT FOR WEST COMPLEX DEVELOPMENT, PORT OF STOCKTON, SAN JOAQUIN COUNTY

We have received your draft Environmental Impact Report (DEIR), dated 2 December 2003, which describes the proposed project for the redevelopment of the former U.S. Naval military base situated on Rough & Ready Island in San Joaquin County. The 1,459-acre project site is bounded on all sides by water: the Stockton Deep Water Ship Channel (DWSC) on the north, Burns Cutoff on the south and west, and the San Joaquin River to the east. The site was previously zoned for institutional uses, and land use designation would be changed to accommodate maritime, industrial and commercial land uses. The project would include the redevelopment of marine terminals on the existing 500 acres northern portion of the island and the development of a commercial and industrial park on the undeveloped 500 acres portion of the island. When completed the commercial phase is expected to house approximately 20,000 people. In order to allow commercial shipping access to the West Complex docks, the project would dredge the river bottom between the docks No. 14 to 20 and the DWSC to a new depth of 35 feet Mean Low Low Water (MLLW).

The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition*, (Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Resources Control Board. In order to determine if the proposed project would have any potential significant environmental impacts, staff used the Basin Plan and the related water quality objectives that implement the Basin Plan.

The project site and the DWSC are situated in the Sacramento-San Joaquin Delta watershed. The listed beneficial uses of the Sacramento-San Joaquin Delta are municipal supply; domestic supply; agricultural irrigation; process; service supply; water contact recreation; noncontact water recreation; warm fresh water habitat; cold fresh water habitat; warm water migration; cold water migration; warm water spawning; wildlife habitat; and navigation.

As a Responsible Agency, as defined by CEQA, we have reviewed the DEIR for the West Complex Development. Based on our review, we have the following major comments regarding the proposed project:

Letter A8 (Continued)

New River Bottom

Dredging to the new depth of 36 MLLW would create a new river bottom and expose a new layer of sediment. The sediment bioassay testing show a lower survival rate for benthic organisms at several sample locations of the proposed new river bottom. For example, the survival rates were lower for18-F-New and 19-F-New then either the control or samples from the existing locations. In short, the new river bottoms may have areas of toxicity that would be exposed by the proposed project after dredging is completed. The DEIR has proposed to take a phased approach to the docks deepening portion of the project and would propose to prevent any impacts by either removing the sediments by dredging deeper to 40 feet MLLW or covering and capping the exposed sediment with a clean fill material. However, the DEIR did not list either of the proposed remedial actions as mitigation measures. The DEIR should list these potential remedial alternatives as possible mitigation measures in the CEQA document. A8-1

Dredging Operations Impacts to Water Quality

Based on a 6-day tidal mixing and 134 cfs river flow for dilution, the DEIR concludes that water quality impacts related to the dredging operation would be less than significant. The dilution analysis is not accurate, and is based on out of date information. A flow meter has been in place in the vicinity of the Stockton wastewater treatment plant (WWTP) outfall for over 5 years. The flow meter shows that there is significant tidal influence in the vicinity of the Port. Based upon an analysis of available information, the Regional Board has found, and the State Board has upheld on appeal, that at times there is little to no dilution available in the San Joaquin River for effluent discharged from the WWTP. The effluent discharged from the WWTP already exceeds water quality objectives for a number of constituents.

Staff noted that the applicant used a single grab sample to determine water quality characteristic for the river. Historically, the river's temperature, electrical conductivity, dissolved oxygen, turbidity and pH may change daily. For example, the pH of the river is variable, subject to diurnal fluctuation and may even change with depth. A single grab sample is not adequate to evaluate the potential impacts the project may have on the river. A8-2

Also, the DEIR indicates that dredging operations will be performed seven days a week for ten hours per day and may require 60 to 120 days to complete. Dredging operations may be performed during slack tides when little or no mixing is available in the river. Discharges from dredging operations are known to follow the river bank for a considerable distance and generally do not mix laterally across the entire river channel. In addition, the river velocity may be can be less along the riverbanks when compared to flow rates for the main channel.

In order to determine potential impacts, the DEIR must consider the worst-case scenario with no mixing available. For example, sediment data shows that ammonia concentrations in sediment may be as high as approximately 1,300 mg/kg. High concentrations of ammonia have been detected in the river in the vicinity of the project and the rivers assimilative capacity may not always be available. Depending on the ambient pH of the river, the discharge of sediments that are not entrained by the hydraulic dredges cutter head, estimated at an emission rate of one percent, may have a localized impact at the detected concentrations for ammonia. It is inappropriate to consider the entire river flow for mixing or that dilution is available for all the waste constituents.

Letter A8 (Continued)

The magnetic survey identified 46 magnetic anomalies situated within the proposed project area. Possible metallic objects include 2-inch metal cables, abandoned vehicles, backhoes, and a 12,000 pound anchor. Before hydraulic dredging can proceed, the submerged objects will have to be lifted from the river bottom. Removal of the objects will cause the surrounding sediments to be disturbed and subsequently to be suspended in the water column when the objects are lifted. Based on the provided sediment data, the removal of the object may have a localized impact. Furthermore, the DEIR did not discuss possible impacts related to waste associated with the objects such as petroleum oils that may also be discharged. A8-2 (Cont.)

Dredge Material Placement Site

The project will discharge dredge material to a dredge material disposal (DMD) site situated on Robert's Island. The proposed DMD site, Robert I, has historically received dredge material from previous maintenance dredging operations in the DWSC. Recently, the DMD site received approximately 120,000 cubic yards of dredge spoils from the 2003 maintenance dredging of the DWSC. The applicant has submitted soil pH monitoring reports to the Regional Board that indicate acidic soil conditions exist at the DMD site. The data indicates that the previously deposited dredge spoils are acid generating in nature and that the soil in the DMD site is acidic. In order to control the acidic condition, the applicant has applied lime to the DMD site on two separate occasions in December 2002 and August 2003.

A8-3

The Regional Board has not received any additional soil monitoring data since September 2003 and cannot comment on the current soil conditions at the DMD site. The DEIR indicates that if the soil pH drops below 6.0 S.U., then the applicant would implement a soil management plan. A more accurate assessment is that the DMD soil pH has already dropped below 6.0 and the applicant has already started a soil management program. If the applicant plans to continue to use lime applications to control the soil pH, then both the soil pH monitoring and lime application procedure must be incorporated into DEIR as migration measures for the DMD site.

To evaluate the potential impact of dredge sediment disposal on the environment, the applicant assumed neutral conditions and used deionized water as the extractant for the waste extraction test (WET) instead of citrate buffer. If the applicant does not mitigate the acidic soil conditions at the DMD site, then it is not appropriate to use deionized water as the extractant for the WET. Rather, the applicant must retest the sediment using the citrate buffer solution. If the reanalysis with citrate buffer indicates that the dredge material is potentially a designated waste, then the applicant must implement the criteria specified in the California Code Regulations Title 27 for the management of waste disposal sites in order to prevent impact to the underlying groundwater.

Decant Water Impacts to Water Quality

The DEIR proposes to test the decant water from the DMD site prior to discharging it to the river. If the data shows that the discharge would violate a water quality objective, then the wastewater would be retain on site for disposal through evaporation and percolation. In order to determine if the discharge of decant water is toxic to aquatic life, the applicant has proposed not to discharge unless the decant water has a survival rate for the bioassay test within 20 percent of that at the reference site. In order to discharge, the bioassay results of the decant water need to be statistically the same as the reference point, provided that the reference point is non-toxic relative to the laboratory control. If the reference is found to be toxic, the applicant must use the laboratory control as reference. The applicant must also use the most recently promulgated EPA methods for testing. A8-4

Letter A8 (Continued)

The applicant's data shows that the effluent may exceed water quality objectives for a number of constituents. For example, the concentration of ionized ammonia in the fish bioassay test was found to exceed the reported LC 50 dose and therefore considered to be acutely toxic. In addition, total metal concentrations for arsenic, barium, cadmium, copper, lead, mercury and nickel exceeded water quality objectives. Furthermore, the concentration of the organochlorine (OC) pesticide, Endosulfan II, in the elutriate test also exceeded water objectives. Staff noted that the sample detection levels for other OC pesticides and poly aromatic hydrocarbons exceeded water quality objectives and therefore the potential impact from these constituents is not known. A8-4 (Cont.)

The DEIR indicates that the water balance shows the DMD site has sufficient capacity. As discussed in Regional Board letter, dated 10 October 2003, the applicant's water balance is incomplete and the total holding capacity of the DMD site is not known. Therefore, the applicant will have to complete a water balance, which demonstrates that the DMD has significant holding capacity.

Storm water Issues

The DEIR notes that the project will increase the volume of non-storm water runoff. Mitigation Measure No. 4.7.3a proposes to control the amount of pollutants entering the storm drains by using street sweeping. However, street sweeping alone will not reduce the volume of non-storm water discharges. In order to reduce impacts from storm water discharges, the DEIR has proposed into construct a retention basin and perform BMPs. Staff noted that the applicants has a Storm water Permit for the East Complex (Port of Stockton). The East Complex has a retention basin and has implemented BMPs similar to those listed in the DEIR. However, monitoring data submitted for the East Complex indicate that storm water discharges exceed water quality objectives for a number of constituents. Therefore, the BMPs proposed for the project may also not meet water quality objectives and would increase pollutant loading from storm water runoff. Finally, based on the removal efficiency listed in the DEIR, the proposed mitigation measures are not sufficient to reduce loading related to the project. The applicant must propose additional BMPs in an effort to meet water quality objectives. A8-5

Additionally, no measures were proposed to address the increase in storm water runoff as a result of greater impervious areas and waste loadings associated with them. The applicant needs to explore post construction storm water BMPs, such as but not limited to low impact development, to address this issue.

A NPDES General Permit for Storm Water Discharges Associated with Construction Activities, NPDES No. CAS000002, Order No. 99-28-DWQ is required when a site involves clearing, grading, disturbances to the ground, such as stockpiling, or excavation that results in soil disturbances of at least one acre of total land area. Construction activity that involves soil disturbances on construction sites of less than one acre and is part of a larger common plan of development or sale, also requires a permit. A Construction Activities Storm Water General Permit must be obtained prior to construction. A8-6

Jet Aeration Device-Mitigation Measure No. 4.7.6

The description of this mitigation measure addresses comments provided last year by Regional Board staff to the Notice of Preparation. A8-7

Letter A8 (Continued)

Based on our review, we have the following additional comments regarding the proposed project:

Failing Sewer System

The DEIR indicates that the sewer system on Rough & Ready Island experiences problems from inflows and infiltration (I&I). Collection systems with I&I problems are more likely to have sewage spills and can substantially increase the hydraulic loading discharged to the POTW. In addition, leaky sewer lines may degrade the underlying groundwater.

In order to maintain the groundwater elevation on the island, the site uses a system of reclamation ditches to drain the shallow groundwater. The collected water flows via gravity to a pump station and is subsequently pumped to the river. The reclamation ditches may also intercept seepage from failing sewer lines or the contaminated groundwater. Therefore, wastewater may be discharged via the reclamation ditches to surface waters. The applicant has proposed to conduct a phased assessment of the sewer lines. Ideally, no new sewer connections should be made for each phase of the project until the applicant has certified the repairs identified in the assessment have been completed. A8-8

Shoreline Erosion Resulting from Increased Ship Traffic

The DEIR indicates that the increased commercial ship traffic and tug boat activities in the DWSC will cause shoreline erosion from the related boat wakes. Shoreline erosion will cause an increase in turbidity, suspended sediment and other waste constituents when the eroded sediments are mixed in the water column. The erosion and resuspension of sediments in the water column may have a significant impact on water quality and related beneficial uses.

In order to protect the riverbank from wave erosion, the applicant has proposed to use riprap along the unprotected shoreline areas on Rough & Ready Island. However, this mitigation measure, Mitigation Measure No. 4.6.4, only provides erosion protection to the shoreline along Rough & Ready Island and does not address erosion damage to the riverbank directly across from the West Complex. In fact, wave erosion from ship traffic will have an impact to unprotected shorelines along the entire San Joaquin River from Sherman Island to the Port of Stockton. A8-9

The DEIR did not discuss the potential impacts from the listed mitigation measure itself and does not determine that the proposed mitigation measure is the least environmentally damaging practicable alternative. Rip-rap is a type of fill material that will result in a loss of the adjacent shallow water aquatic habitat. The applicant must mitigate for any impacts to the shallow water aquatic habitat. The area of impact is measured from the high water level to the bottom of the rip-rap and across the covered shoreline. The DEIR did not disclose the total area or type(s) of habitat that would be potentially impacted by the rip-rap installation. Prior to commencing any shoreline protection project, the applicant must obtain the necessary permits.

The applicant has also proposed to reduce potential impacts by increased operation of the jet aeration device, Mitigation Measure No. 4.7.6, and compliance with terms of the SJMSCP, Mitigation Measure No. 4.8.2. Operation of the aeration device will not reduce turbidity or other related sedimentation impacts not related to oxygen demand. While SJMSCP does replace habitat for some species, it does not replace aquatic habitat for all federally listed species such as steelhead and Chinook salmon. Finally, compliance with the SJMSCP does not migrate impacts to other beneficial uses that are not related to wildlife habitat. A8-10

Letter A8 (Continued)

Ballast Tank Discharges

The discharge of ballast tank water may result in non-native invasive species being introduced into the Delta. The organisms can become established in the Delta, where they may replace native species or cause significant ecological damage. In addition, ballast water may contain pathogens and other waste materials that may impact the beneficial uses of the Delta. The waterways around the City of Stockton are impaired for pathogens and the DEIR did not discuss the cumulative impacts the project may have on this impairment.

Bulk transport ships in particular have large ballast tanks, up to 30,000 cubic meters, and may have to discharge ballast in order to navigate the DWSC. The applicant proposes to continue to provide information to vessels on ballast water requirements but does not consider any other feasible mitigation measures. Because the applicant does not have the authority to regulate ballast discharges, the DEIR concludes that impacts from ballast tanks discharges are significant and unavoidable without exploring additional mitigation measures or alternatives. We do not agree that the impacts are completely unavoidable. For example, the applicant did not explore pump out systems for the new port. In addition, other Ports have provided funding for the development of regional approach for on board ballast water treatment systems. The applicant does not need to have regulatory jurisdiction in order to develop and implement mitigation measures. A8-11

Cumulative Impacts

The Delta waterways are listed pursuant to Clean Water Act (CWA) section 303(d) as impaired for chlorpyrifos, DDT, diazinon, Group A pesticides, mercury, unknown toxicity and has recently been listed for pathogens near the Port of Stockton turning basin. A portion of the Delta is listed for electrical conductivity, and low dissolved oxygen causes impairment in the DWSC from Channel Point to Disappointment Slough. Because the project may contribute listed pollutants, the applicant should consider the cumulative impacts the project may have on the water body from each waste. A8-12

The applicant should incorporate the appropriate mitigation measure necessary in the final EIR document, which address the water quality concerns listed above. The mitigation measures selected should be the least environmentally damaging practicable alternative. Please note that mitigation measure described in the final EIR may be incorporated, through their respective processes, in the required Section 401 Water Quality Certifications and/or Waste Discharge Requirements required for dredging the operations. A8-13

Thank you for the opportunity to review the DEIR for the West Complex Development Plan. If you have any questions regarding the above information, please contact me at (916) 464-4684.

ALEX BAILLIE
Environmental Specialist
Surface Runoff Unit

cc: Lynn Wall, Port of Stockton, Stockton
Bill Jennings, Delta Keeper, Stockton
G. Fred Lee & Associates, El Macero
Ann M. Chargin, Stockton

Letter A9

SAN JOAQUIN COUNTY
COMMUNITY DEVELOPMENT DEPARTMENT

1810 E. HAZELTON AVE., STOCKTON, CA 95205-6232
PHONE: 209/468-3121 FAX: 209/468-3153

Received
JAN 2004
Environmental
Planning & Fac

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JAN 2 1 2004
PORT OF STOCKTON

January 20, 2004

Mr. Ray Weiss
Environmental Science Associates
8950 Cal Center Drive, Suite 300
Sacramento, CA 95826

RE: DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE PORT OF STOCKTON WEST COMPLEX DEVELOPMENT PLAN

Dear Mr. Weiss:

In my letter of April 10, 2002, to Gordon Palmer, Jr., it was recommended that off-site project impacts to the residents of Boggs Tract be addressed in the EIR. The Draft EIR, however, ignores the issue of compatibility between the Port-related land uses and the land uses of the Boggs Tract, a low-income neighborhood. Existing conditions are significant and adverse. Cumulative-plus-project conditions will exacerbate conditions that place an unfair burden on local residents. The failure of the Draft EIR to address and mitigate impacts to the Boggs Tract community renders the document inadequate. The benefit of the Port's continued development must be tempered by a good-neighbor consideration of Boggs Tract residents.

A9-1

It is recommended that the Draft EIR be revised to address issues of land use compatibility, consistency with the County's General Plan for Boggs Tract, Port access and traffic impacts on the neighborhood, truck noise, dust, vibration, glare, toxic emissions, and safety hazards to motorists, pedestrians, school children and residents.

Last year, the Council of Governments prepared a Port Access Study. A copy of my comment letter on this study is attached for consideration in the revised Draft EIR. I believe that the issue of access needs to be included in the West Complex Development Plan in order to mitigate neighborhood concerns. Specifically, the Plan should include a re-routing of Port traffic around the neighborhood. Alternative Alignment No. 1 of the Port Access Study would provide adequate access to the Port without inflicting further adverse impacts on its residential neighbors.

Thank you for this opportunity to comment. You may contact me by telephone at 209-468-3155.

Sincerely,

Harry Islas
Senior Planner

SAN JOAQUIN COUNTY
COMMUNITY DEVELOPMENT DEPARTMENT

1810 E. HAZELTON AVE., STOCKTON, CA 95205-6232
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JAN 2 1 2004
PORT OF STOCKTON

February 26, 2003

Mr. Scott Butler
San Joaquin Council of Governments
6 South El Dorado Street, Suite 400
Stockton, CA 95202

RE: ACCESS STUDY FOR THE PORT OF STOCKTON AND COMMUNITY OF BOGGS TRACT

Dear Scott:

I appreciate an opportunity to comment on the work being done by CCS Planning and Engineering, Inc. Of the five alternatives identified at our meeting on February 20, 2003, only Alternative Alignment No. 1 is acceptable to the County and the Boggs Tract residents. Each of the other four alternative routes would cut across the neighborhood and disrupt the residential community. The placement of a major industrial truck route in a residential neighborhood would conflict with policies of the San Joaquin County General Plan.

The consultant has completed his primary task by identifying Alternative No. 1 as the alternative that meets the Port's access needs and maintains the integrity of the residential neighborhood. To put forward an alternative that fails to meet the objective of either the Port or the community is a disservice that jeopardizes the integrity of the project. Alternative Nos. 2 through 5 fail to meet the objectives of either the Port or the community.

There is a serious problem now with trucks going through the neighborhood: truck noise, dust, vibration, glare, toxic emissions, and safety hazards to motorists, pedestrians, school children and residents. It would be time wasteful and disrespectful of the neighborhood residents to re-hash alternatives that bisect one portion or another of the neighborhood. The residents have made it clear that they have had enough of the problems associated with Port truck traffic in their neighborhood. From this point forward our efforts should be focused on how we can join the forces of the City, County, Port, COG, Caltrans, and neighborhood residents to implement Alternative No. 1.

Sincerely,

ORIGINAL SIGNED

Harry Islas
Senior Planner

C: County Supervisor Steve Gutierrez, First District
County Supervisor Dario Marenco, Second District

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Letter A10

THOMAS R. FLINN
DIRECTOR

THOMAS M GAU
DEPUTY DIRECTOR

MANUEL SOLORIO
DEPUTY DIRECTOR

STEVEN WINKLER
DEPUTY DIRECTOR

BENTON ANGOVE
BUSINESS ADMINISTRATOR

Public Works San Joaquin County
Working for YOU

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PORT OF STOCKTON

January 20, 2004

Mr Rita Koehnen
Port of Stockton
Post Office Box 2089
Stockton, California 95201-2089

SUBJECT: PORT OF STOCKTON PROPOSED WEST COMPLEX DEVELOPMENT PLAN

Dear Ms. Koehnen:

The San Joaquin County Department of Public Works has reviewed the environmental document for the above referenced project, and our concerns, recommendations, and corrections are as follows:

The Transportation Planning Division offers the following comments:

Page 4.3-20, Table 4.3-10:

PM peak hour data is missing. A10-1

Page 4.3-14, first paragraph, second sentence:

"The McTrans Highway Capacity Software..." Is this correct? A10-2

Page 4.3-29, Mitigation Measure 4.3.2 Develop and Implement Truck Travel Control Plan.

Deferring to a plan is not adequate mitigation. Who will have authority over the plan? The Department of Public Works requests review of plan prior to finalization.

The transportation and circulation analysis indicates that 15 percent of the proposed project's traffic will be utilizing Washington Street. This is not acceptable. Any access proposed that utilizes Washington Street will not be allowed. There are already significant issues regarding traffic on Washington Street. A10-3

Page 4.3-32, Environmental Impact/Mitigation Measure 4.3.4:

Impacts to 18 intersections within the project area, three of which are under San Joaquin County jurisdiction, are identified. The mitigation measure calls upon public agencies to establish fair share fee programs as the basis for collecting the Port's fair share of funding costs for improvements. This is unacceptable. The analysis must identify impact mitigation cost and calculate and identify the proposed project's fair share toward the cost of those improvements.

Appendix D, Trip Distribution, Page D-4, first paragraph and figure 1:

How was the trip distribution determined and how will this be affected by the adoption of a "Truck Travel Control Plan", as required by Mitigation Measure 4.3.2? A10-4

Letter A10 (Continued)

Appendix D, Page D-12, third paragraph:

A detailed table should be provided that identifies the Average Daily Traffic trigger points that will be used to determine when the recommended mitigation improvements will be constructed.

A10-5

General Comment.

The Environmental Impact Report must identify impact mitigation cost and calculate and identify the proposed project's fair share toward the cost of those improvements for all mitigation measures

The Traffic Engineering Division offers the following general comments:

Pertaining to the Boggs Tracy Community:

The environmental document states that there will be Development and Implementation of a Truck Travel Control Plan. However, there are no specifics on how this would be done other than signage, suggested travel routes, etc. To manage trucks accessing the area. All of these suggestions are not very effective in mitigation trucks through a residential area. A specific and more appropriate mitigation plan should be proposed.

A10-6

Fresno Avenue, which will be the freeway access to and from the cross-town destinations including State Highway Route 99, will have a highly increased amount of trucks and southbound left turns from Fresno onto Highway 4. There is a Kindergarten – 6th grade school located at the intersection of Sonora and Fresno Avenues with associated pedestrian traffic associated with school times. What will be the mitigation for the pedestrian traffic in relation to the added Average Daily Traffic's and truck traffic volumes?

Pertaining to the Future 2010 No. Project Scenario:

It is not clear why there is an increase of 17,927 trips in the Future 2010 No. Project Scenario? Is there an anticipated growth of business internally? A total of 17,927 trips anticipated within the next six years is a lot! If the project does not proceed, the Port of Stockton should address these additional trips traveling through a residential area.

A10-7

Were the truck trips converted to passenger car trips in calculating the level of service?

The Solid Waste Division offers the following general comments:

The Department of Public Works, Solid Waste Division requests that current waste disposal practices and waste destination be indicated in this document. In addition, the Final Environmental Impact Report should include estimated waste quantities and waste types to be generated by this project as well as the proposed disposal destinations (see Section 5-2702) for the waste generated.

A10-8

Project participants may refer to the San Joaquin County Ordinance – Division 2, Solid Waste Collection and Disposal, Chapter 1 through 11, for local solid waste regulatory information.

Thank you for the opportunity to be heard. Should you have any questions or need additional information regarding the above comments, please contact me at 468-3085.

Sincerely,

Wendy Johnson

WENDY JOHNSON
Environmental Coordinator

WJ:ll
TP-4A063-L1

c: Annette Borges, Integrated Waste Manager
Mike McDowell, Senior Transportation Planner

Letter A11

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JAN 21 2004
PORT OF STOCKTON

CITY OF STOCKTON

COMMUNITY DEVELOPMENT DEPARTMENT
City Hall • 425 N. El Dorado Street • Stockton, CA 95202-1997
(209) 937-8266

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JAN 21 2004
ENVIRONMENTAL SCIENCE ASSOCIATES

January 20, 2004

J. Gordon Palmer, Jr., Deputy Port Director
Port of Stockton
Environmental, Planning and Facilities
2201 West Washington Street
P.O. Box 2089
Stockton, CA 95201

Ray Weiss, Project Manager
Environmental Science Associates
8950 Cal Center Drive, Suite 300
Sacramento, CA 95826

COMMENTS REGARDING THE DRAFT ENVIRONMENTAL IMPACT REPORT (DEIR) FOR THE PORT OF STOCKTON WEST COMPLEX DEVELOPMENT PLAN

City of Stockton staff has reviewed the Draft Environmental Impact Report (DEIR) for the Port of Stockton West Complex Development Plan. Comments for the DEIR are attached for your information and use.

We wish to thank you for the opportunity to review and comment on the above-referenced document and to coordinate our planning efforts. Please direct copies of subsequent environmental documentation, as well as any notifications of meetings regarding the proposed project, to me at the above-noted address. Should you have any questions regarding our comments or require additional information, please feel free to contact Senior Planner David Stagnaro, AICP at 937-8598.

James E. Glaser

JAMES E. GLASER
COMMUNITY DEVELOPMENT DIRECTOR

JEG:DJS
Attachments
emc: Mark Lewis, City Manager w/attachments
Steve Pinkerton, Director of Housing and Redevelopment w/attachments
Michael M. Niblock, Deputy Director, CDD/Planning Division. w/attachments
Jim Giottonini, Public Works Director w/attachments
Mark Madison, Director, Municipal Utilities Department w/attachments
Gregg Meissner, Development Services Manager w/attachments
Kitty Walker, Principal Economic Development Analyst, HRD w/attachments

Stockton
All-America City
1999

Letter A11 (Continued)

Community Development Department Comments:

General Comments:

Only the cover page of the City's NOP comment was included in the DEIR. Please include the actual NOP comment letter in the DEIR. A copy of the noted letter is attached for your convenience. A11-1

As indicated in the DEIR, the City is considering a comprehensive revision of the existing Planning and Zoning Code. If adopted, the document will be known as the "Development Code." Please note this in the DEIR. A11-2

Specific Comments:

Mitigation Measure 4.5.3a: The mitigation measure should specify by what means the determination of when a "doubling of traffic on Fresno Avenue adjacent to Marshall Middle School..." will occur. Will this be a traffic analysis that is coordinated with the paid for and contracted for by the Port? A11-3

Mitigation Measure 4.5.3b: The mitigation measure should reference both residences and the school since its may be invoked by SUSD on behalf of Marshall Middle School.

Mitigation Measure 4.12.1a: The DEIR/Mitigation Measure should define what "major project-specific development" is in order to provide certainty as to when the assessment of the non-potable water system shall occur. Second Paragraph: Instead of "current edition," the mitigation measure should read "in effect of the time that the water assessment is conducted. A11-4

Mitigation Measure 4.12.1b: Said fire protection system upgrade should be in accordance with City Fire Department requirements.

Mitigation Measure 4.12.8: AB939 compliance efforts should be coordinated with the City's Solid Waste Division of the Public Works Department. A11-5

Page 4.12-3, first paragraph: Remove the reference to the previous parkland require of 1 acre and 2 acres per 1,000 residents for Neighborhood and Community Parks respectively. The correct ratio is noted later in the same paragraph. A11-6

Municipal Utilities Department Comments:

Page 4.12-3 Public Utilities Wastewater – Paragraph 1 - 4th sentence: Mitigation measure: **"Implement a program to identify and correct I & I in the wastewater collection system."** A11-7

Page 4.12-3 Public Utilities Wastewater – Paragraph 2 – correct last sentence: The allowable average dry weather discharge flow is **"42"** million gallons per day. Add the following sentence: **"Planned expansion will increase ADWF to 48 mgd."**

Page 4.12-3 Public Utilities Wastewater – Paragraph 3
Delete paragraph

A11-7 (Cont.)

Page 4.12-3 Public Utilities Wastewater – Paragraph 4
Projected wastewater flow calculations should be based on land use.

Please clarify in the DEIR that the City does not operate or maintain the wastewater collection system on Rough and Ready Island (West Complex). The City's responsibility begins just down stream of the Port's pump station that feeds into the City's force main.

Fire Department Comments:

Page 4.12-1
Public Services
Fire Protection Service:

Amend – Second paragraph – The Port does not maintain a fireboat staffed by the Stockton Fire Department.

Page 4.12-2

Amend – Second paragraph – The fire department anticipates that the proposed project will require additional staff, specifically fire prevention personnel, to deal with the increased work load.

A11-8

Page 4.11-11

Amend – Fire Hazards:
The Stockton Fire Department HazMat team is located at Station #10, 2903 West March Lane.

Page 2.47

Summary of Impacts and Mitigation Measures:

Add - *The owners, developers, and/or successors-in-interest shall install fire hydrants and water distribution facilities which will provide fire flows which are adequate to support the City's existing Class I ISO rating and which conform to adopted Building Code Fire Safety Standards, for all of the uses proposed within the project area.*

::ODMA\GRPWISE\COS.CDD.CDD_Library:35452.1

(209) 937-8266

April 10, 2002

J. Gordon Palmer, Jr., Deputy Port Director
Port of Stockton
Environmental, Planning and Facilities
2201 West Washington Street
P.O. Box 2089
Stockton, CA 95201

COMMENTS REGARDING THE NOTICE OF PREPARATION (NOP) OF THE DRAFT ENVIRONMENTAL IMPACT REPORT (DEIR) FOR THE PORT OF STOCKTON WEST COMPLEX DEVELOPMENT PLAN

City of Stockton staff from several departments have reviewed the Notice of Preparation (NOP) of the Draft Environmental Impact Report (DEIR) for the Port of Stockton West Complex Development Plan. As stated in the NOP, the DEIR will examine water activities at a project level of detail. These include but are not limited to: dredging, placement of dredged materials, and shipping channel operations. The DEIR will examine the maritime and land use actions at a program level of detail. However, the DEIR will examine the described maritime and land uses, and their potential impacts to a degree that will allow subsequent CEQA documentation to be tiered from said EIR. City staff has reviewed the listing of potential impacts and concurs with the environmental issue areas to be studied.

The City of Stockton General Plan Land Use/Circulation Diagram currently designates the entire project area as Institutional. The City's Planning and Zoning Code currently designates the entire Project area as Public Lands (P-L). As part of the proposed project, the Port of Stockton requested that the City of Stockton initiate the General Plan amendment to Industrial and to redesignate the project area to Port (PT) Zoning District, in accordance with the City's Draft Development Code. On February 29, 2000, the City Council approved a resolution (No. 00-0069) to initiate the General Plan amendment and rezoning of the subject site on behalf of the Port of Stockton. As the Port of Stockton is aware, the PT Zoning District does not yet exist in the current Planning and Zoning Code, but is expected to be created as part of the approval of the City's new Development Code. The PT Zoning District will be applied to areas of the City of Stockton that are operated by port districts as formed under the Harbors and Navigation Code (Section 6210, et seq.) for the operation of port facilities, including wharves, dockage, warehousing and related port facilities. The PT Zoning District as proposed, will require a

Master Development Plan that will consider a full range of industrial and commercial activities. Consistent with the range of industrial and commercial land uses that may occur within the Master Development Plan area, the DEIR should examine the potential effects of such a magnitude of development. Doing so will help limit the scope of subsequent environmental documents that are prepared as specific projects are proposed, and will allow for adequate infrastructure planning. The DEIR should also discuss the coordination and timing of infrastructure improvements as they relate to the "project phasing" as described in the NOP.

We wish to thank you for the opportunity to review and comment on the above-referenced document and to coordinate our planning efforts. Please direct copies of subsequent environmental documentation, as well as any notifications of meetings regarding the proposed project, to me at the above-noted address. Should you have any questions regarding our comments or require additional information, please feel free to contact Associate Planner David Stagnaro at 937-8598.

ROGER A. STOREY, DEPUTY CITY MANAGER/
INTERIM COMMUNITY DEVELOPMENT DIRECTOR

RAS:DJS:sl

emc: Mark Lewis, City Manager
Steve Pinkerton, Director of Housing and Redevelopment
Michael M. Niblock, Deputy Director, CDD/Planning Division.
Jim Giottonini, Public Works Director
Mark Madison, Assistant Director, Municipal Utilities Department
Gregg Meissner, Senior Transportation Planner
Lorraine Islas, Sr. Economic Development Analyst, HRD

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Letter A12

San Joaquin Valley
Air Pollution Control District

RECEIVED
JAN 26 2004
PORT OF STOCKTON

January 20, 2004

J. Gordon Palmer, Jr.
Deputy Port Director – Port of Stockton
Environmental, Planning and Facilities
2201 W. Washington Street
P.O. Box 2089
Stockton, CA 95201

SUBJECT: PORT OF STOCKTON PROPOSED WEST COMPLEX REDELOPMENT PLAN DRAFT ENVIRONMENTAL IMPACT REPORT.

Dear Mr. Palmer:

The San Joaquin Valley Unified Air Pollution Control District (District) has reviewed the proposed project and offers the following comments:

The San Joaquin Valley's air quality has been designated nonattainment by the EPA and by the Air Resources Board (ARB) for ozone and fine particulate matter (PM-10). The Federal Clean Air Act (CAA) and the California Clean Air Act require areas that are designated nonattainment to reduce emissions until standards are met. A12-1

The DEIR adequately addresses existing air pollution conditions and current regulations, and identifies air quality impacts from the development of the West Complex on the surrounding environment as a significant impact. However, it fails to discuss the feasibility of potential mitigation measures to reduce community impacts, the following are mitigation measure that could potentially reduce concentrated emissions that occur in and around ports, the list should not be considered all-inclusive, and the District encourages new and innovative ideas. A12-2

1. Require all off road diesel equipment including Harbor Craft use CARB on-road diesel.

2. Provide all Port Heavy Duty vehicle users information regarding the Districts Heavy Duty Engine Incentive (Carl Moyer) programs.

David L. Crow
Executive Director/Air Pollution Control Officer

Northern Region Office
4230 Kiernan Avenue, Suite 130
Modesto, CA 95356-9322
(209) 557-6400 • FAX (209) 557-6475

Central Region Office
1990 East Gettysburg Avenue
Fresno, CA 93726-0244
(559) 230-6000 • FAX (559) 230-6061

Southern Region Office
2700 M Street, Suite 275
Bakersfield, CA 93301-2373
(661) 326-6900 • FAX (661) 326-6985

www.valleyair.org

3. Have the Port of Stockton run a program similar to the Port of Long Beach, Port of Oakland, and Port of Sacramento to provide incentive money to replace older diesel engines (Trucks, Off-Road Engines, Locomotive, and Harbor Crafts) with newer more efficient engines. A12-2 (Cont.)

4. Require cold-ironing (ship to shore power connections), to reduce emissions from auxiliary engines while ships are hotelling.

Finally, throughout the DEIR the Districts Regulation VIII (Fugitive PM10 Prohibitions) are referred to as mitigation, Regulation VIII is a required set of rules mandated by the District, mitigation measures are control measure beyond those required. A12-3

Thank you for the opportunity to comment. If you have any questions, please feel free to contact me at (209) 557-6400.

Sincerely,

John Cadrett
Environmental Planner
Northern Region

APCD REF # 20030635

Letter A13

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
P.O. BOX 2048 (1976 E. CHARTER WAY)
STOCKTON, CA 95201 (95205)
TTY: California Relay Service (800) 735-2929
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January 22, 2004

10-SJ- I5,99,4 PM various
DEIR Port of Stockton West
Complex Development Plan

Mr. J. Gordon Palmer, Jr.
Port of Stockton
2201 W. Washington Street.
Stockton, California 95203

Dear Mr. Palmer:

The California Department of Transportation (Department) appreciates the opportunity to review and comment on the Draft Environmental Impact Report (DEIR) concerning the proposed Port of Stockton West Complex Development Plan, City of Stockton Rough and Ready Island Redevelopment Plan. This plan also contains two project-specific components within the project area (Project) for the Port of Stockton (City). This very large project consists of a the redevelopment of marine terminals on the existing developed 500 acre portion of the island and the development of a commercial and industrial park on the existing undeveloped southern 500 acres of the island.

We would welcome the opportunity to work closely with the Port of Stockton, as this project develops to insure that the impacts to the state highways are minimized. We have circulated the documents through various branches within the District and have the following comments:

Traffic Operations/Safety

1. Traffic Operations has reviewed the Draft EIR, Volumes I and II. Based on the land use development, the proposed project would substantially increase the vehicle-trips, especially trucks on State and local facilities. These vehicle-trips would have a significant impact on Highway 4 (Charter Way), I-5, SJ-4 (Cross-Town Freeway) and SR-99. Traffic Operations concurs with the analyzed locations list on page 4.3-15 and 4.3-17, Volume I. A13-1

2. For Freeway facilities, LOS A through D are considered acceptable not LOS E as stated on page 4.3-10, Volume I. A13-2

3. Please provide a Technical Traffic Analysis Report (Traffic Impact Study) and traffic simulation files, SYNCHRO, etc., as soon as possible for this review. Technical Traffic Analysis Report should include the following: Period analysis for cumulative conditions should be 20 years from build-out year. Analyze Level of Service, signalized intersections, un-signalized intersections, A13-3

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mainline freeway segments, freeway ramp junction and freeway weaving areas using Highway Capacity Manual 2000 Analysis methodology, HCS 2000 software and SYNCHRO traffic simulation software Analysis result output files. A13-3 (Cont.)

4. Traffic Operations would like to review the Travel Demand Measures Plan and Truck Travel Control Plan as stated in the mitigation measures sections 4.3.1 and 4.3.2, Volume I. A13-4

5. Traffic Operations does not agree with impact statement, section 4.3.5, Volume 1, "traffic associate with the proposed project would not substantially increase (greater than 5%)...this impact is considered less-than significant" No mitigation measures are required? Please verify and provide justification to this statement. A13-5

6. Which agency will actually be responsible for implementing and funding the improvements identified in the Appendix D, Volume 2? Please provide justification and agreements/ resolutions identifying the responsible parties if possible. A13-6

7. Traffic volumes appear inconsistent from existing plus project to short term 2005 plus project and so forth. Please explain. A13-7

8. Figure 4.3-2 and 4.3-5 of DEIR Volume I for intersection "14" shows Charter Way eastbound with a left turn movement which should be a through movement. Please revise and provide the correct information.

9. There appears to be an inconsistency at intersection "14" Charter Way eastbound has 3 through lanes when intersection "13" and "15" has only 2 through lanes. Please verify if this is correct or modify accordingly. A13-8

10. The proposed project would increase the number off-site truck trips on local and regional roadways up to additional 8,850 truck trips per day. This would have a significant impact to SR-4/Fresno Ave ramp termini, I-5/Charter way interchange, weaving sections between I-5 and Eight St, Charter Way I-5 northbound on ramp and SR 4, westbound SR 4 between Stanislaus to Center St, eastbound SR 4 to northbound SR 99 and SR 26. These locations and all the intersections that would be impacted by the proposed project need to be improved within the same timeframe as the proposed project. A13-9

11. The figure under Cumulative 2020 Plus Project Peak Hour Volumes, Figure 4.3-5, Location 15, Charter Way/I -5 Interchange shows a total of 1923 vehicles per hour making left-turn from eastbound Charter Way to northbound I-5. It is recommended to construct triple left-turn lanes at this location. The Charter Way on-ramp to I-5 northbound will also need to be widened to three lanes to accommodate triple left-turn lanes. A13-10

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12. Under Appendix A, Volume 2, Notice of Preparation, Caltrans comment letter as sent to Mr. David Stagnaro dated 5/11/2001, was not included. A13-11

13. The volume of traffic generated by the project will require that the intersection of SR 4/Daggett Rd and eastbound SR 4 will need to be widened to three through lanes to accommodate triple left-turn lanes from southbound Daggett Rd. A13-12

14. At this time, Traffic Operations does not concur with the conclusions and recommendations of the transportation impact assessment identified in the Draft EIR, Appendix D, Volume 2. A13-13

15. A Technical Traffic Analysis Report (Traffic Impact Study) needs to be provided and more detailed analysis will need to be conducted to evaluate the impacts properly.

Travel Forecasting

1. The trip generation appeared reasonable, however the trip distribution did not seem as realistic as it should be for the magnitude of a project. The trip distribution should have more of the trips entering and exiting onto I-5 at all three interchanges on I-5: (1) At SR 4 (2) at Charter Way and (3) at Eighth Street. It seems logical that the majority of the trips will not be absorbed into south Stockton, and many more trips will be directed toward one of these three connections to freeways (primarily at SR 4 and Charter Way). Please provide your justification as your trip distribution. A13-14

2. The trip assignment would have been acceptable except that a large percentage of the trips that were unaffected by the project were not given any projected growth values, and remained the same between 2002 & 2020. This problem occurred on Figure 4.3-5 on diagrams #3, 5, 7, 8, 11, 13, 14, 15 & 16. It may be realistic in some circumstances, but definitely not for instance at #15 where the volume of traffic onto 1-5 NB ramp from Charter Way is the same volume as they are now. Please provide justification or re-calculate the data to be more realistic.

3. There was no diagram #20 on the Existing Peak Hour Volumes Figure 4.3-2. Please provide. A13-15

4. It is also unclear whether the Cumulative 2020 Plus Project volumes adequately take into account growth from the region. Was increased growth accounted for, from the vacant agricultural land that is located south of the project around Daggett Rd and southward? This area could be developed and should be accounted for in the future Cumulative Plus Project Volumes. Please provide information and justification on how this area is accounted for. A13-16

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5. There was concern that truck volumes were being undercounted. This would include the High Tech/Research and Development and Support for Offices/High Tech (food service etc.) projects defined in the Trip Generation Table: Table 4.3-13. There should be some expected truck transport for any type of business. Every business must have some truck deliveries to keep in operation. Please provide justification as why the truck volumes are low or recalculate using more reasonable estimates. A13-17

Environmental

1. The DEIR is missing community impacts, environmental justice, and energy categories, which should be addressed as part of the General Plan document. A13-18

2. Please provide more information regarding the determination of each of the numerous impacts being considered as "significant and unavoidable". These significant impacts should be reconsidered and efforts made to minimize their impacts. Please provide additional information as to how these levels of significance were determined. A13-19

3. The comment letters as shown in the Appendix of Volume II, address areas that are considered to be "less than significant" in the study. Will the Port's response letters be included in the EIR? A13-20

4. Project level documents need to first identify, then avoid, minimize, or mitigate all environmental impacts that would arise from the building of a proposed project. The SR 4/Daggett Road improvement projects may require a separate project level documents or section. The improvement project must include with detail plans and information to fully describe the project, identify the environmental impacts and mitigations to fulfill CEQA requirements. Please provide this information and the project level mitigation. A13-21

5. The use of California State Highways for other than normal transportation purposes such as conducting traffic counts, surveys etc. may require written authorization from Caltrans in the form of an encroachment permit. For more information on encroachment permits and their requirements, please visit our web page at http://www.dot.ca.gov/doing business.html then click on encroachment permits. A13-22

6. It is highly recommended to contact the Native American Heritage Commission (NAHC) at 915 Capitol Mall, Room 364, Sacramento, California, 95814, (916) 653-4082, (916) 657-5390 [fax]. The results of the information from NAHC should be used to consult with Native American Tribes and groups regarding concerns within the project area A13-23

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Project Management

1. Each specific component of the proposed project, such as the capacity improvements to Daggett Road and Washington Street, as well as the other transportation aspects of the project, will require separate, individual environmental review and evaluation. The requirement for project specific transportation and environmental evaluation should be more clearly spelled out in the DEIR. A13-24

2. The proposed transportation infrastructure improvements, described in the DEIR and in Appendix D, are listed as suggestions and possibilities rather than specific requirements for the project proponents. Specific requirements for funding of these improvements, detailed timetables, and specific triggers related to the proposed development and the increase in Port-related traffic need to be described. DEIR should commit the project proponents to be responsible to fund and complete a number of these mitigation improvements in transportation infrastructure and should define the strategy for "fair-share" contributions to the remainder of the mitigation proposals. A13-25

3. The DEIR requires the Port of Stockton (and/or the City of Stockton) to make "fair share" contributions to both interchange and mainline improvements that will mitigate the traffic impacts of the proposed development and maintain adequate levels of service. "Fair share" requirements for mainline capacity improvements (I-5 and SR 4) should be clearly stated in the Draft Environmental Impact Report.

4. Table 2-3, section 4.3 Transportation and Circulation of the DEIR proposes several travel demand management (TDM) measures to reduce the impacts of daily commuter traffic to and from the proposed development. Unfortunately, these proposed mitigation measures are general, non-specific goals, without specific numbers or percentage goals, lacking commitments to require, promote, or enforce compliance from either the Port or its future tenants. Specific goals (numbers or percent) for TCM measures are required with clearly stated commitments and strategies to achieve them. For example, a TDM measure could commit to limiting the available single-occupant vehicle parking to 50% of the employees or funding the purchase and maintenance of transit vans and/or car-pool vehicles from building leases and/or parking fees. The project should work with the San Joaquin Regional Transit District to develop and/or sponsor bus routes that would serve the various work locations and help reduce the number of vehicle trips to and from the area. The subsidy of the transit fares would also increase the use of public transit. The coordination of work hours and the public transit services being provided can be very beneficial in decreasing the number of single occupant vehicles traveling to and from the project area. A13-26

Mr. J. Gordon Palmer, Jr.
January 22, 2004
Page 6

Intermodal Planning

1. Fair Share, and/or Traffic Impact Fees should be collected by with the lead agency to pay for future infrastructure upgrades and other impacts created by this Project. A13-27

2. We recommend that the City continue to coordinate and consult with the Department to identify and address potential transportation impacts near this vicinity. This will ensure that any potential issues/concerns on this Project and other development projects do not conflict with our future transportation corridor improvement plans. A13-28

If you have any questions or would like to discuss our comments in more detail, please contact Lynn O'Connor at (209) 948-7575 (email address Lynn_O'Connor@dot.ca.gov) or myself at (209) 941-1921. We look forward in continuing to work with you in a cooperative manner.

Sincerely,

TOM DUMAS, Chief
Office of Intermodal Planning

C: State Clearinghouse: Scott Morgan

"Caltrans improves mobility across California"

Letter A14

THOMAS R. FLINN
DIRECTOR

THOMAS M GAU
DEPUTY DIRECTOR

MANUEL SOLORIO
DEPUTY DIRECTOR

STEVEN WINKLER
DEPUTY DIRECTOR

BENTON ANGOVE
BUSINESS ADMINISTRATOR

Public Works
San Joaquin County
Working for YOU

P. O. BOX 1810 - 1810 E. HAZELTON AVENUE
STOCKTON, CALIFORNIA 95201-3018
(209) 468-3000 FAX (209) 468-2999
www.co.san-joaquin.ca.us

RECEIVED
FEB 19 2004
PORT OF STOCKTON

VIA FACSIMILE (209) 464-1251 AND U. S. MAIL

February 13, 2004

Ms. Rita Koehnen
Port of Stockton
Post Office Box 2089
Stockton, California 95201-2089

SUBJECT: PORT OF STOCKTON PROPOSED WEST COMPLEX DEVELOPMENT PLAN

Dear Ms. Koehnen:

The San Joaquin County Department of Public Works has reviewed the Draft Environmental Impact Report (DEIR) for the above referenced project and our concerns, recommendations, and corrections are as follows. These comments should be considered in addition to the letter forwarded to your office by the County on January 20, 2004.

- Does the DEIR consider full development of the island? Page 2-1, in Volume I of the DEIR, first paragraph, indicates that the types of uses under consideration by the Port include the redevelopment of the existing developed 500-acre portion of the island and the undeveloped southern 500 acres of the island. However, in Table 2-2 "Proposed West Complex Land Uses", the total acreage presented (minus 60 acres for the INS facility and 23 acres of private land) amounts to 1,376 acres. Please clarify. A14-1

- Figure 1 "Trip Distribution" indicates that 15 percent of the proposed project traffic is expected to utilize Washington Street. As an existing two-lane facility, Washington Street does not have the capacity to carry the projected volume of traffic, especially when volume of truck traffic that is proposed to utilize the roadway is factored in. As a result of the study performed for the Boggs Tract area, it was concluded, by the Port, City of Stockton, and San Joaquin County, that Boggs Tract would remain a residential area. Therefore, Washington Street serves the residential area of Boggs Tract and is not appropriate for industrial access to the West Complex. A14-2

- The traffic study should include development planned south of Charter Way – does it? A14-3

- San Joaquin County does not have funding identified to improve the roadways/intersections being impacted by the project that would not otherwise need improvement. Where such project impacts occur, the project will be expected to fully mitigate impacts and fund the required improvements. A14-4

- Separate figures should be provided in the traffic analysis that includes both Existing and Cumulative 2020 traffic volumes. A14-5

Thank you for the opportunity to be heard. Should you have questions or need additional information regarding the above comments, please contact me at 468-3085.

Sincerely,

Adam Brucker

For WENDY JOHNSON
Environmental Coordinator

WJ:to
TP-4B076-T1

c: T. R. Flinn, Director of Public Works
Thomas M. Gau, Deputy Director/Development
Adam Brucker, Associate Planner
Mike Selling, Associate Civil Engineer

PUBLIC COMMENTS

Letter P1

RECEIVED
JAN 05 2004
ENVIRONMENTAL SCIENCE ASSOCIATES

December 26, 2003

RECEIVED
JAN 05 2004
PORT OF STOCKTON

Ray Weiss, Project Manager
Environmental Science Associates
8950 Cal Center Drive
Suite 300
Sacramento, CA. 95826

Dear Sir:

The Draft Environmental Impact Report for the Port of Stockton Proposed West Complex Development Plan does not adequately mitigate my concerns as a resident of 4223 Riviera Drive. The noise emitted into my house especially at night threatens my health and quality of life. The vibrations created by some of the ships travel across the water and land into my house causing my windows to rattle and my hardwood floors to vibrate. The cumulative affects of these type of vibrations threaten the structural integrity of my house. P1-1

Further, the draft EIR fails to address alternate sites which would better serve the Port and have little or no impact on residential neighborhoods. San Joaquin River on the east end of Rough and Ready Island between the Deeper Water channel and Daggett Road as an example could be turned into a deep water basin to accommodate all of the Ports needs without the negative impacts on the residential neighborhoods. P1-2

I don't believe that the intent of the Environmental Quality Act was to pass on the problem to someone else rather than mitigating it. Until you come up with satisfactory mitigating measures and studies of alternate sites that address all of the concerns the Port should drop any development plans. The proposal in its present from is awfully inadequate. P1-3

Sincerely

Dean Alexander
4223 Riviera Dr.
Stockton, CA. 95204

Saturday, January 3, 2004 The Record

Leave the port where it belongs

We're not against the development of Rough and Ready Island. Using buildings for warehouses, manufacturing and high-tech companies is very welcome.

These types of companies would create more year-round jobs per square foot and be most of the jobs mentioned in the reports.

Our concerns are only the intended changes on the waterfront (500 feet from our homes) to 24-hour, seven-day-a-week commercial shipping.

These ships:

- Leave their engines and/or generators running 24/7.
- Create no jobs on the ship. Pilots would be on the ship no matter where it docked.
- Create a tremendous amount of noise that can make you leap from your bed in the middle of the night.
- Create vibrations that shake shelves and beds at least a half-mile away.
- Cause pollution from engine smoke that turns the blue skies gray.
- Generate pollution from lights. We no longer have nighttime at our home.
- Create pollution with water that constantly pours out of them into the Delta.

Along with shipping, we understand the Port of Stockton intends to put trains on the dock. The effects of this haven't been studied and would be devastating to homes.

It would look like the existing port, which has operated for 70 years and is a blighted junkyard.

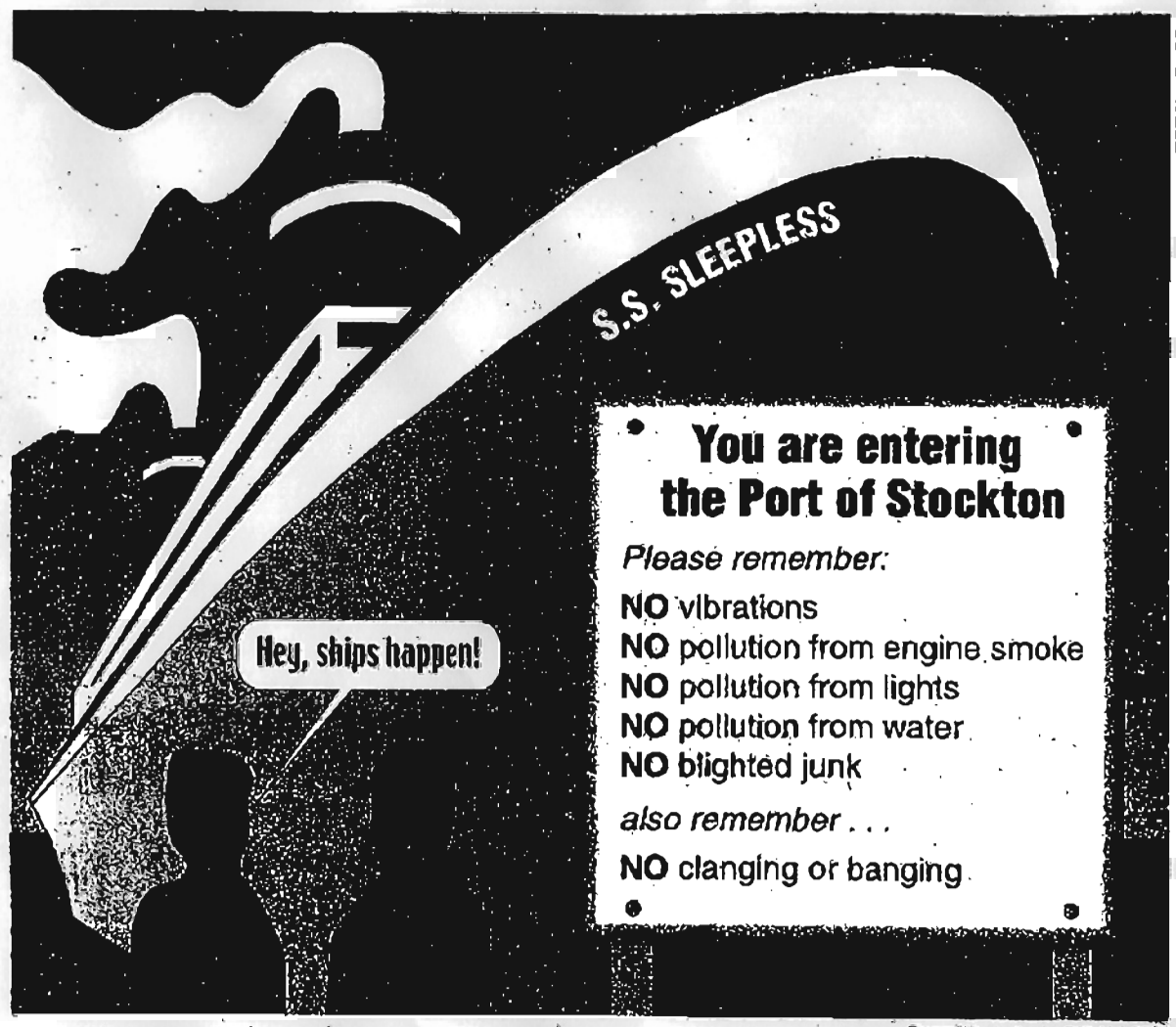
We're told we don't matter. The homeowners of Boggs Tract, Atherton Island/Cove, Riviera Cliffs and Brookside should count.

Boggs Tract homes are just as valuable to the owners as mine is to me. It's easier for me to move than it would be for them.

Taxation without representation has nothing to do with how the port operates. It means Richard Pombo, Barbara Matthews, Michael Machado, Gary Podesto, Victor Mow, Stockton police and the county sheriff's department refuse to help us. We're being denied our civil rights.

These officials claim they have no jurisdiction, but their faces and names are all over the port's brochures. Articles in the paper always state how much they're doing for the port.

A better alternative to the port's plan would be to leave it where it's been for 70 years and remodel it to fit new shipping. They could use the east end of Rough and Ready Island from the golf course to Louis Park.



Record illustration by RICK HUDGES

Instead of blighting the waterfront at Rough and Ready Island, use it for warehouses, manufacturing and high-tech companies that might build campus-type facilities that would enhance the area and make everyone proud.

Appraisers have told us our property values will be devastated. The impact also will be relayed to homes off the water, each area and home affected differently.

San Joaquin County Supervisor Steve Gutierrez has stated that it's "unacceptable" that neighborhoods have to put up with heavy truck traffic rolling past their homes.

Stockton's General Plan doesn't allow these incompatible uses. The mission statement is all about quality of life.

We're not against the development of Rough and Ready Island, but believe it can be done without destroying hundreds of owners' lives.

Richard Hacker
Stockton

Letter P2

RECEIVED
JAN 20 2004
PORT OF STOCKTON

Blanche L. Ingraham
4147 Cliff Drive
Stockton, California 95204

January 14, 2004

Ray Weiss, Project Manager
Environmental Sciences Associates
8950 Cal Center Drive, Suite 300
Sacramento, CA 95826

Dear Mr. Weiss:

The broad scope of the proposed development of the Port of Stockton West Complex Development Plan is quite a shock to me, as it likely will be to the hundreds of families who will be affected by the heavy industrial use of the mile-long site on the San Joaquin river. Diesel fumes, bright lights, trucks, trains, noise from generators will persist day and night and will be devastating personally and monetarily to all of us in this area. The large ocean going ships that will ply the delicate waterways of the delta will have devastating consequences to erosion of levees, fish and wildlife and air quality. P2-1

The San Joaquin Valley was recently cited in newspapers and television as the second most polluted area of California. Many suffer from respiratory problems

Blanche L. Ingraham
4147 Cliff Drive
Stockton, California 95204

and the cases of asthma have arisen significantly in recent years. The one-mile length of Rough and Ready island with cranes, generators, lights, trucks, deisel fuel will make it a "Terminal Island" nightmare; all this in a narrow river with barely room for two large ships to pass one another. P2-1 (Cont.)

I live in Riviera Cliffs residential area directly across the river from this site, and two blocks from the river. Many times over the past two years I have been awakened at night by the noise: throb of deisel motors, the beeping of fork lifts & trucks backing up, loud banging sounds of metal against metal. In addition, during summer and early fall, any outside activity such as barbeques, picnics, swimming and gardening are interrupted by these same noises. P2-2

The area where I reside is a beautiful neighborhood of 109 homes. People take pride in the care of their homes, lead a quiet, peaceful lifestyle, and enjoy the cool evening breezes of the waterways. I have lived here P2-3

2

Blanche L. Ingraham
4147 Cliff Drive
Stockton, California 95204

for 33 years and I and my family have enjoyed many happy days in the backyard around the pool. I hope to live here the rest of my life. I've spent considerable time, effort and money to maintain and upgrade my home. Most of my net worth is in my home. This home is more than a house — it is a reflection of my personality, my family, my heirlooms and my history. P2-3 (Cont.)

I believe that zoning laws protected me from having heavy industry and pollution of black diesel smoke over my home and our area. If this huge, dirty development is permitted to proceed, my property will decrease drastically — 50% by some appraisals. And, of course, it will affect my personal well-being.

Here is a suggestion for an alternative use of the land. Stockton has not utilized the beauty and possibilities of what could be done with the two rivers which flow through our city. Rough and Ready Island's river frontage P2-4

3

Blanche L. Ingraham
4147 Cliff Drive
Stockton, California 95204

could provide a marina for the many boaters in the delta. It could provide: berthing facilities, a meandering river walk with lawns, picnic areas, bicycling, jogging trails, boating re-lated shops, restaurants, fuel, repair facilities, and could even include unique town houses and condos for rent or sale. For the many boaters and fishermen in the delta, Stockton would be a "destina-tion." The attractions that are down-town would be drawing attractions also: the new theatre, Event Center, Hotel Stockton, and proposed ballpark and sports arena. P2-4 (Cont.)

The Port of Stockton would still have 10-13 berths near the turning basin for large ships and could still rent many of the warehouses which, I understand, brought in 12.7 million dollars last year.

The delta is a fisherman's paradise. The issue of anadromous fish spawning, migration and well-being must be addressed in the EIR. Such fish include, but are not limited P2-5

4

Blanche L. Ingraham
4147 Cliff Drive
Stockton, California 95204

to, salmon, steelhead, striped bass and sturgeon. Such fish may be impacted anywhere between the Port of Stockton and the ocean.

It is also quite probable that resident aquatic mammals, amphibions, and birds of the delta waterway will be negatively affected by the traffic of large ships.

P2-5 (Cont.)

More thought and planning needs to be given to the use of the waterway and Rough and Ready Island. Current proposed plans will:

- Adversly impact hundreds of residents adjacent to the area proposed for heavy industrial shipping
- Contaminate air, water, create noise, and erode Delta levees
- Negatively affect fish and wildlife

P2-6

These issues must be addressed in the EIR.

Sincerely yours,
Blanche L. Ingraham

5

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Letter P3

RECEIVED
JAN 20 2004
PORT OF STOCKTON

Received
JAN
Environmental
Planning & Facilities

January 15, 2004

Re: Port of Stockton EIR at Brookside

Dear Review Board,

After attending the presentation at Brookside I have major concerns about your expansion plans at Rough and Ready Island. I live in Brookside, on the Calaveras River, at 4990 Saint Andrews Drive. The two nights prior to the presentation I woke up at 3am to humming noises which continued to about 5am. This happens often. We have also heard men's voices shouting late at night when we are sitting on our balcony upstairs. Our bedroom is downstairs and we just hear humming, no voices. Of course during the foggy months we also hear the ships' fog horns as they come and go. We built our house four years ago on the river because we have a sailboat and love the peacefulness of the river. The time of year you tested the noise levels is important because the noise levels are different at different times of the year. I understand the need for family wage jobs in Stockton but commercial industry should not be backed up to residential properties. Stockton is trying to improve its image and the downtown area and this expansion is one more example of poor planning. If your intent is to have residential and industrial areas successfully coexist, then you MUST take into consideration the need for quiet nights for the hundreds of homeowners (not just 16 as per the Record editorial January 15, 2004) who are being adversely affected. P3-1

Sincerely,

Luzanne Conrad

Luzanne Conrad

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Letter P4

RECEIVED
JAN 20 2004
ENVIRONMENTAL SCIENCE ASSOCIATES

January 15, 2004

Ray Weiss, Project Manager
Environmental Science Associates
8950 Cal Center Drive, Suite #300
Sacramento, CA 95826

RECEIVED
JAN 20 2004
PORT OF STOCKTON

Dear Mr. Weiss:

I wish to begin this letter by stating that I realize that the Port of Stockton is a vital part of the community, but, their actions of allowing shipping to load and unload cargo opposite Riviera Cliffs is a travesty to both myself and my neighbors.

Their actions are damaging our environment, including water quality, air quality and fish population. The water quality is so bad that the Health District tells us not to swim in the river. When the ships come into dock, and then leave, you should see the black soot from the smokestacks. This is okay for our lungs? There have also been two recent fish kills in our area. All this can be attributed to the Port of Stockton.

The Port started using the shipping docks opposite Riviera Cliffs, before any Environmental Impact Report was drafted. This is illegal and against the law. A report must be drafted, reviewed, and input received from others, before it can be accepted. Then and only then can a change of use for a property be allowed. The Port of Stockton has not done this. They went ahead without an approved environmental impact report.

In the past, the port has been using docks closer to the civic center and there has been no problem. Their present arrangement will impact Riviera Cliffs, Brookside, Atherton Island, Atherton Cove and Smith Canal.. These areascontain many very nice homes. The noise, the lights, the vibrations and the air quality are terrible when the ships come and go and while the ships are docked, their generators run twenty-four hours a day. P4-1

The Port of Stockton received the land from the Navy after presenting a plan that said they would beautify the land with a marina, a recreation area for the people and shops. None of these projects are in the environmental impact report.

The recently drafted EIR says that the above mentioned neighborhood will be impacted by noise, and that we should close our windows, put on the air conditioner, and stay inside. How much will the port impact our lives? Would you like to live like this? Your answer obviously is no. Our homes were here long before the Port started shipping near by. They are breaking the law, and I say fight them. They must take responsibility for their actions. P4-2

The Navy had ships in dry dock, but now the port wishes to use those same docks for loading and unloading cargo containers, a railroad to move the cargo from the docks and a totally different use for the land. That is why the law says you must have an approved EIR before you can change a land use.

I am very concerned about the loss of property values in Riviera Cliffs. Now we must disclose that the Port is near by and causing problems with noise, lights, vibrations, air quality and water quality. If you were a buyer, would you want to live here? And if you did want to live here, would you not offer a much lower price because of the activities of the Port? The answer is yes. P4-3

When I started with this lawsuit, it was because I was supporting my neighbors. I felt very badly for their loss of quality of life. They are awakened at 3:00 a.m. and 4:00 a.m. by the light and the loud noise and cannot sleep. They don't deserve this problem, and the Port has done nothing to alleviate the complaints.

The Port is being sued for their actions. If we did not live in this great country of ours, the Port would not have to justify their actions. They could do whatever they wished. Thank God for the freedoms which we have.

Sincerely,

Raymond J. Rishwain

Raymond J. Rishwain, DDS.
4355 Riviera Drive
Stockton, CA 95204

Letter P5

RECEIVED
JAN 20 2004
ENVIRONMENTAL SCIENCE ASSOCIATES

January 15, 2004

Mr. Ray Weiss
Project Manager
Environmental Science Associates
8950 Cal Center Drive, Suite 300
Sacramento, CA 95826

RECEIVED
JAN 20 2004
PORT OF STOCKTON

Dear Mr. Weiss:

This letter is a comment on the Draft Environmental Impact Report for the Port of Stockton (POS) Development of the West Complex (formerly Rough and Ready Island).

The POS has not followed CEQA and EIR law but has initiated construction of the dockside railroad tracks prior to the completion of the EIR process. Thus POS is implementing a small project without obtaining the EIR approval for the entire program outlined in the Draft EIR.

P5-1

The proposed ship berthing spaces are 300-400 feet from residential area of 109 homes called Riviera Cliffs. This residential area is surrounded on two sides by water, the Stockton Deep Water Channel (SDWC) on the South and the Calavares River on the Northwest. The development of Riviera Cliffs began in the 1950's and has evolved into a quiet residential area of well-maintained, upscale homes and mature trees. Other homes on Atherton Island, Atherton Cove, Brookside and Virginia Lane have also been adversely affected although to a lesser degree.

If the POS is permitted to dredge the ship berthing spaces, it will have an adverse impact on the adjacent homes and residential areas. This will become a zone of heavy industrial activity with resulting noise as high as unmitigable 70dBA, in addition to vibrations, light and increased air pollution. Prevailing winds are from the Northwest but frequently during the summer the wind blows directly across the SDWC toward our homes. The constant drone of vibrations and noise of ship generators are very disturbing and disrupt the interior quiet and peace of my home. My windows are Thermopane but the vibrations penetrate the house and produce a pressure sensation that over a short period of time becomes very distressing. During the warmer months we will be unable to open our doors and windows when a ship is docked at the West Complex of the POS.

P5-2

The DEIR states that the noise, vibration, lights, and air pollution cannot be mitigated.

SIGNIFICANCE AFTER MITIGATION

The above mitigation measure would reduce some of the vibration impacts. However, it is recognized that no feasible mitigation is available to eliminate

vibration impacts to sensitive residential areas to the north of the island. Since these residential land uses are situated directly across from several berths in the Project Area, no feasible measure could be implemented other than prohibiting proposed use at these berths. Consequently, for these reasons, vibrations impacts resulting from implementation of the Proposed Project are considered SIGNIFICANT AND UNAVIODABLE. P. 4.5-32.

The home owners are expected to reinsulate the walls albeit at POS expense, close doors and windows at all times and operate air conditioners 24 hours a day. P5-2 (Cont.)

Furthermore, homeowners would be expected to build double walls and windows. This may stop noise but will not stop vibrations. That would be an outrageous way to have to live in California.

The noise and vibration will have a devastating, adverse impact on a restful night's sleep with all the subsequent symptoms of tiredness, inattention, impaired mental alertness and acuity, and motor incoordination.

Heavy industrial activity and commercial shipping are incompatible in such close proximity to residential areas.

Thanks for listening.

Yours truly,

Thomas A. Thomas.

Thomas A. Thomas

Dr. Thomas A Thomas
4256 Riviera Dr.
Stockton, CA 95204-1116

Letter P6

RECEIVED
JAN 2 0 2004
PORT OF STOCKTON

January 16, 2004

Ray Weiss
Project Manager
Environmental Science Associates
8950 Cal Center Drive, Suite 300
Sacramento, CA 95826

Dear Mr. Weiss:

This letter is a comment on the Draft Environmental Impact Report (DEIR) for the Port of Stockton Development of the West Complex (formerly Rough and Ready Island). Furthermore, because the Port has not been forthcoming in their discussions of the full project, and because of the scope of the project and the "***significant and unavoidable***" impacts outlined, we request an extension of 60 days for the comment period to allow residents to become informed. P6-1

Our home was in a tranquil, unique neighborhood of over one hundred well-maintained homes developed in the 1950's. ***It was our dream, after 20 years of living in Stockton, in 1998*** to finally be able to purchase a home in this premier waterfront area called Riviera Cliffs directly across the Stockton Deep Water Channel from Rough and Ready Island.

As early as 2000 we began to ask the Port, the City and the County to come before the neighborhood to discuss their intentions with respect to the "gift" of Rough and Ready Island from the US Navy. They did not offer to meet, but instead said they were planning to "reuse" the island under permission from the Navy. They claimed to be "good neighbors" while they were obscuring their intentions to develop the island, several hundred feet from our home, into a ***new*** heavy industrial and commercial shipping port.

They placated me through the 180 time limited, as they new the laws much better than I, just a working stiff trying to be a good neighbor, asking them to stop making noise. They said; " Gee, we are trying to limit the noise Mr. Shields", and "Gee, Mr. Shields we don't need to notify you about what we are doing because you live over 300 feet away". They stuck a guy by the name of Tim Parker to tell me how they were trying to make the noise and the lights be not so significant as to keep us awake all night. But as soon as the 180 days were up they didn't even bother to return my phone calls.

So we hired an attorney who new CEQA law and he suggested we try to get a restraining order to stop them from working and keeping us up all night. So we filed suit against them. Of course throughout this time period we are learning lots of new words and lots of laws that we never really wanted to know or hope we every hear of again after this is over.

Our attorney appeared on our behalf and the case was rejected because the Judge said we were over our time limit. This was supposedly based on the clock starting from the first good neighbor letter my wife and I wrote in early 2000 complaining about the noise, vibration, lights. Little did I know about CEQA, I was just trying to be a good neighbor. I expected the same kind of treatment from the people at the Port. However, I didn't get that. I basically have been S--- all over by those people. I'm a hard working business owner who has worked seven days a week for 20 years trying to be a good guy, set the proper example for my employees, children, and I'm really P-------. They have no idea how angry sleep deprivation can make a person. It gives you Road Rage symptoms! If it weren't for the fact that I go to church every Sunday with my grand children and my wife I might already have been driven crazy. As it is, they have just about driven us out of our home.

When you have to try sleep in your downstairs guest bedroom, instead of your nice upstairs master, with all solid core doors closed, the TV on and earplugs in and you can still feel the vibrations and have a hard time trying to fall asleep. There's something really wrong! Generally only when you are truly exhausted do you finally sleep and then not very well. Or when your wife is screaming at you at 10 o'clock when its time to go to bed that she can't stand another night of this and eventually ends up sleeping on the floor in the laundry room because it's the only place she can find to minimize the noise and vibration effects that the ship is making, do you finally come to the conclusion that the Port is TAKING our home from us!

This is a travesty, that any public entity should be able to violate all the rules of public trust and drive us from our homes, all in the name of jobs and money! It is absolutely unconscionable! And we have been living in this hell for the last three years, with increasing intensity. At first it was only when the ships were at the dock close by us. Now it is almost every night as they have added tenants in the warehouses that work till 3am and later and start their fork lift beeping and banging as early as 4am in the morning.

We have complained to the port Police many times all to no avail! Only once early on did the Port seem to recognize that there was too much noise when they told me they would be moving Costplus to another warehouse because of the noise they were creating.

But I'm afraid what they might have done to try to quiet things down has long been abandoned after we filed the suits against them. From that point on it's been lets shove it up theirs…meaning of course ours!

There are so many alternative uses for Rough and Ready that they have never even bothered to explore, all because they were given a gift and were power hungry.

However, they had blinders on, tunnel vision, all they could see was the same usage for Rough and Ready as they were currently doing at the main complex.
They didn't anticipate what kind of impact that kind of usage would have on the surrounding areas of homes.

They also have been less than forthright in their efforts to complete their project, they have not told the truth, they have tried to be tricky with the release of information, they have been deceptive, they have tried to create a ground swell of publicity in their favor, they have conspired with city and county officials to push the project forward, to overrun the effected citizens making us out as a "bunch of spoiled rich people in Riviera Cliffs"
.
They have used the local newspaper to focus on their supposed good deeds and the jobs they are creating, all in the name of helping to better the community. But at what cost I ask you? They have no regard for my rights as a citizen of this great country we live in. They would overrun my neighbors and me in a hot minute if they could!

I also invited Mr. Parker to my house on more than one occasion and told him to bring his sleeping bag so he could see first hand what he and the Port were putting us through. I've also invited Victor Mow, Mayor Podesto, and Richard Aschieris, none of which have bothered to come see what they are doing to us first hand. They left us no alternative but to seek a remedy through the courts, which was not our first choice of action, contrary to what they say. We've also asked for meetings with the Port since the first ship arrived in 2000 and have had none. And they say there trying to be good neighbors. It's all a crock!!! They had no intentions of doing anything but being self serving to the project no matter what the costs our to anyone who gets in their way! They have proven that over and over by their actions, which more than one of my neighbors can attest!

Thank God this is a free country where we can stand up for our rights to our home and our property! Thank God for our right of free speech! Thank God for our right to gather together to fight the wrongs that are put upon us, as this has been. It remains to be seen whether there is real justice or it is just a word!
They will soon know just how many people they have affected with their arrogance.

In December, 2001 the Port approved plans and proceeded to dredge the area in front of berthing areas 18, 19, and 20 (directly across from our home) without first following CEQA and EIR law which is required for the project. Although, at that time we were questioning their intended usage of the island, they did not notify us of their plans. They claimed they were not required to notify us because we were more than 300 feet from the site. Instead, without our knowledge, they approved a lesser "mitigated negative declaration" and concealed the project as "maintenance dredging". Their intention was to deepen the area to accommodate huge ocean going-vessels to dock and conduct ***new*** heavy industrial and commercial shipping activities, around the clock…segmenting their full project plan. Currently, we believe construction of railroad tracks to service dockside is underway without first having completed the EIR. P6-2

The island of Rough and Ready was largely unused by the Navy since 1965. It was not designed for nor ever used for heavy industrial, commercial shipping. The depth would not have allowed that type of usage. This new around the clock activity is only 300-400 feet across the Stockton Deep Water Channel from our home. It has destroyed our lives and our property. We have become sleep-deprived, distressed, anxious and enraged. We have been exposed to harmful levels of noise, vibrations, lights, and heavy truck traffic and air pollution.

Currently, it has become an area of heavy industrial activity including foreign commercial ships 600-800 feet in length) running day and night with 6-8 enormous generators that burn the worst grade of diesel fuel. Dirty ballast water pours out of the ships for days at a time. Multiply this by the fact that there are often more than one; sometimes three at a time. The sounds and vibrations of generators and cranes permeate our home, even though we have excellent insulation and dual-pane windows. Lights are as bright as a football stadium and often shine into our homes all night long. The ships work around-the-clock producing noise levels above 70dBA. Forklifts and trucks generate beeping, clanging and diesel fumes. Trucks line up on the docks and idle for hours (sometimes 20 or more at a time and as early as 4 a.m.) contributing to smog and air pollution. Powerful diesel burning tugs aggressively push the ships in and out of the docks (can occur anytime and often at 3 – 4 a.m.) contributing to the smoke filled air and ruining our sleep. At low tide, these tugs churn the bottom of the delta, scattering or killing the fish and diminishing the wildlife. P6-3

The prevailing winds primarily blow in our direction, which makes the air unhealthy and prevents us from enjoying our waterfront backyard, which is the reason we purchased our home. Even if we made our home a fortress as the Port suggests in the report, it would be unlivable. These activities are incompatible with homes and will eventually, lead to blight. P6-4

We have witnessed, due to the narrowness of the channel, difficulty in ships passing when a huge commercial vessel is docked at Rough and Ready Island. Some carry cargoes of Liquified Petroleum Gas (LPG), anhydrous ammonia and fertilizer, all of which are extremely harmful if a spill or collision occurs. Our safety and security have been compromised. P6-5

The Port ***did not*** conduct a study of these potential impacts on our homes and our environment ***before*** proceeding with this new activity. It was not until the recent release of the DEIR that the Port admits that the noise, vibration, lights and air pollution, truck traffic, etc. are "***significant and unavoidable***".

The DEIR states that the Port is intending to further dredge the docks along the island, which could only result in potentially greater harm to us and would involve other residential areas. The impact to the levees is significant and there would be no guarantee that the additional stress of "seismically-induced groundshaking" would not cause a disaster such as is described in the DEIR 2-21, 4.6.3. "Failure of the levee could result in significant damage to properties from flooding and loss of life." In addition to this, it is

stated that the dredged material will produce significant impacts when pollutants are carried through the air by wind erosion.

What could they possibly have been thinking when the Port and City chose such an incompatible land use around concentrated residential areas including Riviera Cliffs, Brookside, Atherton Cove, Atherton Island and Smith's Canal…the entire length of Stockton Deep Water Channel residential communities? Could it have been all because of the money…with total disregard to the people? Equally as important, the report projects significant impacts, in varying degrees, as far reaching as 4 miles in distance; to the extent it will have significant impacts upon thousands of homes and ***devalue hundreds of millions of dollars in property***. It has a terrifying outcome.

The island has over 5 million square feet of covered warehouse space, which contributes greatly to the income the port receives. Because the island was a "gift" the space has been competitively marketed by the port, generating millions of dollars in revenue with minimal overhead. They marketed and obtained the rice shipping, before preparation of the EIR, and were able to secure the contracts away from Sacramento port to eventually contribute to the financial decline of that port. It would have been difficult to compete with the low price being offered by the Stockton Port. All of this commercial shipping was brought directly in back of our home along with thousands of truck trips on our freeways and on the docks. After all, the rice is grown in Sacramento and their port is suitably equipped for rice shipping. The jobs created in Stockton by this new activity belonged to Sacramento; they are not new; only relocated. Now we are told that the City and Port have already contracted for auto roll-on, roll-off, planned for the west end of the island, prior to approval of the EIR. Furthermore, they refer to this activity in their report as "existing". P6-6

The Port representatives have stated that the East Complex, which has operated for over 70 years, has 13 available berths. They are equipped with the turning basin, and are away from residential properties. Therefore, the best and most appropriate usage would be to develop the East Complex for heavy industrial, commercial shipping and use the island for creating jobs that are in harmony with the environment and thousands of homes in the surrounding area.

Finally, we vigorously oppose the DEIR, the proposed dredging, and the rezoning of the island by the City of Stockton, and the current heavy industrial, commercial shipping activities. It is an incompatible use of land close to homes. The Port could be a valuable asset to the community and create thousands of jobs at both the East and West Complexes…it just takes the ability to perceive and design a plan that benefits the people, the environment and the business community. It serves no purpose to destroy the nature of the waterfront because of a ***shortsighted*** vision. P6-7

According to the California Environmental Quality Act (CEQA), "***every citizen of California has the right to a decent home and a satisfying living environment***". The Port is currently depriving us of this right.

Sincerely,

Jim Shields
4224 Riviera Drive
Stockton, CA 95204
209 234-2000

Letter P7

RECEIVED

JAN 2 0 2004

PORT OF STOCKTON

January 16, 2004

Ray Weiss
Project Manager
Environmental Science Associates
8950 Cal Center Drive, Suite 300
Sacramento, CA 95826

Dear Mr. Weiss:

This letter is a comment on the Draft Environmental Impact Report (DEIR) for the Port of Stockton Development of the West Complex (formerly Rough and Ready Island). Furthermore, because the Port has not been forthcoming in their discussions of the full project, and because of the scope of the project and the "***significant and unavoidable***" impacts outlined, we request an extension of 60 days for the comment period to allow residents to become informed. P7-1

Our home was in a tranquil, unique neighborhood of over one hundred well-maintained homes developed in the 1950's. It was our dream, after 20 years of living in Stockton, in 1998 to finally be able to purchase a home in this premier waterfront area called Riviera Cliffs directly across the Stockton Deep Water Channel from Rough and Ready Island.

As early as 2000 we began to ask the Port, the City and the County to come before the neighborhood to discuss their intentions with respect to the "gift" of Rough and Ready Island from the US Navy. They did not offer to meet, but instead said they were planning to "reuse" the island under permission from the Navy. They claimed to be "good neighbors" while they were obscuring their intentions to develop the island, several hundred feet from our home, into a ***new*** heavy industrial and commercial shipping port. P7-2

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P7-4

Currently, it has become an area of heavy industrial activity including foreign commercial ships 600-800 feet in length) running day and night with 6-8 enormous generators that burn the worst grade of diesel fuel. Dirty ballast water pours out of the ships for days at a time. Multiply this by the fact that there are often more than one; sometimes three at a time. The sounds and vibrations of generators and cranes permeate our home, even though we have excellent insulation and dual-pane windows. Lights are as bright as a football stadium and often shine into our homes all night long. The ships work around-the-clock producing noise levels above 70dBA. Forklifts and trucks generate beeping, clanging and diesel fumes. Trucks line up on the docks and idle for hours (sometimes 20 or more at a time and as early as 4 a.m.) contributing to smog and air pollution. Powerful diesel burning tugs aggressively push the ships in and out of the docks (can occur anytime and often at 3 – 4 a.m.) contributing to the smoke filled air and ruining our sleep. At low tide, these tugs churn the bottom of the delta, scattering or killing the fish and diminishing the wildlife.

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The Port representatives have stated that the East Complex, which has operated for over 70 years, has 13 available berths. They are equipped with the turning basin, and are away from residential properties. Therefore, the best and most appropriate usage would be to develop the East Complex for heavy industrial, commercial shipping and use the island for creating jobs that are in harmony with the environment and thousands of homes in the surrounding area.

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people, the environment and the business community. It serves no purpose to destroy the nature of the waterfront because of a ***shortsighted*** vision. P7-8 (Cont.)

According to the California Environmental Quality Act (CEQA), "every citizen of California has the right to a decent home and a satisfying living environment". We are currently being deprived of this right by the Port.

Sincerely,

Sherry Shields
4224 Riviera Drive
Stockton, CA 95204
209 234-2000

attachments
- photos
- newspaper article
- sound recordings

cc: San Joaquin Valley Air Pollution Control District
Department of Fish and Game
County of San Joaquin, Public Works
San Joaquin River Group
California Regional Water Quality Control Board
San Joaquin County Community Development Dept
Department of the Army, US Engineer Dist , Corps of Engineers
Port of Stockton, Richard Aschieris, Port Director
City of Stockton, Mayor Gary Podesto
San Joaquin County Board of Commissioners
Richard W.Pombo, Congressman

MOTHBALL
FLEET
1998 &
PRIOR

our backyard 2002

OUR HOME
IN RIVIERA
CLIFFS

OUR HOME
PROCKSIDE DEVELOPMENT

Stockton Country Club
Dock 18
Dock 19
Dock 20

NARROW OF
SECTION
SDWC

CALAVERAS RIVER

communities of
affected
Homes...
THOUSANDS

COUNTRY
CLUB

BROOKSIDE &
RIVIERA
CLIFFS

NARROW ↑
CURVY
SPOT

ATHERTON COVE
ATHERTON ISLAND
THOUSANDS OF SURROUNDING HOMES

Stockton's
Premier
Waterfront

LONG ESTABLISHED
WELL KEPT
HOMES -
UNIQUE

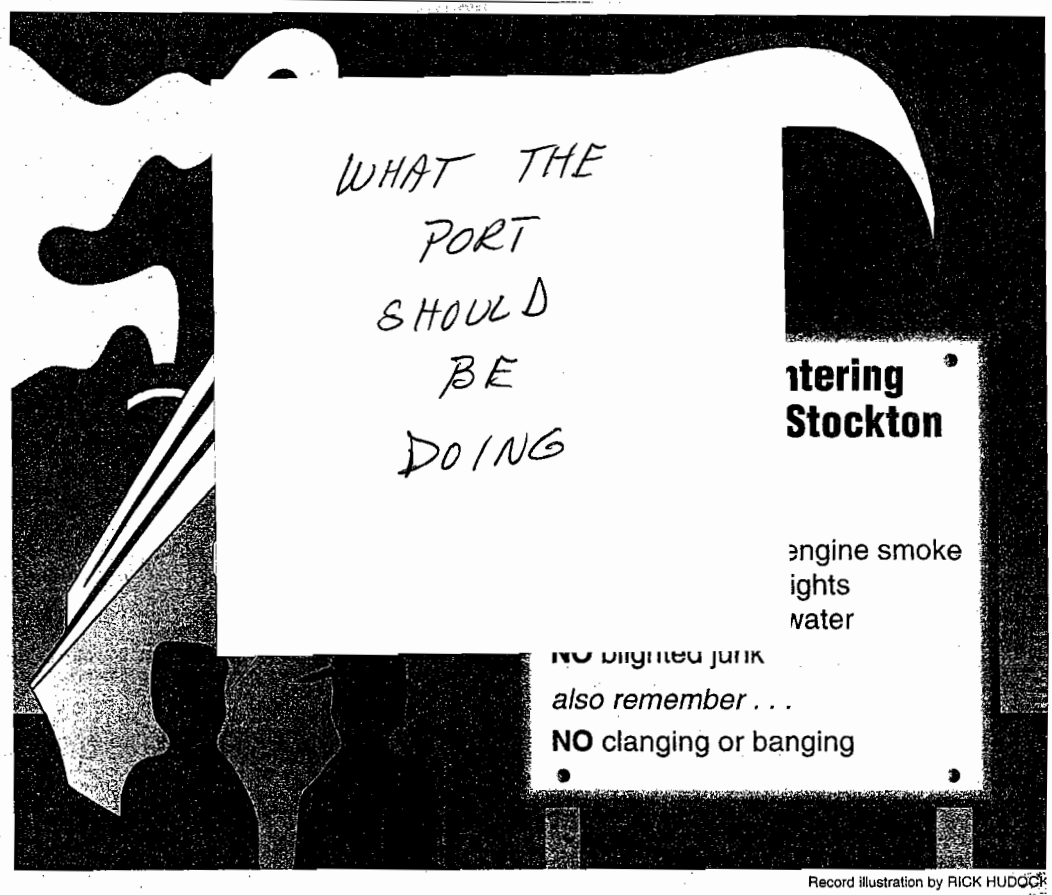
The Record
Founded in 1895

Public Pulse

Saturday, January 3, 2004 B5

Roger W. Coover, president and publisher
James E. Gold, editor in chief
Mike Klocke, managing editor
Kevin L. Parrish, opinion-page editor

Leave the port where it belongs



Record illustration by RICK HUDOCK

We're not against the development of Rough and Ready Island. Using buildings for warehouses, manufacturing and high-tech companies is very welcome.

These types of companies would create more year-round jobs per square foot and be most of the jobs mentioned in the reports.

Our concerns are only the intended changes on the waterfront (500 feet from our homes) to 24-hour, seven-day-a-week commercial shipping.

These ships:

- Leave their engines and/or generators running 24/7.
- Create no jobs on the ship. Pilots would be on the ship no matter where it docked.
- Create a tremendous amount of noise that can make you leap from your bed in the middle of the night.
- Create vibrations that shake shelves and beds at least a half-mile away.
- Cause pollution from engine smoke that turns the blue skies gray.
- Generate pollution from lights. We no longer have nighttime at our home.
- Create pollution with water that constantly pours out of them into the Delta.

Along with shipping, we understand the Port of Stockton intends to put trains on the dock. The effects of this haven't been studied and would be devastating to homes.

It would look like the existing port, which has operated for 70 years and is a blighted junkyard.

We're told we don't matter. The homeowners of Boggs Tract, Atherton Island/Cove, Riviera Cliffs and Brookside should count.

Boggs Tract homes are just as valuable to the owners as mine is to me. It's easier for me to move than it would be for them.

Taxation without representation has nothing to do with how the port operates. It means Richard Pombo, Barbara Matthews, Michael Machado, Gary Podesto, Victor Mow, Stockton police and the county sheriff's department refuse to help us. We're being denied our civil rights.

These officials claim they have no jurisdiction, but their faces and names are all over the port's brochures. Articles in the paper always state how much they're doing for the port.

A better alternative to the port's plan would be to leave it where it's been for 70 years and remodel it to fit new shipping. They could use the east end of Rough and Ready Island from the golf course to Louis Park.

Instead of blighting the waterfront at Rough and Ready Island, use it for warehouses, manufacturing and high-tech companies that might build campus-type facilities that would enhance the area and make everyone proud.

Appraisers have told us our property values will be devastated. The impact also will be relayed to homes off the water, each area and home affected differently.

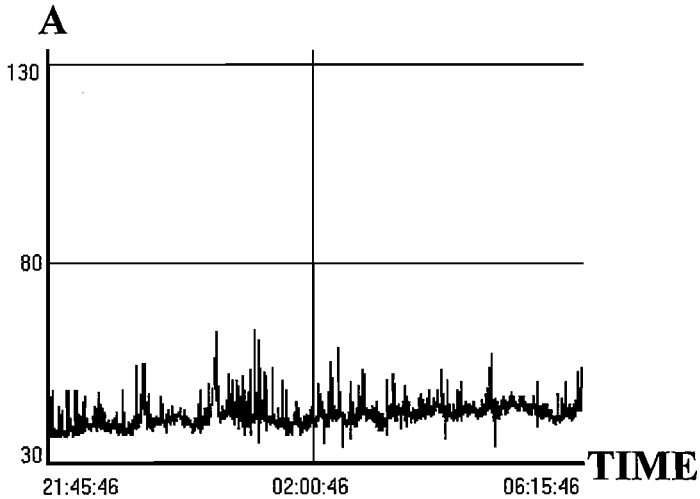
San Joaquin County Supervisor Steve Gutierrez has stated that it's "unacceptable" that neighborhoods have to put up with heavy truck traffic rolling past their homes.

Stockton's General Plan doesn't allow these incompatible uses. The mission statement is all about quality of life.

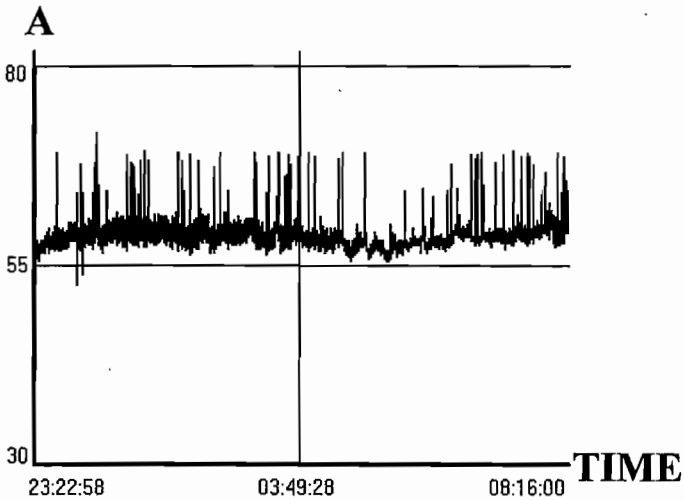
We're not against the development of Rough and Ready Island, but believe it can be done without destroying home owners' lives.

Richard Hacket
Stockto

Letter P7 (Continued)

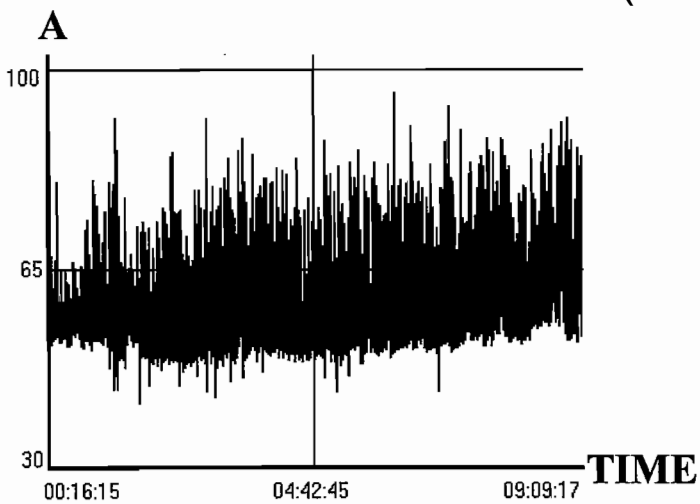


10/17/03
Should night
quiet
backyard



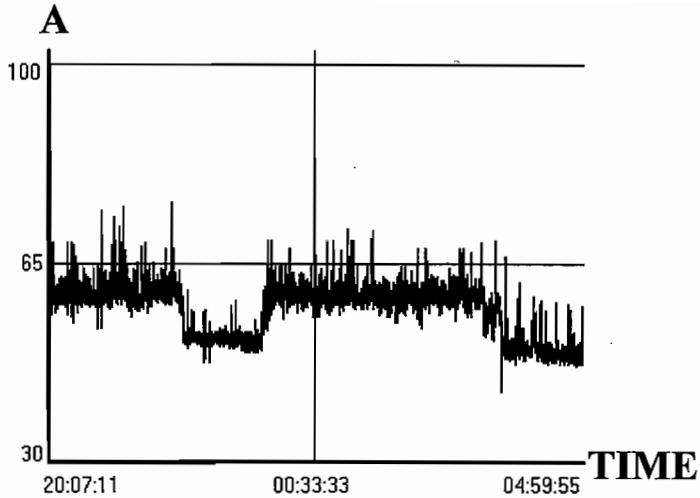
1-2-04

Shield
outside bedroom
horrible vibration
all night
Aurora Ace
#20

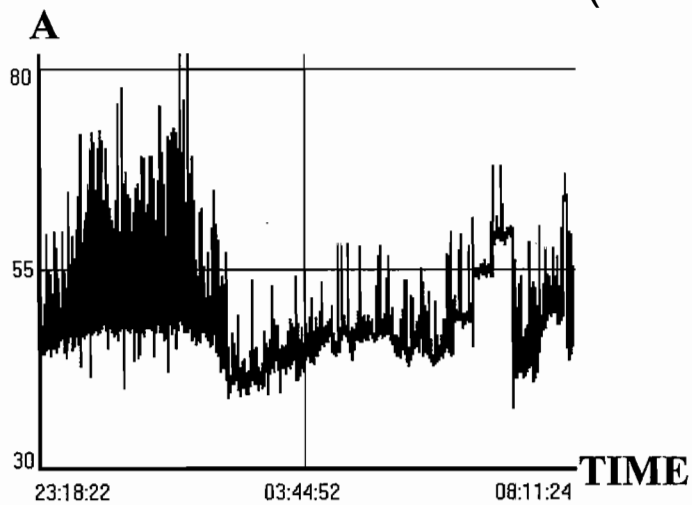


12/9/03
Shields backyard
Ship on 20

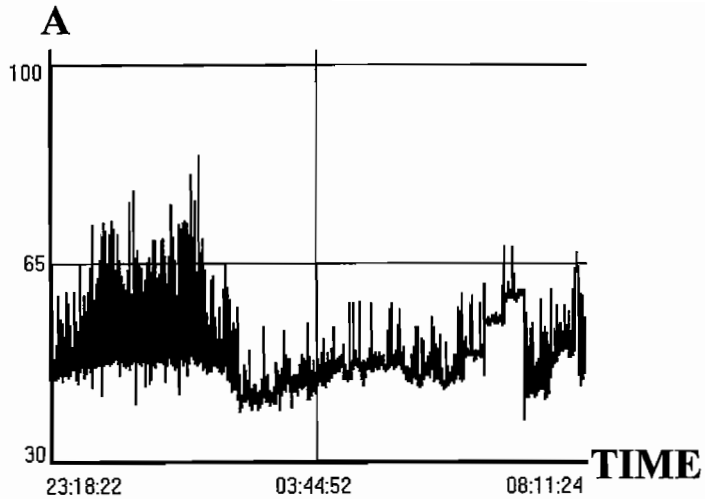
Letter P7 (Continued)



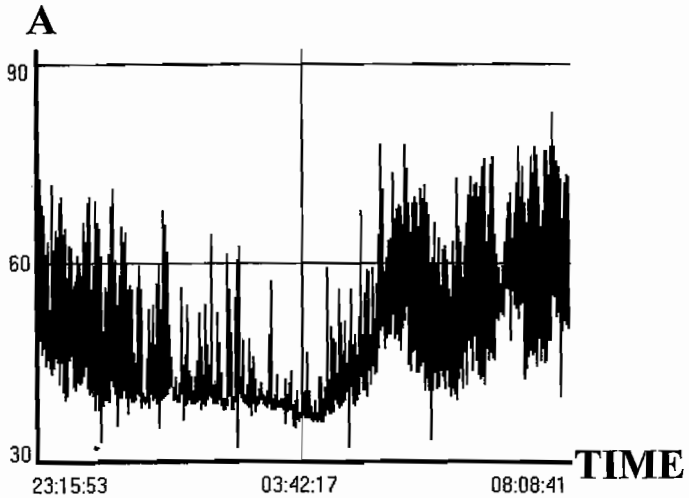
Shields 12/7/03
ship's in #20
glory forwarder



7/7/03
nights working
Shulds

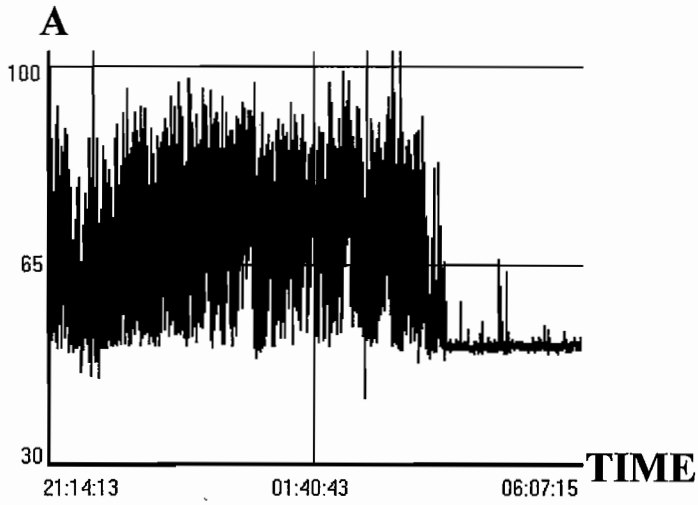


Shields nite
all night trucks,
forklifts, etc
7/2/03

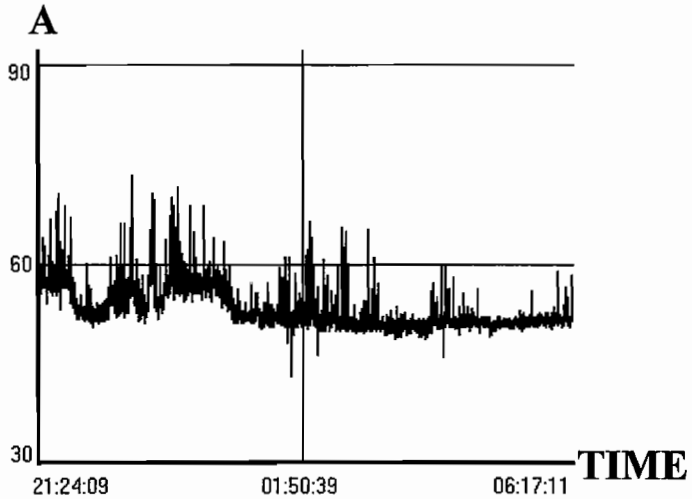


Shields 3-18-03
nightime
trucks hauling
@ night, beeping
braking, etc.
idling

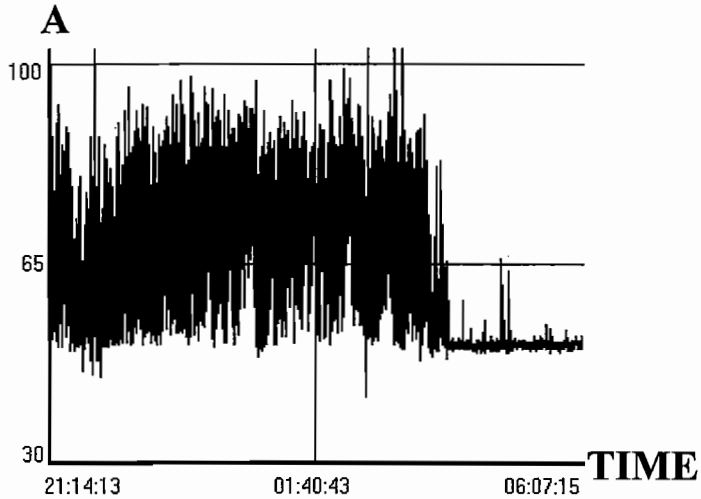
Letter P7 (Continued)



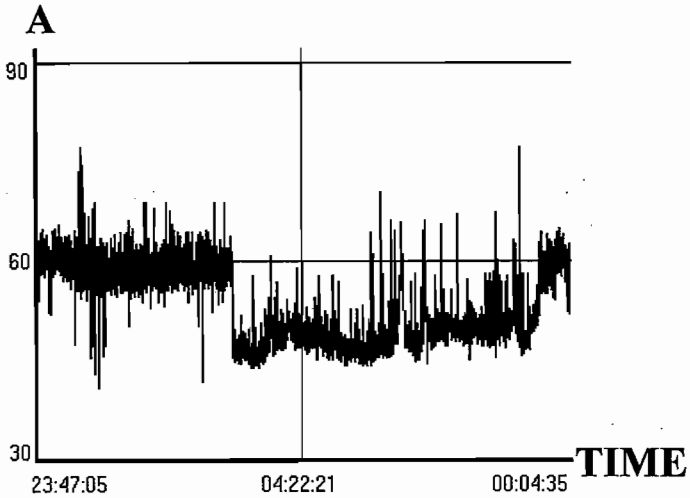
1/8/03
Shield
night
bedroom
2 Ships in
20 + 19



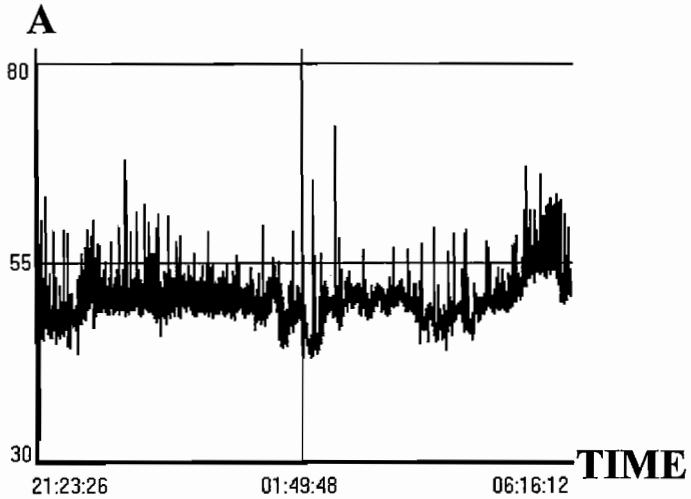
1/9/03 (1/8/03 pm - 1/9/03 AM)
Shifts
backyard
2 ships
1 in 20 working
1 in 19 docked



1/8/03
Shills
night
bedroom
2 ships
10 & 20

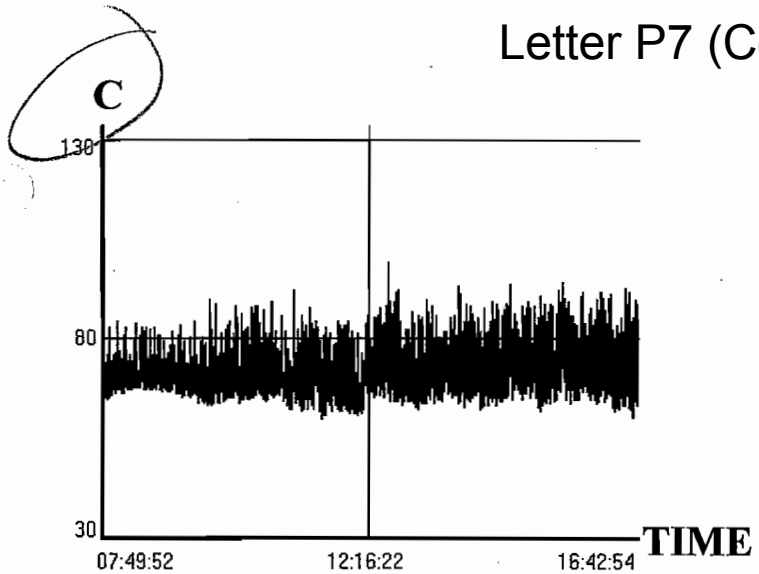


Shuts
whom
10/31/02
Stopped working
@
3:20 AM
generator still
running



08/07/02

Ship in 17
Shields backyard

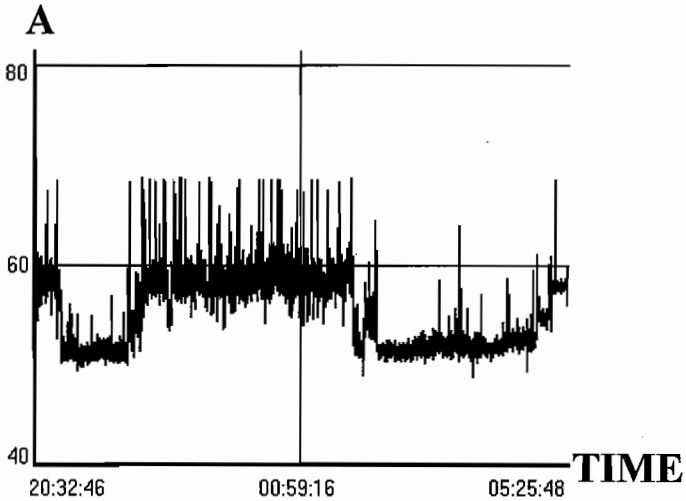


7/24/02

Shed trucks
loading rice

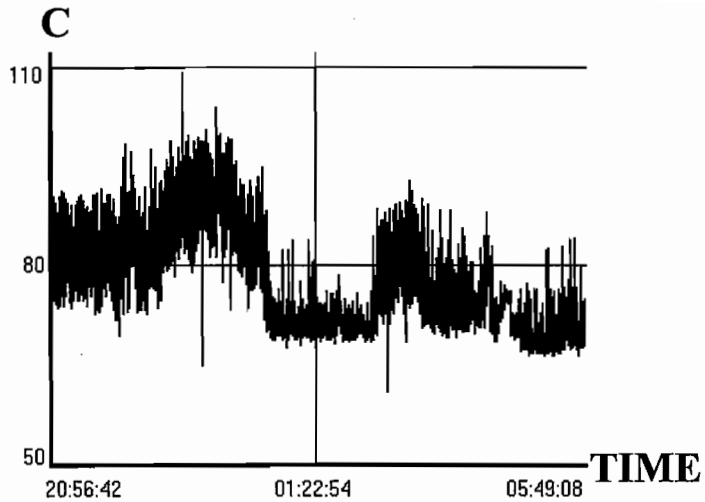
in warehouses

daytime
no ship



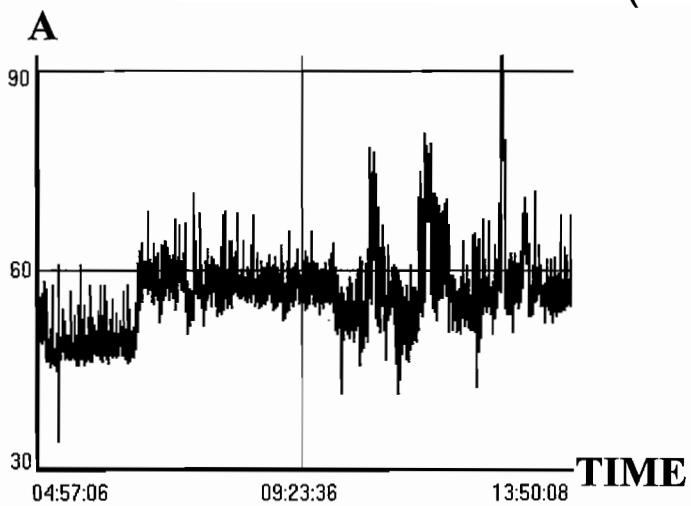
4/24/02
Shill bedroom
nighttime
ship @ #28
working until 2/3 AM 4.25

also, meter running
in backyard @ the
same time

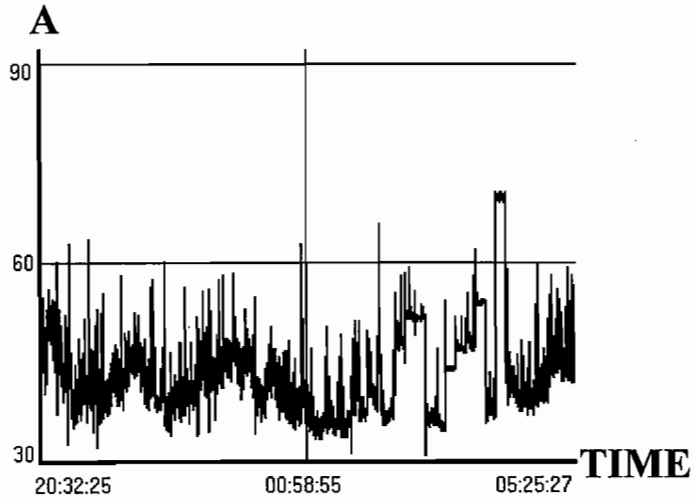


4/23/02
Hackett home
night time
outside backyard
2 ships @ 18 & 19
ship @ 19 moved
to 20 at 3-4 AM
lights on all nite

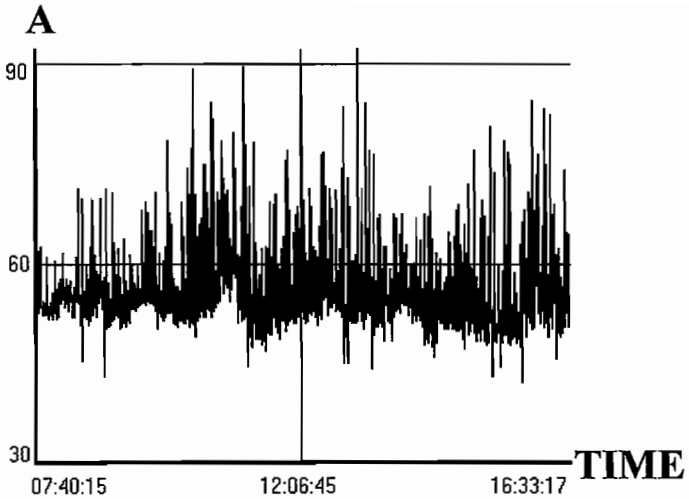
Letter P7 (Continued)



early AM &
daytime
Shields bedroom
4/19/02
19/
Ship in #20

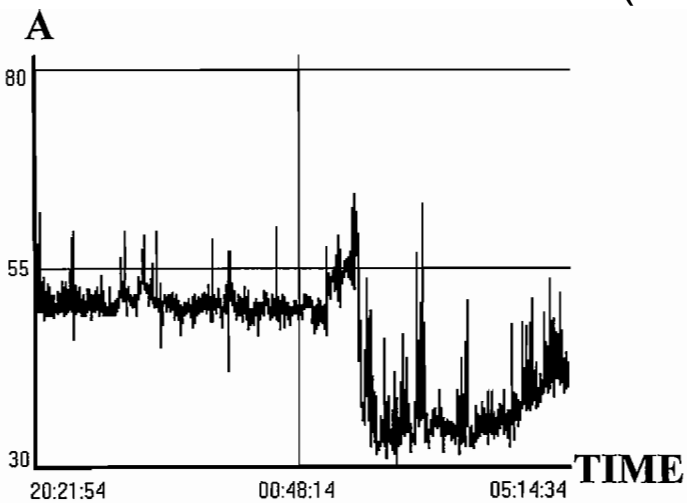


Ship in #17 - @ approx 9-9:30 pm
4/17/02
Night Shields bedroom



4/12/02 Shields House Backyard

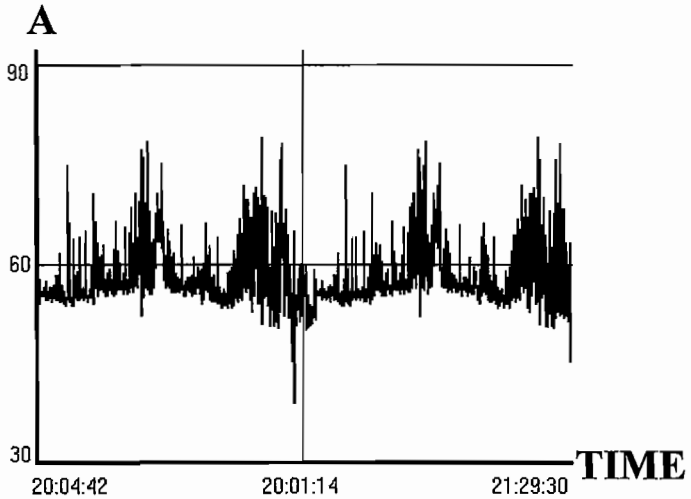
Daytime 2 Ships 1 Left every day



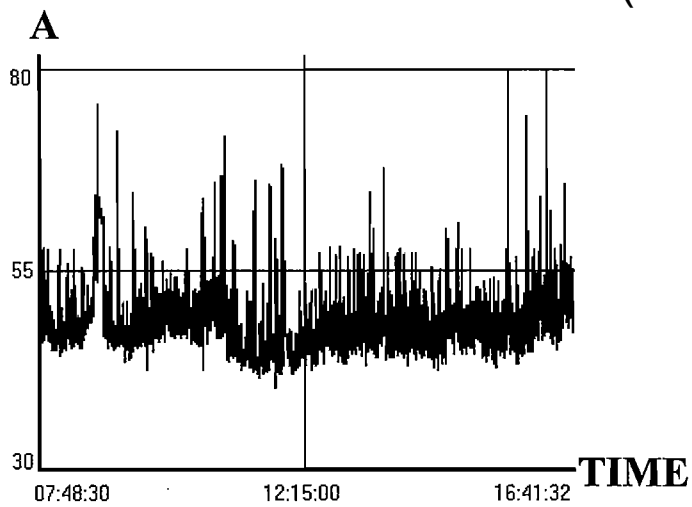
4/11/02 Night Shield's House

1 Ship (just generator noise) Left at

1 or 2 AM From just outside door backyard

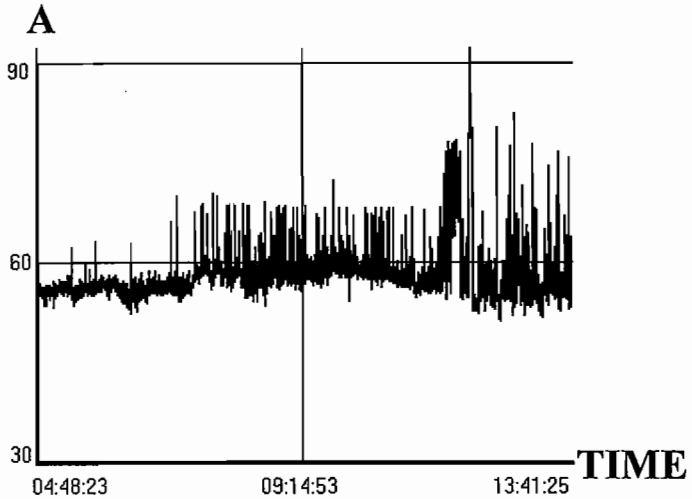


Shields House as 2nd Ship
being Docked at WH#20
4/10/02
HANDY TIGER
(large vested ship)

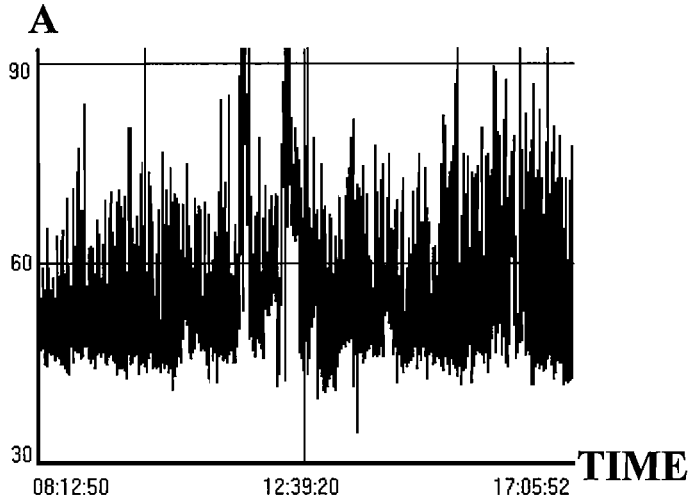


Shields home
4/8/02 daytime
backyard - near
kitchen door

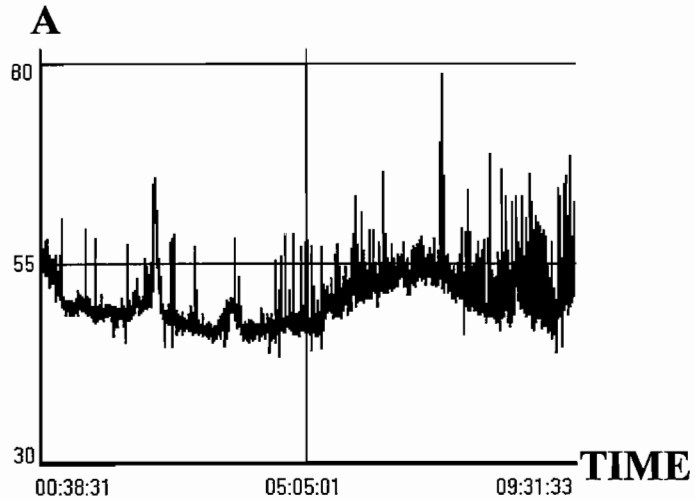
1 ship @ 18
Stern to west



Shields House Bedroom
3/29/02 Ship being moved into Docks
Across From us Then Loading and
Leaving Later in Day
2 Ships Missed Tugs putting Ship
in To Dock which Started About
400 Am



3/28/02 Daytime Ambient Background
2 Ships

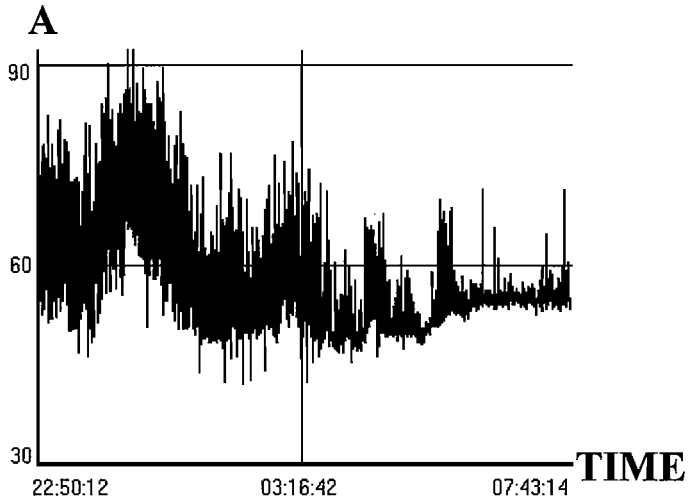


3/27/02 Shields House Bedroom

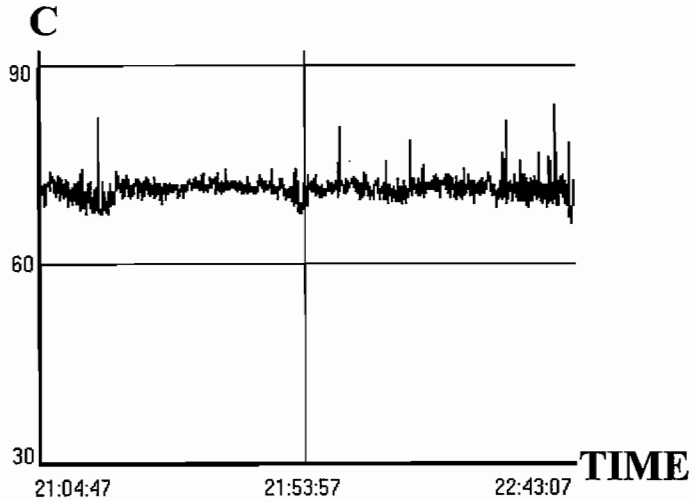
Night Time

2 Ships 1 across Not Loading

1 Down Just Come in



B/24/02 Night time Shields House
Recorded From Bedroom outside balcony
1 Ship

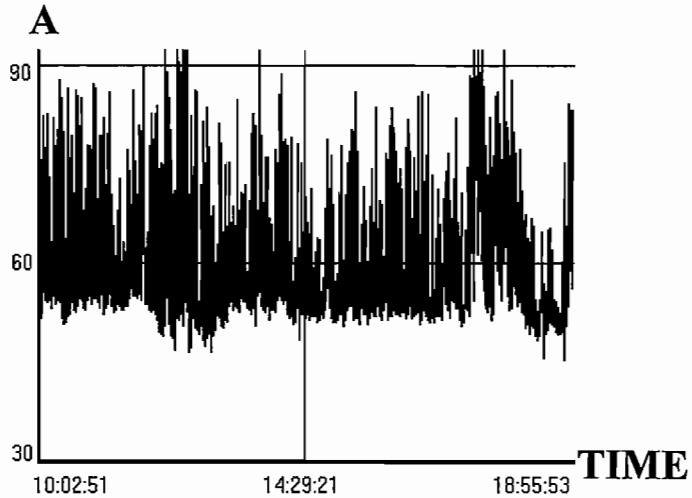


Shields Dock Night Time

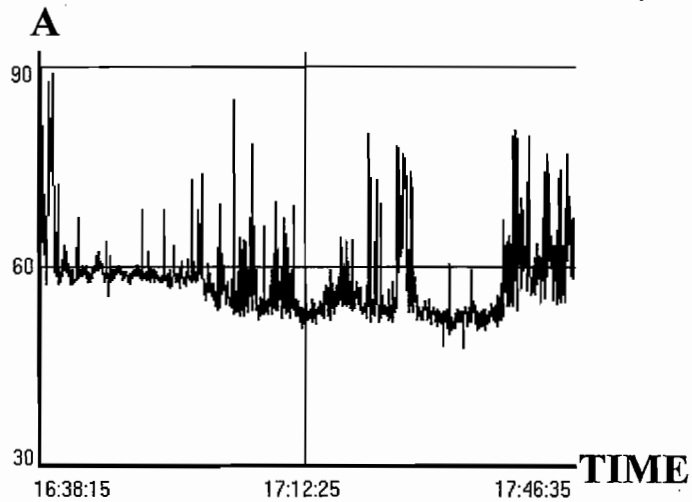
3/25/01 Using "C" Type weighting

Bottom Run out

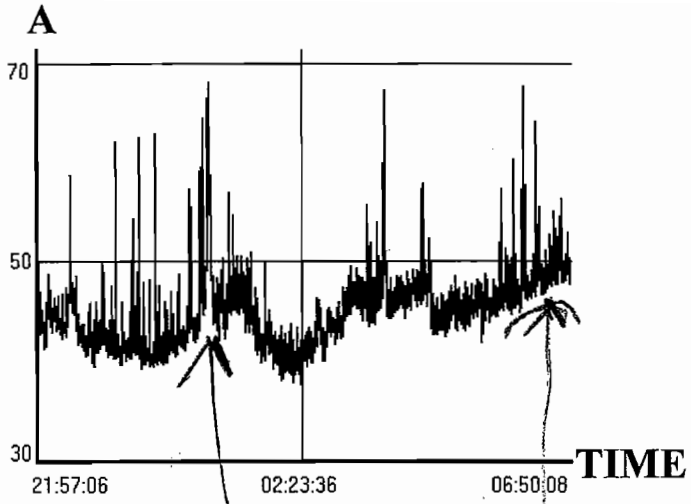
To Show Difference in "C" and "D"



3/24/02 Daytime Recorded
From Dock Shield House
1 Ship Working Loaded Rice



Daytime 3/23/02 as ship is docking
wind blowing slightly - put on wind guard
2 tug boats pushing into spot @ low tide



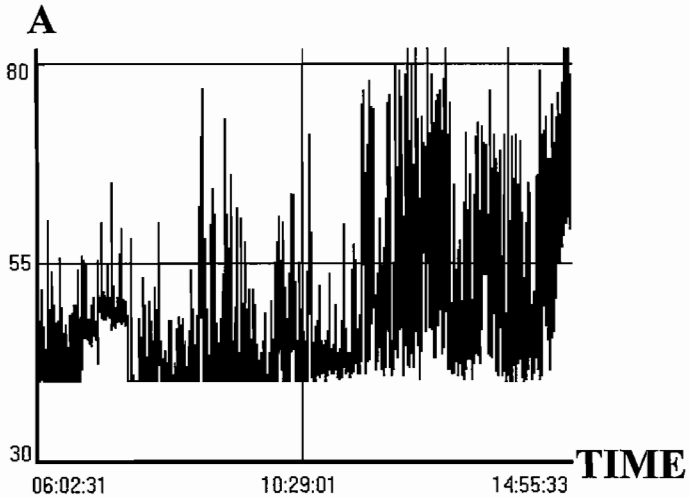
3/20/02 Shields Bedroom outside

Tug pulling Barge By at late evening

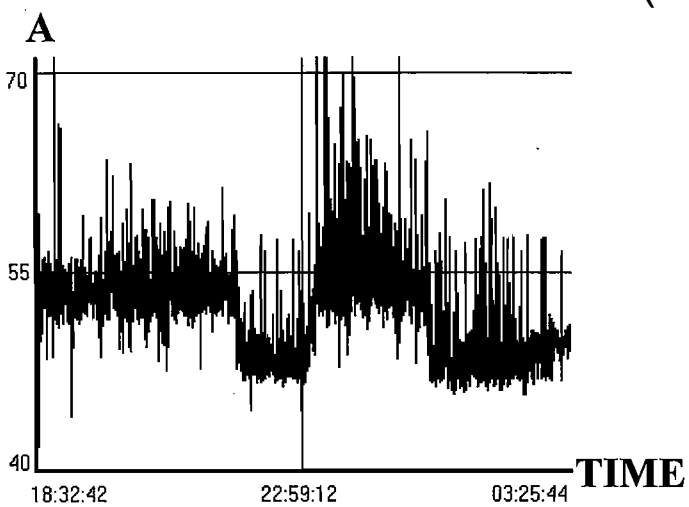
Early Morning Fork Lift Noise and activity

at Warehouses

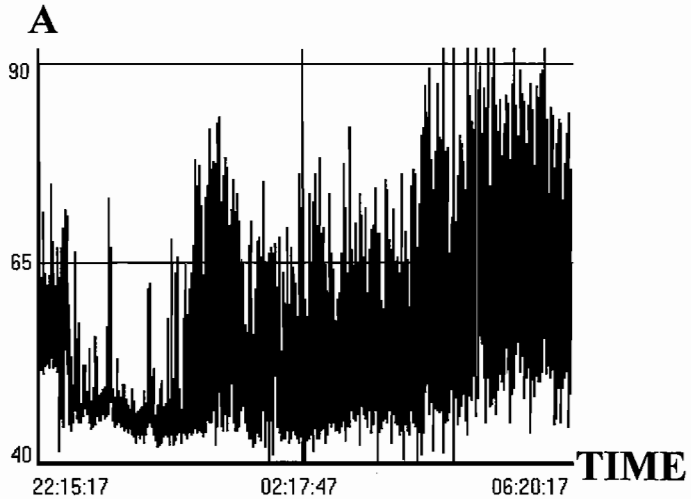
no ship in Dock



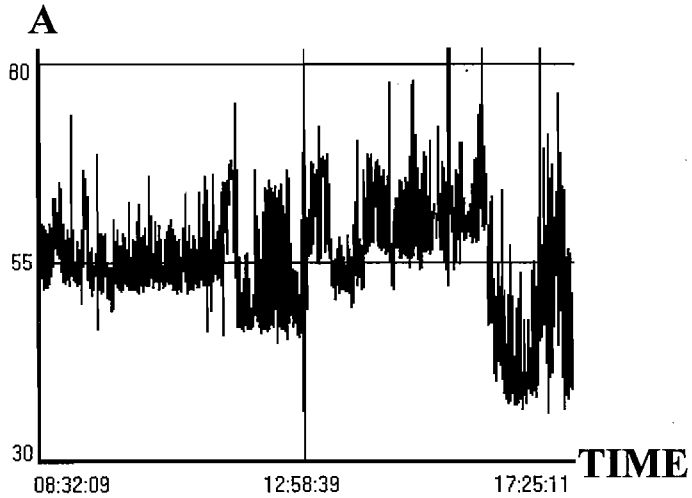
Shields House outside Bedroom
600Am 3-05-02 To approx 3 Pm
Daytime Noise Started approx 4Am
Trucks Moving Around Starting at 4Am
To 430. I Finally got up and set
Decibel Meter at 6Am and left on
All Day.



2/19 To 2/20/02
at Changing Home
1 Ship working at Night
property Edge Backyard



3/18/02 to 3/19/02
Night Time
New Ship Brought in
Shields House Bedroom



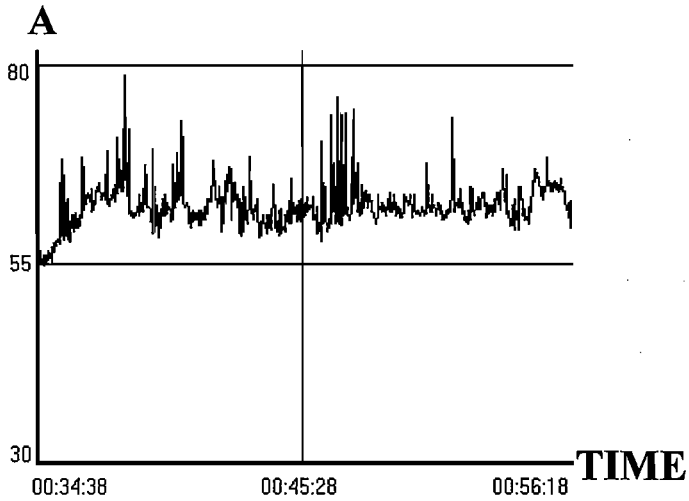
1 Ship Rice

Directly across from Shields Residence

Left at approx. 330/500 Pm

3/15/02

Sample taken from Dock



Richards Horse
just after 12 minute
1230pm 100 Am
2/11/02

Letter P8

To: Ray Weiss
Environmental Science Associates
8950 Cal Center Dr., Suite 300
Sacramento, Ca. 95826

1-17-04

RECEIVED
JAN 20 2004
PORT OF STOCKTON

Re: Port of Stockton E.I.R Comments

1. The first comment I have is the Dead Line Date should be moved back at least 60 days. The reason is that the Brookside, Atherton Cove people impacted by this E.I.R. are just becoming aware of the Ports plans and need more time for discussion and comments. The Port certainly is under fire for its poor neighbor attitude and would do well to give the interested and impacted residents proper time to gain knowledge and respond. P8-1

2. The E.I.R. failed to explain in detail the benefits of the Port, namely: What exactly happens to the profit? P8-2
   a. Land and building were free.
   b. Federal and State grants seem to pay for most everything else.
   c. Where does the profit go? How is it divided?
   d. Does the City of Stockton benefit?
   e. Does the County benefit?

3. The E.I.R. does not accurately evaluate the impacts of residents. All the residents complaints are about the incompatibility of the project. Even in the Stockton Record, dated 1/15/04, Mr. Aschieris states "you can't build these in today's world." P8-3

   Is not all the information and comments by Mr. Aschieris 1000% proof this plan is totally incompatible?

4. The E.I.R does not evaluate the torture from the noise and vibration. The constant noises and vibrations are extremely more damaging than the E.I.R. study indicates. Only real life experiences to this torture should be used in the E.I.R. P8-4

5. The E.I.R fails to address the actual jobs used for part time shipping. Without cooking the books, the number of jobs is misleading. P8-5
   Compare only the jobs at the limited dock area 17, 18, 19, 20 that might be affected by moving a little to the east – verses the same area used for

manufacturing or water front office buildings which would greatly improve the looks and value of the land. P8-5 (Cont.)

6. Enclosed is a partial video tape of what we residents of Riviera Cliff, Brookside and Atherton Cove are forced to live with. P8-6

7. The E.I.R. fails to articulate the health risk to the residents, dock workers, and citizens of the City of Stockton. The constant black smoke from the ships, plus the fumes from the tug boats engulf the area and must be a significant health risk. P8-7

   What mitigation will stop the polluting of out skies?

8. The E.I.R. does not address the deprivation of the full use of our property. This is a violation of our civil rights. Please study why the Port feels our family lives are inconsequential. P8-8

9. The E.I.R. totally ignored and failed to look at the alternatives that would let the Port expand its shipping, rent-out warehouses for manufacturing, or new building construction that would enhance the area rather than destroying the area. It would create a better year round tax base and year round family wage job. I believe this was the alternative #9. P8-9

10. Since the Port of Stockton is also the lead agency, doesn't this incestuous relationship make a mockery of the law and the reason for an E.I.R? Please explain how this Report could possibly have any viability. P8-10

11. Please evaluate the Ports claim of being a good neighbor: P8-11
    A. Do good neighbors torture their neighbors?
    B. Do good neighbors terrorize their neighbors?
    C. Do good neighbors pollute their neighborhoods?
    D. Do good neighbors de-value their neighbors property?
    E. Do good neighbors have a policy of sue me and stand in line?

12. The E.I.R fails to address the Coast Guard inspection. Only 3% of the ship containers are inspected. The possibility of terrorists using the ships and the ports is great. It is the considered the easiest way to enter the United States. What level of risk are we adding to the Stockton area by increasing the number of ships traveling the Delta? A terrorist could very easily turn a ship into a levy causing massive flooding. P8-12

13. The E.I.R. failed to address my scoping meeting request that would thoroughly study the explosive material carried by ships passed the residential areas. The study should include each hazardous material; fertilizer, LPG gas, and etc. What if there was an accident and the ship blows up? What would the affect be? How much area would be destroyed and how many people would be killed? If a ship caught fire, what would be the affects of the fumes? Please explain the law regarding these materials and their moving on waterways to ports. P8-13

14. The plain facts are exactly like Mr. Aschieris has quoted in the Stockton Record; "You can't build these in today's world." Is Stockton not part of this world? There are obviously reasons why no one wants to live near a Port. PORTS ARE TOTALLY INCOMPATIBLE WITH RESIDENTIAL AREAS. Port Leadership has shown a huge disregard for long-time Stockton residents and the community as a whole. Three years of torture is enough. DO NOT ALLOW COMMERCIAL SHIPPING SO CLOSE TO OUR HOMES!!! P8-14

Richard C. Hackett

Richard C. Hackett
4100 RIVIERA DR.
STOCKTON, CA-
95204

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Letter P9

RECEIVED
JAN 2 0 2004
PORT OF STOCKTON

Mr. Ray Weiss
Environmental Science Associates
8950 Cal Center Drive, Suite 300
Sacramento, Ca. 95826

Re: Port of Stockton

Listed below are some of our concerns about the development to take place by the Port of Stockton:

1. Noise: The 24 hour noise from ship generators, fork lifts dropping metal and other heavy industrial sounds we can hear and keep us awake at night. We have double-paned windows and are forced to keep these closed in the summer. P9-1
2. Destruction of the waterways is harming fish, wild life and plant life. P9-2
3. Pollution of the air. P9-3
4. Shipping will have a negative impact on the re-sale of our houses in our neighborhood. First to the houses on the water, then trickling down to all the houses in Riviera Cliffs.
5. If we are disturbed living three streets away by one ship, how could you imagine it would be like with numerous ships. It seems there has to be ways to negotiate with the people in a peaceful, quiet neighborhood on ways to avoid this upset! P9-4

   We are all for improving the Stockton job market. We feel there are alternatives in doing this that have not been explored. We would like to remain living in PEACE. We feel you are not trying to work with the people in this neighborhood to achieve that peace.

Sincerely,

Mr. and Mrs. Lawson
4154 Cliff Drive
Stockton, Ca. 95204

Mr. + Mrs. Lawson

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Letter P10

RECEIVED
JAN 2 0 2004
PORT OF STOCKTON

Moreno
Moreno

4145 Riviera Drive

Stockton, CA 95204-1113

209-464-5815 - Voice

209-467-4416 - Fax

moreno@inreach.com

January 17, 2004

Environmental Science Associates
8950 Cal Center Drive
Building #3, Suite 300
Sacramento, CA 95826

To Whom It May Concern:

A native of Stockton, my family moved to the Tuxedo Park area just as I was approaching my teens. A few years later during my first year at Stagg High School, I became friends with someone who lived in Riviera Cliffs.

When I first saw their home, I was tremendously impressed by the unique and beautiful homes and the outstanding view of the Stockton Main Channel. It was at that moment I realized if I could live in an area like Riviera Cliffs, I would have "arrived."

In October 1990 my dream came true, when my wife, Marcia, and I were able to move into a home on Riviera Drive. The neighborhood was absolutely quiet. Five cars driving by was like rush-hour traffic for us. We were thrilled to be in a serene neighborhood and I told my wife, "This is the last home we'll ever own in Stockton. It can't get any better!"

P10-1

In 1991, we began remodeling our home including Pella dual pane windows and doors throughout, insulating all external walls and the attic, re-stuccoing the exterior, putting on a new roof as well as extensive work to the inside of the house. It was just like a new home!

Shortly into the year 2000, ships started off-loading or on-loading their materials across the Channel in what was once Rough & Ready Island; originally a Naval facility. The Navy gave the property to the Port of Stockton for what was supposed to be a Marina and other like developments.

Since this date, there have been numerous ships:

- Bilging black smoke into the air
- Trucks idling hours on end
- Ships generators running 24 hours a day, whose vibrations are often felt as long as the ship is there
- Lights from both the ships and the Port lighting up the Southern sky's all night long

- Ships horns blasting at all times of day and night that often disturb our sleep
- The sound of forklifts at all hours
- Dockworkers and ship's crews carrying on conversations and playing their music, again, at all hours of the day and night
- The coming and going of trains and their whistles
- As well as noises we can't identify

The above items are rapidly adding to the increase of noise and air pollution of our fair City.

Thanks to the conditions we listed, we find ourselves prisoners in our own home. Unable to open our windows in the evenings, and not able to enjoy the former peace and quiet of our own yard.

The Port has indicated they have a 20 year plan for this area. This plan would generate a significant number of ships on a regular basis and will also create an amplification of the above complaints. If the Port is able to proceed with their plan, they will destroy Riviera Cliffs, Atherton Island, Atherton Cove, Brookside and who knows how far beyond. P10-1 (Cont.)

We are terribly distressed that the value of our home has already greatly decreased and if the Port is allowed to use the area across from our home, it will be devastating to our lives and livelihood.

We want the Port to **stop** all of its shipping activities in relationship to Rough & Ready Island and utilize the docks at the "east end" as they have traditionally done. The original plan to create a Marina would be a great asset to Stockton and the Delta waterways. In addition, condominiums, restaurants, shops in a Venice Beach-like setting would draw families, create jobs and bring tax dollars to the City of Stockton.

STOP THE PORT FROM THEIR WEST END SHIPPING ACTIVITIES NOW.

Sincerely,

Stephen Moreno

Stephen & Marcia Moreno

Letter P11

Mr. Ray Weiss
Environmental Science Associate
8950 Cal Center Drive
Building 3, Suite 300
Sacramento, CA 95826

RECEIVED
JAN 20 2004
ENVIRONMENTAL SCIENCE ASSOCIATES

RECEIVED
JAN 20 2004
PORT OF STOCKTON

Dear Mr. Weiss,

I am a resident of the Stockton neighborhood of Riviera Cliffs. Our neighborhood, along with Brook side, Atherton Cove and Atherton Island have been targeted as potential receptors of noise and pollution by the Port of Stockton's usage of Rough and Ready Island (New West Complex-Port of Stockton) that cannot be mitigated.

I am strongly opposed to the port's usage of this island for heavy commercial shipping. This usage places ships 400-500 feet from our property. The port has changed the island from a quiet, light industrial area into an extremely heavy industrial area with 24-hour operations. P11-1

This area, a former navy base, was a "free" gift to the Port of Stockton. It had never been used for commercial shipping before.

The port plunged into heavy shipping ignoring the CEQA laws and did not file for the required EIR. In addition, the port did not consider other options for the island's use, options, which could have been more compatible with the nearby homes. P11-2

The round the clock noise is very disturbing inside and outside our home. Examples of noise include ship generators, which use the worst kind of fuel, heavy metal sounds of hatch covers closing, idling engines of sometimes 20 trucks or more and forklifts swarming the docks all day and night.

The EIR is now finally out and we learn that in addition to the aforementioned noise- we will also have 4 cranes mounted on one end of the island with train tracks and boxcars on the docks. At the other end we will have roll-on roll-off vehicles from ships at additional future berths.

When our neighbors and we have complained about this noise and the resultant pollution of the air, we have often been publicly castigated. We have been accused of wanting to "mothball" the island. This is not true. We simply feel that the Port of Stockton did not consider in detail other options for development of Rough and Ready Island. Such options might be: a marina with warehouses converted into shops, light industrial educational facilities (extension universities, etc.).

The port certainly must lack the vision for this type of remodeling, as the downtown port has never been fully utilized. The fact is that area seems to be in a time warp. The only warehouse there has been inadequate for many years. It was built in 1930! If the port has supposedly been so successful for the last 70 years, where have all the profits gone? Could not they have hired engineers that study ports to use some "vision" to remodel the port long ago? Vast areas appear to be unused. Bad planning seems to have been the agenda of choice. Roads are pot-holed and buildings are old and outdated. Perhaps some restructuring of their finances is something that is vitally needed. They always seem to need federal funding for travel, etc. Guess what? We, the taxpayers, pay for that.

In the public remarks we are also accused of trying to prevent the creation of jobs. Are those jobs on the island really "new" jobs for the state? These jobs "happened" because the Port of Stockton outbid the Port of Sacramento. Stockton was able to outbid it because it received the free gift of Rough and Ready Island from the navy. This has helped to put the Port of Sacramento on the verge of bankruptcy. These jobs were really jobs stolen from Sacramento. It is ironic that this island created by taxpayers has been turned into a 24-hour disturbance 400-500 feet from the people who created it.

Furthermore, the Sacramento rice crop has to be loaded on trucks and delivered to Stockton resulting in a round trip of 100+ miles per truck. More pollution is created as the trucks idle on Rough and Ready Island as they wait to unload. The port got an exemption for the trucks to do this, but private citizens could never get away with contributing this kind of pollution due to the waiting-truck idling laws.

We had no complaints when the navy occupied the island. The navy was a good neighbor. I never heard any unnecessary yelling, honking of horns, and massive concentration of vehicles day and night that now exists.

When ships embark or disembark they need the assistance of tugboats, so in addition to all the other noise, 2 powerful tugboats contribute to it all- often in the early morning hours.

Peace and tranquility in the evening hours is vital- we have lost that due to the 24-hour operations at Rough and Ready Island (New West Complex). In fact, at night it almost seems to be twice as noisy because all the surrounding activity has subsided. Bright lights are on all night.

The EIR targeted homes on the water as the sensitive receptors of this noise, yet some of our neighbors blocks away report it bothersome as well.

People who navigate the Deep Water Channel have often told us they love the way the homes of Riviera Cliffs are on the water and what a nice entrance it is to the city of Stockton. It truly is unique and it could be even more appealing. Someone, I believe the navy, suggested that the island be used as a marina.

What a wonderful idea to possibly convert some of the warehouses on the island into a maritime visitors center complete with a historical museum displaying the history of the channel and how it was dredged. Holt's caterpillar at the Haggin Museum could be displayed there. Many boaters from out of town do not know that tanks used by armies all over the world were modeled after this piece of machinery-invented right here in Stockton, California. This could be an extension of the Hagen Museum. Other shops, restaurants and attractions could greatly benefit- especially during the Asparagus Festival- boaters could be bussed to the festival just as they are from Delta College. Our city busses do not pollute. Look at what Alameda did with their navy base closure. Look at the warehouse renovations all over the world-Liverpool, England, for example, etc.

I have many questions about the berths and loading areas at the port downtown (the original port). The Stockton Record of July 28, 2002 reported that 80 feet of dock collapsed at the port. Two workers on the dock when it collapsed had to be rescued by the fire department. I wonder if the docks are safe? There are 10 berths but most are never filled. At the most only 5 are filled at one time.

Perhaps a comprehensive study of this downtown port would be revealing. If upgrades and regular maintenance have been omitted and shoddy standards implemented thereby rendering it inadequate for today's shipping needs, why should we bear the brunt

of it by having the port move into our backyard? We are deprived of sleep sometimes for days at a time. Sleep deprivation is a form of torture.

Our neighborhood has literally been ruined by this shipping activity. I'm wondering if the port really ever intends to move ships away from us. They have made vague remarks about making improvements to the downtown port but these could simply be security precautions that all ports must make due to 9/11.

The City of Stockton's North Channel Plan includes plans for high-end apartments and condominiums. This area is near the downtown port and turning basin. I can't help wondering if the "real" plan is to protect this proposed new area from the noise and pollution of shipping, by keeping the bulk of this activity on the island. Are four established high-end neighborhoods to be sacrificed to build condos and apartments?

I don't know anyone who would buy a condo or apartment in the downtown area. In this area there are 148-licensed residential mental health facilities and sites for substance abuse treatment, not to mention dwellings that have generated an unusually high number of police calls. I lived near this area 12 years ago. It seems to me that the whole area has become worse, not better. Drug dealings on multiple corners, shootings, burglaries, unsolved murders and muggings are rampant.

Commerce in Stockton will happen. But, it can happen in way that does not injure great numbers of people and their homes. The vibration and noise from the ships is amplified by the water and is unbelievable and psychologically annoying. I wonder what structural damage the vibrations can cause to our homes over the years, not to mention, damage to the surrounding levees.

An appraiser has informed us that the shipping across from our homes could rob us of up to 50% of our home's value. Realtors are already telling people not to buy in our neighborhood. I worry, that when I am older and need to move to a retirement home, no one will want to but my home. Our life's investment will have been gobbled up by the port. The remedies mentioned in the EIR for homeowners would be something like building a fort around our homes. Why should we have to soundproof our homes, when our homes already have thermal-paned windows and our attics and walls are adequately insulated? We also do not like the idea of using our air conditioner all the time and keeping our windows closed because of the "promise" of even more air pollution. Neither do we like the idea of driving energy bills through the roof. It is not compatible with the national description of proper energy conservation. Basically, the remedies tell us how <u>not</u> to enjoy our homes.

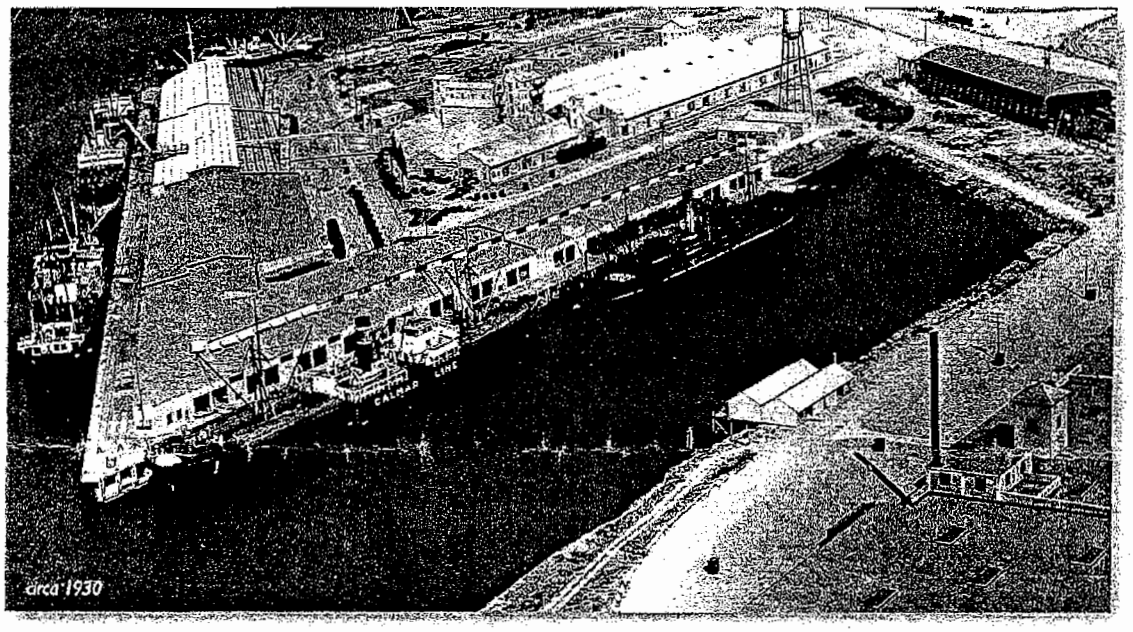
I think there could be an equitable resolution to this problem whereby both Stockton and Sacramento ports thrive. Freeways would not be overcrowded with unnecessary trucking, thereby reducing pollution. Use Rough and Ready Island for the light industrial that has been its tradition and expand other use of the island for perhaps more profitable usage than shipping. This usage ideally would not be a 24-hour noise and pollution producer. There are other options within the huge realm of light industry.

I am strongly opposed to the change the Port of Stockton has made to this island. I am opposed to their plan to dredge the channel deeper in front of the berths to accommodate even larger ships. They simply do not have the right to ruin our lives and drive down the value of our homes. I fervently ask you and your colleagues to utilize your conscience in the study of this situation. Think about what the port is doing to *people*.

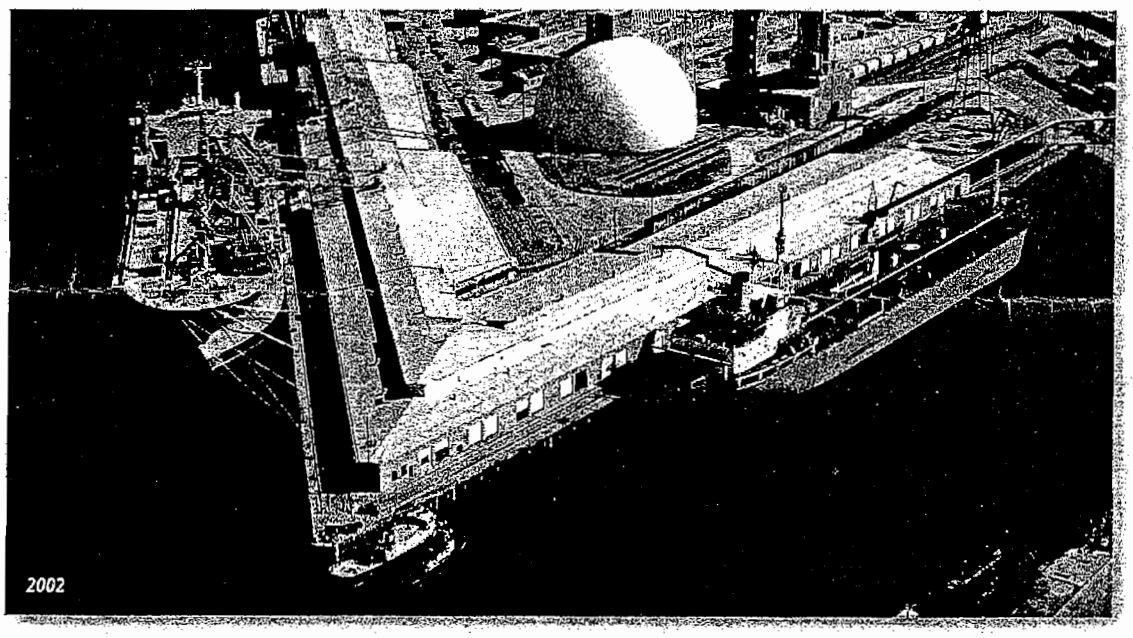
Sincerely,

Donna G. Thomas

70 Years of Linking International Trade



to California's Agricultural Heartland



and Creating Jobs in the Community

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Letter P12

RECEIVED
JAN 2 0 2004
PORT OF STOCKTON

January 18, 2004

Ray Weiss
Project Manager
Environmental Sciences Associates
8950 Cal Center Drive, Suite 300
Sacramento, CA 95826

Dear Mr. Weiss:

This letter is being written as a formal comment to the Draft Environmental Impact Report (DEIR) prepared by the Port of Stockton for the planned development of Rough and Ready Island referred to as the new West Complex.

We strongly oppose the planned development as described in the DEIR, into a heavy industrial, commercial shipping port. Such activities are not compatible with the long established residential properties in close proximity. Additionally, this includes many thousands of homes located within the surrounding areas.

The project describes "significant and unavoidable" impacts on air quality, water quality, noise, vibration, light and glare, truck traffic and freeway congestion and identifies potential significant impacts on the levee system. These actions will compromise the health and safety of residents, the environment and will devalue residential properties. P12-1

In addition, we oppose the dredging of the entire length of docks along the island as described in the DEIR. The report states this activity will create a "significant impact" due to the harmful effects from wind erosion and airborne pollutants. We also oppose this because it is designed to further deepen the area to allow for greater heavy industrial and commercial shipping usage.

The Port has previously undertaken a portion of their project in December 2001, without preparing an EIR, dredging in front of berths 18, 19 and 20 to deepen the area directly across from homes, and proceeded to use the area for *new* heavy commercial/industrial usage. No public hearings were conducted. No proper study was prepared defining the potential significant impacts as they related to the premier properties of Riviera Cliffs, Atherton Island, Atherton Cove, Brookside and Smith's Canal. It is unconscionable to imagine that no options were considered that would have provided for jobs and a more appropriate usage of the land located close to homes. These new activities have resulted in physical and emotional harm due to 24-hour noise, air pollution, vibration, light and glare, and truck traffic. P12-2

Ultimately, we oppose the proposed rezoning of the West Complex by the City of Stockton. It is an incompatible usage with homes. Instead, we propose that the Port of Stockton and the City of Stockton develop the island and create jobs that are in harmony P12-3

with the residential areas. Although we value the Port, all of the heavy industrial, commercial shipping usage should remain at the East Complex…away from the residences.

P12-3 (Cont.)

Finally, we are strongly opposed to the development of the West Complex and the dredging as described in the DEIR. We are further opposed to the current new activities, which have proven to be harmful to the environment and the residents. According to the California Environmental Quality Act (CEQA), every citizen of California has the right to a decent home and a satisfying living environment.

Sincerely,

Alyce Benninger
Alyce Benninger
2047 Cove Ct
Stockton, CA 95204

BRUCE BENNINGER
2047 COVE CT
STOCKTON CA 95204

Sent VIA FAX 916 564-4501
Sent by Regular Mail
Sent by Hand Delivery

Letter P13

RECEIVED
JAN 2 0 2004
PORT OF STOCKTON

January 18, 2004

Ray Weiss
Project Manager
Environmental Sciences Associates
8950 Cal Center Drive, Suite 300
Sacramento, CA 95826

Dear Mr. Weiss:

This letter is being written as a formal comment to the Draft Environmental Impact Report (DEIR) prepared by the Port of Stockton for the planned development of Rough and Ready Island referred to as the new West Complex.

We strongly oppose the planned development as described in the DEIR, into a heavy industrial, commercial shipping port. Such activities are not compatible with the long established residential properties in close proximity. Additionally, this includes many thousands of homes located within the surrounding areas.

The project describes "significant and unavoidable" impacts on air quality, water quality, noise, vibration, light and glare, truck traffic and freeway congestion and identifies potential significant impacts on the levee system. These actions will compromise the health and safety of residents, the environment and will devalue residential properties. P13-1

In addition, we oppose the dredging of the entire length of docks along the island as described in the DEIR. The report states this activity will create a "significant impact" due to the harmful effects from wind erosion and airborne pollutants. We also oppose this because it is designed to further deepen the area to allow for greater heavy industrial and commercial shipping usage.

The Port has previously undertaken a portion of their project in December 2001, without preparing an EIR, dredging in front of berths 18, 19 and 20 to deepen the area directly across from homes, and proceeded to use the area for *new* heavy commercial/industrial usage. No public hearings were conducted. No proper study was prepared defining the potential significant impacts as they related to the premier properties of Riviera Cliffs, Atherton Island, Atherton Cove, Brookside and Smith's Canal. It is unconscionable to imagine that no options were considered that would have provided for jobs and a more appropriate usage of the land located close to homes. These new activities have resulted in physical and emotional harm due to 24-hour noise, air pollution, vibration, light and glare, and truck traffic. P13-2

Ultimately, we oppose the proposed rezoning of the West Complex by the City of Stockton. It is an incompatible usage with homes. Instead, we propose that the Port of Stockton and the City of Stockton develop the island and create jobs that are in harmony P13-3

with the residential areas. Although we value the Port, all of the heavy industrial, commercial shipping usage should remain at the East Complex…away from the residences.

P13-3 (Cont.)

Finally, we are strongly opposed to the development of the West Complex and the dredging as described in the DEIR. We are further opposed to the current new activities, which have proven to be harmful to the environment and the residents. According to the California Environmental Quality Act (CEQA), every citizen of California has the right to a decent home and a satisfying living environment.

Sincerely,

Bishop Mark

4208 RIVIERA DR.
STOCKTON, CA. 95204

WEST COAST WORLD OUTREACH
PO BOX 8086
STOCKTON, CA. 95208

Sent VIA FAX 916 564-4501
Sent by Regular Mail
Sent by Hand Delivery

Letter P14

RECEIVED
JAN 2 0 2004
PORT OF STOCKTON

January 18, 2004

Ray Weiss
Project Manager
Environmental Sciences Associates
8950 Cal Center Drive, Suite 300
Sacramento, CA 95826

Dear Mr. Weiss:

This letter is being written as a formal comment to the Draft Environmental Impact Report (DEIR) prepared by the Port of Stockton for the planned development of Rough and Ready Island referred to as the new West Complex.

We strongly oppose the planned development as described in the DEIR, into a heavy industrial, commercial shipping port. Such activities are not compatible with the long established residential properties in close proximity. Additionally, this includes many thousands of homes located within the surrounding areas.

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In addition, we oppose the dredging of the entire length of docks along the island as described in the DEIR. The report states this activity will create a "significant impact" due to the harmful effects from wind erosion and airborne pollutants. We also oppose this because it is designed to further deepen the area to allow for greater heavy industrial and commercial shipping usage.

The Port has previously undertaken a portion of their project in December 2001, without preparing an EIR, dredging in front of berths 18, 19 and 20 to deepen the area directly across from homes, and proceeded to use the area for *new* heavy commercial/industrial usage. No public hearings were conducted. No proper study was prepared defining the potential significant impacts as they related to the premier properties of Riviera Cliffs, Atherton Island, Atherton Cove, Brookside and Smith's Canal. It is unconscionable to imagine that no options were considered that would have provided for jobs and a more appropriate usage of the land located close to homes. These new activities have resulted in physical and emotional harm due to 24-hour noise, air pollution, vibration, light and glare, and truck traffic. P14-2

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with the residential areas. Although we value the Port, all of the heavy industrial, commercial shipping usage should remain at the East Complex…away from the residences.

P14-3 (Cont.)

Finally, we are strongly opposed to the development of the West Complex and the dredging as described in the DEIR. We are further opposed to the current new activities, which have proven to be harmful to the environment and the residents. According to the California Environmental Quality Act (CEQA), every citizen of California has the right to a decent home and a satisfying living environment.

Sincerely,

Joe Faso
4453 Yacht Harbor Drive
Stockton, CA 95204

Sent VIA FAX 916 564-4501
Sent by Regular Mail
Sent by Hand Delivery

Letter P15

RECEIVED
JAN 2 0 2004
PORT OF STOCKTON

January 18, 2004

Ray Weiss
Project Manager
Environmental Sciences Associates
8950 Cal Center Drive, Suite 300
Sacramento, CA 95826

Dear Mr. Weiss:

This letter is being written as a formal comment to the Draft Environmental Impact Report (DEIR) prepared by the Port of Stockton for the planned development of Rough and Ready Island referred to as the new West Complex.

We strongly oppose the planned development as described in the DEIR, into a heavy industrial, commercial shipping port. Such activities are not compatible with the long established residential properties in close proximity. Additionally, this includes many thousands of homes located within the surrounding areas.

The project describes "significant and unavoidable" impacts on air quality, water quality, noise, vibration, light and glare, truck traffic and freeway congestion and identifies potential significant impacts on the levee system. These actions will compromise the health and safety of residents, the environment and will devalue residential properties. P15-1

In addition, we oppose the dredging of the entire length of docks along the island as described in the DEIR. The report states this activity will create a "significant impact" due to the harmful effects from wind erosion and airborne pollutants. We also oppose this because it is designed to further deepen the area to allow for greater heavy industrial and commercial shipping usage.

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Ultimately, we oppose the proposed rezoning of the West Complex by the City of Stockton. It is an incompatible usage with homes. Instead, we propose that the Port of Stockton and the City of Stockton develop the island and create jobs that are in harmony P15-3

with the residential areas. Although we value the Port, all of the heavy industrial, commercial shipping usage should remain at the East Complex…away from the residences.

P15-3 (Cont.)

Finally, we are strongly opposed to the development of the West Complex and the dredging as described in the DEIR. We are further opposed to the current new activities, which have proven to be harmful to the environment and the residents. According to the California Environmental Quality Act (CEQA), every citizen of California has the right to a decent home and a satisfying living environment.

Sincerely,

3823 Windy Cove
STOCKTON, CA.
95219

Sent VIA FAX 916 564-4501
Sent by Regular Mail
Sent by Hand Delivery

Letter P16

RECEIVED
JAN 2 0 2004
PORT OF STOCKTON

January 18, 2004

Ray Weiss
Project Manager
Environmental Sciences Associates
8950 Cal Center Drive, Suite 300
Sacramento, CA 95826

Dear Mr. Weiss:

This letter is being written as a formal comment to the Draft Environmental Impact Report (DEIR) prepared by the Port of Stockton for the planned development of Rough and Ready Island referred to as the new West Complex.

We strongly oppose the planned development as described in the DEIR, into a heavy industrial, commercial shipping port. Such activities are not compatible with the long established residential properties in close proximity. Additionally, this includes many thousands of homes located within the surrounding areas.

The project describes "significant and unavoidable" impacts on air quality, water quality, noise, vibration, light and glare, truck traffic and freeway congestion, and identifies potential significant impacts on the levee system from "seismic-induced vibrations". These actions will compromise the health and safety of residents, the environment and will devalue residential properties. Further, we are now told they are in the process of building train tracks for rail to dock service, which will heighten the noise, etc. P16-1

In addition, we oppose the dredging of the entire length of docks along the island as described in the DEIR. The report states this activity will create a "significant impact" due to the harmful effects from wind erosion and airborne pollutants. We also oppose this because it is designed to further deepen the area to allow for greater heavy industrial and commercial shipping usage.

The Port has previously undertaken a portion of their project in December 2001, without preparing an EIR, dredging in front of berths 18, 19 and 20 to deepen the area directly across from homes, and proceeded to use the area for *new* heavy industrial/commercial shipping usage. No public hearings were conducted. No proper study was prepared defining the potential significant impacts as they related to the premier properties of Riviera Cliffs, Atherton Island, Atherton Cove, Brookside and Smith's Canal. It is unconscionable to imagine that no options were considered that would have provided for jobs and a more appropriate usage of the land located close to homes. These new activities have resulted in physical and emotional harm due to 24-hour noise, air pollution, vibration, light and glare, and truck traffic. P16-2

Ultimately, we oppose the proposed rezoning of the West Complex by the City of Stockton. It is an incompatible usage with homes. Instead, we propose that the Port of Stockton and the City of Stockton develop the island and create jobs that are in harmony with the residential areas. Although we value the Port, all of the heavy industrial, commercial shipping usage should remain at the East Complex…away from the residences. P16-3

Finally, we are strongly opposed to the development of the West Complex and the dredging as described in the DEIR. We are further opposed to the current new activities, which have proven to be harmful to the environment and the residents. According to the California Environmental Quality Act (CEQA), every citizen of California has the right to a decent home and a satisfying living environment.

Sincerely,

David G. Gifford, DDS,

David G. Gifford, DDS,
2308 Virginia Lane,
95204

Sent VIA FAX 916 564-4501
Sent by Regular Mail
Sent by Hand Delivery

Letter P17

RECEIVED
JAN 2 0 2004
PORT OF STOCKTON
1-18-04

To: Ray Weiss
Environmental Science Associates
8950 Cal Center Dr., Suite 300
Sacramento, CA 95826

Re: EIR

The Navy's transfer of Rough and Ready Island, a Navy Land Base, mandated the Port of Stockton to follow all laws, comply with the state and local regulations, and conduct all appropriate environmental analysis.

I believe the Port violated this mandate by purposely ignoring the written and verbal request by those interested and significantly impacted by the potential project.

I believe from the very start, the Port has taken a path of secrecy, not informing those asking to be kept aware and those asking to be part of the planning. This is un-American. P17-1

The Port of Stockton has made it very clear that the report cannot stop them from proceeding with their project. They have continued to attempt to piece-mail the project before the EIR has been completed and approved. The City of Stockton politicians and County Supervisors are saying the project will go ahead, no matter what the damages are to the residents in Atherton Island and Cove, Riviera Cliffs, and Brookside.

The Port of Stockton has put themselves in the position of Judge and Jury of their own Development. If this incestuous method was allowed for any individual, corporation, etc…, the United States would not need a government, army, police, judges, jails, or any system of checks and balances. Each individual conscious would be the only rule. Obviously, this system would lead to total chaos!! What makes the Port of Stockton so special that they have their own laws? I believe it is against the US Constitution and their actions certainly violate our Civil Rights. The Port certainly makes CEQA and the EIR studies absolutely worthless. The system to protect Civil Rights has been disregarded. The whole project should be stopped and the shipping removed from the West Complex because of the complete disregard of the CEQA and EIR. P17-2

Should we disregard all laws and start sinking the ships, regardless of the impact it has on the Port? If the Port of Stockton proceeds with this project, it will sink the natural environment around it, property values, and the cohesiveness of Atherton Cove and Island, Riviera Cliffs, and Brookside with the Stockton Community. P17-3

Richard C. Hackett
4100 RIVIERA DR.
STOCKTON, CA- 95204

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Letter P18

Mr. Ray Weiss
Environmental Science Associate
8950 Cal Center Dr.
Building 3, Suite 300
Sacramento, CA 95826

January 18, 2004

RECEIVED
JAN 20 2004
PORT OF STOCKTON

We live in the Stockton California neighborhood called Riviera Cliffs. A recent release of an E.I.R. contains some startling and disturbing facts about how we and others will be effected by noise and pollution caused by the Port of Stocktons proposed expansion of shipping at the new west complex.

We cannot believe that the Port of Stockton will subject whole neighborhoods to this kind of increase in pollution. San Joaquin County has never met federal health-based limits on particulate pollution, tiny flex of soot, dust and vapor. Stockton is known for its dirty air and anyone can tell you if you live here very long you will have allergy problems. We cannot ever burn wood in our fireplaces on bad air days because of restrictions. New studies now link pollution to heart disease. How can the Port of Stockton rationalize contributing to this already threatening situation?

Could it be that the demography of this city has not been adequately studied? Has the Port moved ahead too fast? Could not the Port of Sacramento share some of this high concentration of business? Couldn't the Port of Stockton keep the shipping at their east complex and use Rough and Ready Island for other businesses that would not cause pollution and noise 24 hours a day?

Our home is not along the water where the E.I.R. has designated areas as sensitive receptors. However, we often hear the loud banging and all movement of all kinds of vehicles! We also feel the vibration of the ships generators. We can't imagine how it would be if the Port is able to proceed with the proposals of expansion. We fear that we would not be able to live here. More berths for more ships, trucks, and trains along the docks and elsewhere, along with roll-on-roll-off of vehicles from the ships will make lif here unbearable! The E.I.R. advises us to stay inside and keep the air conditioning going all day and all night as the only solution. We don't relish this idea. We like to enjoy our home and yard, and we like fresh air. P18-1

I hope you and your associates will respect the rights of homeowners verses big business sprawl. The proposed expansion could destroy the value of our homes. The truth is that this has already impacted the value of our homes, if we tried to sell out home now, we would have to disclose the information in the E.I.R. It is truly outrageous that the Port has proceeded with greatly expanded shipping before the preparation of the E.I.R. We feel the Port may be expanding more than the environment is suited to except. Many of us are also worried about the potential seismic damage that the vibrations of such a high concentration of ships may cause to our levies.

Paul and Kay Jones
4272 Cliff Drive
Stockton, CA 95204
(209) 463-6280

Kathleen E. Jones

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Letter P19

RECEIVED
JAN 20 2004
PORT OF STOCKTON

RE: RIVIERA CLIFFS / Port of Stockton

FROM: Bob and Kathleen Larson
4340 Riviera Drive
Stockton, California 95204

Riviera Cliffs, a peninsula of 110 homes between the San Joaquin Deep Water Channel and the Calaveras River is a well known Stockton landmark. Complete with Golf Course and Country Club this development has served its local property owners well since the mid 50's. In turn we feel it deserves all the protection we can give it to ensure that our children and grandchildren will be able to enjoy it for many decades to come.

I am a 55 year old resident and native Stocktonian. My husband Bob is 56 year old resident and native Stocktonian. We both remember many, many Sunday drives with our parents as children that ultimately ended up driving through the water framed streets of Riviera Cliffs. There was always that distant dream of "Someday!" For us that dream became a reality 26 years ago when Bob and I purchased a lot in the "Cliffs". Did we want to build on the San Joaquin Deep Water Channel or the meandering Calaveras River? Being in the boating business since 1969 we chose the Deep Water Channel. A 180 x 100' lot overlooking a beautiful river and a very popular floating dock attached that had been used by young and old alike for

(P-2)

years and years prior. This lot with dock was the "favorite fishing spot" with the greatest view for all who walked or drove by and especially our neighbors to be directly across the street. We almost felt guilty building our new home but not that guilty! We began construction in 1977. Imagine how we felt looking down from our walls of glass so we could see our beautiful river and there were our wonderful customers with their families enjoying the day or days of boating on the river. Our children enjoyed swimming, boating, digging clams, fishing and just playing on our private, sandy beaches along our property and our neighbors'.

Then a big dredge took place in the middle of the channel. Gone were the sandy beaches along our property and our neighbors. But, it was all for the good wasn't it? It was so we could have our channel safe for the ships to pass safely to the Ports various docks way east of us. Ships passing in the night, softly, all lit up in all their glory. We were ecstatic. Gods heaven on earth for sure!

But wait! Now 26 years later some of our dear neighbors don't see ships passing in the night. They see ships packing in the night right behind their walls of glass installed to allow our beautiful river to be a focal point of their homes. There is no more looking down at boating families at play. Now it's looking straight across less than 200 yards at a ship

(P-3)

with crew waving and peering eyeball to eyeball into your home. The Port of Stockton has in essence put temporary apartments in our back yards. The walls of glass have brought more than the river view into our homes. They now have brought the ships lights which are parked behind their homes turning nights into 24 hour days because of the enormous amounts of lighting required by the Port to maintain safe docks for the loading and unloading of these ships. Along with the ships lights that can run all night long, there's the tug boats lights, the heavy equipment lighting, the warehouse lighting, security lighting, Patrol car lights and lines and lines of large trucks with trailers for offloading these ships - lights on!

What about the pulsating sounds that come from the glass walls because of the continuous running of the generators on the ships which power their lights. Add the clanking of heavy nautical chains and propeller chains, the crashing of heavy metal hatches that echo off the water with heavy reverberation. What about heavy equipment back up safety alarms. Do you know how many times fork lifts back up and emit their safety warning signal while in operation? There are too many to count.

The Port of Stockton knows these ships should be passing in the night or day and docked way east of us at the Ports existing docks! But these docks cannot be used now because they have not been maintained prudently.

(P-4)

The Port has appeared to be very negligent and wasteful in regards ~~in regards to~~ to their properties. Our local newspaper reported that one dock collapsed under the weight of a couple of fishermen. The Record never said what dock it was or if the Port ever fixed that dock. Did they fix it or just left it in disrepair because they would rather build across from Riviera Cliffs or Brookside Homes than to take care of their responsibilities.

The Port seems to have a history of not maintaining what they own or responsibility for their actions. The Port owned a portion of Fern Island located by Light 13 in the Deep Water Channel which is the home of Port Stockton Boaters. The other portion of Fern Island was owned by Mr. Bob Clark a longtime business owner in the City of Stockton. Mr. Clark's levee got a hole in it and like the prudent man he is he hired a very reputable firm to repair it at an expense of approximately $75,000. Within the year the Port of Stockton's levee developed a crack. Instead of fixing the crack they allowed the water to flood Mr. Clark's property. Mr. Clark asked them to be responsible for their property and repair their levee that cracked and flooded his portion of the island. He got the response of No! Get in line and sue us! There's lots more ahead of you! (Not verbatim but close)

(P-5)

What message does their history in accepting responsibility and their dealings with prior neighbors and court dealings convey to us in Riviera Cliffs? The Port owns, they use, they abuse, they don't maintain, they don't take responsibility for their actions, they abandon and then move on to the new and fresh in total disregard for their neighbors. The Port needs to take responsibility, repair their own existing docks and properties and stop the abuses and nuisances directed at these well established neighborhoods like Riviera Cliffs. We have pride in our community and neighborhood and work hard at both.

Our City of Stockton and County of San Joaquin and other agencies are trying to control urban sprawl. Our Port of Stockton seems to be a bad case of urban sprawl. The powers to be need to work on their inner growth — bring the Port back to par. Take care of docking these ships where they belong, not behind these waterfront homes. We homeowners should not suffer because of inferior handling of our Port. Our Port has been blessed with acres and acres of land from the land based Naval Communication Station in Stockton. In return the Port needs to go forward in a positive prudent manner with the least amount of negative friction that is brought on by creating severe nuisances for its neighbors, Riviera Cliffs. The Port which is our Port should be protecting us, our lives and properties from the threat of

P19-1

(P-6)

terrorism with security measures according to the standards set by our U.S. Government. Instead, the choices the Port has made and the actions taken thus far has appeared to be a definite form of terrorism toward Riviera Cliffs or our own home fronts. P19-1 (Cont.)

Submitted by:

Bob Larson

Kathleen Larson

January 18, 2004
Date

RECEIVED
JAN 21 2004
ENVIRONMENTAL SCIENCE ASSOCIATES

Letter P20

Larry Celle
4324 Riviera Drive
Stockton, CA 95204
(209) 933-9900

RECEIVED
JAN 21 2004
PORT OF STOCKTON

January 19, 2004

Sent via FAX (916) 564-4501 & 1st Class Mail

Mr. Ray Weiss, Project Manager
Environmental Science Associates
8950 Cal Center Drive, Suite 300
Sacramento, CA 95826

RE: Port of Stockton-DEIR

Dear Mr. Weis:

This letter is in response to the Draft Environmental Impact Report recently prepared for the Port of Stockton regarding their proposed container handling facility development.

I live in Riviera Cliffs at 4324 Riviera Drive in Stockton. My home is on the waterfront directly across the channel from the proposed development. We already experience the horrifying sounds of trucks, forklifts, ship hatches and cranes throughout the night. The lights and ship generators alone are a nuisance. To add ship container activity will make it worse.

It is unbelievable to me that with so much unused land and dock space available on the east end of the Port that the Port would want to expand to the west end. The negative impact this would have on the residents who have lived in this area for so many years will be "significant and unavoidable". The proposed facilities and uses will interfere with our right to the quiet enjoyment of our homes and will cause a decrease in property values. P20-1

The Port should look to their present facilities for port services and to the existing Rough and Ready warehouses for warehousing.

Sincerely,

Larry Celle

Cc: Sherry Sheilds, via FAX (209) 234-0555

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Letter P21

CHRISTOPHER M. FLAHERTY

RECEIVED
JAN 2 0 2004
PORT OF STOCKTON

January 19, 2004

Ray Weiss
Project Manager
Environmental Science Associates
8950 Cal Center Drive, Suite 300
Sacramento, CA 95826

Dear Mr. Weiss:

Often, we, the people of this great city, county, state, and country, are faced with challenges in our lives whether they are small or great. One of the greatest challenges, we face, often involves an altruistic answer to a very important question. This question is one that our founding fathers asked themselves, while contemplating the framework of the Constitution of the United States of America. This question is sometimes difficult to answer by one's self and almost always requires the consensus of many.

Although at times we may only be interested in our personal needs, we must, collectively, be self-reflective in our decision making process so as to answer the very same question the Founding Fathers of the United States asked themselves. We have a duty to our Founding Fathers, our peers and those that will come after us, long after we are gone, to answer this question unimpeded from our own emotional perspective. This is truly the most important duty that we possess, as citizens of the United States, the duty to be honest with ourselves in answering the following question, one that most certainly our Founding Fathers asked themselves: What would best serve the community, the city, the county, the state, and the United States of America?

Which of the following answers to the following question is more in line with our altruistic commitment to the community in which we live? Should the City of Stockton grant proper zoning requirements to the property owned by the Port of Stockton for its proposed use? No, because its use could and will make a whole lot of noise, vibrations, and blight for the neighbors. Or, no, because its use conflicts with what is in the best use of the property for the future of Stockton's transformation through redevelopment efforts already in place. The former answer sounds selfish and will garner very little support from those not affected by the noise, vibrations, and blight. Although, this approach may seem as if the appropriate defense, it does, however, fail to capture truly that which is at risk., Stockton's ability to truly become the city that it deserves to be.

Educating one's self as to the facts, a noun most often taken very lightly, as they relate to the past, present and the future, is the very first step. I began the process of educating myself today and with much respect, I humbly suggest that the concern and approach undertaken by those citizens and homeowners challenged by the proposed expansion of the Post of Stockton to their most westerly location be refocused with the aforementioned question and proper answer at the forefront of all discussions. This approach will eliminate any sense of self, in lieu of the community, from all those uneducated as to the facts and undecided. Therefore, following our meeting and the overwhelming consensus of those in attendance and the ideas brought to light when posed the aforementioned question, the following thoughts and actions should be considered when redirecting the focus of the opposition to the Post of Stockton's proposal.

1. Introduce to the leaders of Stockton, the idea that the proposal to introduce the expansion of the Post of Stockton's Facility is not the best use of the property for the future of Stockton's desire to become what it deserves to be without mention of the noises, vibrations, and other nuisances that may take place. P21-1

2. The property's uniqueness with respect to its access to water, its proximity to downtown and its growth respective to activity is not conducive to the City of Stockton's plan for the waterfront downtown. The property is better suited for development geared more towards that of other areas such as Alameda, Oakland, and other cities throughout the U.S. that have been faced with similar challenges where the redevelopment focus is away from industry on waterfronts where industry currently exists and is healthy and entrenched. (I could be wrong, however, I do believe that the Port of Stockton is as healthy financially as it has ever been. Expansion to Rough and Ready Island could lead to the very same threat of

financial challenges that the Port of Sacramento is experiencing. Why add to increased traffic challenges from rice country in and around the Port of Sacramento by shifting, through the enticement of the Post of Stockton's ability, the point of delivery.)

3. The tax revenue that could be generated from a different form of development could help the city immensely and the dollars generated from the "real jobs' created would also lead to increased spending and more revenue for the City.

4. The Port of Stockton would almost certainly, upon proper re-zoning to other uses, stand to gain financially. This gain could be realized through the sale of certain parcels or the entire property pursuant to a proposed different master development plan approved by the city or through the development in unison with local developers.

5. The political ramifications of any deviation from the Post of Stockton's proposal and the implementation of their development plan could, due to its ill effects on those affected by any missteps or failed assumptions, lead to changes in the future for those responsible for the decisions. In Brookside, for example, those homeowners damaged in any way could seek monetary compensation by naming a long list of entities, businesses, agencies, and persons through a collaborative effort. Those persons even named in any future lawsuits will have a hard time understanding why they were placed at risk in the first place P21-1 (Cont.)

6. The idea that those areas directly across from the property, not currently in the City of Stockton., would consider annexation to the City in exchange for zoning is compatible and best suited for the property. Therefore, adding more money to the city via tax base increase.

7. Remember, although there may be deadlines in place that may appear to only make this challenge seem even more insurmountable to overcome, everything is negotiable.

8. Most importantly, I would also ask the question as to the importance of the Port of Stockton's expansion relative to agriculture as a whole and its need to have additional services relative to transportation.

In concluding, any and all lamentations geared towards self, only solidify the realization that the answer to the question of what would best serve the community, the city, the county, the state, and the United States of America is surely not making our own lamentations disappear. The correct answer to the question should be and can only be that the property could potentially be utilized for a better purpose, one that benefits all both now and in the future. If this purpose is clearly defined and substantiated to be as it is proposed because that is what is best for the community, then that must take precedent over the needs of the few that are challenged by the decision. It is then up to those challenged by the Port's expansion to negotiate a remedy mitigating their concerns.

Strength is in numbers and a petition to be circulated in the areas affected might help, however, how would a petition circulated outside of those areas immediately affected react. Would they care whether or not I have been troubled by noise and vibrations that have yet to be substantiated scientifically? Or might they give heed to any of the eight items listed above or any other ideas that may put their interests in unison with their duty to ask themselves the question, what is best for the community?

Sincerely,

Christopher M. Flaherty

Letter P22

January 19, 2004

RECEIVED
JAN 2 0 2004
PORT OF STOCKTON

Ray Weiss
Project Manager
Environmental Science Associates
8950 Cal Center Drive, Suite 300
Sacramento, CA 95826

Dear Mr. Weiss:

This letter is a comment on the Draft Environmental Impact Report (DEIR) for the Port of Stockton Development of the West Complex (Rough and Ready Island).

We live in the Brookside Development and we are pro-business, pro-jobs, and pro-community. We are also pro-safety, pro-privacy, and pro-property value. And, we have a right to peace and tranquility in our home and neighborhood.

The purpose of this letter is to voice our protest against the recently released Draft Environmental Impact Report (DEIR) prepared by the Port of Stockton for the development of Rough and Ready Island, the City of Stockton for the rezoning to port usage, and the related dredging of the Stockton Deep Water Channel. The report was released during the holiday period, limiting the ability of impacted citizens to comment by their deadline of January 20, 2004. It is our request to extend the deadline 60 days for comment. P22-1

The Port was asked to attend the January 8, 2004 board meeting of the Brookside Homeowners Association to address the issues as they relate to our community and answer questions from the homeowners. My husband and I both attended. The Port was not forthcoming at the meeting about the scope of the project and did not discuss the properties in our neighborhood that are marked in the report for *"significant and unavoidable"* impacts.

We have personal, first-hand knowledge of these impacts and the negative effects they have on our quality of life.

In 2000, we purchased a home in Riviera Cliffs, based upon tranquility and safety of the neighborhood with the intention that it would be the home in which we could raise our family. It became apparent, over the course of the next two years that our long- term plans would not be attainable there. The new Port activities including cargo ship traffic, related truck traffic and dredging directly across from our home began to create an unlivable environment for myself, my husband, and our two small children.

The new 24 hour a day humming noise of the cargo ships generators combined with the constant beeping and banging of the forklifts and freight trucks and diesel fumes made it

difficult to live in our home. Frequent and regular calls to both the Port and Sheriff's department requesting cessation of evening noise and lights went unanswered.

.....Noise all day,
.....Noise and light all night,
.....Pollution and chemicals compromising the air quality,
.....Long term health and quality of life concerns,
.....Declining property values.

These reasons summarize the decision for moving my family from our Riviera Cliffs home to the Brookside community.

Currently, with the release of the DEIR it raises further concerns:

.....Dredging and vibrating may jeopardize the integrity of the levees that keep us from being part of the Delta bottom.

.....Increased numbers of ships and activities operating 24 hours a day will impact our quality of life. P22-2

.....Further westward expansion beyond warehouse #20 designated for a 300 acre automobile roll-on, roll-off commercial shipping operation (planned directly across from and in close proximity to Brookside homeowners) will further increase the impacts.

Does the Port expect us to have to relocate our family again?

If the Port, the City, and the County want to develop Rough and Ready Island, develop it into something that is compatible with the hundreds of surrounding homes. There are plenty of uses that would provide jobs and economic income without heavy industrial activity and commercial shipping. It is my request to the City to consider the zoning of the island to a more compatible usage with residential properties and to relocate the heavy industrial, commercial shipping activities to the East Complex where they have been for 70 years. P22-3

Sincerely,

Gina Jones
4649 Pine Valley Circle
Stockton, CA 95219
209 477-3316

Letter P23

RECEIVED
JAN 22 2004
ENVIRONMENTAL SCIENCE ASSOCIATES

RECEIVED
JAN 22 2004
PORT OF STOCKTON

January 19, 2004

Ray Weiss
Project Manager
Environmental Science Associates
8950 Cal Center Drive, Suite 300
Sacramento, CA 95826

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Sincerely,

Matt Jones
4649 Pine Valley Circle
Stockton, CA 95219
209 477-3316

Letter P24

January 19, 2004

RECEIVED
JAN 2 0 2004
PORT OF STOCKTON

Ray Weiss
Project Manager
Environmental Sciences Associates
8950 Cal Center Drive, Suite 300
Sacramento, CA 95826

Dear Mr. Weiss:

This letter is being written as a formal comment to the Draft Environmental Impact Report (DEIR) prepared by the Port of Stockton for the planned development of Rough and Ready Island referred to as the new West Complex.

We strongly oppose the planned development as described in the DEIR, into a heavy industrial, commercial shipping port. Such activities are not compatible with the long established residential properties in close proximity. Additionally, this includes many thousands of homes located within the surrounding areas.

The project describes "significant and unavoidable" impacts on air quality, water quality, noise, vibration, light and glare, truck traffic and freeway congestion and identifies potential significant impacts on the levee system. These actions will compromise the health and safety of residents, the environment and will devalue residential properties. P24-1

In addition, we oppose the dredging of the entire length of docks along the island as described in the DEIR. The report states this activity will create a "significant impact" due to the harmful effects from wind erosion and airborne pollutants. We also oppose this because it is designed to further deepen the area to allow for greater heavy industrial and commercial shipping usage.

The Port has previously undertaken a portion of their project in December 2001, without preparing an EIR, dredging in front of berths 18, 19 and 20 to deepen the area directly across from homes, and proceeded to use the area for *new* heavy commercial/industrial usage. No public hearings were conducted. No proper study was prepared defining the potential significant impacts as they related to the premier properties of Riviera Cliffs, Atherton Island, Atherton Cove, Brookside and Smith's Canal. It is unconscionable to imagine that no options were considered that would have provided for jobs and a more appropriate usage of the land located close to homes. P24-2

Ultimately, we oppose the proposed rezoning of the West Complex by the City of Stockton. It is an incompatible usage with homes. Instead, we propose that the Port of Stockton and the City of Stockton develop the island and create jobs that are in harmony with the residential areas. Although we value the Port, all of the heavy industrial, P24-3

commercial shipping usage should remain at the East Complex … away from the residences.

P24-3 (Cont.)

Finally, we are strongly opposed to the development of the West Complex and the dredging as described in the DEIR. We are further opposed to the current new activities which have proven to be harmful to the environment and the residents. According to California Environmental Quality Act (CEQA), every citizen of California has the right to a decent home and a satisfying living environment.

Sincerely,

Peter J. Rafert Kerry L. Rafert

Letter P25

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January 19, 2004

RECEIVED
JAN 20 2004
PORT OF STOCKTON

Ray Weiss, Project Manager
Environmental Science Associates
8950 Cal Center Drive, Suite 300
Sacramento, CA 95826

Re: Port of Stockton West Complex Development Plan DEIR

Dear Mr. Weiss:

On behalf of our clients, the Friends of Riviera Cliffs, we submit these comments to help ensure that the Port of Stockton ("Port") fully complies with the California Environmental Quality Act ("CEQA") and other laws in considering the proposed West Complex Development Plan ("Project") on Rough and Ready Island. The Friends of Riviera Cliffs is a group of residents living directly across the Stockton Deep Water Ship Channel ("DWSC" or "ship channel") from the proposed development.

The Friends of Riviera Cliffs also retained experts on air quality and noise to review those sections of the DEIR. The comments of Dr. Phyllis Fox, an air quality expert, are filed herewith as Exhibit A.[1] The comments of Steve Pettyjohn, a noise control engineer will be hand delivered under separate cover.

After carefully reviewing the November 2003 Draft Environmental Impact Report ("DEIR") for the Project, we have concluded that it fails in innumerable respects to comply with the requirements of CEQA, Public Resources Code § 21000 et seq., and the CEQA Guidelines, California Code of Regulations, title 14, § 15000 et seq. ("CEQA Guidelines"). As described below, the DEIR is inadequate because it fails to adequately identify and analyze the significant environmental impacts that would result from proposed dredging, construction of the McCloy

[1]Dr. Fox's resume is attachment number 4 to her comments at Exhibit A. Any documents cited, but not attached to Dr. Fox's report, will be provided upon request.

Avenue, Daggett Road and Daggett Road Bridge Project, and implementation of the massive West Complex Development Plan.

Given the inevitable regional and acute local impacts of the proposed Project, it is especially important that the DEIR contain the necessary analysis to enable both the decision makers and the public to understand the significant environmental repercussions of the Project, and to compare the proposed Project to other possible alternatives for redeveloping Rough & Ready Island. Instead, the DEIR attempts to disguise the true impacts of the Project by inaccurately describing the scope of the Project and the environmental baseline, omitting crucial information regarding its dredging proposal, and ignoring some crucial impacts altogether in an apparent hope that they will just "go away."

Moreover, when the DEIR acknowledges a significant impact, it often makes an unsupported conclusion that mitigation will reduce it to below a level or significance, or it utterly fails to consider feasible mitigation measures. For example, the DEIR deems noise impacts on nearby residents from shipping operations significant and unavoidable, despite failure to consider such obvious mitigation measures as muffling ship generators and limiting ship loading and unloading to daytime hours.

As a result of the DEIR's inadequacies, there can be no meaningful public review of the Project. CEQA accordingly requires the Port to prepare and circulate a revised DEIR to permit a complete understanding of the environmental issues at stake.

I. THE DEIR DOES NOT PERMIT MEANINGFUL PUBLIC REVIEW OF THE PROJECT.

The basic purpose of an EIR "is to inform the public and its responsible officials of the environmental consequences of their decisions *before* they are made." Citizens of Goleta Valley v. Board of Supervisors, 52 Cal.3d 553, 564 (1990) ("Goleta I"). The DEIR for the Project fails to fulfill this fundamental purpose, however, for several reasons.

First, the Port has illegally begun implementing the Project, and has even begun shipping operations at the West Complex, despite the fact that such operations have never undergone environmental review. For example, the Port adopted a mitigated negative declaration in September 2001 to dredge 65,000 cubic yards of material from docks 18, 19, and 20 (previously referred to as docks J, K, and I) at the West Complex, bringing the area to a depth of 30 feet. Port of Stockton, Amended Draft Initial Study/Mitigated Negative Declaration for Dredging Berths I, J, and K (June 2001) (excerpts attached hereto as attachment ("att.") 2 to P25-1

Exh. B). This stretch of the ship channel is within the area the Port now seeks to dredge to a depth of 36 feet. While the Port sought to minimize this activity as "maintenance dredging," it acknowledged that the dredging was simply the first phase of the Port's development of the West Complex. See id. at 1-3 to 1-4. Nevertheless, the Port proceeded with a mitigated negative declaration as though this "maintenance dredging" was unrelated to the rest of the West Complex development. Similarly, the Port has proceeded with negotiations to lease warehouse space within the West Complex on the assumption that the Port development plan will go forward. See Reed Fujii, Port of Stockton to Clean Up Land, Stockton Record (July 23, 2003) (attached hereto as att. 3 to Exh. B). The Port has also engaged in numerous infrastructure improvements in anticipation of obtaining dredging permits and proceeding with the West Complex development. Id.

In a strikingly similar situation, the California Court of Appeal recently set aside the Port of Los Angeles' efforts to proceed in this manner. Natural Res. Defense Council v. City of Los Angeles, 103 Cal. App. 4th 268 (2002) ("NRDC"). In that case, the Court found the Port to have unlawfully segmented a project when it approved an agreement with a shipping company for the construction and expansion of a shipping terminal to take place in three phases, when only the first phase of the project had been subject to environmental review. Id. at 284. "When a specific project contemplates future expansion, the lead agency is required to review all phases of the project before it is undertaken. . . If postapproval environmental review were allowed, EIR's would likely become nothing more than *post hoc* rationalizations to support the action already taken." Id. (emphasis added). P25-1 (Cont.)

The Port of Stockton has committed a more serious violation of the law even than the Port of Los Angeles, because it has undertaken no environmental review of the Project as a whole prior to proceeding with the initial phases of development. The Port of Stockton issued the Notice of Preparation of a DEIR for the Project a year and a half ago, but repeatedly delayed public issuance of that document. Now that the DEIR is publicly available, it "describes a journey whose destination is already predetermined and contractually committed to before the public has any chance to see either the road map or the full price tag." NRDC, 103 Cal.App.4th at 271.

The Port brazenly published its premature commitment to this Project in the Stockton Record. After several paragraphs paying lip-service to residents' concerns, the Port announced that residents will "benefit greatly from a completed port expansion," and "[t]his kind of opportunity is too rare to pass up, offering tremendous economic potential for San Joaquin County." "Navigating the Future," Stockton Record, E-1 (Jan. 15, 2004) (attached hereto as Exh. C). The gist of the Port's approach, as presented in the article, is that the severe adverse

impacts that the Port has already illegally foisted upon neighboring residents will be justified once the EIR is completed and even more extensive operations commence.

Taking these kinds of actions before a project has undergone environmental review contravenes the precept that an EIR must inform the decisionmaker of the environmental consequences of an action before it is taken. Goleta I, 52 Cal.3d at 564. Because all aspects of a "project must be open for public discussion and subject to agency modification during the CEQA process," Concerned Citizens of Costa Mesa v. 32nd Agric. Dist., 42 Cal.3d 929, 936 (1986), the DEIR should have been completed and circulated before the Port made these decisions and undertook these actions. Now, however, any changes to the Project that are included in or result from comments on the revised DEIR "might call for a burdensome reconsideration of decisions already made." Citizens for Responsible Govt. v. City of Albany, 56 Cal.App.4th 1199, 1221 (1997). Unfortunately, the inevitable result is that the current process improperly "risk[s] becoming the sort of '*post hoc* rationalization[] to support action already taken,' which our high court disapproved of in Laurel Heights Improvement Assn. v. Regents of University of California (1988) 47 Cal.3d 376, 394." Id. P25-1 (Cont.)

Second, the DEIR is misleading because the Project's potentially significant impacts are repeatedly compared to conditions that include the impacts of illegal Port operations commenced only recently, after the Port proposed this very Project. An EIR must describe the conditions of the environment which preceded the proposal of a project as the baseline against which to measure the adverse environmental change. See County of Inyo v. City of Los Angeles, 124 Cal.App.3d 1, 9-14 (1981); see also CEQA Guidelines § 15125(a). Here, the environmental baseline is the condition of the project area and region as they existed before the Port began implementing its development project, i.e. at the time the Navy stopped using the property and evaluated transferring the property to the Port. The baseline, therefore, is no shipping activity in the West Complex. It is completely improper to review the impacts of the proposed project against a baseline of recently commenced unauthorized activity. To do so would allow the Port to benefit from its illegal actions. P25-2

II. THE DEIR'S PROJECT DESCRIPTION IS FLAWED.

A clear and comprehensive description of the project being proposed for approval is critical to meaningful public review. Indeed, "[a]n accurate, stable and finite project description is the sine qua non of an informative and legally sufficient EIR." County of Inyo, 71 Cal.App.3d at 192-193. The DEIR's description of the proposed Project is flawed in a number of regards.

Most importantly, the description of "existing" Port operations at the West Complex, including bagged rice transport from the West Wharf (Berths 18, 19 & 20), hides the fact that these unauthorized operations are simply early phases of the Project currently under review and have never undergone independent CEQA review. See Part I, supra. Moreover, some of the supposed "existing" facilities do not even exist at the West Complex. For example, there is no existing roll-on, roll-off ("Ro-Ro") facility at the West Complex, see id., nor are there existing cranes, id. at 3-6, fig. 3-3. Through an inaccurate description of "existing" conditions, the DEIR provides a correspondingly false description of the proposed Project. Therefore, the Project description is based on the fundamentally incorrect premise that the "Project" does not include those allegedly "existing" activities. See DEIR 3-5. P25-3

Second, the DEIR does not describe proposed land uses with sufficient specificity to determine even the nature of the development in those categories. Meaningless labels such as "Water Related Future Expansion Area" and "Diversified Land Use," DEIR 3-9, Fig. 3-4, do nothing to inform the public about the Project's compatibility with existing land uses within and adjacent to the Project area. To be legally sufficient, the revised DEIR must contain an expanded definition of these proposed land use designations and development plans. P25-4

Third, the Project description does not identify, as it must, any of the materials that will be handled at the West Complex. For example, it is reasonably foreseeable that petroleum coke and fertilizer will be unloaded at the West Complex, since those products are handled at the East Complex. These materials, and certainly others which have not been identified, have very different potential impacts than bagged rice. In order for the public to have an opportunity to meaningfully comment on these impacts, the revised DEIR must disclose all potential materials to be handled at the West Complex. P25-5

Fourth, the description of the phases of development contains no temporal or spatial context. The revised DEIR must provide at least approximate time frames of construction phases and consistently describe locations of the facilities identified for each phase. P25-6

With respect to the dredging description, the DEIR describes only a portion of the actual dredging required for the Project. Shockingly, the DEIR describes only the proposed dredging between docks 14-20, but omits altogether reference to dredging between dock 20 and the Burns Cutoff. Public Notice of the Port's application to the Army Corps of Engineers for a permit to dredge the latter area was issued on September 26, 2003 – the same day as the Public Notice for dredging between docks 14-20. See Public Notices 200300314 and 200300038 (attached hereto as Exh. D); Letter to Paul Maniccia, Army Corps of Engineers (Oct. 27, 2003), (attached hereto as Exh. B). The Port's stated purpose in the application to dredge between dock P25-7

20 and Burns Cutoff "is to provide economic development at Port of Stockton's West Complex by dredging the area for commercial shipping use," the *same purpose* stated in its application to dredge between docks 14-20. Id. There can be no serious argument that these applications are not *both* a part of the West Complex development. Therefore, the revised DEIR must include a description of proposed dredging between dock 20 and Burns Cutoff. P25-7 (Cont.)

The project description must also describe future maintenance dredging activities, which are an integral part of the dredging project. The frequency and volume of dredged material has already been estimated in the applications to the Corps (albeit, inadequately), see id. An accurate and complete estimate of the same should therefore be included in the project description. P25-8

Moreover, the DEIR's description of the component of the Project apparently proposed for consideration by the City of Stockton's Redevelopment Agency—which the DEIR refers to as the "Rough and Ready Island Redevelopment Project"—is woefully inadequate, incomplete, and internally inconsistent. At times, the DEIR refers to the Rough and Ready Island Redevelopment Project (hereafter, "Redevelopment Project") as if it were nothing more than a financing mechanism. *See*, *e.g.*, DEIR at 2-15; 3-18; NOP at "Overview of Project." Elsewhere, the DEIR refers to an allegedly comprehensive Redevelopment Plan, albeit without mentioning any of the details of that Plan. And still elsewhere, the DEIR suggests that that its evaluation of the Redevelopment Plan is so detailed that, for CEQA purposes, all further activities undertaken pursuant to the plan shall be considered a single project. *See* DEIR at 3-21.

However, CEQA expressly provides that future activities undertaken pursuant to an adopted redevelopment plan shall only be considered a single project for CEQA purposes where a project level EIR has been prepared and certified. Pub. Res. Code § 21090(b). Where, as in the instant case, the EIR for the proposed redevelopment plan is a program level EIR, the provisions of CEQA Guidelines section 15180 do not apply. The DEIR in the present case does not remotely provide sufficiently detailed analysis of the Redevelopment Project even to satisfy the requirements for programmatic EIR's, let alone the more detailed analysis required for a project-specific EIR. P25-9

Equally troubling, it is not even clear if the purported Redevelopment Plan for the Redevelopment Project has even been prepared yet. The DEIR never refers to the specific contents of any such plan, there are no references to it in the DEIR's bibliography, and it is not reproduced in the DEIR appendix. Nor were the Friends provided with a copy of any such document in response to their Public Records Act request to the Port. However, without access to the text of the proposed Redevelopment Plan, neither the drafters of the DEIR, nor the public,

nor the agency decision-makers can even begin to evaluate whether the DEIR properly analyzes the potential environmental impacts from any such Redevelopment Plan.

P25-9 (Cont.)

The revised DEIR must explain the specific activities the purported Redevelopment Plan calls for and indicate where that document is available for public review. Moreover, if the Redevelopment Agency or the Port intends to rely on the revised DEIR as a "project EIR" for the Redevelopment Plan, then the revised DEIR must provide the type of detailed analysis required for project-specific EIRs.

III. THE DEIR DOES NOT ADEQUATELY DISCLOSE OR ANALYZE SIGNIFICANT ENVIRONMENTAL IMPACTS, NOR DOES IT INCLUDE REASONABLE MITIGATION MEASURES.

An EIR must be detailed and complete, and reflect a good faith effort at full disclosure. The document should provide a sufficient degree of analysis to inform the public about the proposed project's adverse environmental impacts and to allow decision makers to make intelligent judgments. CEQA Guidelines § 15151. In reviewing the legal sufficiency of environmental review documents, the courts have emphasized that an EIR must support with rigorous analysis and substantial evidence the conclusion that environmental impacts will be insignificant and will be adequately mitigated. Kings County Farm Bureau v. City of Hanford, 221 Cal.App.3d 692 (1990). As set forth below, the DEIR for the Project fails to comply with this standard.

A. Noise and Vibration Impacts

While the DEIR acknowledges that the proposed Project will substantially increase the noise levels in and around the Project area, the analysis and proposed mitigation measures for noise and vibration impacts are wholly inadequate for the reasons described below and summarized here. First, the DEIR contains an inaccurate depiction of the environmental baseline that unlawfully includes recently commenced illegal Port activity in the Project area. The noise analysis then describes significance criteria which fail to account for the overall noise generated by recently commenced, illegal Port activity combined with proposed increased activity. In the case of construction impacts, the DEIR provides no explanation of or support for the selected significance criteria. The noise analysis goes on to omit obvious sources of noise from the Project, inadequately describe others, and neglect important effects noise has on human health. Finally, the DEIR proposes only minimal measures to lessen the severity of noise and vibration impacts and absolutely no measures to avoid them. For all of these reasons, and for all

of the reasons in Mr. Pettyjohn's report, delivered under separate cover, the DEIR's noise analysis does not meet the requirements of CEQA.

1. The Noise Analysis Contains an Inadequate Description of the Environmental Setting.

First, the DEIR improperly describes the environmental setting for noise and vibration to include the Port's recently commenced illegal ship loading and unloading activities. A Project's environmental baseline consists of the conditions of the environment which *preceded* the project. See County of Inyo, 124 Cal.App.3d at 9-14. The EIR should therefore describe the noise baseline as the ambient noise levels before the illegal shipping activity in the West Complex began.

The DEIR goes on to state the significance criteria for construction and operation impacts in terms of increases over existing levels. DEIR 4.5-13, 4.5-20, App. 4.5-6. When the DEIR describes the overall noise levels nearby residents will experience when the project is fully implemented, this representation may be appropriate. However, when the DEIR describes significance in terms of relative increase over existing noise levels, when that noise is directly attributable to unauthorized and therefore illegal Project activity by the Port, these criteria are unacceptable. They allow the Port to benefit from its CEQA violations by presenting a minimized incremental change which may not rise to the level of significance. Instead, significance criteria should be based both on a comparison of Project noise to noise levels *before* the Port began activity in the West Complex and on the overall noise impacts of the Project. P25-10

The background noise measurements provided in the DEIR, which are supposed to constitute the environmental baseline, are improperly reported as twenty-four hour averages and the DEIR does not disclose the hourly sound level data underlying the average. Therefore, these measurements can not serve as a point of comparison for the most relevant noise measurements (e.g. Lmax, Leq, L25, L50, etc.) A noise consultant retained by the Friends of Riviera Cliffs measured background noise at the Riviera Cliffs development on May 23, 2002 when no ships were in Port at Berths 18-20 and recorded substantially lower noise levels than the baseline reported in the DEIR. Over twelve hours (from 7:00 p.m. to 7:00 a.m.), the noise level ranged from 32 to 50 dB, with a 12-hour average of 41 dB. See att. 5 to Exh. 2. The DEIR should be revised to reflect these accurate baseline measurements.

The project setting for the noise impacts analysis is also flawed in other respects. The noise receptor at Dad's Point, which the DEIR characterized as "the most representative of

the residential receptors," recorded noise levels ranging from 57 DNL[2] to 70 DNL. (DEIR 4.5-10). However, that noise receptor is no closer to homes than the receptor at Berth 20, which recorded far higher noise levels. (DEIR, Fig. 4.5.3). The Berth 20 receptor, which is located directly across the channel from Riveria Cliffs residences, recorded noise levels ranging from 73 to 85 dBA DNL over the same period, with the maximum decibel levels occurring in the middle of the night (85 dBA during 2:00-3:00 a.m. on 10/10/02 and 85 dBA 3:00-4:00 a.m. on 10/11/02). In order to accurately determine the overall noise levels associated with increased shipping activity at Berth 20 on Riviera Cliffs residences, the Port should use the higher of these two measurements, not the lower one. The Port should also record actual noise levels at the residences themselves. P25-10 (Cont.)

Additionally, the DEIR reported that "[t]he existing noise environment is heavily influenced by recreational boating, which tends to result in loud peaks in noise over short periods of time and may substantially affect the overall DNL." (DEIR 4.5-10). However, this statement cannot account for the fact that a long-term noise measurement recorded peak hourly Leq of 85 dBA during 2:00-3:00 a.m. on one day and 3:00-4:00 a.m. on the next day. (DEIR, App., 4.5-3). The most likely source of these high noise levels is the very ship loading activities that this DEIR purports to be reviewing. Certainly, recreational boating does not account for the very high noise levels in the middle of the night. The questionable description of the sources of noise in and near the project area is misleading.

Because "the description of the environmental setting of the project site and surrounding area is inaccurate, incomplete or misleading, the EIR does not comply with CEQA." Cadiz Land Co. v. Rail Cycle, L.P., 83 Cal.App.4th 74, 87 (2000)

2. The Noise Analysis Identifies Improper Significance Criteria.

By selecting inaccurate and misleading significance criteria, the DEIR understates the significance of the noise and vibration impacts resulting from development and operation of the West Complex.

First, the DEIR fails to adequately consider "single event" noise impacts from project operations. Instead, significance criteria state impacts in terms of increase over "normally acceptable" DNL levels. DEIR 4.5-12 to 4.5-13. These levels are misleading because DNL only accounts for the average noise level, it does not represent peak highs over short P25-11

[2]The DEIR uses DNL, Ldn and CNEL interchangeably. For consistency, this letter refers to DNL whenever the DEIR used Ldn or Ldn/CNEL.

periods. Thus, while single event noise levels in and around homes near the West Complex may be high, DNL levels do not accurately reflect the magnitude of those events. Sound Exposure Level ("SEL") metrics are convenient for describing noise from short-term events, because the calculation accounts for both the duration and intensity level.

Single event noise levels have been shown to be likely to result in sleep disruption and speech interference, and heightened levels of stress and annoyance. CEQA requires consideration of these impacts from single noise events. Berkeley Keep Jets Over the Bay Comm. v. Board of Port Comm'rs, 91 Cal.App.4th 1344, 1372-73 (2001) ("Berkeley Keep Jets"). In the Berkeley Keep Jets case, the EIR contained similar noise significance criteria to the Port of Stockton's DEIR, stating that noise impacts "would only be significant if over a 24-hour period, the average noise levels either (1) increased by more than 1.5 CNEL in those areas already experiencing noise levels greater than 65 CNEL, or (2) caused the noise levels in an area to exceed 66.5 CNEL." Id. at 1373. Noting that "sound exposure level [SEL] has been found to be the most appropriate and useful descriptor for most types of single event sounds," the court held that the Port must prepare a supplementary noise analysis calculating "[t]he probability of being repeatedly awakened by multiple single-event sounds." Id. at 1382. Therefore, the revised DEIR must consider identify significance criteria describing impacts of single event noise on sleep, speech, stress and annoyance levels. P25-11 (Cont.)

Second, the DEIR fails to adequately address residents' existing noise concerns or to discuss the adverse effects that noise has on people. The DEIR provides no attempt to gauge existing levels of communication interference, sleep interference or physiological responses and annoyance, nor does it attempt to predict future levels associated with the Project. At the very least, the DEIR should have included a community attitude survey to assess how residents perceive existing noise levels. Such a survey should include a summary of the type and extent of the noise complaints that have been registered with the Port of Stockton. Additional significance criteria for all stages of the Project should have been included based on this information.

The DEIR also understates appropriate noise limits and ignores other relevant indicators of significance. For instance, the DEIR all but ignores the City of Stockton's noise regulations, as set forth in the City's Municipal Code. In enacting those regulations, the City Council expressly declared that "Every person is entitled to an environment in which the noise is not detrimental to his or her life, health or enjoyment of property." Stockton Mun. Code § 5-700(d). The City further provided that "it shall be unlawful for any person to willfully make. . . any loud, unnecessary, or unusual noise which unreasonably disturbs the peace and quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area. Id. § 5-702(A)(1). The Port's proposed Project – which has

already begun to cause "unecessary [and] unusual noise which unreasonably disturbs the peace and quiet [] any neighborhood[s] [and] which causes discomfort [and] annoyance to [] reasonable person[s]. . . residing in the area.

Moreover, as explained in detail in Steve Pettyjohn's report, the DEIR ignores local noise limits based on non-transportation sound source. The Stockton General Plan contains a policy supporting adoption of the State's Model Noise Ordinance. The model ordinance limits exterior, nighttime noise levels to an hourly Leq of 40 dBA and a maximum level of 60 dBA. The daytime limits are 50 dBA Leq and 70 dBA Lmax. These limits incorporate a 5 dBA penalty for pure tones, which are produced by the ships engines as explained in the Pettyjohn report. These are the most relevant significance criteria for non-transportation noise sources such as the construction, shipping and dredging activities that this DEIR proposes. Because the DEIR does not employ the model ordinance standards, it is inconsistent with the Stockton general plan. The revised DEIR must use these standards to determine significance of Project-generated noise.

Additionally, the DEIR labels noise up to 60 dBA DNL as within the "normally acceptable range." DEIR 4.5-13. However, at the very least, a noise impact is significant if it exceeds 55 dB DNL, which the U.S. Environmental Protection Agency ("EPA") has identified as the requisite level with an adequate margin of safety for areas with outdoor uses, including residential and recreational uses. See EPA, "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety" 21 (March, 1974) (attached hereto as Exh. E). The same report identifies 70 dB as the requisite 8-hr exposure level necessary to protect against hearing loss from intermittent noise. Id. at 20. Even the DEIR reported that the City of Stockton General Plan limits noise level in residential areas to a DNL of 60 dBA. Moreover, compliance with applicable noise standards the does not necessarily mean noise impacts are insignificant. See Oro Fino Gold Mining Corporation v. County of El Dorado, 225 Cal. App. 872, 881-82 (1990). Personal observations or complaints of residents can constitute substantial evidence of significant noise impacts. Id. at 882. P25-11 (Cont.)

For operation-phase significance criteria, the DEIR improperly asserts that even if ambient noise levels already exceed compatible levels for nearby uses, impacts will only be considered significant if the Project will contribute 3 dBA or greater increase due to the project. DEIR 4.5-13. The proper question, however, is not the relative amount of noise resulting from the Project, but "whether *any* additional amount of [] noise should be considered significant . . ." in light of existing conditions. Los Angeles Unified School District v. City of Los Angeles, 58 Cal.App.4th 1019, 1025-26 (1997) (emphasis added). In addition, when the noise from project operations would not cause the overall noise level to exceed the "normally acceptable" range, the

DEIR only deems significant increases of 10 dBA or more. DEIR 4.5-13. However, compliance with the general plan standard does not necessarily mean noise impacts are insignificant. Oro Fino Gold Mining Corporation v. County of El Dorado, 225 Cal. App. 872, 881-82 (1990). The Port provides no justification for its approach of automatically deeming all such increases of less than 10 dBA insignificant.

As noted above, significance criteria for operational noise impacts are wrongfully stated in terms of incremental increase over existing noise levels attributable to recently commenced illegal activities. If an appropriate baseline were employed, (e.g., the "background noise" measurement described above), significance would be triggered at a far earlier stage even using the DEIR's existing inadequate significance criteria. Assuming a background noise level averaging 41 dB over twelve hours (note that this is not an A-weighted average, which would result in a slightly higher number), the threshold of significance would be triggered every time a ship was at Berth 20. *See* Table 4.5-22. The revised DEIR must state significance criteria in terms of the appropriate baseline.

The DEIR also identifies improper significance thresholds for short-term impacts of construction noise. The DEIR merely asserts, with no support, that "short-term" construction noise between 6:00 a.m. and 9:00 p.m is categorically insignificant, and construction noise between 9:00 p.m. and 6:00 a.m. (when most people are sleeping), is insignificant so long as it does not exceed 65 dB Lmax. DEIR 4.5-14. However, this significance threshold has no basis in science or logic. Most glaringly, it completely ignores daytime noise impacts and assumes that most people are no longer sleeping at 6:00 a.m., which is verifiably false. P25-11 (Cont.)

The DEIR further fails to identify short-term construction noise impacts in terms of existing noise conditions. The proper question is not the relative amount of noise resulting from the Project, but "whether *any* additional amount of [] noise should be considered significant . . . in light of existing conditions." Los Angeles Unified School District v. City of Los Angeles, 58 Cal.App.4th 1019, 1025-26 (1997) (emphasis added). The sensitive receptor at Berth 20, which is directly across the channel from Riveria Cliffs residences, recorded noise levels ranging from 73 to 85 dBA peak hourly Leq and 60 to 84 dBA DNL over a four day period. DEIR App. Fig. 4.5.3. While the DEIR should not express significance criteria as relative increase over existing conditions (because those conditions represent unauthorized and therefore illegal Project activity by the Port), it *should* consider that the construction noise impacts will be experienced by residents already exposed to exceptionally high noise levels from Berth 20.

With respect to vibration impacts, the DEIR once again defined significance criteria in terms of allegedly "existing conditions" (significant if airborne sound-induced vibration would exceed 70 dBA at low frequencies and would be at least 3 dBA greater than existing conditions). These "existing conditions" include vibration measurements from loading and unloading of bagged rice at Berths 18, 19 and 20. (DEIR, Appendix, 4.5-6). These activities *do not* represent the baseline conditions as they are illegal activities taken prematurely by the Port without *any* environmental review. See County of Inyo v. City of Los Angeles, 124 Cal.App.3d 1, 9-14 (1981) (baseline must be circumstances the *precede* the project). P25-12

Accordingly, in order to accurately evaluate the effects of the Project on nearby residents, the EIR must utilize thresholds of significance that are based on all of the following: (1) single event noise; (2) overall noise levels after full Project implementation; (3) Project impacts compared to the environmental baseline *before* any Port operations began at the West Complex; (4) community attitude and health criteria (described below); (5) the EPA's noise regulation, which identifies 55 dB DNL as the requisite level with an adequate margin of safety for areas with outdoor uses, including residential and recreation uses; and (6) the noise regulations set forth in the City of Stockton's Municipal Code.

3. The DEIR Fails to Accurately Describe the Impacts from Noise.

The DEIR's description of operational noise impacts is inadequate because it omits relevant sources of noise and inaccurately describes others. To determine operational noise impacts, the DEIR employed an "acoustical model" based on measurements from a single ship to determine the noise created by different numbers of ships in Port. Based on this model, the DEIR predicted that two, three, four and five ships in port would result in a noise level of 65 DNL at the receptor located nearest to Berth 20. DEIR 4.5-22. This prediction bears no relation to reality. The Port's own measurement of noise during ship loading and unloading operations at Berth 20 receptor, which is located directly across the channel from Riveria Cliffs residences and 120 feet north of Berth 20, recorded noise levels ranging from 60 to 84 DNL. DEIR App. 4.5-3. Even when attenuated for distance, these levels far exceed acceptable noise conditions. P25-13

Furthermore, the acoustical model does not account for numerous sources of noise. The DEIR uses 24-hour *average* noise levels to calculate significance thresholds for noise impacts from Port operations. Accordingly, this measurement provides no basis for determining the significance of noise impacts attributable to single events (such as dropping of heavy objects and opening of ship hatches) or short-term periods of peak shipping activity. The model also disregards the tug vessels that will pass through the channel with increased frequency which, as the DEIR acknowledges, generate substantial noise. DEIR App. 4.5-3

The DEIR's description of impacts related to construction noise is even less satisfactory. The DEIR makes no projection of noise levels during the years of construction at Rough and Ready Island on which to base their significance determination. Indeed, even the inadequate description of construction noise in the DEIR leads to the opposite conclusion. The DEIR reports that construction noise during finishing could range from 63 to 75 dBA at the nearest residence. These noise levels are clearly beyond the hourly Leq limits in the Model Noise Ordinance (50 dBA daytime; 40 dBA nighttime). The noise would also certainly exceed EPA standards described above for intermittent noise (70 dB), and probably also for average noise over a period of time (55 dB DNL). See EPA, supra. Once these noise impacts are added to existing noise conditions, the short-term noise impacts from construction are inescapably significant, even after the proposed mitigation in the DEIR. P25-14

The DEIR's antiseptic approach to noise analysis omits the most relevant effects that come from noise. The DEIR fails to identify the multiple criteria which have been established to help protect public health and safety and prevent disruption of certain human activities. These criteria are based on the effects of noise on people such as communication interference, sleep interference, physiological responses and annoyance. These are described more fully below.

a. Communication Interference

A primary concern in environmental noise problems is communication interference including speech interference and interference with activities such as watching television. Normal conversational speech is in the range of 60 to 65 dBA and any noise in this range or louder may interfere with speech. There are specific methods of describing speech interference as a function of distance between speaker and listener and voice level. P25-15

b. Sleep Interference

Sleep interference is a major noise concern in noise assessment and is most critical during nighttime hours. Noise can make it difficult to fall asleep, create momentary disturbances of natural sleep patterns by causing shifts from deep to lighter stages and cause awakening. Noise may also cause awakening which a person may or may not be able to recall. Extensive research has been conducted on the effect of noise on sleep disturbance. Recommended values for desired sound levels in residential bedroom range from 25 to 45 dBA, with 35 to 40 dBA being the norm.

The National Association of Noise Control Officials has published data on the probability of sleep disturbance with various single event noise levels. Based on experimental sleep data as related to noise exposure, a 75 dBA interior noise level event will cause noise induced awakening in 30 percent of the cases.

c. Physiological Responses

These are measurable effects of noise on people such as changes in pulse rate and blood pressure. Generally, physiological responses are a reaction to a loud short term noise such as a rifle shot or a loud jet overflight. P25-15 (Cont.)

Annoyance is a very individual characteristic which can vary widely from person to person. What one person considers tolerable can be quite unbearable to another of equal hearing capability. The level of annoyance depends on the characteristics of the noise, defined as the loudness, frequency, time and duration of the noise, and how much speech and/or sleep interference results from the noise. The level of annoyance is also a function of the attitude of the receiver. Personal sensitivity to noise varies widely. It has been estimated that 2 to 10 percent of the population is highly susceptible to annoyance from noise not of their own making, while approximately 20 percent is unaffected by noise.

4. The DEIR Fails to Propose Adequate Measures to Mitigate Noise and Vibration Impacts.

The DEIR deems operational noise impacts significant and unavoidable, but does not make any attempt to avoid or adequately mitigate these impacts. The suggested mitigation measures are patently inadequate. One mitigation measure would require the Port to pay for building treatments to reduce noise at the homeowner's request if the interior noise level exceeds 45 DNL. (DEIR 4.5-29) However, DNL represents the average noise-level over a 24-hour period. Accordingly, this measurement provides no basis for determining the significance of noise impacts attributable to single events or short-term periods of peak activity. Additionally, this mitigation measure would require the Port to reimburse homeowners only after treatments are completed. The Port should pay the contractor directly to avoid undue financial burden on homeowners. Finally, the noise impact on residences should be fully mitigated by the Port, regardless of whether or not homes contain wall systems that comply with building codes. The DEIR's qualification of mitigation obligations is entirely inappropriate because, absent the Project, these residents would not be impacted by shipping noise, regardless of whether or not their homes are up to code. P25-16

The Port also failed to consider additional, feasible mitigation measures for operation related noise. First, the Port must also consider requiring berthed ships to "plug-in" to electric power while hoteling rather than running off of generators. In a stipulated judgment in the NRDC case described above, the Port of Los Angeles was required to install necessary infrastructure and retrofit all ships berthing at its container terminal to allow ships to use electrical power while docked. See NRDC v. City of Los Angeles, Stipulated Judgment, Modification of Stay, and Order Thereon, at 18 (No. BS 070017, March 6, 2003) ("China Shipping Settlement") (attached hereto as att. 1 to Exh. A). Because the Port of Los Angeles has agreed to this measure, it is feasible and must be used by the Port of Stockton unless other, equally effective mitigation measures are found and adopted. P25-16 (Cont.)

The Port should also consider additional mitigation measures for operation-related noise such as limiting tugboat activity and the time of ship loading and unloading to the hours of 8:00 a.m. to 6:00 p.m., and any other feasible mitigation measures. The Port's suggestion that limiting hours of operation is economically infeasible is unavailing. Mitigation is not facially infeasible simply because it would increase the cost of a Project or decrease the profit-margin. Many airports limit nighttime noise from aircraft to decrease disturbance to nearby residents, and presumably, some ports do as well. The Port must study the feasibility of this measure, and adopt it if feasible. If, after actually analyzing the issue in a revised DEIR, the Port proposes to find such limitations infeasible, then it should disclose the empirical basis for any such finding so that the public may have an opportunity to test and weigh-in on any such proposed findings before it is too late.

The mitigation measures for construction-related noise are also completely inadequate. First, the DEIR proposes to limit construction activities to between 6:00 a.m. and 9:00 p.m., and suggests that some nighttime construction is acceptable. However, these times do not correspond in any way with residential activity patterns. To prevent unbearable noise impacts on nearby residents, construction activities must be limited to between 8:00 a.m. and 6:00 p.m. No construction activities should take place at night. Furthermore, even if nighttime construction activities were acceptable, the DEIR sets an unacceptable level of 65 Lmax at the property line of the nearest residence. Not only is that limit too high to avoid potential sleep disruption, it is entirely unclear how this limit will be monitored and enforced. P25-17

The revised DEIR must consider additional feasible measures to mitigate construction-related noise impacts, such as limiting hours of construction to the hours of 8:00 a.m. to 6:00 p.m. and employing the most protective noise-control devices available and economically feasible.

Vibration is deemed to be a significant and unavoidable impact, and no mitigation measures are proposed (DEIR 4.5-32). However, "[o]nce a significant effect has been identified, the EIR must propose and describe mitigation measures that will minimize the significant environmental effects that the EIR has identified." Napa Citizens for Honest Gov't v. Napa County Bd. of Supervisors (2001) 91 Cal.App.4th 342, 360. The Port failed to consider feasible mitigation measures to lessen the severity of vibration impacts on residences. One possible mitigation measure the Port must analyze is muffling on-shore and on-ship generators to reduce vibration. The Port must propose, and adopt if feasible, this measure and any other feasible mitigation measures for vibration in a revised DEIR. P25-18

With respect to noise impacts on nearby residences from dredging operations, the DEIR likewise fails to accurately characterize the impacts and consider feasible mitigation measures. The DEIR concludes that noise impacts from dredging will be less-than-significant at 500 feet because it would result in a noise level of 58 dBA. However, this conclusion ignores important activity-interference criteria described above and EPA's significance threshold of 55 dB DNL for residential and recreational uses. See EPA, "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety" 21 (March, 1974). Therefore, the impact is significant and the DEIR should have considered feasible mitigation measures. At the very least, the revised DEIR should consider the feasible mitigation measure of limiting dredging operations to daytime. The revised DEIR must also include analysis of the noise-related impacts of dredging between dock 20 and Burns Cutoff, as described above. P25-19

B. Air Impacts

In describing the project setting for air quality, the DEIR once again describes an inaccurate air quality baseline by measuring the Project's impacts as an incremental increase over recently commenced illegal Port activities at the Port. DEIR App. E-4 to E-7. As explained above, CEQA requires a comparison of the Project's impacts to conditions that existed *before* the project began. See County of Inyo v. City of Los Angeles, 124 Cal.App.3d 1, 9-14 (1981). Illegally, the Port has been conducting shipping activities at the West Complex that have not undergone CEQA review and that are in reality a part of the Project that is the subject of this DEIR. It cannot now say that the air pollution resulting from those unauthorized activities represents "existing" conditions by which to judge the rest of the Project's impacts. Rather, the air quality baseline should be the conditions that existed before the Port began its illegal activity at the West Complex. P25-20

In addition, the DEIR wholly fails to adequately analyze the Project's air quality impacts and feasible mitigation measures, as fully described in Dr. Fox's attached report. See Exh. A. P25-21

C. Transportation and Circulation Impacts

The DEIR acknowledges that transportation and circulation impacts of the proposed project will be significant, but does not describe the impacts with sufficient specificity to determine whether its conclusion that the impacts are also unavoidable is supported by substantial evidence. Given the enormity of the proposed Project, the Port should prepare a revised DEIR that more adequately describes these impacts and feasible mitigation measures.

Also, the DEIR's traffic analysis impermissibly defers mitigation to a later date, and illogically concludes that such illusory mitigation will reduce certain impacts below a level of significance. For example, the analysis identifies additional truck traffic as a significant impact, but finds that development of a "truck travel control plan" at some future date will mitigate the impact to a less-than-significant level. DEIR 4.3-29. The deferral of this key mitigation by the Port is inappropriate under CEQA. Sundstrom v. County of Mendocino, 202 Cal.App.3d 296, 307 (1988). Similarly, the Port cannot propose to implement travel demand measures "[t]o the extent feasible, and as appropriate to the specific use," DEIR 4.3-28, without making a commitment to concrete performance standards. Sundstrom, 202 Cal.App.3d at 307; Sacramento Old City Association v. City Council of Sacramento, 229 Cal.App.3d 1011 (1991). The Port must address these questions in a revised DEIR. Id. P25-22

D. Hydrology and Water Quality

1. Impacts of Development Plan

The DEIR's discussion of water impacts and mitigation is also inadequate. With respect to impacts from the development plan, the DEIR fails to identify and fully describe potential impacts and fails to discuss feasible mitigation measures.

First, Impact 4.7.3 identifies the transport of contaminants to receiving waters such as the DWSC through non-storm and stormwater runoff as a potentially significant impact. As mitigation, the DEIR proposes to employ Best Management Practices (BMPs) to ensure "at minimum no net increase in contaminant releases in comparison with pre-project conditions." DEIR 4.7-18 (MM 4.7.3b). This mitigation measure suffers from the same baseline problem associated with recently commenced illegal Port activity as described above and fails to ensure P25-23

that relevant significance criteria will be met. The revised DEIR should ensure that BMPs are adequate to meet a performance standard that non-storm and stormwater runoff from the Project area, compared with the baseline of *no* Port activity at the West Complex, will not cause a violation of "any water quality standards, waste discharge requirements, or otherwise substantially degrade water quality." *See* DEIR 4.7-13. Without such a performance standard, the DEIR does not ensure that the impacts associated with the proposed Project will be mitigated to a less-than-significant level. Moreover, the Port has a lengthy history of failing to implement even the BMP's that it has identified for its existing facility. P25-23 (Cont.)

Second, the DEIR fails to describe with specificity the unloading and loading procedures of bulk materials at the Port and is thus not sufficient to determine if there is a potential for discharge of materials into the DWSC apart from any potential contamination from runoff. For example, the DEIR states that materials such as anhydrous ammonia are "transported to and from the Port . . . in mass quantities and are generally unconfined." DEIR 4.7-11. Ammonia discharges could exacerbate already low dissolved oxygen concentrations and may be toxic to fish in concentrations as low as 0.3 mg/L. The revised DEIR must identify and analyze this impact. P25-24

Third, the DEIR identifies the decrease in dissolved oxygen associated with turbidity from increased ship traffic as a potentially significant impact, (DEIR 4.7-21), and proposes mitigation, but provides no support for its conclusion that mitigation will reduce the impact to a less-than-significant level. The DEIR states that the Port shall take ownership of a jet aerator currently owned by the Army Corps of Engineers, however, the jet aerator does not currently produce oxygen at adequate levels.[3]

Furthermore, the DEIR provides no guarantee that the Port will produce enough oxygen to offset the Project's impacts. Mitigation Measure 5.6.1, discussing cumulative dredging impacts (which should have been cross-referenced in MM 4.7.6), sets a maximum amount of dissolved oxygen the Port will produce as mitigation without respect to the amount of dissolved oxygen depletion resulting from the Project (250,000 lbs/year). DEIR 5-71. However, the proposed level would fail to off-set the Project's oxygen depleting impacts and is set below the level allocated to the Port's activities by the technical Total Maximum Daily Load ("TMDL") for dissolved oxygen in the ship channel, and therefore demonstrably fails to fully mitigate the Project's impacts. The technical TMDL requires that "responsibility for mitigating P25-25

[3] Telephone communication, Kevin Wolf, Kevin Wolf and Associates, to Jenny Harbine (Jan. 7, 2004). Kevin Wolf is the official facilitator for the San Joaquin River Dissolved Oxygen TMDL.

the [dissolved oxygen] impairment will be shared equally between . . . three contributing factors": loads of oxygen-demanding substances, ship channel geometry, and reduced flow in the DWSC. Cntral Valley Regional Water Quality Control Board ("CVRWQCB"), Total Maximum Daily Load for Low Dissolved Oxygen in the San Joaquin River 13, 25 (June 2003). Because the Port of Stockton is primarily responsible for changes to the ship channel geometry through dredging, and also contributes oxygen-demanding substances, it should bear at least one-third of the mitigation responsibility. Because the DEIR sets as maximum oxygen production only one-fourth of the calculated deficiency, it is inadequate mitigation. DEIR 5-71 (MM 5.6.1). P25-25 (Cont.)

Amazingly, the Port also misstated the relevant target dissolved oxygen concentration set by the State Water Resources Control Board (SWRCB). Between the City of Stockton and Turner Cut, where the Port of Stockton is located, SWRCB requires 6.0 mg/L minimum dissolved oxygen from September 1 through November 30, and 5.0 mg/L at all other times. SWRCB, Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (1995). Therefore, the revised DEIR must include mitigation that guarantees, at a minimum, maintenance of the Basin Plan standards for dissolved oxygen.

Fourth, the DEIR proposes inadequate mitigation for the potentially significant impact of bank erosion associated with increased ship traffic. DEIR 4.7-22. Bank erosion will interfere with property ownership across the DWSC from the West Complex. The DEIR provides no analysis supporting its conclusion that an "annual levee-monitoring and inspection program," (DEIR 4.6-22; MM 4.6.3), will reduce bank erosion below a level of significance. Indeed, the Port's own expert concluded that for shoreline segments that are inadequately protected,[4] "shoreline treatment should be considered because the rate of levee erosion may increase due to more frequent tug boat traffic." DEIR, App. H. As bank erosion along the DWSC is almost guaranteed as a result of this project, the Port must install steel bulk heading or other shoreline treatment to mitigate this impact. P25-26

2. Impacts from dredging

a. Placement of Dredged Materials

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[4]The report refers to photographs of "inadequately protected" shoreline segments. While the details of these photographs are nearly impossible to discern due to the poor quality of reproduction, the vicinity map suggests that several of the photographs are of residential property. DEIR, App. H, fig. 1.

The DEIR's analysis of water quality impacts must include analysis of the impacts of dredging between dock 20 and Burns Cutoff, as described above. Inclusion of this project component will dramatically increase the volume of dredge spoil to be analyzed, from 326,000 cubic yards to approximately 576,000 cubic yards of dredged material. See Public Notice 200300314, Exh. D. In addition, dredging between dock 20 and Burns Cutoff is outside the scope of the Jones & Stokes "Data Characterization Report" or the assessement of the suitability of the Roberts Island Disposal Site, relied upon throughout this analysis. See DEIR, Apps. M & N. For these reasons, the entire analysis of dredging impacts to water quality is fatally flawed. P25-27

The DEIR fails to quantify both volume and content of contaminated return flows from the disposal site. The DEIR's terse analysis merely asserts that, upon disposal, "most of the solids will have been removed due to gravity. A small portion may still remain in suspension, but it will be less-than-significant." DEIR 5-44. CEQA does not permit such leaps in logic. The revised DEIR must describe with specificity the quantity of potentially harmful constituents in the decant water and the volume of discharge anticipated.

The DEIR's proposed mitigation for contaminate return flows employs performance standards that appear to have been invented for the purpose of convenience with no basis in science. While it proposes that the Port will hold decant water until it has been determined not to pose a threat to aquatic biota, it goes on to qualify the standard in such a way as to render it meaningless. DEIR 5-44 (MM 5.4.7i). Mitigation Measure 5.4.7i explains that, "because this is an impaired water, the Port suggests that the survival criteria should be established in consideration of the survival rate at a regional reference site using the MSD method. Decant water that has a survival rate within 20% of that at the reference site would be considered to meet water quality objectives." Id. The DEIR provides no support for the adequacy of its proffered criteria; indeed, by its own terms it appears that decant water meeting these criteria would impose a significant adverse impact on aquatic biota. Upon adequately quantifying the impacts of contaminated return flows from the disposal site, the revised DEIR must propose new measures and performance standards that will ensure adequate mitigation of this significant impact. P25-28

Similarly, the DEIR provides no evidence that Roberts Island disposal site has adequate capacity to handle the volume of dredged materials. As noted above, the assessment of the suitability of the Roberts Island Disposal Site did not analyze the impact of dredging an additional 250,000 cubic yards from dock 20 to Burns Cutoff. See DEIR, App. N. Additionally, the analysis does not consider the additional material from maintenance dredging. The information contained in the Army Corps of Engineers public notices of dredging demands the conclusion that Roberts Island does not have the capacity to contain all of this dredged material. P25-29

See Exhs. B, D. Using the numbers stated in the Public Notices, dredging for this project will generate 576,000 cubic yards of dredged solids. Both Public Notices state that the Roberts Island site, can accommodate 270,000 cubic yards of solids at its primary disposal location, and 135,000 cubic yards of solids at its "overflow area." Id. Altogether, then, the Roberts Island disposal site can accommodate only 405,000 cubic yards of solid material. The Port of Stockton does not report its plans for the 171,000 cubic yards of dredged material that the site cannot accommodate. P25-29 (Cont.)

The Public Notices also report that the Port will conduct maintenance dredging resulting in a total of 125,000 additional cubic yards of dredged material to be deposited on Roberts Island every two years. Id. It seems highly unlikely, even if settling and compaction occur after the initial deposit, that the Roberts Island site could accommodate this additional material. In light of these questions, the revised DEIR must contain a full exposition of where the Port intends to dispose of dredged material.

b. Dissolved Oxygen

In addition to the problems with the dissolved oxygen analysis noted above, the DEIR's discussion of dredging impacts with respect to dissolved oxygen is inadequate in several other respects. First, as described above, the DEIR fails to analyze the impacts of dredging between dock 20 and Burns Cutoff, which will dramatically increase the dissolved oxygen depletion projected in the current analysis. Therefore, the entire analysis in this section is fatally flawed.

Second, the DEIR contains an outdated and incomplete description of the dissolved oxygen TMDL process. The DEIR sets forth the "proposed framework" of the stakeholder TMDL process, (DEIR 5-30), but fails to provide the most relevant information stemming from that process. In June, 2003, the CVRWQCB submitted a technical TMDL report to the EPA that includes numeric targets, a source analysis, and waste load allocations for point sources and load allocations for non-point sources. CVRWQCB, Total Maximum Daily Load for Low Dissolved Oxygen in the San Joaquin River (June 2003). This report and its numerical targets are not even mentioned in the DEIR. P25-30

Additionally, the stakeholder group, of which the Port of Stockton is a member, is developing an aeration plan for the DWSC and anticipates that aeration beyond that provided by the Port's jet aerator will be necessary to meet target dissolved oxygen levels.[5] The revised

[5]Telephone communication, Kevin Wolf, supra note 2.

DEIR must consider this information in its analysis of the Project's impacts and cumulative impacts to water quality and feasible mitigation measures.

Even the DEIR's inadequate analysis of dredging impacts to dissolved oxygen concentrations cannot support its conclusions that both near-field and far-field impacts are less than significant. DEIR 5-40 to 5-43. The DWSC is listed as impaired for low dissolved oxygen pursuant to Clean Water Act section 303(d). CVRWQCB, "2002 Revision of the Clean Water Act Section 303(d) List of Water Quality Limited Segments." In light of existing conditions, *any* further depletion of dissolved oxygen is significant. See Los Angeles Unified School District, 58 Cal.App.4th at 1025-26. The DEIR's assertions that dissolved oxygen depletion is not significant because it will not be "appreciabl[e]" (DEIR 5-40), is "relatively small" (DEIR 5-43), or is a "small change" (DEIR 5-46) have no analytic basis and are contrary to law.[6] The revised DEIR must properly label these impacts as potentially significant and identify feasible mitigation measures. P25-30 (Cont.)

One partial mitigation measure for the depletion of dissolved oxygen the Port should consider is funding off-site improvements that would reduce the impact from other sources of dissolved oxygen depletion. For example, the Port could install run-off controls on nearby agricultural lands to decrease or eliminate the discharge of oxygen-demanding substances from those lands. Regardless of whether this mitigation proves feasible, the Port must propose and analyze feasible mitigation measures for this impact.

c. Tidal Prism

The proposed dredging would have a significant impact on the tidal prism of the Bay/Delta system, i.e. the volume of water that flows into a tidal channel and out again during a complete tide, excluding any upland discharges. In general, increased system volume, especially via channel deepening, increases the tidal prism and, thus, the salinity intrusion. Even though this is a well-documented concern in the Bay/Delta system, the DEIR fails to even identify, let alone analyze, this impact. The revised DEIR must quantify the impacts, both direct and cumulative, of the proposed dredging on the tidal prism and salinity of the Bay/Delta system. P25-31

E. Biological Resources

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[6]The analysis is not saved by its acknowledgment that such impacts are cumulatively considerable. DEIR 5-46. As discussed below, the terse statement in the cumulative impacts analysis that proposed mitigation will reduce impacts below a level of significance is circular and uniformative.

1. Impacts of the Development Plan

The DEIR contains some detailed information regarding special-status species in the Project area, but, almost as if the writers got bored with the topic, the DEIR almost completely avoids identification and analysis of the Project's potentially significant impacts on these species and of potentially feasible mitigation measures.

The DEIR glosses over or ignores several harmful impacts to biological resources from the Project operations and dredging. While Impacts 4.8.2 and 4.8.3 acknowledge significant impacts stemming from the Project as a general matter, those impacts are not specifically identified or analyzed. DEIR 4.8-28 to 4.8-31. For example, the biological resources impacts analysis for the development plan contains no mention of the harm to fish species associated with decreased dissolved oxygen content due to the Project operations, even while acknowledging that dissolved oxygen is an important habitat parameter for certain special status species. See, e.g., DEIR 4.8-13 (fall-run chinook salmon). The revised DEIR must specifically analyze this impact.

There are many other conceivable, and likely significant, impacts to special status species that are not even identified, let alone analyzed. For instance, among other omissions, there is no mention of impacts to birds and land mammals from the construction and intensified land uses. Because the DEIR fails to inform both the decision-maker and the public of potential impacts to biological resources, it fails as an informational document and is inadequate under CEQA. See Goleta I, 52 Cal.3d at 564. P25-32

For those impacts to biological resources that the DEIR attempts to address, the mitigation measures are patently inadequate. First, the DEIR reports that Project construction could conflict with the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan, and indicates that mitigation will reduce the impact to a less-than-significant level, but does not describe Mitigation Measure 4.8.6 with sufficient specificity to permit the public to confirm that determination.[7] DEIR 4.8-33. The revised DEIR must describe this mitigation.

Second, the biological resources impacts analysis identifies impacts to jurisdictional wetlands as potentially significant. DEIR 4.8-27. The DEIR makes no reasonable effort to mitigate permanent impacts to wetlands in the Project Area,. The purchase of credits in a mitigation bank may lessen the severity of the wetlands impact, but it does not reduce it below

[7]The Mitigation Measure directs readers to "Refer to the Mitigation description above," but nothing in the vicinity of this measure appears relevant. DEIR 4.8-33.

a level of significance. Id. (MM 4.8.1a). On-site mitigation or avoidance is preferable to off-site mitigation banking. This is because the filling of wetlands involves important local impacts, including decreased floodwater retention, nutrient uptake, and the loss of locally valued wildlife. Therefore, the revised DEIR should include a mitigation measure that would avoid permanent impacts to wetlands or mitigate them on-site.

P25-32 (Cont.)

To the extent the Port relies on mitigation banking, it must tailor its approach to ensure adequate mitigation. The Port should rely only on mitigation banks near the Project area to mitigate local impacts. Additionally, the Port should prefer mitigation banks that restore wetlands; mitigation banks that merely preserve or enhance existing wetlands contribute to a "net loss" of wetlands contrary to this Nation's established policy. Finally, given the uncertainty associated with mitigation banking, the Port must offset impacts by at least a 2:1 ratio, if this measure is adopted at all.

2. Impacts of Dredging

The analysis of impacts on biological resources from dredging is similarly defective. First, the DEIR fails to address the impacts to biological resources from proposed dredging between dock 20 and Burns Cutoff, as described above. Because this dredging will increase the project's impacts by approximately two-thirds, the analysis which omits this discussion is fatally flawed. P25-33

Second, while it *does* identify reduced dissolved oxygen from dredging as an impact on fisheries, the DEIR fails to provide any support for its conclusion that the impact is less than significant and requires no mitigation. DEIR 5-58. Indeed, the DEIR ignores evidence to the contrary. The DEIR assumes that "San Joaquin River flow and weather conditions are the primary factors driving water temperature and [dissolved oxygen] conditions that support migration of fall-run chinook salmon." Id. However, the technical TMDL for dissolved oxygen in the DWSC, which was written by the Stakeholder group of which the Port is member, found that three factors were each equally responsible for dissolved oxygen depletion in the channel: loads of oxygen-demanding substances, ship channel geometry, and reduced flow in the DWSC. CVRWQCB, supra, at 13, 25. Therefore, San Joaquin River flow accounts for only one-third of the responsibility. The other two-thirds responsibility has been allocated to conditions caused, at least in part, by the Port's dredging activities; that is, resuspension of oxygen-demanding substances and deepening of the ship channel. The inaccurate assumption undermines the conclusion that the "expected small change in [dissolved oxygen] attributable to increased depth from dredging would have a less-than-significant effect on migration delay." DEIR 5-58. P25-34

Moreover, the DEIR provides no reference to fish biology or quantified impacts on dissolved oxygen content on which to base its determination of insignificance. If the Port had sought such evidence, it would certainly have come to the opposite conclusion. The 6.0 mg/L dissolved oxygen objective in the 1995 SWRCB water quality control plan was specifically adopted to protect fall-run Chinook salmon spawning migration in a channel segment that includes, and is only slightly longer than (Stockton to Turner Cut), the area that will be locally affected by the proposed dredging. CVRWQCB, supra, at 12-13.

Third, the DEIR's analysis of dredging impacts fails to quantify the impacts of resuspended contaminants on fish mortality rates. DEIR 5-58 to 5-60. The revised DEIR must describe this impact with sufficient specificity to determine the nature and severity of this impact. Additionally, the impact description states that "[r]estricting dredging to the June 1 to October 30 window will minimize exposure of chinook salmon, steelhead, delta smelt, and splittail to contaminants." DEIR 5-59. However, elsewhere in the DEIR, the Port indicates that it intends to dredge through December 31 each year. DEIR 5-10 ("The fish window will allow dredging until December 31 of each calendar year..."), 5-11("The Port anticipates requesting an . . . allowance for the proposed dredging project to extend beyond November 1 if determined to be necessary) and ("...any additional extension of the dredging activities into the winter months is not expected to cause any adverse environmental impacts."). The revised DEIR must resolve this conflict either by (1) acknowledging that dredging will occur outside of the window stated in Impact 5.4.8d and fully analyzing the resultant impact in both Impacts 5.4.8d and 5.4.8e, or (2) committing to mitigation restricting dredging to June 1 to October 30 and deleting references to winter dredging elsewhere. P25-34 (Cont.)

Fourth, as noted above, the DEIR fails to quantify the level of contaminants in return flow from the disposal site, and proposes inadequate mitigation for this potentially significant impact. The DEIR also fails to meaningfully analyze the impacts of this discharge on fisheries and aquatic vegetation, which is potentially significant. See DEIR 5-61. The revised DEIR must identify and analyze this impact and propose and adopt adequate mitigation.

Fifth, the DEIR fails to identify with specificity the impacts of dredging on Benthic invertebrate mortality. DEIR 5-62. Likewise, it provides no support for its assertion that "the potential reestablishment of benthic invertebrates following dredging" means that their mortality is a less-than-significant impact. Id. Furthermore, this analysis completely ignores the fact that the Project would require continuous maintenance dredging throughout the life of the Port, which would obviously interfere with the reestablishment of benthic invertebrates on the floor of the ship channel. The revised DEIR must fully analyze these impacts and propose feasible mitigation measures.

Finally, the DEIR fails to identify and analyze the impacts associated with the occasional dredging necessary to maintain the viability of the channel for the Port's intended use. Not only will "maintenance" dredging exacerbate all of the above impacts, it will keep the habitat value of the ship channel low by preventing the growth of mature riparian vegetation on all but the uppermost portions of its banks. P25-35

F. Conversion of Farmland

The DEIR reports that implementation of the proposed Project would convert 272 acres of prime farmland, up to 500 total acres of agricultural land, to non-agricultural use, yet proposes no mitigation. DEIR 4.2-16, 4.10-12. The DEIR must identify feasible mitigation measures to lessen the severity of the impact, and the Port must adopt such measures if at all feasible.

CEQA requires that agencies "mitigate or avoid the significant effects on the environment of projects that it carries out or approves whenever it is feasible to do so." Pub. Resources Code § 21002.1(b). Mitigation of a project's significant environmental impacts is one of the "most important" functions of CEQA. Sierra Club v. Gilroy City Council, 222 Cal.App.3d 30, 41 (1990). Therefore, it is the "policy of the state that public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects." Pub. Resources Code § 21002; Laurel Heights Improvement Ass'n v. Regents, 47 Cal.3d 376, 400-401 (1988) (Laurel Heights I).

P25-36

CEQA imposes a duty to mitigate significant effects on the environment to the extent feasible, even if the potential impacts remain significant and unavoidable. Pub. Resources Code §§ 21002, 21002.1(a) & (b); Cal. Code Regs., tit. 14, §§ 15126.2(b), 15126.4 ("CEQA Guidelines"). The CEQA Guidelines require that an EIR "[d]escribe any significant impacts, including those which an be mitigated but not reduced to a level of insignificance." CEQA Guidelines § 15126.2(b). "Once a significant effect has been identified, the EIR must propose and describe mitigation measures that will minimize the significant environmental effects that the EIR has identified." Napa Citizens for Honest Gov't v. Napa County Bd. of Supervisors (2001) 91 Cal.App.4th 342, 360.

To minimize the impact of this Project on prime farmland, the Port of Stockton should propose and adopt a mitigation measure to avoid land with that designation on the Southern end of the Project site, or at least minimize the number of farmable acres consumed by the Project.

As another mitigation measure, the Port of Stockton should record an agricultural easement on other prime agricultural land nearby to prevent its future conversion to non-agricultural use. Agricultural easements permanently restrict the use of land for more intensive purposes, and are widely used to reduce the impacts of development on agricultural land. Such easements are usually administered by land trusts or government agencies, and property ownership typically does not change.

CEQA Guidelines section 15370 specifically identifies ways in which measures might mitigate the impacts of a project, even though they do not eliminate its effects. Of particular relevance to the agricultural easement at issue here, mitigation includes measures "reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action," and "[c]ompensating for the impact by replacing or providing substitute resources or environments." CEQA Guidelines § 15370(d), (e). Agricultural easements satisfy this definition by preserving agricultural land in the project area that is otherwise likely to be developed, thereby ensuring more agricultural acres over time than would exist absent the easement. P25-36 (Cont.)

Admittedly agricultural easements do not eliminate the impact caused by the direct loss of land to a project. However, a single development can lead to pressure for other development, thus exacerbating the direct impact of the project. Agricultural easements reduce the pressure for further conversion of other lands to non-agricultural uses, even though they do not save the land to be developed by the proposed project.

The purchase of an agricultural easement is especially appropriate where, as here, the preservation of farmland is a City policy. Stockton's Right to Farm ordinance expresses the City's policy "to preserve, protect and encourage the use of viable agricultural lands for the production of food and other agricultural products." Stockton Mun. Code § 16-013.1. The DEIR identifies other agricultural land in the project vicinity, DEIR 4.2-11, that would be natural candidates for easements. Because the DEIR does not even address this potential mitigation measure, it cannot be ruled out as infeasible.

G. Visual Resources

The DEIR also glosses over the visual impacts of the Project on residents and users of Louis Park and the Stockton Country Club. Adding insult to injury, the DEIR even makes the unsubstantiated conclusion that the industrial expansion "in many cases will be perceived by some as beneficial to the overall appearance of the Project Area." DEIR 4.10-13.

1. Cranes

First, the DEIR fails to even mention, let alone analyze, the significant visual impact of large cranes on the public across the DWSC from the West Complex. Despite the inaccurate depiction of cranes in the map showing "existing" uses, DEIR 3-6, fig. 3-3, the Project site does not currently contain any cranes and this will be a new and significant visual impact. The revised DEIR must identify and analyze this potentially significant impact of visually obtrusive cranes that interfere with the horizon even when not in use. To reduce the visual impact of cranes, the Port should adopt a mitigation measure requiring the use of only "low profile" cranes. Such cranes may include mobile harbor cranes or cranes that use a horizontal boom that does not need to be raised up when not in use, thereby reducing overall crane height when not in use. As demonstrated by the China Shipping settlement, this is a feasible mitigation measure that the revised DEIR must consider. See att. 1 to Exh. A. P25-37

2. Light

Second, the DEIR fails to fully describe the impact of light and glare on nearby residences. Residents have complained that lights from the West Complex shine directly into their bedrooms at night making sleeping impossible. See att. 4 to Exh. B (complaints). The revised DEIR must analyze this and other specific impacts of light and glare on nearby residents. The DEIR must also identify feasible mitigation measures to reduce the light and glare impact on nearby residents. Impact 4.10.4 states that "[b]erthed vessels typically operate exterior lights during night-time hours to facilitate operations" such as cargo loading and unloading. DEIR 4.10-14. The DEIR improperly deemed the impact significant and unavoidable, despite the fact that it did not consider feasible mitigation measures. See Napa Citizens, 91 Cal.App.4th at 360. The revised DEIR must analyze feasible mitigation measures and, at the very least, consider the feasibility of a mitigation measure that would limit loading and unloading activity to daytime hours, (or encourage ships to load and unload in the daytime), thereby eliminating the need for illumination of night operations. P25-38

The DEIR also completely ignored the impacts of light associated with dredging operations. See DEIR 5-65 to 5-66. Through numerous telephone calls, residents across the ship channel from the West Complex have made the Port aware that illumination of nighttime dredging operations floods their homes with light and makes sleeping difficult, if not impossible. (See att. 4 to Exh. B; Exh. F) The revised DEIR must identify and analyze this impact, and consider such feasible mitigation measures as redirecting or shading the light source and limiting dredging operations to daytime hours.

3. Conversion of Farmland and Open Space

Third, the DEIR dismisses the obviously significant visual impact from converting up to 500 acres of farmland and open space within the project site to industrial use simply because it does not affect "general public views." DEIR 4.10-12. This is in spite of the fact that the DEIR's own significance criteria would deem an action to have a significant adverse visual impact if it would "[s]ubstantially degrade the existing visual character or quality of the site and its surroundings." DEIR 4.10-11. The revised DEIR must properly identify this impact as significant and consider feasible mitigation measures, including avoidance of these important visual resources. P25-39

H. Hazardous Materials and Public Safety

The hazardous materials and public safety impacts analysis does not sufficiently describe the materials that will be transported to and from the West Complex and/or stored at the West Complex to determine whether these activities pose a potentially significant risk to public safety. Even though this is a program-level DEIR, the Port certainly knows or may reasonably predict what materials may foreseeably come through the West Complex. At the very least, the Port can reasonably foresee that materials such as elemental sulfur, coal, anhydrous ammonia and fertilizer are likely to be handled at the West Complex. DEIR 4.7-11. Contrary to the DEIR's suggestion, the Port's responsibility to disclose potential impacts associated with specific hazardous materials is not discharged by hazardous material inventory requirements. DEIR 4.11-29. CEQA requires the Port to identify and analyze impacts before any further Project activity takes place. The revised DEIR must specifically identify hazardous materials that will be handled at the West Complex and describe the public health risks associated with those materials. P25-40

The DEIR also omitted important potential possibilities for exposure to hazardous materials. See DEIR 4.11-24. Most significantly, the DEIR lacks any discussion of the risk of exposure associated with spills of hazardous cargo from trucks on roadways or and from ships. Without consideration of these risks, there can be no support for the DEIR's conclusion that the risk of exposure to hazardous materials is less than significant. DEIR 4.11-29.

The DEIR must also propose and analyze mitigation for these potentially significant impacts. The DEIR's suggestion that local provisions for handling accidental releases of hazardous materials is adequate mitigation is unsupportable. DEIR 4.11-29 to 4.11-30. Moreover, such deferral of mitigation is not permitted by CEQA. Sundstrom v. County of

Mendocino, 202 Cal.App.3d 296, 307 (1988). The Port must propose and adopt an adequate hazardous materials safety plan, among other mitigation measures, in a revised DEIR. P25-40 (Cont.)

I. Cumulative Impacts

The DEIR's cursory discussion of cumulative impacts is likewise inadequate. The CEQA Guidelines provide that a cumulative impacts discussion must contain, among other elements, either a list of past, present, and reasonably anticipated future projects producing related or cumulative impacts or a summary of projections contained in an adopted general plan. CEQA Guidelines § 15130(b)(1). In addition, the cumulative impacts discussion must contain a summary of the expected environmental effects to be produced by those projects with specific reference to additional information and a reasonable analysis of the cumulative impacts of the relevant projects, including discussion of reasonable mitigation measures. CEQA Guidelines § 15130(b)(1)-(3). An inadequate cumulative impacts discussion renders an EIR fatally defective. San Joaquin Raptor Ctr. v. Stanislaus County, 27 Cal.App.4th 713, 740-42 (1994).

The DEIR contains none of these required elements. The dredging analysis contains no attempt to provide either a list of past, present, and reasonably anticipated future projects producing related or cumulative impacts or a summary of projections contained in an adopted general plan. CEQA Guidelines § 15130(b)(1). The cumulative impacts analysis for the development plan purports to incorporate by reference the City of Stockton General Plan, DEIR 8-3, to satisfy its obligation to provide a "summary of projections" contained therein, but does not satisfy CEQA's requirements for doing so. CEQA Guidelines § 15150. Among other things, the relevant part of a referenced document must be briefly summarized. Id. Even if done properly, however, reference to the General Plan in the introductory discussion is valueless if, as here, the cumulative impacts analysis does not contain a "summary of the expected environmental effects to be produced by those projects with specific reference to additional information." Id. § 15130(b)(2). The so-called analysis exhibits almost no attempt to identify other projects or projections, let alone quantify the cumulative impacts. P25-41

In addition, the DEIR fails to properly identify and justify the geographic scope used as the basis for its cumulative impacts discussion. CEQA Guidelines § 15130(b)(1)(B)(3).

The cumulative impacts analysis contains numerous other flaws. First, the DEIR acknowledges that ballast water releases resulting from the Project individually would create a significant impact by introducing non-native organisms into the Sacramento-San Joaquin Delta. DEIR 8-6. Illogically, however, the DEIR concludes that the cumulative effect of the Project is less-than-significant in this regard. It attempts to justify the conclusion by stating that the Port of

Sacramento has reduced operations in recent years. However, this does not eliminate the potential for a cumulative impact based on combined operations at those Ports and others. The revised DEIR must analyze this cumulative impact.

Next, with respect to cumulative impacts to aquatic biological resources, special-status species, water quality, and geology and soils, the DEIR simply concludes that mitigation proposed in the analyses of the Project's primary impacts will "render the project's incremental contribution to cumulative impacts less than cumulatively considerable." DEIR 8-5 to 8-6. However, in addition to the general concerns raised above, this circuitous logic does not satisfy CEQA for all of the same reasons that the mitigation for those individual impacts are inadequate, as described in this letter. P25-41 (Cont.)

The cumulative impacts analysis also contains a fatal flaw that is repeated throughout the DEIR. With respect to land use, transportation/circulation, air quality, noise, visual resources, and water supply, the DEIR deems cumulative impacts significant and unavoidable, yet considers no feasible mitigation measures to lessen the severity of these impacts. DEIR 8-3 to 8-8. This failure to consider reasonable mitigation options violates CEQA. CEQA Guidelines § 15130(b)(3).

The cumulative impacts analysis for dredging operations is also inadequate because it does not, as it must, list and analyze maintenance dredging activities in the ship channel (past, present and future), other dredging activities, and other Projects (past, present and future) which contribute to some of the same adverse impacts as the proposed dredging. P25-42

J. Growth Inducing Impacts

The DEIR fails to properly analyze growth inducing impacts, in contravention of Public Resources Code section 21100(b)(5) and CEQA Guidelines section 15126.2(d). This failure is particularly disturbing because, as the DEIR acknowledges, growth-inducement is an "inherent impact (i.e. goal) of the Proposed Project." DEIR 8-1. The DEIR's discussion of growth inducing impacts is nonetheless so cursory as to be almost meaningless and gives no indication as to whether the anticipated and allegedly desirable growth inducing effects are considered significant. The DEIR purports to justify this failure on the ground that future projects (presumably "induced" by the West Complex development) would submit future individual development applications. DEIR 8-2. While it may be true that future projects will undergo future review, the purpose of a growth-inducement analysis is to provide the decision-maker for the current project an accurate view of its probable direct and indirect impacts. See P25-43

CEQA Guidelines § 15126.2(d). This is particularly appropriate where, as here, the DEIR purports to serve as a programmatic EIR.

For example, the Project site is surrounded by agricultural land. See DEIR Fig. 3-3. The analysis of growth inducing impacts should consider the likelihood that conversion of up to 500-acres of agricultural land within the Project area, DEIR 4.10-12, and construction of the Daggett Road Bridge will lead to further conversion of agricultural land adjacent to the Project area. The revised DEIR must contain a growth-inducing impact analysis that considers and proposes mitigation for this and other probable impacts. See Stanislaus Audubon Soc'y v. County of Stanislaus, 33 Cal.App.4th 144, 158 (1995). P25-43 (Cont.)

IV. THE DEIR DOES NOT ADEQUATELY DISCUSS ALTERNATIVES TO THE PROPOSED PROJECT.

The requirement to set forth and analyze impacts of alternatives within an EIR is crucial to CEQA's mandate that avoidable significant environmental damage be substantially lessened or avoided where feasible. Public Resources Code § 21002; CEQA Guidelines §§ 15002(a)(3), 15021(a)(2), 15126.6; Citizens for Quality Growth v. City of Mount Shasta 198 Cal.App.3d 433, 443-45 (1988). "Without meaningful analysis of alternatives in the EIR, neither the courts nor the public can fulfill their proper roles in the CEQA process . . . . [Courts will not] countenance a result that would require blind trust by the public, especially in light of CEQA's fundamental goal that the public be fully informed as to the environmental consequences of action by their public officials." Laurel Heights Improvement Ass'n v. Regents of Univ. of Cal., 47 Cal.3d 376, 404 (1988).

It is especially important at the alternatives phase of the CEQA process that the agency keep an open mind to all feasible options of achieving the agency's and the developer's objectives. "'The CEQA reporting process is not designed to freeze the ultimate proposal in the precise mold of the initial project; indeed, new and unforeseen insights may emerge during investigation, evoking revision of the original proposal.' [citation omitted]. . . . [T]he lead agency may determine an environmentally superior alternative is more desirable or [that] mitigation measures must be adopted . . . ." Kings County, 221 Cal.App.3d at 736-37.

In particular, the discussion of alternatives must focus on alternatives capable of avoiding or substantially lessening the adverse environmental effects of the project, or reducing them to a level of insignificance, "even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly." CEQA Guidelines § 15126.6(b). The alternatives to be discussed need not be identical or even substantially similarly to the

project as originally described by the applicant. Rather, a feasible alternative is one which can be accomplished in a successful manner within a reasonable period of time, taking into account economic, legal, social and technological factors. Goleta I, 52 Cal.3d at 574.

The DEIR alternatives analysis fails to comply with these requirements in numerous ways. First, the DEIR fails to identify and consider a reasonable range of alternatives. Although the DEIR lists several alternatives, it discards all but one of those Alternatives as failing to meet the Project's objectives. The only other alternative, Alternative 7, would involve higher intensity development which would actually exacerbate identified significant impacts.

The "Limited Maritime Use Alternative" – Alternative 6 – would reduce, if not eliminate, all of the identified significant and unavoidable impacts associated with shipping activities if properly configured. If coupled with development plans that avoid agricultural and wetland areas, such an alternative would substantially lessen all of the significant impacts associated with Port development. Such an alternative would meet the essential project objectives of eliminating blight in the Project Area and enhancing existing Port operations. However, this alternative was never meaningfully considered. In short, the DEIR fails to seriously consider any realistic, smaller scale alternative that would both reduce significant environmental impacts and also serve the essential Project objectives. P25-44

Second, the DEIR defines the Project's objectives overly narrowly to eliminate any alternative that does not include maximum development of berths and upland areas. A lead agency may not avoid analyzing a full range of project alternatives by defining the project overly narrowly. Rural Land Owners Association v. Lodi City Council, 143 Cal.App.3d 1013, 1024-25 (1983); see Kings County, 221 Cal.App.3d at 735-737; City of Cent. v. County of San Diego, 214 Cal.App.3d 1438, 1455 (1989). Here the DEIR lists *twelve* project objectives, including the "full economic use of the Project Area" and to "maximize the creation" of jobs, which can only be met by the precise project proposed. DEIR 7-30 to 7-31. Such an approach eliminates the possibility that an alternative which serves the true purpose of the project will be considered feasible. See, e.g., Save the Niobrara River Ass'n v. Andrus, 483 F.Supp 844, 862 (D.Neb. 1979) (project's true purpose was to provide economic stimulus to region, not to add irrigation). By improperly defining project objectives, the EIR has unduly limited the range of project alternatives. Moreover, potentially feasible alternatives plainly exist that would satisfy many of these objectives. One such alternative, for instance, was proposed by a nearby resident, Richard Hackett, in a January 3 Op-ed article published in the Stockton Record. See Exh. F.

Third, the DEIR does not contain a legally adequate discussion of alternative locations for the Project. Consideration of alternative sites is necessary and proper even where

the project proponent may not currently own other suitable properties. Citizens of Goleta Valley v. Board of Supervisors, 197 Cal.App.3d 1167, 1179 (1988) ("Goleta II") ("Serving the public purpose at minimal environmental expense is the goal of CEQA. Ownership of the land used and the identity of the [project proponent] are factors of lesser significance."); see CEQA Guidelines § 15126.6(f)(2). While the DEIR does declare that alternate locations were considered and found to be infeasible, its explanation for this finding fails to supply in meaningful detail the reasons and facts supporting this conclusion. Instead, the DEIR asserts that using any other location would preclude development of "a 531-acre Port maritime expansion and a 436-acre commercial and industrial development." DEIR 7-2. However, this assertion ignores other potentially viable commercial uses for the island – such as a public marina or technology park – that would be far less environmentally damaging. Thus, this explanation fails to provide sufficient reasons and facts for the DEIR's conclusion. See Marin Munic. Water Dist. v. KG Land California Corp., 235 Cal.App.3d 1652, 1664 (1991). Furthermore, CEQA requires consideration of reasonable alternatives, "even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly." CEQA Guidelines § 15126.6(b). P25-44 (Cont.)

Likewise, the DEIR's conclusory assertions that other alternatives would undermine project objectives that rely on redevelopment funds are unsupported by any evidence. In fact, the DEIR's vague description of redevelopment financing, which includes funding sources that are not related to marine development, shows that the Port has not yet determined how the redevelopment will be financed. DEIR 3-21 ("It is expected that the proposed redevelopment activities may be financed through many funding sources including, but not limited to: the developer and property owner contributions, gas tax revenues, Community Development Block Grant funds (CDBG) (if available), and Port funds to the extent available, assessment districts, and various local, state and federal community development and housing programs."). This laundry list of financing options belies the DEIR's conclusory assertion that alternatives providing for less than maximum build-out would undermine the redevelopment objectives by eliminating funding.

Accordingly, a revised DEIR must be prepared that complies with CEQA's requirements to provide information sufficiently detailed to permit a reasonable choice of alternatives so far as environmental aspects are concerned. San Bernardino Valley Audubon Soc'y v. County of San Bernardino, 155 Cal.App.3d 738, 750-51 (1984). The revised DEIR should also set forth all alternatives that were considered by the lead agency and rejected as infeasible during the scoping process, and the reasons underlying the agency's determination. Agency consideration of reasonable, but infeasible alternatives in the administrative record cannot replace the CEQA mandated discussion of alternatives in the EIR. Goleta I, 52 Cal.3d at P25-45

569. Thus, if the Port finds certain alternatives to be infeasible, its EIR analysis must explain in meaningful detail the reasons and facts supporting that conclusion. P25-45 (Cont.)

V. A REVISED DRAFT EIR MUST BE PREPARED AND RECIRCULATED.

Based on the inadequacies discussed above, the West Complex Development Plan DEIR cannot form the basis of a final EIR. CEQA requires preparation and recirculation of a supplemental draft "[w]hen significant new information is added to an environmental impact report" after public review and comment on the earlier draft EIR. Pub. Resources Code § 21092.1 The opportunity for meaningful public review of significant new information is essential "to test, assess, and evaluate the data and make an informed judgment as to the validity of the conclusions to be drawn therefrom." Sutter Sensible Planning, Inc. v. Sutter County Board of Supervisors, 122 Cal.App.3d 813, 822 (1981); City of San Jose v. Great Oaks Water Co., 192 Cal.App.3d 1005, 1017 (1987). An agency cannot simply release a draft report "that hedges on important environmental issues while deferring a more detailed analysis to the final [EIR] that is insulated from public review." Mountain Lion Coalition v. California Fish and Game Comm'n, 214 Cal.App.3d 1043, 1052 (1989).

In order to cure the panoply of DEIR defects identified in this letter, the Port must obtain substantial new information to adequately assess the proposed Project's environmental impacts, and to identify effective mitigation and alternatives capable of alleviating the Project's significant impacts. CEQA requires that the public have a meaningful opportunity to review and comment upon this significant new information in the form of a recirculated draft supplemental EIR.

Very truly yours,

SHUTE, MIHALY & WEINBERGER LLP

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Bill Jennings, Delta Keeper

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EXHIBIT A

Letter P25a

Comments

on

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PORT OF STOCKTON

Draft
Environmental Impact Report

PORT OF STOCKTON
WEST COMPLEX DEVELOPMENT PLAN

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January 20, 2004

Table of Contents

I. THE DEIR FAILS TO ADEQUATELY DESCRIBE THE ENVIRONMENTAL SETTING OF THE PROJECT 1
- I.A The DEIR Fails To Adequately Describe Emissions From Other Sources Of Pollution In The Area, All Of Which Contribute To Ozone, Toxic Chemicals, And Cancer 2
- I.B The DEIR Fails To Accurately Characterize The Regulatory Setting For The Project 3
  - I.B.1 Nuisance Statutes 3

II. THE DEIR FAILS TO ANALYZE CONSTRUCTION IMPACTS 7
- II.A Fugitive Dust Impacts Are Significant And Unmitigated 8
  - II.A.1 Significance Criteria For Construction Fugitive Dust PM10 Emissions 9
  - II.A.2 Uncontrolled Construction Fugitive Dust PM10 Emissions Are Significant 10
  - II.A.3 Controlled Construction Fugitive Dust PM10 Emissions Are Significant 11
  - II.A.4 All Feasible Fugitive PM10 Mitigation Measures Not Required 13
    - II.A.4.a The DEIR Does Not Require All SJVAPCD-Recommended Construction Fugitive Dust Mitigation Measures 13
    - II.A.4.b Additional Feasible Fugitive Dust Mitigation Measures 15
- II.B Exhaust Emissions Are Significant And Unmitigated 19
  - II.B.1 Significance Thresholds For Exhaust Emissions 22
  - II.B.2 Uncontrolled Construction Diesel Exhaust Emissions Are Significant 23
    - II.B.2.a Diesel Exhaust Emissions Exceed Emissions Significance Thresholds 23
    - II.B.2.b NOx, ROG And PM10 Emissions Result In Significant Air Quality Impacts 26
    - II.B.2.c Diesel Exhaust Emissions Result In Significant Cancer Risks 26
  - II.B.3 Controlled Construction Diesel Exhaust Emissions Are Significant 27
  - II.B.4 Additional Feasible Diesel Exhaust Control Measures 27

III. PROJECT IMPACTS ARE SIGNIFICANT AND UNMITIGATED 32
- III.A Odor Impacts Are Significant 32

III.B Ozone-Formation Impacts Are Significant 33
III.C Dredging Impacts Are Significant 34
III.C.1 Dredging Inappropriately Treated As Construction 34
III.C.2 Dredging Impacts Not Evaluated And Are Significant 35
III.C.3 Dredging Mitigation Is Deferred 36
III.D All Feasible Mitigation Is Not Required 37
III.D.1 Feasible Traffic Mitigation Measures 38
III.D.2 Feasible Maritime Mitigation Measures 41
III.D.3 Feasible Mitigation For Heat Island Impacts 42

IV. CUMULATIVE IMPACTS ARE SIGNIFICANT AND UNMITIGATED 44

COMMENTS

The Port of Stockton ("Port") is proposing to develop 1,459 acres on Rough and Ready Island for a wide range of uses. The Draft Environmental Impact Report ("DEIR")[1] addresses the Port's West Complex Development Plan, the City of Stockton's Rough and Ready Island Redevelopment Plan, and two specific projects, dredging from docks 14 – 20 and a new bridge. ("Project").

AIR QUALITY

I. THE DEIR FAILS TO ADEQUATELY DESCRIBE THE ENVIRONMENTAL SETTING OF THE PROJECT

To facilitate its informational goals, an Environmental Impact Report ("EIR") must contain an accurate description of the project's environmental setting. An EIR "must include a description of the physical environmental conditions in the vicinity of the project… from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant." (14 Cal. Code Regs. ("CEQA Guidelines"), § 15125, subd. (a).) As the court stated in *Friends of Eel River v. Sonoma County Water Agency*, 108 Cal. App. 4th 859, 874 (2003):

> There is good reason for this requirement: "Knowledge of the regional setting is critical to the assessment of environmental impacts. . . . The EIR must demonstrate that the significant environmental impacts of the proposed project were adequately investigated and discussed and it must permit the significant effects of the project to be considered in the full environmental context." (Guidelines, § 15125, subd. (c).) We interpret this Guideline broadly in order to "afford the fullest possible protection to the environment." (*Kings County Farm Bureau, supra*, 221 Cal. App. 3d 692, 720.) In so doing, we ensure that the EIR's analysis of significant effects, which is generated from this description of the environmental context, is as accurate as possible. (See also Remy et al., Guide to the Cal. Environmental Quality Act (CEQA) (10th ed. 1999), pp. 374-376.)

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[1] Environmental Science Associates (ESA), Draft Environmental Impact Report, Port of Stockton, West Complex Development Plan, Prepared for the Port of Stockton, November 2003.

I.A The DEIR Fails To Adequately Describe Emissions From Other Sources Of Pollution In The Area, All Of Which Contribute To Ozone, Toxic Chemicals, And Cancer

The DEIR fails to describe adequately the environmental setting of the Project. The San Joaquin Valley air basin ("SJVAB") and surrounding areas are home to numerous refineries, power plants, chemicals plants and many other polluting facilities. In fact, the SJVAB is currently designated as severe nonattainment for nation and state ozone and serious nonattainment for PM10 ambient air quality standards. (DEIR, p. 4.4-7.)

The Project and its related emissions should be evaluated in the context of these other sources of pollution. The Project's emissions will add to this existing baseline of ozone precursor emissions, and toxic chemical emissions. The DEIR makes no attempt to characterize the emissions from the existing Port facilities or surrounding facilities, which together constitute the baseline against which the Project must be evaluated. The DEIR makes no attempt to analyze the impacts of the proposed Project in the context of the environmental setting of the hundreds of other sources of pollution in the region. These combined sources of pollution are what the public actually breathes — not the isolated emissions of this single Project.

P25a-1

As the court explained in *Kings County Farm Bureau, supra*, 221 Cal. App. 3d 692, 720, when a Project is placed in an already polluted environment, its impacts are even more significant since it adds to already unacceptable levels of pollution. In that case, the EIR failed to analyze the emissions of a proposed power plant together with already unacceptable levels of pollution that existed in the region. The court stated, "[t]he relevant question to be addressed in the EIR is not the relative amount of precursors emitted by the project when compared with preexisting emissions, but whether any additional amount of precursor emissions should be considered significant in light of the serious nature of the ozone problems in this air basin." *Id.* at 718.

In the recent case of *Friends of Eel River*, 108 Cal. App. 4th at 874 (2003), the court held that an EIR prepared for a water diversion from the Eel River was inadequate because it did not adequately describe the environmental setting that included many other diversions from the same river. The proposed project at issue was much more significant when viewed in conjunction with the many other diversions from the river. The court therefore ordered a new EIR to properly describe the Project and its environmental setting. *Id.* at 873.

Under similar circumstances, the court in *Citizens to Preserve the Ojai v. Bd. of Supervisors*, 176 Cal. App. 3d 421 (1985), held that an EIR prepared to consider the expansion and modification of an oil refinery was inadequate because it

failed to consider the cumulative air quality impacts of other oil refining and extraction activities combined with the project. The court held that the EIR's use of an Air District's air emissions inventory did not constitute an adequate analysis. The court ordered the agency to prepare a new EIR analyzing the combined impacts of the proposed refinery expansion together with the other oil extraction activities ongoing in the region.

The DEIR only includes emissions from the Project and wholly ignores both the baseline emissions from nearby Port of Stockton facilities and emissions from the surrounding area. (DEIR, p. 4.4-21, Table 4.4-3.) Therefore, a supplemental DEIR must be prepared and circulated to fully analyze and disclose the existing environmental setting for the Project. The supplemental DEIR must accurately disclose and analyze the many sources of pollution in the region that combine to create the ozone and toxic chemical emissions in the region. Without this analysis of environmental setting, the DEIR fails to serve its fundamental purpose of disclosing the Project's impacts to the public. P25a-1 (Cont.)

I.B The DEIR Fails To Accurately Characterize The Regulatory Setting For The Project

The environmental setting must include a discussion of the regulatory setting for the Project, including any inconsistencies of the Project with any applicable general plans, regional plans, air quality plans, state implementation plans, and water quality control plans. (CEQA Guidelines section 15125(d).) If a project has any significant impacts, a lead agency may only approve the project if it is "otherwise permissible under applicable laws and regulations." CEQA section 21002.1(c). Thus, the DEIR must analyze the Project's compliance with all other laws and regulations. The DEIR is deficient because it fails to identify all applicable laws, regulations and plans, and fails to disclose that the Project is inconsistencies with certain plans and in violations of certain laws and regulations. The DEIR did not evaluate inconsistencies with applicable air plans and ignored nuisance statutes. P25a-2

I.B.1 Nuisance Statutes

The Project must comply with state public nuisance statutes. This is a critical issue in this case because existing Port operations have a history of generating nuisance odors. The DEIR not only fails to describe the regulatory requirement, but wholly fails to evaluate the impact of the Project on this existing significant impact. These legal requirements are nowhere mentioned in the DEIR. California Health and Safety Code Section 41700, requires that: P25a-3

> no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, response, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

Generally, a nuisance is defined as "[a]nything which is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property, or unlawfully obstructs the free passage or use, in the customary manner, of any navigable lake, or river, bay, stream, canal, or basin, or any public park, square, street, or highway." (Civ. Code, § 3479.)

Under the broad definition of nuisance set forth in Civil Code Section 3479, California courts have classified a wide range of conditions and activities as nuisances. In *People v. General Motors* (1980) 117 Cal. App. 3d Supp. 6, 172 Cal. Rptr. 470, the Court held that General Motors could reasonably understand that its conduct in discharging baked or burnt paint odors could annoy and irritate those persons who lived and worked in the area surrounding the plant. In determining what constitutes a "considerable number of persons," the court noted that 11 persons who owned 12½ lots in a 51-lot tract complained over the operation of a dairy in *Wade v. Campbell* (1962) 200 Cal. App. 2d 54, constituted a "considerable number of persons in the neighborhood." With respect to odors, the Court in *General Motors*, stated that P25a-3 (Cont.)

> What constitutes the appropriate neighborhood may depend on the range of the contaminants. In the Wade case the complaints were of flies, mosquitoes, noxious odors, dust, noises and unsightly views. In our case the complaint was about odors from a paint oven. It would be a matter of fact how far such odors could travel and still be annoying.

(*Id.; see also, Varjebedian v. Madera,* 20 Cal.3d 285, 293 (1977) (foul odors from sewage plant are a nuisance); *Ultramar v. South Coast Air Quality Management District,* 17 CalApp.4th 689 (1993) (risk of release of hydrofluoric acid at a refinery is a public nuisance); *Eaton v. Klimm,* 217 Cal. 362, 368 (1933) (smoke from an asphalt factory is a nuisance); *Selma Pressure Treating v. Osmose Wood Preserving,* 221 Cal. App. 3d 1601 (1990) (leaking hazardous waste site is a nuisance); *Judson v. Los Angeles Suburban Gas Co.* (1910) 157 Cal. 168 (odors, sounds and smoke which are offensive to the senses constitute a nuisance; *McIntosh v. Brimmer* (1924) 68 Cal. App. 770 (dust arising from the conduct of a chicken-raising

business constitutes a nuisance); *Johnson v. V.D. Reduction Co.* (1917) 175 Cal. 63 (odors from decaying garbage constitute a nuisance); *Willson v. Edwards* (1927) 82 Cal. App. 564 (odors from refreshment stand constitute a nuisance).)[2]

Ultimately, the Court in *General Motors* found that the thrust of these cases is to apply "the reasonable man standard, *i.e.*, would the reasonable man be irritated by the conduct of the defendant." Thus, a wide range of activities can constitute a nuisance if a reasonable person would be irritated or annoyed by the activity.

The fact that there are feasible means to reduce nuisance impacts weighs strongly in favor of finding the activity to be a nuisance. In *Venuto v. Owens-Corning*, 22 Cal. App. 3d 116, 130 (1971), the court held that "the failure to secure [devices or more efficient management which would reduce the conduct or activity causing the nuisance] when they are available at a reasonable expense renders the conduct or activity causing the nuisance unnecessary and unreasonable." "Where the danger to an entire neighborhood is demonstrated... and where the condition created is unnecessary and can be remedied, prudence, common sense, fair play and justice require that the danger to the entire neighborhood be eliminated. In such a situation, the condition may be found to be a nuisance and abated." *County of San Diego v. Carlstrom*, 196 Cal. App. 2d 485, 491 (1961). P25a-3 (Cont.)

Also, the fact that an activity is conducted in violation of a statute, ordinance or other legal requirement weighs heavily in favor of finding the activity to be a nuisance. *McIvor v. Mercer-Fraser Co.* 76 Cal. App. 2d 247 (1946); *Morton v. Super. Ct.*, 124 Cal. App. 2d 577 (1954). However, to the contrary, the mere fact that an activity is in compliance with all laws does not shield it from being declared a nuisance. In *Varjebedian v. Madera*, 209 Cal.3d 285 (1977), nearby landowners sued a sewage treatment plant due to foul odors. The court held that even though the sewage plant was in compliance with all laws, the legislature did not have power to allow the plant to create a nuisance.

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[2] Section 3480 of the Civil Code provides: "A public nuisance is one which affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal." Conditions which amount in law to public nuisances include a cattle stable and hog pen, together with a large manure pile on the banks of, and which polluted the waters of, a nonnavigable stream (*People v. Elk River Mill & Lumber Co.* (1895) 107 Cal. 214); noxious gases emitted from an accumulation of whey, sour milk and debris, allowed to stand in tanks at defendant's creamery (*Fisher v. Zumwalt* (1900) 128 Cal. 493); and dust, noise and grit from a cement plant (*Markey v. Danville Warehouse & Lumber, Inc.* (1953) 119 Cal. App. 2d 1).

The DEIR fails to discuss public nuisance statutes in the Regulatory Requirements section of the Project Description or in the Air Quality Section. Instead, it appears to rely only on CEQA Guidelines that only "recommend that odor impacts be considered for any proposed new odor sources located near existing receptors, as well as any new sensitive receptors located near existing odor sources." The DEIR continues to argue that no land uses would create additional increased sources of odor and thus this issue need not be discussed further. This is incorrect and contrary to the law.

The Courts have held that agencies may not rely on standards created by other agencies to declare impacts insignificant for CEQA purposes. For example, in *Oro Fino Gold v. El Dorado,* 225 Cal. App. 3d 872, 882 (1990), the court held that an agency could not rely on the fact that noise impacts of a project would not exceed the significance threshold set by a different agency to declare those impacts insignificant. The court found the impacts to be potentially significant, requiring an EIR, despite the fact that they did not exceed the other agency's noise thresholds. See also, *Eller Media v. Comm. Redev. Agency,* 108 Cal. App. 4th 25, 38 (2003) (lead agency could not rely on project's conformity with general plan and local ordinances to determine that project would not have significant impacts within meaning of CEQA). P25a-3 (Cont.)

In fact, in *Communities for a Better Environment v. Calif. Resources Agency,* 103 Cal. App. 4th 98, 112 (2002), the court struck down an attempt by the Resources Agency to allow CEQA lead agencies to rely on standards set by other agencies. The court held:

> This direction relieves the agency of a duty it would have under the fair argument approach to look at evidence beyond the regulatory standard, or in contravention of the standard, in deciding whether an EIR must be prepared. Under the fair argument approach, *any* substantial evidence supporting a fair argument that a project may have a significant environmental effect would trigger the preparation of an EIR. A well-known CEQA treatise recognized this dilemma as well, stating: "Subdivision (h)... appears to dispense with the traditional 'fair argument' standard otherwise applicable to the decision whether to prepare an ... EIR ... Notably, where existing regulatory standards, as defined, address a particular category of impact, the lead agency need not treat the impact as potentially significant whenever *any* substantial evidence in the record supports such a conclusion." (Citing, Remy & Thomas, Guide to CEQA, page 174 (1999)).

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It appears that the drafters of the DEIR at issue may have been relying on the obsolete 1998 version of the CEQA Guidelines that was struck down by the court in *CBE v. Resources Agency, supra.* Regardless, odor impacts from existing Port operations are significant and the Project would increase these operations, thus exacerbating existing significant impacts and creating new significant impacts where none previously existed. See Comment III.A. P25a-3 (Cont.)

Thus, the DEIR improperly dismisses odor impacts based on the Project's alleged compliance with CEQA Guidelines, and on this basis the DEIR improperly fails to discuss the requirements of public nuisance law as codified in Health and Safety Code section 41700. A supplemental DEIR must be prepared to analyze the Project's potential odor impacts in the context of all applicable laws and regulations, including section 41700.

II. THE DEIR FAILS TO ANALYZE CONSTRUCTION IMPACTS

The DEIR admits that construction emissions could cause adverse impacts on air quality (DEIR, p. 4.4-17), but fails entirely to estimate them. Instead, the DEIR merely makes a conclusory statement, based on the San Joaquin Valley Air Pollution Control District's ("SJVAPCD's") CEQA Guidelines,[3] that with the implementation of Rule VIII and two mitigation measures, construction emissions will be less than significant. (DEIR, pp. 4.4-17, 4.4-19/20.) However, without any quantification of construction emissions at all, it is impossible to determine if the mitigation measures proposed reduce those unknown impacts to insignificance.

The SJVAPCD CEQA Guidelines do not excuse the Port of Stockton from preparing a site-specific analysis of air quality impacts, when it can be reasonably demonstrated that these impacts would be significant, as held by the court in *CBE v. California Resources Agency* (2002) 103 Cal.App.4th 98. Further, it is impossible to conclude that site-specific impacts have been fully mitigated without performing an appropriate analysis. For construction and operational emissions, an appropriate analysis generally involves the following six steps: P25a-4

(1) establishing quantitative significance thresholds (*e.g.*, in pounds/day or ton/yr) for each criteria pollutant;

(2) estimating emissions in pounds per day and tons per year of each criteria pollutant;

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[3] San Joaquin Valley Air Pollution Control District (SJVAPCD), Guide for Assessing and Mitigation Air Quality Impacts, Adopted August 20, 1998, Revised January 10, 2002.

(3) comparing the emissions to the significance thresholds;

(4) imposing mitigation;

(5) estimating the controlled emissions;

(6) comparing the controlled emissions to the significance thresholds.

One can only conclude that the mitigated impacts are not significant if the emissions in step (6) are less than the significance thresholds in step (1). The DEIR has leapt to the conclusion that construction emissions are not significant if the Project complies with Regulation VIII and implements two additional mitigation measures, without performing any of these essential steps. (DEIR, pp. 4.4-19 – 4.4-20.) Thus, its conclusion that construction air quality impacts are reduced to a less than significant level is a hollow promise.

The DEIR's analysis is patently inadequate. The DEIR must not only identify the impacts, but must also provide "information about how adverse the impacts will be." *Santiago County Water Dist. v. County of Orange*, 118 Cal. App. 3d 818, 831 (1981). The lead agency may deem a particular impact to be insignificant only if it produces rigorous analysis and concrete substantial evidence justifying the finding. *Kings County Farm Bureau v. City of Hanford*, 221 Cal. App. 3d 692 (1990). P25a-4 (Cont.)

The Port makes absolutely no attempt to describe "how adverse" construction impacts will be, let alone quantify the impacts. In the absence of such an analysis, there can be no assurance that the mitigation measures will reduce construction impacts to a level of insignificance. For example, consider the following hypothetical: The DEIR's proposed mitigation measures may hypothetically reduce particulate emissions by half (by way of example only). However, if particulate emissions are four times higher than the CEQA significance threshold, then they will still be double the level of significance after mitigation. This, in fact is the case, as demonstrated below. This example points out why the DEIR must be revised to analyze the actual level of construction emissions, and to analyze whether those emissions will remain significant after the implementation of mitigation measures.

II.A Fugitive Dust Impacts Are Significant And Unmitigated

As demonstrated below, emissions of particulate matter with an aerodynamic diameter of less than or equal to 10 microns ("PM10") from construction are significant and the mitigation measures proposed in the DEIR do not reduce these construction impacts to a less than significant level. These P25a-5

impacts remain significant after the mitigation measures recommended in the DEIR are implemented. Substantial additional mitigation is feasible and should be identified, evaluated, and required in a revised and recirculated EIR.

The DEIR concluded that Project construction could generate substantial amounts of dust (including PM10 and PM2.5), primarily from "fugitive" sources but did not prepare an estimate of fugitive dust PM10 emissions, instead relying on the SJVAPCD CEQA Guidelines. (DEIR, pp. 4.4-17, 4.4-19/20.) Thus, it is not possible to determine whether the mitigation measures that it imposed are adequate to reduce fugitive PM10 impacts to a less than significant level, as it claims. P25a-5 (Cont.)

The following sections identify construction emission significance thresholds; estimate uncontrolled fugitive dust PM10 emissions; evaluate the reduction in fugitive PM10 that would be achieved by the proposed mitigation program, demonstrating that construction emissions are not mitigated to a less than significant level; and recommend additional mitigation.

II.A.1 Significance Criteria For Construction Fugitive Dust PM10 Emissions

The SJVAPCD has not established PM10 significance criteria for either construction or operation. (SJVAPCD 1/10/02, Sec. 4.3.) Thus, we rely on construction-specific thresholds established by other air districts. Four air districts currently recommend significance thresholds that apply specifically to short-term construction emissions. The Sacramento Metropolitan Air Quality Management District ("SMAQMD") has a PM10 construction emission significance threshold 275 lb/day. (SMAQMD 1994,[1] p. A-2, Table A-2.) The South Coast Air Quality Management District ("SCAQMD") has a PM10 construction emission significance threshold of 150 lb/day. (SCAQMD 4/93,[4] p. 6-4.) The San Luis Obispo County Air Pollution Control District ("SLOCAPCD") has a PM10 construction emission significance threshold of 2.5 tons per quarter, concluding that "any project with a grading area greater than 4.0 acres of continuously worked area will exceed the 2.5 ton PM10 quarterly threshold." (SLOAPCD 4/03,[5] p. 6-4.) Finally, the Monterey Bay Unified Air Pollution Control District ("MBUAPCD") has a PM10 construction emission significance threshold of 82 lb/day, which can be refuted by dispersion modeling. This is equivalent to 2.2 acres per day for sites with grading and excavation and 8.1 acres per day for sites with minimal earthmoving. (MBUAPCD 9/02, p. 5-3.) P25a-6

[4] South Coast Air Quality Management District, CEQA Air Quality Handbook, April 1993.

[5] San Luis Obispo Air Pollution Control District, CEQA Air Quality Handbook. A Guide for Assessing the Air Quality Impacts for Projects Subject to CEQA Review, April 2003.

These thresholds are used below to evaluate the significance of mitigated PM10 emissions from Project construction.[6] P25a-6 (Cont.)

II.A.2 Uncontrolled Construction Fugitive Dust PM10 Emissions Are Significant

We estimated fugitive dust emissions for the Project using a study conducted for the SCAQMD in 1996 to improve U.S. Environmental Protection Agency's ("U.S. EPA") construction emission factors. (MRI 1996.[7]) This study developed fugitive dust PM10 emission factors for seven construction sites, including commercial and industrial construction sites. One of these, Site 5.2, a commercial development site in the San Joaquin Valley, is similar to the Project in its level of construction activity.

This study, which represents the most recent guidance for estimating fugitive dust from construction, recommends a fugitive dust emission factor of 4.1 pounds of PM10 per acre per work hour ("lb/acre-work hr") for overall construction activities. This includes 3.86 lb/acre-hr of cut-and-fill operations and 0.24 lb/acre-hr of other general construction activities. The cut-and-fill emission factor includes only on-site emissions from vehicle movement of materials. Neither of these emission factors includes off-site dust sources (e.g., deliveries, commuting workers, fugitive dust from beds of haul trucks) or fugitive dust emissions from wind erosion or track-out of soil and mud, which can often be substantial. (MRI 1996, ES-3 and p. 4-3.) It should be noted that these emission factors include the effects of watering on some of the sites. Thus, actual uncontrolled emissions could be even higher than estimated here. P25a-7

Construction of the Project would take place over an extended period of time, through at least 2020, according to the traffic analysis. The Development Plan covers future uses within the 1,459-acre West Complex. (DEIR, p. 1-1.) Of this area, about 897 acres would be developed into uses that would likely require construction activities. (DEIR, p. 4.4-19 and Table 4.3-13.) This development would occur in three phases. The number of acres that would be developed in each phase is inconsistent within the DEIR. Compare Table 3-2 with Table 4.3-12. The DEIR is silent on the timing of each phase. Thus, for purposes of this analysis, we assume the more detailed information in Section 4.3 is correct and rely on the acreages shown in Table 4.3-12, which indicates that 290 acres would be disturbed in Phase I, 428 acres in Phase II, and 108 acres in Phase III. (DEIR,

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[6] The Sacramento Metropolitan Air Quality Management District ("SMAQMD") p a significance threshold for that apply to construction emissions of 275 lb/day. (SMAQMD 1994,[6] p. A-2, Table A-2.)

[7] Midwest Research Institute (MRI), Improvement of Specific Emission Factors (BACM Project No. 1), Final Report, March 29, 1996.

Table 4.3-12.) Uncontrolled fugitive dust PM10 emissions from Project construction of these three phases would be at a minimum:

Phase I

Cut & Fill	(4.1-0.24 lb/ac-hr)(290 ac)	=	1,119.4 lb/hr
General	(0.24 lb/ac-hr)(290 ac)	=	69.6 lb/hr
Phase I Uncontrolled Fugitive PM10 Emissions		**=**	**1,189.0 lb/hr**

Phase II

Cut & Fill	(4.1-0.24 lb/ac-hr)(428 ac)	=	1,652.1 lb/hr
General	(0.24 lb/ac-hr)(428 ac)	=	102.7 lb/hr
Phase II Uncontrolled Fugitive PM10 Emissions		**=**	**1,754.8 lb/hr**

P25a-7 (Cont.)

Phase III

Cut & Fill	(4.1-0.24 lb/ac-hr)(108 ac)	=	416.9 lb/hr
General	(0.24 lb/ac-hr)(108 ac)	=	25.9 lb/hr
Phase III Uncontrolled Fugitive PM10 Emissions		**=**	**442.8 lb/hr**
TOTAL PROJECT			**3,386.6 lb/hr**

Assuming a typical 10-hour workday, the uncontrolled fugitive dust emissions are 11,890 lb/day for Phase I; 17,548 lb/day for Phase II, and 4,428 lb/day for Phase III. These substantially exceed the construction-specific PM10 emission thresholds of other air districts, 150 to 275 lb/day, and thus are a significant impact, whether the Project is built out in 1 year or over multiple years as projected. As we demonstrate below in Comment II.A.3, controlled fugitive dust emissions, assuming the DEIR's proposed mitigation program is adopted, also exceed the PM10 significance threshold.

II.A.3 Controlled Construction Fugitive Dust PM10 Emissions Are Significant

The DEIR proposes that these significant impacts would be mitigated by complying with SJVAPCD's Regulation VIII and retaining an on-site monitor to assure compliance with Regulation VIII. (DEIR, pp. 4.4-19/20.) These fugitive P25a-8

dust mitigation measures are summarized in attached Table 1 together with the estimated emission reduction efficiencies based on CEQA Guidelines of two air districts. The last three columns of this table show which construction activity, cut-and-fill, general construction, or wind erosion and dust trackout, each proposed mitigation measure applies to. Because the above emission calculations do not include either wind erosion or dust trackout, the control efficiencies in Table 1 do not apply to these emission sources.

This summary shows that several of the proposed mitigation measures would reduce fugitive dust from sources that are not included in the fugitive cut-and-fill and general construction emissions estimated in Comment II.A.2, including dust from trackout (e, f), wind erosion (g, h), and off-site roads (c,j). The remaining measures would reduce either fugitive cut-and-fill PM10 emissions (a, b, i) or general construction PM10 emissions (b, d, i). Using the upper ends of the SCAQMD control range (see Table 1) and conservatively assuming that the reductions are cumulative and apply to 100% of the emissions in each category, the controlled emission rate would be no lower than:

P25a-8 (Cont.)

Phase I

Cut & Fill	(1,119.4 lb/hr)(1-0.14)(1-0.68)(1-0.925)	=	23.1 lb/hr
General	(69.6 lb/hr)(1-0.68)(1-0.925)(1-0.7)	=	0.9 lb/hr
Total Phase I Controlled Fugitive PM10 Emissions		**=**	**23.6 lb/hr**

Phase II

Cut & Fill	(486.4 lb/hr)(1-0.14)(1-0.68)(1-0.925)	=	34.1 lb/hr
General	(30.2 lb/hr)(1-0.68)(1-0.925)(1-0.7)	=	0.7 lb/hr
Total Phase II Controlled Fugitive PM10 Emissions		**=**	**185.3 lb/hr**

Phase III

Cut & Fill	(486.4 lb/hr)(1-0.14)(1-0.68)(1-0.925)	=	8.6 lb/hr
General	(30.2 lb/hr)(1-0.68)(1-0.925)(1-0.7)	=	0.2 lb/hr
Total Phase III Controlled Fugitive PM10 Emissions		**=**	**8.8 lb/hr**

Assuming a typical 10-hour workday, the daily controlled fugitive PM10 emissions from construction of Phase I are 236 lb/day, from Phase II 348 lb/day, and from Phase III 88 lb/day. Thus, controlled fugitive PM10 emissions from the

TABLE 1
Construction Fugitive Dust Mitigation Proposed in DSEIR

	RECOMMENDED MITIGATION MEASURE	REFERENCE[a]	EMISSION REDUCTION EFFICIENCY		SOURCE CATEGORY	AFFECTED EMISSIONS			
			(MBUAPCD[b])	(SCAQMD[c])		General Construction	Cut & Fill	Wind Erosion and Dust Tracking	Off-site On-road Emissions
a	Phase work to reduce the amount of disturbed surface area.	Table 8021-2, Measure A1	71 lb/acre-day	de minimis	Fugitive emissions from active, unpaved construction areas		x		
b	Pre-water site and water/stabilize all active and inactive construction areas and bulk materials, including haul/access roads and unpaved vehicle/ equipment traffic areas sufficient to limit opacity to 20%.	Table 8021-1, Measures A2, B1, B3, C2; Table 8031-1, Measures A1, A2	50%	34%-68%	Fugitive emissions from active, unpaved construction areas	x	x	x	
c	For full trucks, prevent spillage or loss of bulk material from holes or other openings in the cargo compartment's floor, sides, and/or tailgate and cover haul trucks or apply water to the top of the load sufficient to limit opacity to 20%.	Table 8031-1, Measures B2 or B3, C2 and C3	90%	7%-14%	Off-site spills from haul trucks		(x)*		x
d	For unpaved roads with 75 or more vehicle trips per day, limit opacity to 20% by watering, uniform layer of washed gravel, chemical/organic dust suppressant, vegetative materials, paving, roadmix or any other method.	Regulation 8061, Sec. 5.2	50% (water) to 90% (pave)	45%-92.5%	On-site entrained PM10	x	x		
e	Cleanup carryout and trackout at the end of each day.	Rule 8041, Sec. 5.1, 5.2, 5.7	34%	25%-60%	On-road entrained PM10			x	
f	Prevent carryout at any site with 150 or more vehicle trips per day.	Rule 8041, Sec. 5.3-5.6, 5.8	34%	40%-70%	On-road entrained PM10			x	
g	For all open areas, apply and maintain water or dust suppressant to all unvegetated areas or establish vegetation on all previously disturbed areas, or pave, apply and maintain gravel or apply and maintain chemical/organic stabilizers/suppressants sufficient to limit opacity to 20%.	Table 8051-1, Measure A	up to 80%	30%-65%	Wind erosion from inactive areas			x	
h	Cover bulk materials stored outdoors or construct and maintain wind barriers sufficient to limit opacity to 20%.	Table 8031-1, Measures A3 or A4	up to 90% (cover)	30%-74%	Wind erosion from storage piles			x	
i	Limit traffic speeds or load all haul trucks such that freeboard is not less than 6 inches when material is transported across any paved public access road, sufficient to limit opacity to 20%.	Table 8031-1, Measures B1 or B2	-	40%-70%	On-road entrained PM10	x	x		
j	For empty trucks, clean the interior of the cargo compartment or cover the cargo compartment before the truck leaves.	Table 8031-1, Measure C1	5%-99%	-	Wind erosion from inactive areas				x

[a] SJVAPCD Regulation VIII section.
[b] Monterey Bay Unified Air Pollution Control District, CEQA Air Quality Guidelines, September 2002, Table 8-2
[c] South Coast Air Quality Management District, CEQA Air Quality Handbook, April 1993, Table 11-4
* Emissions from this source were not included in general construction and cut-and-fill emission factors developed in the 1996 MRI study. Thus, emission reduction factor is not applicable to emissions calculated based on MRI factors.

construction of Phases I and II exceed the construction PM10 significance thresholds established in Comment II.A.2, 150 to 275 lb/day. The fugitive PM10 emissions from construction of Phase III would also be significant if lower (and more reasonable) control efficiencies were used in the above calculations.

Actual emissions would be much higher because most of the emission reduction efficiencies in Table 1 only apply to a subset of the total emissions. For example, controlling dust from unpaved roads would only reduce unpaved road PM10 emissions by up to 92.5%, which is typically a small fraction of the total cut-and-fill emissions. We assumed that this measure would reduce the total cut-and-fill emissions by 92.5%, thus greatly overestimating achievable emissions control and underestimating controlled fugitive PM10 emissions. See SCAQMD 4/93, Table 11-4. Thus, fugitive dust PM10 emissions during site preparation for all three phases are in all probability still significant after imposing DEIR-proposed controls.

P25a-8 (Cont.)

When emissions exceed significance thresholds, as above, it is standard practice to model these emissions to determine if they would cause or contribute to exceedances of ambient air quality standards ("AAQS"). Our experience modeling construction fugitive emissions at other similar sites is that they are typically high enough to cause violations of the federal and state 24-hour as well as the annual ambient air quality standards on PM10 and PM2.5, *i.e.* particulate matter smaller than 2.5 microns, a subset of PM10. Thus, the Project would result in significant air quality impacts not disclosed in the DEIR and substantial additional fugitive dust mitigation is required to reduce these emissions to a less than significant level. The fugitive dust emissions should not only be quantified but also modeled to evaluate ambient air quality impacts and the resulting analysis recirculated for public review.

II.A.4 <u>All Feasible Fugitive PM10 Mitigation Measures Not Required</u>

II.A.4.a <u>The DEIR Does Not Require All SJVAPCD-Recommended Construction Fugitive Dust Mitigation Measures</u>

The DEIR relied on the SJVAPCD's CEQA Guidelines to determine that construction emissions were adequately mitigated, *viz.*, "The SJVAPCD has determined that compliance with its Regulation VIII constitutes sufficient mitigation to minimize adverse construction-related air quality impacts." (DEIR, p. 4.4-19.) However, the SJVAPCD CEQA Guidelines actually conclude as follows:

P25a-9

> The SJVAPCD has determined that compliance with Regulation VIII for all sites and implementation of all other control measures

indicated in Tables 6-2 and 6-3 (as appropriate, depending on the size and location of the project site) will constitute sufficient mitigation to reduce PM-10 impacts to a level considered less-than-significant....If all appropriate "enhanced control measures" in Table 6-3 will not be implemented for these very large or sensitive projects, then construction impacts would be considered significant (unless the Lead Agency provides a satisfactory detailed explanation as to why a specific measure is unnecessary)." (SJVAPCD 1/10/02, p. 24.)

Compliance with Regulation VIII does not constitute mitigation because it is already required by law. Table 6-3 contains Enhanced and Additional Control Measures that will provide a greater degree of PM-10 reduction than Regulation VIII. The SJVAPCD will recommend these enhanced and additional measures when project conditions warrant; e.g. potential for impacting sensitive receptors, construction sites of significant size, or any other conditions that may justify additional emission reduction. (SJVAPCD 1/10/02, p. 64.)

P25a-9 (Cont.)

The DEIR concluded that construction PM10 impacts would not be significant without adopting any of the mitigation measures from the SJVAPCD CEQA Guidelines, Table 6.3, contrary to the recommendation in the Guidelines. The DEIR failed to include all appropriate measures, or any explanation for why certain feasible and widely used measured were not required for this Project. The fugitive dust mitigation measures in the DEIR at page 3.13-10 exclude the following:

- Limit traffic speeds on unpaved roads to 15 mph
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways from site with a slope greater than 1 percent
- Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site
- Install wind breaks at windward side(s) of construction areas
- Suspend excavation and grading activity when winds exceed 20 mph
- Limit area subject to excavation, grading and other construction activity at any one time

All of these measures are applicable and feasible. Therefore, controlled fugitive dust impacts are significant even under the DEIR's own analysis unless

the DEIR is modified to require the implementation of these additional measures and recirculated.

The first two measures are required. The use of the balance of the measures is routinely required in EIRs on similar projects and should have been required here. The SJVAPCD's Guidelines state that these measures "are strongly encouraged at construction sites that are large in area, located near sensitive receptors or which for any other reason may warrant additional emissions reduction." (SJVAPCD 1/10/02, Table 6-3.) The site is large and is surrounded by large tracts of low- to medium-density housing and isolated areas of high-density housing, including schools, day care centers, churches, and recreational facilities, within as little as 600 feet. (DEIR, p. 4.4-14.) P25a-9 (Cont.)

II.A.4.b Additional Feasible Fugitive Dust Mitigation Measures

There are numerous additional relevant and reasonable measures contained in the CEQA Guidelines and rules of air districts and other agencies that should be required for this Project. Further, several agencies have conducted comprehensive studies of fugitive dust control measures to bring their region into compliance with national ambient air quality standards on PM10.

The SCAQMD has sponsored research, passed regulations (*e.g.*, Rule 403),[8] and published guidelines that identify best management practices for controlling fugitive dusts at construction sites. The *Rule 403 Implementation Handbook*[9] contains a comprehensive list of such measures. P25a-10

Clark County, Nevada, has also sponsored research, passed regulations (Rule 94), and published best management practices for controlling fugitive dust from construction activities.[10] Clark County's *Construction Activities Notebook* contains a comprehensive list of best management practices. Similarly, Arizona has developed guidance to control fugitive PM10 emissions. (ADEQ 6/5/01[11])

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[8] South Coast Air Quality Management District, Revised Final Staff Report for Proposed Amended Rule 403, Fugitive Dust and Proposed Rule 1186, PM10 Emissions from Paved and Unpaved Roads, and Livestock Operations, February 14, 1997.

[9] South Coast Air Quality Management District, Rule 403 Implementation Handbook, January 1999.

[10] P.M. Fransioli, PM10 Emissions Control Research Sponsored by Clark County, Nevada, Proceedings of the Air &Waste Management Association's 94th Annual Conference & Exhibition, Orlando, FL, June 24-28, 2001.

[11] Arizona Department of Environmental Quality (ADEQ), Air Quality Exceptional and Natural Events Policy PM10 Best Available Control Measures, June 5, 2001.

The CEQA guidelines of other California air districts also contain additional feasible mitigation measures for fugitive dust that are routinely required in EIRs. These include the Bay Area Air Quality Management District (BAAQMD 1999, pp. 12-14), the Ventura County Air Pollution Control District (VCAPCD 1989, pp. 7-2 to 7-4),[12] the San Luis Obispo County Air Pollution Control District (SLOCAPCD 2003, Sec. 6.3.1),[13] the Sacramento Metropolitan Air Quality Management District (SMAQMD 1994, pp. 10, 20),[14] the Santa Barbara County Air Pollution Control District (SBCAPCD 1998, pp. 16-18),[15] Butte County Air Quality Management District (BCAQMD 1997),[16] the Yolo-Solano Air Quality Management District (YSAQMD 1996, Appx. D),[17] the Monterey Bay Unified Air Pollution Control District (MBUAPCD 2002),[18] and the South Coast Air Quality Management District (SCAQMD 1993, pp. 11-3, 11-4, 11-13 to 11-15).[19] All of these measures should be discussed in a revised DEIR. These agency guidelines are feasible and therefore should be considered for adoption here under CEQA Guidelines §§ 15126.4, 15091. Examples of such feasible mitigation measures are listed below: P25a-10 (Cont.)

- For backfilling during earthmoving operations, water backfill material or apply dust palliative to maintain material moisture or to form crust when not actively handling; cover or enclose backfill material when not actively handling; mix backfill soil with water prior to moving; dedicate water truck or large hose to backfilling equipment and apply water as needed; water to form crust on soil immediately following

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[12] Ventura County Air Pollution Control District ("VCAPCD"), Guidelines for the Preparation of Air Quality Impact Analyses, October 24, 1989.

[13] San Luis Obispo Air Pollution Control District ("SLOAPCD"), CEQA Air Quality Handbook, A Guide for Assessing the Air Quality Impacts for Projects Subject to CEQA Review, April 2003.

[14] Sacramento Metropolitan Air Quality Management District ("SMAQMD"), Air Quality Thresholds of Significance, 1994.

[15] Santa Barbara County Air Pollution Control District ("SBCAPCD"), Scope and Content of Air Quality Sections in Environmental Documents, 1998.

[16] Butte County Air Quality Management District ("BCAQMD"), Indirect Source Review Guidelines, March 20, 1997.

[17] Yolo-Solano Air Quality Management District, Air Quality Handbook, May 1996 (Construction mitigation is identical to SMAQMD).

[18] Monterey Bay Unified Air Pollution Control District ("MBUAPCD"), CEQA Air Quality Guidelines, revised September 2002.

[19] South Coast Air Quality Management District, CEQA Air Quality Handbook, April 1993.

backfilling; and empty loader bucket slowly; minimize drop height from loader bucket. (CCHD)[20]

- During clearing and grubbing, prewet surface soils where equipment will be operated; for areas without continuing construction, maintain live perennial vegetation and desert pavement; stabilize surface soil with dust palliative unless immediate construction is to continue; and use water or dust palliative to form crust on soil immediately following clearing/grubbing. (CCHD)
- While clearing forms, use single stage pours where allowed; use water spray to clear forms; use sweeping and water spray to clear forms; use industrial shop vacuum to clear forms; and avoid use of high pressure air to blow soil and debris from the form. (CCHD)
- During cut and fill activities, prewater with sprinklers or wobblers to allow time for penetration; prewater with water trucks or water pulls to allow time for penetration; dig a test hole to depth of cut to determine if soils are moist at depth and continue to prewater if not moist to depth of cut; use water truck/pull to water soils to depth of cut prior to subsequent cuts; and apply water or dust palliative to form crust on soil following fill and compaction. (CCHD) P25a-10 (Cont.)
- For large tracts of disturbed land, prevent access by fencing, ditches, vegetation, berms, or other barriers; install perimeter wind barriers 3 to 5 feet high with low porosity; plant perimeter vegetation early; and for long-term stabilization, stabilize disturbed soil with dust palliative or vegetation or pave or apply surface rock. (CCHD)
- In staging areas, limit size of area; apply water to surface soils where support equipment and vehicles are operated; limit vehicle speeds to 15 mph; and limit ingress and egress points. (CCHD)
- For stockpiles, maintain at optimum moisture content; remove material from downwind side; avoid steep sides or faces; and stabilize material following stockpile-related activity. (CCHD)
- To prevent trackout, pave construction roadways as early as possible; install gravel pads; install wheel shakers or wheel washers, and limit site access. (CCHD, SLOCAPCD)

[20] The following acronyms are used in this listing of mitigation measures: ADEQ = Arizona Department of Environmental Quality; BCAQMD = Butte County Air Quality Management District; CCHD = Clark County (Nevada) Health Department; MBUAPCD = Monterey Bay Unified Air Pollution Control District; SBCAPCD = Santa Barbara County Air Pollution Control District; SJVUAPCD = San Joaquin Valley Unified Air Pollution Control District; SLOCAPCD = San Luis Obispo County Air Pollution Control District.

- Where feasible, use bedliners in bottom-dumping haul vehicles. (Rule 403 Handbook)
- Grade each phase separately, timed to coincide with construction phase or grade entire project, but apply chemical stabilizers or ground cover to graded areas where construction phase begins more than 60 days after grading phase ends. (Rule 403 Handbook)
- Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant. (ADEQ)
- During initial grading, earth moving, or site preparation, projects 5 acres or greater may be required to construct a paved (or dust palliative treated) apron, at least 100 ft in length, onto the project site from the adjacent site if applicable. (BCAQMD)
- Post a publicly visible sign with the telephone number and person to contact regarding dust complaints. This person shall respond and take corrective action within 24 hrs. (BCAQMD, CCHD)
- Prior to final occupancy, the applicant demonstrates that all ground surfaces are covered or treated sufficiently to minimize fugitive dust emissions. (BCAQMD) P25a-10 (Cont.)
- Gravel pads must be installed at all access points to prevent tracking of mud on to public roads. (SBCAPCD)
- Prior to land use clearance, the applicant shall include, as a note on a separate informational sheet to be recorded with map, these dust control requirements. All requirements shall be shown on grading and building plans. (SBCAPCD, SLOCAPCD)
- All roadways, driveways, sidewalks, etc., to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used. (SLOCAPCD)
- Barriers with 50 percent or less porosity located adjacent to roadways to reduce windblown material leaving a site. (Rule 403 Handbook)
- Prohibit all grading activities during periods of high wind (over 15 mph). (MBUAPCD)
- Pave all roads on construction sites. (MBUAPCD)
- Replant vegetation in disturbed areas as quickly as possible. (BAAQMD)

- Permanent dust control measures in an approved project revegetation and landscape plan should be implemented as soon as possible following completion of any soil disturbing activities. (SLOAPCD)
- Exposed ground areas that are planned to be reworked at dates greater than 1 month after initial grading should be sown with a fast-germinating native grass seed and watered until vegetation is established. (SLOPACD)
- Require a dust control plan for earthmoving operations. (ADEQ)

P25a-10 (Cont.)

While portions of some of these measures are included as part of the DEIR's mitigation measures, the above measures are generally far more protective than those recommended for this Project. All of these measures are feasible and various combinations of them are routinely required elsewhere to reduce fugitive PM10 emissions. See, for example, the fugitive dust control program for the Big Dig[21], for the El Toro Reuse Draft EIR[22], and for the Padres Ballpark Final EIR[23].

II.B Exhaust Emissions Are Significant And Unmitigated

Emissions from construction equipment engines contribute to elevated concentrations of the ozone precursors -- nitrogen oxides ("NOx") and reactive organic gases ("ROG") -- as well as carbon monoxide ("CO") and PM10. The DEIR also did not quantify exhaust emissions from construction equipment or evaluate its significance. Instead, the DEIR argues that emissions of ozone precursors (ROG and NOx) from construction equipment need not be evaluated because "such emissions are included in the emission inventory that is the basis for regional air quality plans." (DEIR, p. 4.4-17.) The DEIR further claims these emissions would be minimized by requiring contractors to minimize idling time. (DEIR, p. 4.4-17.) The DEIR offers no explanation for not evaluating CO and PM10 emissions from construction equipment exhaust. This approach to

P25a-11

[21] A. Kasprak and P.A. Stakutis, A Comprehensive Air Quality Control Program for a Large Roadway Tunnel Project, Proceedings of the Air & Waste Management Association's 93rd Annual Conference 7 Exhibition, June 18-22, 2000.

[22] County of Orange, Draft Environmental Impact Report No. 573 for the Civilian Reuse of Marine Corps Air Station El Toro and the Airport System Master Plan for John Wayne Airport and Proposed Orange County International Airport, Draft Supplemental Analysis, Volume 1, April 2001, pp. 2-121 to 2-123.

[23] City of San Diego, Final Subsequent Environmental Impact Report to the Final Master Environmental Impact Report for the Centre City Redevelopment Project and Addressing the Centre City Community Plan and Related Documents for the Proposed Ballpark and Ancillary Development Projects, and Associated Plan Amendments, V. IV. Responses to Comments, September 13, 1999, pp. IV-254 to IV-256.

assessing the air quality impacts associated with diesel exhaust from Project construction is unacceptable for a number of reasons.

First, this approach is inconsistent with the definition of "significant" under CEQA, which is "a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." CEQA Guidelines §15002. If a project causes a substantial adverse change, such as emissions of large quantities of diesel exhaust, these emissions are a significant impact, regardless of whether they are in another agency's plans and policies, unless evaluated under CEQA and properly mitigated. An air quality plan is not a CEQA document. Thus, even if the subject emissions were included, and the DEIR presents no evidence that they are, this would not override the need to determine if these emissions are significant under CEQA.

Second, the inclusion of emissions in an air quality plan does not assure that all impacts are mitigated. It only lays out a roadmap to achieve compliance with a federal or state ambient air quality standard. However, exhaust emissions may have impacts in addition to causing or contributing to a violation of a standard covered by an air quality plan, i.e., attainment plan. For example, while NOx is an ozone precursor, it is also a respiratory irritant and thus separately regulated through air quality standards on NO_2. An ozone attainment plan does not assure compliance with NO_2 standards. Similarly, PM10 from diesel-fueled construction equipment is a potent carcinogen. Compliance with a PM10 attainment plan designed to bring a region into compliance with an a PM10 ambient air quality standard does not assure that cancer risks are less than significant because the existing standards did not consider carcinogenic properties of diesel exhaust, which contributes to PM10. Thus, the inclusion of emissions in an official inventory does not necessarily assure that all impacts associated with those emissions have been identified and mitigated. In fact, by taking this road, the DEIR overlooked the potentially significant cancer impacts of Project construction. See Comment II.B.2.c. P25a-11 (Cont.)

Third, the DEIR claims that the "SJVUAPCD's GAMAQI" state that the construction emissions are included in the emission inventory of regional air quality control plans. (DEIR, p. 4.4-17.) We were not able to find any support for this claim in GAMAQI or the GAMAQI Technical Document. In fact, the SJVAPCD's CEQA Guidelines specifically conclude the opposite, *viz.*, "The use of diesel powered construction equipment produces ozone precursor emissions and combustion related particulate emissions. Large construction projects lasting many months may exceed the District's annual threshold for NOx emissions and could expose area residents to diesel particulate." (SJVAPCD 1/10/02, p. 24.) This is properly acknowledged elsewhere in the DEIR, e.g., page 5-21. The SJVUAPCD CEQA Guidelines also note that: "[a]lthough the impacts

from construction related air pollutant emissions are temporary in duration, such emissions can still represent a significant air quality impact. In some cases, construction impacts may represent the largest air quality impact associated with a proposed project... Emissions from construction equipment engines also can contribute to high localized concentrations of PM10, as well as increased emissions of ozone precursors." (SJVAPCD 1/10/02, p. 64.) Elsewhere, the SJVAPCD CEQA Guidelines present methods that can be used to mitigate construction exhaust emissions. (*Id.*, p. 66-67.) The SJVAPCD would not present mitigation measures if it believes these emissions were *de facto* exempt due to their inclusion in attainment plans.

Fourth, the courts have expressly rejected reliance on air district emission inventories. The court in *Citizens to Preserve the Ojai v. Bd. of Supervisors*, 176 Cal. App. 3d 421 (1985) held that an EIR prepared to consider the expansion and modification of an oil refinery was inadequate because it failed to consider the cumulative air quality impacts of other oil refining and extraction activities combined with the project. The court held that the EIR's use of an air district's emissions inventory did not constitute an adequate analysis. The court ordered the agency to prepare a new EIR analyzing the combined impacts of the proposed refinery expansion together with the other oil extraction activities ongoing in the region. P25a-11 (Cont.)

Fifth, fugitive PM10 emissions are also included in regional emission inventories in attainment plans. However, the DEIR does not argue that these emissions are exempt and thus need not be mitigated to insignificance. Further, operational emissions of ozone precursors are also presumably included in the air quality plans, or the increase in these emissions is inconsistent with these plans, a potentially significant impact not identified in the DEIR. Therefore, the DEIR is applying a double standard.

Sixth, the DEIR did not provide any support for its claim that these emissions are exempt because they are accounted for in attainment plans, nor provide any analysis to substantiate its claim. The DEIR did not contain the basic information required to allow the public to perform the requisite calculations, without substantial research. At a minimum, assuming this claim were true and legally adequate, which it is not, one would expect to see a demonstration that the construction emissions from *this* Project plus other cumulative projects are included in the SJVAPCD's most current emission inventory. The DEIR contains no such demonstration.

Seventh, the DEIR is silent on CO emissions from construction equipment exhaust. There is no currently applicable CO air quality plan. CO was covered in the *1992 Federal Attainment Plan for Carbon Monoxide*. However, the SJVAPCD

is currently in compliance with CO standards. Further, it is not believable that a 14 year-old plan would have anticipated and included emissions from this project. Thus, on its face, this argument is invalid for CO, which is nowhere analyzed or mentioned.

Eighth, emission inventories in air quality plans do not include emissions from non-typical equipment, such as grinders, portable equipment, dredges, etc. (MBUAPCD 9/02, p. 5-2.) The Project would include the use of this equipment, particularly dredges. Thus, even if the DEIR's approach were valid, which it is not, it would still have to estimate emissions from non-typical and other equipment and activities not included in these inventories.

Finally, the proposed measure to "minimize" construction exhaust emission impacts, minimizing idling time, is not bona fide mitigation. Mitigation measures must reduce emissions relative to a pre-project baseline. Contractors routinely minimize idling to minimize fuel use. Thus, this measure does not reduce emissions relative to standard practices in the construction industry. P25a-11 (Cont.)

The exhaust emissions from the Project are significant and must be mitigated. The following sections discuss significance thresholds for criteria pollutants, estimate emissions, compare them to thresholds, and recommend additional mitigation. These comments apply equally to the West Complex Development Plan, evaluated in Chapter 4, the Dredging and Placing Operations Project, evaluated in Chapter 5, and the Bridge Project, evaluated in Chapter 6, unless otherwise noted.

II.B.1 Significance Thresholds For Exhaust Emissions

Four air districts have established emission significance thresholds that variously apply to ROG, NOx, and CO emissions from construction equipment exhaust. The SMAQMD has established significance thresholds of 85 lb/day for NO_x.[24] The SCAQMD has established construction emission significance thresholds of 75 lb/day for ROG, 85 lb/day for NO_x, and 550 lb/day for CO or 2.5 tons per quarter for ROG and NOx and 24.75 tons per quarter for CO. (SCAQMD 4/93, p. 6-4.) The MBUAPCD has established significance thresholds of 137 lb/day of direct and indirect ROG and NOx and 550 lb/day of CO. (MBUAPCD 9/02, Table 5-3.) Finally, the SLOCAPCD has established significance thresholds for construction of 185 lb/day or 2.5 to 6.0 tons per P25a-12

[24] Memorandum from Norm Covell, Air Pollution Control Officer, to Lead and Responsible Agencies, Consultants and Interested Persons, Re: CEQA Revised Significance Criteria for Air Quality, April 12, 2002.

quarter for both ROG and NOx. If emissions of NOx or ROG exceed 6.0 tons per quarter, standard mitigation plus further mitigation, including emission offsets, is required. (SLOCAPCD 4/03, p. 6-4.) P25a-12 (Cont.)

II.B.2 Uncontrolled Construction Diesel Exhaust Emissions Are Significant

The DEIR does not contain any of the basic information required to estimate construction exhaust emissions on either a program or project level. These emissions are usually estimated from either a detailed construction equipment inventory or from an estimate of the cubic yards of soil and other materials that would be disturbed by construction and a construction schedule. The DEIR contains neither a construction schedule, nor an inventory of construction equipment, nor an estimate of cubic yards of soil that would be disturbed. Therefore, the Project description is inadequate for purposes of air quality analyses. P25a-13

When a project is not adequately described, as here, emissions can only be estimated from emission factors expressed in terms of mass of pollutant per unit volume of soil disturbed and potentially disturbed area. The Bay Area Air Quality Management District ("BAAQMD") has published emission factors that express diesel exhaust PM10, ROG, NOx, and CO emissions in grams of pollutant per cubic yard ("g/yd^3") of earth moved. (BAAQMD 12/99,[25] p. 29, Table 7, p. 28.) To use these factors, the cubic yards of soil that would be disturbed by all construction activities must be known. This would ordinarily be provided in an EIR, but was not provided here.

II.B.2.a Diesel Exhaust Emissions Exceed Emissions Significance Thresholds

We roughly estimated cubic yards of earth disturbed from the acreage that would be disturbed (DEIR, Table 4.3-12) and assumed that soils would be disturbed to a depth of 1 foot. This results in a total amount of disturbed soil of about 467,867 ("yd^3") in Phase I; 690,507 yd^3 in Phase II; and 127,240 yd^3 in Phase III.[26] P25a-14

The equipment to move this soil -- dozers, loaders, graders, and compactors -- uses diesel and emits diesel exhaust. We calculated the total exhaust emissions from earthmoving by multiplying the amount of soil

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[25] Bay Area Air Quality Management District ("BAAQMD"), BAAQMD CEQA Guidelines, April 1996, Revised December 1999.

[26] For Phase I: (290 acres)(43,560 ft^2/acre)(1 ft)(yd^3/27 ft^3) = 467,867 yd^3.

disturbed in each phase by the BAAQMD emission factors for each phase of the Project. Earthmoving of the above-calculated amounts of soil results in the following emissions from diesel exhaust:

Table 2
Total Construction Diesel Exhaust Emissions

Pollutant	Emission Factor[a] (gm/yd³)	Diesel Exhaust Grading Emissions (lb)[b]	(ton)[c]
PHASE I	467,867 yd³		
PM10	2.2	2,267	1.13
ROG	9.2	9,481	4.74
NOx	42.4	43,695	21.85
CO	138.0	142,215	71.11
PHASE II	690,507 yd³		
PM10	2.2	3,346	1.67
ROG	9.2	13,993	7.00
NOx	42.4	64,488	32.24
CO	138.0	209,890	104.95
PHASE III	174,240 yd³		
PM10	2.2	844	0.42
ROG	9.2	3,531	1.77
NOx	42.4	16,273	8.14
CO	138.0	52,963	26.48

a BAAQMD 12/99, Table 7

b Diesel exhaust grading emissions (lb) = (BAAQMD Emission Factor) (disturbed soil in yd³)(lb/454 g)

c Diesel exhaust grading emissions (tons) = (grading emissions in pounds) (ton/2000 lb)

P25a-14 (Cont.)

The significance thresholds discussed in Comment II.B.1 are expressed in pounds per day. Thus, to determine the significance of these emissions, they must be converted to pounds per day so they can be compared with the significance thresholds. This requires a detailed site development schedule, which is not included in the DEIR.

The DEIR does not even contain any information on the construction schedule. It is silent on the length of time during which grading and excavation will take place. Based on our experience with similar projects, we assume that earthmoving operations will occur over the course of one month, or 22 working days for every 50 acres that are developed, or about 128 days for Phase I; 188

days for Phase II; and 48 days for Phase III. Thus, the daily diesel exhaust emissions from cut-and-fill operations would be:

Table 3
Daily Construction Diesel Exhaust Emissions

Pollutant	Emission Factor[a] (gm/yd³)	Diesel Exhaust Grading Emissions (lb/day)[b]	(ton/qtr)[c]
PHASE I	467,867 yd³	128 days	1 qtr
PM10	2.2	17.7	1.13
ROG	9.2	74.1	**4.74**
NOx	42.4	**341.4**[d]	**21.85**
CO	138.0	**1,111.1**	**271.11**
PHASE II	690,507 yd³	188 days	2 qtrs
PM10	2.2	17.8	0.83
ROG	9.2	74.4	**3.5**
NOx	42.4	**343.0**	**16.12**
CO	138.0	**1116.4**	**52.48**
PHASE III	174,240 yd³	48 days	1 qtr
PM10	2.2	17.6	0.42
ROG	9.2	73.6	1.77
NOx	42.4	**339.0**	**8.14**
CO	138.0	**1,103.4**	**26.48**

a BAAQMD 12/99, Table 7

b Diesel exhaust grading emissions (lb/day) = diesel exhaust grading emissions (lb)/(number of workdays)

c Diesel exhaust grading emissions (ton/qtr) = diesel exhaust grading emissions from Table 1 in tons.

d Bold indicates that the emissions exceed one of the significance thresholds discussed in Comment II.B.1.

P25a-14 (Cont.)

The estimated NOx, ROG, and CO emissions from earthmoving variously exceed the construction-specific thresholds established by the SCAQMD, the SMAQMD, and the SLOCAPCD. Thus, construction exhaust emissions are individually significant and should have been fully mitigated. Although the DEIR did impose a single mitigation for construction exhaust emissions, it does not mitigate emissions relative to the CEQA baseline and even if it did, it is not adequate to fully mitigate these emissions. Thus, all feasible mitigation is required.

Further, even though diesel exhaust PM10 emissions are less than the construction emission PM10 significance thresholds, total PM10 emissions, consisting of the sum of fugitive dust plus diesel exhaust, do exceed the construction emission significance thresholds, thus per se requiring all feasible mitigation.

Actual emissions could be much higher than shown in Tables 2 and 3 because there are numerous other sources of construction emissions, including emissions from commuting construction workers, delivery trucks, paving fumes, water trucks, cement trucks, construction of water and sewer lines, building demolition, removal of existing sidewalks and pavement, and architectural coatings, adhesives and other VOC-containing materials used in construction. None of these sources are acknowledged in the DEIR. Further, the emissions in Table 3 only include emissions from earthmoving operations. All other construction exhaust emissions, such as from on-site generators, trucks, hand-operated tools, jack hammers, cranes, and gasoline-powered equipment, are not included in this estimate. P25a-14 (Cont.)

These additional emissions would likely not individually exceed significance thresholds during site buildout, but could be individually significant for shorter periods and would be cumulatively significant when added to grading emissions. Regardless, construction emissions must be evaluated in the aggregate, not piecemealed. Thus, when these other, presently unaccounted for emissions are added to grading exhaust emissions calculated above, the aggregate would also be significant and the total amount in excess of the threshold of significance must be mitigated.

II.B.2.b NOx, ROG And PM10 Emissions Result In Significant Air Quality Impacts

The San Joaquin Valley Air Basin is a severe ozone nonattainment area for ozone and PM10. Ozone and PM10 concentrations exceed state and federal ambient air quality standards. Emissions of NOx and ROG would form ozone downwind from the construction site. Thus, the Project's ozone precursor and PM10 emissions would directly contribute to existing exceedances of the federal and state ozone and PM10 standards, which is a significant impact. *See Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692 [270 Cal. Rptr. 650]. P25a-15

II.B.2.c Diesel Exhaust Emissions Result In Significant Cancer Risks

Diesel exhaust emissions from large-scale construction projects, such as this one, typically result in significant cancer risks. The DEIR did not evaluate P25a-16

the health impacts of diesel exhaust from Project construction. Construction and operation will likely overlap as the Project is being built in phases. The cancer risk from diesel exhaust from the Project operation alone is 8.98 in a million,[27] very close to the significance threshold of 10 in a million. (DEIR, p. 4.4-25.) The combined impact of construction plus operation would likely exceed this significance threshold, resulting in a significant impact not disclosed in the DEIR. P25a-16 (Cont.)

II.B.3 Controlled Construction Diesel Exhaust Emissions Are Significant

The DEIR concluded, with no analysis whatsoever, that one mitigation measure would reduce diesel emissions (which were not quantified) to a less-than-significant level. (DEIR, p. 4.4-20.) As demonstrated in Comment II.B.2, the exhaust emissions from this Project are high enough to individually exceed significance thresholds for VOC, NOx, and CO and thus must be mitigated. Requiring construction contractors to minimize idling time from heavy duty construction equipment does not reduce these emissions to a less than significant level.

Reduced idling time is routinely implemented at construction sites to reduce fuel costs. Thus, this is part of the baseline and does not constitute valid mitigation. Further, exhaust emissions from idling represent a very small percentage of the total emissions from site preparation. Using EPA emission factors, the percent reduction in exhaust emissions that could be achieved using this measure would be less than 3% for NOx, less than 0.5% for PM10, less than 0.4% for VOCs, and less than 0.1% for CO,[28] assuming 100% of idling emissions were eliminated, which is clearly not feasible. These reductions plus those that could be achieved by the other proposed measures would not be sufficient to reduce exhaust emissions calculated in Comment II.B.2 to a less-than-significant level. P25a-17

[27] The operational cancer risk is underestimated because it excludes emissions from existing Port operations, which are part of the Project.

[28] For a 300 hp excavator with a 57% load factor, the running PM10 emissions would be: (1.44 g/bhp-hr)(300 hp)(8 hr/day)(0.57) = 1970 g/day. The idling PM10 emissions would be: (2.57 g/hr)(8 hr/day)(1-0.57) = 8.84 g/day. Total emissions = 1,970 + 9 = 1,979 g/day. Percent idling emissions = (9/1979)100 = 0.5%. The running emission factors and load factors are taken from U.S. EPA, Nonroad Engine and Vehicle Emission Study, Report 21A-2001, November 1991. The Idling Emission Factors are taken from U.S. EPA, Emission Facts. Idling Vehicle Emissions, Report EPA 420-F-98-014, April 1998. The NOx, CO, and VOC reductions are based on gasoline-powered equipment, as there are no idling emission factors for diesel engines for these pollutants.

II.B.4 Additional Feasible Diesel Exhaust Control Measures

As discussed in Comment II.B.3, mitigated emissions of NOx and CO emissions from construction equipment are significant. Further, total PM10, the sum of fugitive and equipment exhaust PM10, as well as health impacts from diesel PM10, are both significant. Thus, mitigation is also required for diesel exhaust PM10 from construction equipment. If this additional mitigation does not reduce impacts to a less than significant level, which is likely for NOx, then all feasible mitigation must be imposed. There are several additional feasible mitigation measures that should be required in a revised and recirculated EIR to address these significant impacts.

First, the SJVAPCD CEQA Guidelines list the following measures for mitigation of diesel exhaust from heavy duty equipment beyond those recommended by the DEIR:

- Use of alternative fueled or catalyst equipped diesel construction equipment
- Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use
- Replace fossil-fueled equipment with electrically driven equivalents P25a-18
- Curtain construction during period of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways
- Implement activity management, e.g., rescheduling activities to reduce short-term impacts.

The SJVAPCD CEQA Guidelines suggest that "these measures are difficult to implement." (SJVAPCD 1/10/02, p. 66.) However, since these Guidelines were written, these types of controls, particular the use of catalyst-equipped diesel engines and alternative fuels, have attained widespsread use. The SLOCAPCD and SBCAPCD both recommend these measures without caveats, based on their experience using them for construction projects.

Second, the CEQA guidelines of other air districts contain additional feasible mitigation measures for diesel exhaust that are routinely required in EIRs. These guidelines were previously cited in Comment II.A.4.b. All of the following measures from these guidelines should be discussed in a revised EIR:

- Use biodiesel,[29] PuriNOx or equivalent alternative fuels.
- Fuel all off-road and portable diesel powered equipment, including but not limited to bulldozers, graders, cranes, loaders, scrapers, backhoes, generator sets, compressors, auxiliary power units, with ARB-certified diesel fuel (non-taxed version suitable for use off-road.) (SLOCAPCD)
- Install diesel oxidation catalysts (DOC), catalyzed diesel particulate filters or other District approved emission reduction retrofit devices. (SLOCAPCD, SBCAPCD, MBUAPCD)
- Maximize to the extent feasible, the use of diesel construction equipment meeting the ARB's 1996 or newer certification standard for off-road heavy-duty diesel engines. (SLOCAPCD)
- CARB-certified engines[30] in construction fleet (SCAQMD, ADEQ)[31]
- Use alternative diesel engines, including turbocharged engines with or without aftercooler or CTS Version I or II rebuilds. (MBU APCD)
- The engine size of construction equipment shall be the minimum practical size. (SBCAPCD)
- Construction equipment operating on-site shall be equipped with two to four degree engine timing retard or precombustion chamber engines. (SBCAPCD)

P25a-18 (Cont.)

[29] For equipment with engines built in 1994 or later, use B100 fuel, which is 100 percent biodiesel fuel. In pre-1994 engines, use B20 fuel (a mixture of 20 percent biodiesel and 80 percent fossil fuel). If B20 is used, the fossil diesel component should be CARB low-sulfur fuel (less than 15 ppmw).

[30] Both the U.S. EPA and CARB have established emission limits on new off-road engines. CARB-certified off-road engines are engines that are 3 years old or less at the time of use and which comply with these new low emission limits. This equipment is widely available in the construction fleet and specified as a control measure in the BAAQMD's Revised Ozone Attainment Plan.

[31] Both the U.S. EPA and CARB have established emission limits on new off-road engines. CARB-certified off-road engines are engines that are 3 years old or less at the time of use and which comply with these new low emission limits. This equipment is widely available in the construction fleet. Construction exhaust emissions of all criteria pollutants could be substantially reduced by requiring the use of at least 20% CARB-certified off-road engines in the mix of construction equipment operating on-site, or alternatively, setting a NOx, ROG, and/or PM10 emission reduction goal for the construction fleet. This measure has been required by the SMAQMD and other agencies to mitigate construction emissions. A similar measure has been adopted by the Texas Natural Resource Conservation Commission ("TNRCC") for the Dallas/Fort Worth and Houston-Galveston areas. (Rennie et al. 2001.) The Arizona Department of Environmental Quality ("ADEQ") has also recommended this measure to address air quality problems in the Phoenix area. (ADEQ 11/9/00, pp. 19-24.)

- Use equipment that has Caterpillar pre-chamber diesel engines. (SLOCAPCD)
- Locally posted and advertised number to report gross-emitting vehicles. (ADEQ)
- Snap acceleration test for heavy-duty diesel vehicles. (ADEQ)
- Require pre-1988 heavy-duty diesel commercial vehicles to meet 1988 federal emission standards. (ADEQ)
- Construction worker trips should be minimized by requiring carpooling and by providing for lunch onsite. (SBCAPCD)
- Use electricity from power poles rather than temporary diesel power generators and electrify equipment where feasible. (SCAQMD, SLOCAPCD)
- During smog season, the construction period should be lengthened to minimize the number of vehicles and equipment operating at the same time. (VCAPCD)
- Emission offsets if ROG or NOx emissions exceed 6.0 tons/quarter. (SLOCAPCD)
- Use ultra low sulfur diesel.[32] (CEC)[33]
- The project shall demonstrate that the heavy-duty (> 50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 20% NOx reduction and 45% particulate reduction1 compared to the most recent CARB fleet average at time of construction. (SMAQMD)

P25a-18 (Cont.)

[32] The U.S. EPA and CARB have adopted stringent fuel regulations that limit the sulfur content of on-road diesel fuel to 500 ppm at the present. This limit will be lowered to 15 ppm in June 2006. However, some California refineries, including the Equilon Refinery, in Martinez, and the Arco Refinery in the South Coast, already comply and could supply 15 ppm diesel fuel for Project construction. CARB diesel, which is not required for off-road equipment, and 15-ppm sulfur, ultra-low-sulfur diesel, are currently used in vehicle fleets and have been widely required as CEQA mitigation. These fuels not only reduce sulfur, but also NOx, CO, and PM10 and could be adopted here to further reduce construction exhaust emissions, especially significant NOx emissions.

[33] The California Energy Commission ("CEC") has required the use of ultra low sulfur fuel where available. The CEC follows a CEQA-equivalent process in licensing of new power plants larger than 50 MW. Ultra-low-sulfur diesel was required in the recently decided cases of the Three Mountain Power Project, the Huntington Beach Generating Station Retool Project, and others. See Final Commission Decisions at www.energy.ca.gov.

- The project shall ensure that emissions from all off-road diesel powered equipment used on the project site do not exceed 40% opacity for more than 3 minutes in any one hour. Any equipment found to exceed 40% opacity (or Ringelmann 2.0) shall be repaired immediately, and district shall be notified within 48 hours of identification of non-compliant equipment. A visual survey of all in-operation equipment shall be made at least weekly, and a monthly summary of the visual survey results shall be submitted throughout the duration of the project, except that the monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey. The district and/or other officials may conduct periodic site inspections to determine compliance. (SMAQMD)

P25a-18 (Cont.)

These and other measures are routinely required as CEQA mitigation. See, for example, the construction exhaust mitigation measures for the NASA Ames Development Plan,[34] for the Stanford University Community Plan,[35] and for Boronda Crossing.[36] The City of San Diego, for example, required that exhaust emissions from equipment used to construct the Padres Ballpark and ancillary projects be reduced by 95% using a range of measures, including alternative fuels and post-combustion controls. The SMAQMD and the U.S. EPA also routinely recommend mitigation for construction exhaust emissions. Other agencies have also required the use of low-sulfur diesel fuels in construction equipment as CEQA mitigation. The El Toro Reuse IS/MND[37] requires the exclusive use of 15 ppm diesel in "all on-site construction equipment and all construction material delivery trucks."

The Port must prepare and recirculate a supplemental EIR that quantifies construction exhaust emissions and includes sufficient construction exhaust mitigation to reduce impacts to a less than significant level. If it is not feasible to

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[34] NASA Ames Research Center, NASA Ames Development Plan, Draft Programmatic EIS, November 2001.

[35] Santa Clara County, DEIR Stanford University Draft Community Plan and General Use Permit Application, June 23, 2000.

[36] City of Salinas, Boronda Crossing, General Plan Amendment, Zoning Change, Salinas Auto Center Precise Plan Amendment, Draft Subsequent Environmental Impact Report, July 2003.

[37] County of Orange, Draft Environmental Impact Report No. 573 for the Civilian Reuse of MCAS El Toro and the Airport System Master Plan for John Wayne Airport and Proposed Orange County International Airport, Draft Supplemental Analysis, April 2001.

reduce these impacts to a less than significant level, the recirculated EIR should include a full list of all feasible construction exhaust mitigation measures. P25a-18 (Cont.)

III. PROJECT IMPACTS ARE SIGNIFICANT AND UNMITIGATED

III.A Odor Impacts Are Significant

The DEIR identified odors as a possible concern, but declined to analyze odors from the Project because proposed land uses would not create "additional or increased sources of odor." (DEIR, p. 4.4-5.) This is not correct.

It is well known that exhaust from burning diesel, bunker fuel, and other similar liquid fuels is malodorous,[38] with a pungent and unpleasant odor that is familiar to anyone who has ridden in or driven behind a diesel-fueled school bus or truck. The peculiar odor is due to aldehydes, principally acrolein, and sulfur compounds that are formed during combustion.[39] The Project would substantially increase the emission of exhaust from liquid fuel combustion, principally diesel and bunker fuel oil. Diesel exhaust is emitted by the general traffic, transport trucks, and yard equipment that would serve the Project. Bunker and other liquid fuel exhaust is emitted by rail locomotives, marine vessels, and tugboats that would serve the Project. (DEIR, Appx. E.) For example, the Project would increase daily trips by 51,319 vehicles, including about 8,849 transport trucks. (DEIR, p. E-4.) The majority of the trucks, 87%, would burn diesel fuel. (DEIR, p. E-5.) The Project would also increase rail locomotive, marine vessel, and tugboat visits to the Project site. All of these burn heavy liquid fuels, creating malodorous exhausts. (DEIR, Appx. E.) Thus, clearly, the Project would increase emissions of an odorous substance and odor impacts should have been evaluated. P25a-19

The DEIR indicates that current emissions of particulate matter from the combustion of diesel and fuel oil, only one component of the exhaust, are about 5 tons/yr. (DEIR, Appx. E, sum of DPM from Tables E-5, E-7, E-9, E-11.) These existing emissions should have been included in the emission inventory for this Project, but were inappropriately treated as part of the baseline. See Appendix E, Tables E-5, E-7, E-9, and E-11.

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[38] Arthur D. Little, Analysis of the Odorous Compounds in Diesel Engine Exhaust, Report PB 220 392, June 1972; Arthur D. Little, Chemical Analysis of Odor Components in Diesel Exhaust, Report PB 228756/AS, September 1973.

[39] U.S. Army Center for Health Promotion and Preventative Medicine, Vehicle Exhaust Gases - Individual. http://chppm-www.apgea.army.mil/doem/

The residents surrounding the West Complex indicate that odors from fuel combustion exhaust are currently a problem.[40] These residents report that malodorous fumes are generated by the tugboats used to position cargo ships at the berths and diesel trucks. Diesel trucks, as many as 20 at a time, line up and await loading or unloading of ships, creating significant fumes. The Project would increase the emission of diesel and fuel oil exhaust by about 20 tons/yr or by a factor of five. Thus, if emissions of only 5 ton/yr create nuisance odors in surrounding communities, it is obvious that increasing those emissions by a factor of five will greatly aggravate existing nuisance odor. P25a-19 (Cont.)

This is a significant impact that was not identified, analyzed, or mitigated in the DEIR. The DEIR should be revised to analyze and mitigate this impact and be recirculated for public review.

III.B Ozone-Formation Impacts Are Significant

The Project would increase the emissions of ROG and NOx, which are ozone precursors. However, the DEIR only compares these emissions with emission significance thresholds, ignoring the fact that these emissions would contribute to or cause violations of ozone air quality standards. (DEIR, p. 4.4-21 and Table 4.4-3.) The SJVAB is not in compliance with either federal or state ozone standards. Thus, the Project's ozone precursor emissions would directly contribute to existing exceedances of the federal and state ozone standard, which is a significant air quality impact not disclosed in the DEIR. *See Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692 [270 Cal. Rptr. 650].

In addition, the Project would indirectly increase ozone by replacing open space with blacktop. This would increase local temperatures, contributing to the urban heat island effect and increasing the formation of ozone. The Project would convert much of Rough and Ready Island open space (DEIR, Fig. 3-3) to blacktop (DEIR, Fig. 3-4), *e.g.*, parking lots, roads, roofs. This can reasonably be expected to increase local ambient temperature and hence local formation of ozone. P25a-20

Black surfaces absorb about 85% to 95% of sunlight that falls on them, becoming one of the hottest surfaces in urban areas. The hot surfaces of pavement and similarly dark roofs quickly warm the air over urban areas, leading to the creation of summer urban "heat islands." On a clear summer afternoon, the air temperature in urban areas can be 2°F to 9°F hotter than the surrounding rural area. The elevated temperature increases cooling energy

[40] See, for example, http://www.recordnet.com/articlelink/102503/news/articles/102503-e-1.php.

demand, accelerates the rate of smog production, and increases evaporative losses of organic compounds from gasoline tanks of vehicles parked over the hot surfaces.[41] This is a significant impact that was not discussed in the DEIR and is feasible to mitigate, as discussed in Comment II.D.2.c. P25a-20 (Cont.)

III.C Dredging Impacts Are Significant

The DEIR includes a project-level analysis of the proposed dredging and placement activities related to the West Complex Development Plan. (DEIR, Chapter 5.0.) This project includes a hydraulic dredge and a number of other diesel-fueled engines. (DEIR, p. 5-21 and Table 5-7.) These engines would emit diesel exhaust, including NOx, ROG, CO, and PM10.

The DEIR declined to analyze the impacts of operating these engines, instead arguing that the SJVAPCD would set the threshold of significance and compliance with this (undisclosed) threshold would result in less than significant impacts. The proposed mitigation is to assure that all diesel engines and motors over 50 hp go through SJVAPCD's permitting process and obtain a permit to operate. (DEIR, p. 5-21.) P25a-21 (Cont.)

Thus, the DEIR defers both the analysis and the mitigation of the air quality impacts of dredging to the future, to another agency, and out of public view. This is impermissible under CEQA, which requires that both the impacts and the mitigation be disclosed in the CEQA document. There are three major problems with the DEIR's approach, outlined below.

III.C.1 Dredging Inappropriately Treated As Construction

The purpose of this project is to dredge sediments from docks 14 through 20 to allow large vessels access. The project includes two phases, maintenance dredging to remove historically deposited sediments, and deepening the area an additional 6 feet. Presumably, maintenance dredging would have to be additionally conducted at future times, throughout the life of the project, but the DEIR is silent on this point. (DEIR, Sec. 5.3.2.) Thus, the dredging itself is the Project. P25a-22

[41] See, for example, A.H. Rosenfeld and others, Cool Communities: Strategies for Heat Island Mitigation and Smog reduction, Energy and Buildings, v. 28, 1998, pp. 51-62; H. Taha, S-C Chang, and H. Akbari, Meteorological and Air Quality Impacts of Heat Island Mitigation Measures in Three U.S. Cities, Lawrence Berkeley National Laboratory Report LBNL-44222, April 2000; and S. Konopacki and H. Akbari, Energy Savings Calculations for Heat Island Reduction Strategies in Baton Rouge, Sacramento and Salt Lake City, Lawrence Berkeley National Laboratory Report LBNL-45368, July 2000.

However, the DEIR evaluates this as a construction project, quoting from Section 4.3.1 of the SJVAPCD CEQA Guidelines. (DEIR, p. 5-21.) This section is captioned "Threshold of Significance for Project Construction Impacts." Dredging is the project. Thus, its impacts should have been evaluated using operational significance thresholds in Table 4-1 of the SJVAPCD's CEQA Guidelines. This tables sets emission thresholds of 10 ton/yr for both NOx and ROG. P25a-22 (Cont.)

III.C.2 Dredging Impacts Not Evaluated And Are Significant

An EIR must disclose all potentially significant adverse environmental impacts of a project. (Pub. Res. Code § 21100(b)(1); CEQA Guidelines section 15126(a); Pub. Res. Code section 21000(a).) CEQA requires that an EIR must not only identify the impacts, but must also provide "information about how adverse the impacts will be." *Santiago County Water Dist. v. County of Orange*, 118 Cal. App. 3d 818, 831 (1981). The lead agency may deem a particular impact to be insignificant only if it produces rigorous analysis and concrete substantial evidence justifying the finding. *Kings County Farm Bureau v. City of Hanford*, 221 Cal. App. 3d 692 (1990). Here, the DEIR contains no analysis at all, instead deferring the analysis to another agency in the future.

Dredging would result in significant NOx air quality impacts. The DEIR indicates that the dredging operations would use a 400-hp Cummins N-14 engine, a 550-hp Cummins K-19 engine, a 2000-hp Nordberg engine, a tugboat, and a skiff. (DEIR, Table 5-7.) The NOx emissions from these engines are reported in Table 4. P25a-23

Table 4
NOx Emissions From Dredging

Engine	hp	Emission Factor g/hp-hr	NOx Emissions[c] lb/day	NOx Emissions[d] ton/qtr
Cummins N-14	400	14.07[a]	99.2	4.5
Cummins K-19	550	14.07[a]	136.4	6.1
Nordberg	2000	7.923[b]	279.2	12.6
Tugboat	600	7.923[b]	83.8	3.8
Skiff	55	7.923[b]	7.7	0.3
Total			**606.3**	**27.3**

a AP-42, Table 3.3-1.

b Napa River Salt Marsh Restoration Project, DEIR/DEIR, April, 2003, Air Appendix Table 17.

c NOx emissions in lb/day = (emission factor)(engine rating in hp)(0.8)(0.5)(20 hr/day)/(454 g/lb).

d NOx emissions in ton/qtr = (daily NOx emissions)(90 days/qtr)/(2000 lb/ton).

These NOx emissions exceed significance thresholds by substantial amounts, requiring mitigation. They exceed the SJVAPCD's operational NOx threshold of 10 ton/yr. They also exceed the construction thresholds of other air districts, summarized in Comment II.B.1 and ranging from 75 to185 lb/day and 2.5 to 6.0 ton/qtr. These emissions are based on operation of the engines for 90 days. (DEIR, p. 5-21.) However, elsewhere in the DEIR, it is claimed that dredging would require between 60 and 120 consecutive days. (DEIR, p. 5-9.) If the emission estimates were based on 120 days, NOx emissions would increase to 808 lb/day or 36.4 ton/qtr. P25a-23 (Cont.)

Thus, this is a significant impact of the Project that was not disclosed in the DEIR and which must be mitigated. These impacts can be mitigated by requiring new engines that meet EPA Tier II emission standards and/or post-combustion controls, e.g. SCR.

III.C.3 Dredging Mitigation Is Deferred

The proposed mitigation, for the unanalyzed impact, is to "ensure that all diesel engines and motors over 50 horsepower must go through the SJVUAPCD's permitting process and have a permit to operate." (DEIR, p. 5-21.)

CEQA disallows deferring the formulation of mitigation measures to post-approval studies. (CEQA Guidelines § 15126.4(a)(1)(B); *Sundstrom v. County of Mendocino* (1988) 202 Cal. App. 3d 296, 308-309.) An agency may only defer the formulation of mitigation measures when it possesses "'meaningful information' reasonably justifying an expectation of compliance." (*Sundstrom* at 308; *see also Sacramento Old City Association v. City Council of Sacramento* (1991) 229 Cal. App. 3d 1011, 1028-29 (mitigation measures may be deferred only "for kinds of impacts for which mitigation is known to be feasible").) A lead agency is precluded from making the required CEQA findings unless the record shows that all uncertainties regarding the mitigation of impacts have been resolved; an agency may not rely on mitigation measures of uncertain efficacy or feasibility (*Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal. App. 3d 692, 727 (finding groundwater purchase agreement inadequate mitigation because there was no evidence that replacement water was available).) This approach helps P25a-24

"insure the integrity of the process of decisionmaking by precluding stubborn problems or serious criticism from being swept under the rug." (*Concerned Citizens of Costa Mesa, Inc. v. 32nd Dist. Agricultural Assn.* (1986) 42 Cal. 3d 929, 935.)

Moreover, by deferring the development of specific mitigation measures, the Applicant has effectively precluded public input into the development of those measures. CEQA prohibits this approach. As explained by the *Sundstrom* court:

> An EIR… [is] subject to review by the public and interested agencies. This requirement of "public and agency review" has been called "the strongest assurance of the adequacy of the EIR." The final EIR must respond with specificity to the "significant environmental points raised in the review and consultation process." … Here, the hydrological studies envisioned by the use permit would be exempt from this process of public and governmental scrutiny. (*Sundstrom*, 202 Cal. App. 3d at 308.)

P25a-24 (Cont.)

This undefined mitigation clearly violates CEQA. The DEIR merely states that mitigation measures will be developed at a later time. The DEIR nowhere defines the exact nature of the mitigation measures. The DEIR nowhere defines what form the mitigation may take, whether the mitigation measures may have adverse impacts of their own, or whether the mitigation will be effective. This analysis is plainly inadequate under CEQA as it forces the public to take on faith that adequate mitigation will be developed after the close of the CEQA process and outside of the public review process.

III.D All Feasible Mitigation Is Not Required

The DEIR concluded that operation of the Project would result in a significant increase in emissions of ROG, NOx, and PM10 from area sources, traffic, maritime, and rail activity. (DEIR, p. 4.4-20/21.) The DEIR recommends three measures to mitigate these significant impacts:

- Implementation of feasible travel demand measures;
- Reduction of truck emissions by improving onsite roads to reduce congestion and truck idling;
- Use of new engines meeting California emission standards for new equipment or replaced equipment.

P25a-25

The DEIR concludes that operational impacts would remain significant after implementation of these measures, resulting in a significant and unavoidable impact. (DEIR, p. 4.4-22.)

However, there are many additional feasible measures that have been implemented at other ports that are not required in this DEIR. CEQA directs public agencies to avoid or reduce environmental damage when possible by requiring alternatives or mitigation measures. (CEQA Guidelines § 15002(a)(2) and (3). *See also Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 564 [276 Cal. Rptr. 410, 416]; *Laurel Heights Improvement Ass'n v. Regents of the University of California* (1988) 47 Cal. 3d 376, 400 [253 Cal. Rptr. 426, 436]).) Public agencies must deny approval of a project with significant adverse effects when feasible alternatives and mitigation measures can substantially lessen such effects. (*Sierra Club v. Gilroy City Council*, 222 Cal. App. 3d 30, 41 (1990).) P25a-25 (Cont.)

CEQA section 21002 requires agencies to adopt feasible mitigation measures in order to substantially lessen or avoid otherwise significant adverse environmental impacts of a proposed project. (See also, Pub. Res. Code section 21081(a); CEQA Guidelines section 15370.) To implement this requirement, EIRs must set forth mitigation measures that decisionmakers can adopt at the findings stage of the process. (CEQA Guidelines section 15126(c).) For each significant effect, the EIR must identify specific mitigation measures. Where several potential mitigation measures are available, each should be discussed separately and the reasons for choosing one over the other should be stated. (CEQA Guidelines section 15126(c).) Mitigation measures should be capable of "avoiding the impact altogether," "minimizing impacts," "rectifying the impact," or "reducing the impact." (CEQA Guidelines section 15370.)

The DEIR falls far short of this requirement. There are many additional feasible mitigation measures that should have been included in the DEIR.

III.D.1 Feasible Traffic Mitigation Measures

The DEIR recommended traffic demand measures to mitigate the increase in emissions from increased traffic. (DEIR, p. 4.4-22.) The measures that it proposed are (DEIR, p. 4.3-28):

- Encourage provision of transit enhancing structures that include transit shelters, benches, etc.; street lighting; route signs and displays; and/or bus turnout/bulbs. P25a-26
- Encourage the provision of park and ride lots and/or satellite telecommuting centers.

- Implement carpool/vanpool programs.
- Establish mid-day shuttle service from worksite to foot service establishments and commercial area.
- Provide shuttle service to transit stations/multimodal centers.
- Provide preferential parking, e.g., near building entrance, sheltered area, etc., for carpool and vanpool vehicles.
- Implement parking fees for single occupancy vehicle commutes.
- Implement parking cash-out programs for employees.
- Provide transit incentives.
- Implement compressed work week schedules, e.g., 4/40, 9/80.
- Implement home-based computing.

The CEQA Guidelines of other air districts, BAAQMD, MBUAQMD, and SLOCAPCD principally, contain numerous additional traffic demand measures that should be included in the DEIR. These include:

- Provide on-site shops and services for employees, such as cafeteria, bank/ATM, dry cleaners, convenience market, postal services, etc.
- Provide on-site eating, refrigeration and food vending facilities. P25a-26 (Cont.)
- Provide pedestrian signalization and signage to improve pedestrian safety.
- Provide incentives to employees to carpool/vanpool, take public transportation, telecommute, walk, bike, etc.
- Include teleconferencing capabilities, such as web cams or satellite linkage, which will allow employees to attend meetings remotely without requiring them to travel out of the area.
- Provide on-site child care or contribute to off-site child care within walking distance.
- Provide secure, weather-protected bicycle parking for employees. One bicycle parking space for every 10 car parking spaces is recommended.
- Provide direct, safe bicycle access to adjacent bicycle routes.
- Provide showers and lockers for employees bicycling or walking to work, typically one shower and three lockers for every 25 employees.
- Short-term bicycle parking for retail customers and other non-commute trips.

- Include a bicycle/pedestrian lane on the new bridge.
- Employ a transportation/rideshare coordinator.
- Implement a rideshare program.
- Design and locate buildings to facilitate transit access, *e.g.*, locate building entrances near transit stops, eliminate building setbacks, etc.
- Provide preferential parking locations for low-emission vehicles, e.g., hybrids.
- Reduce single-occupancy parking fees for low-emission vehicles.

P25a-26 (Cont.)

The DEIR does not contain any discussion of why these numerous additional traffic-related measures are not feasible for the Project. These and similar measures have been included in other EIRs. The Lent Ranch FEIR[42], for example, requires most of these measures. The NASA Ames Development Plan DEIR[43] would implement an aggressive transportation demand management program ("TDM") to reduce trip generation by at least 22%. The Stanford University Draft Community Plan and General Use Permit DEIR[44] adopts all applicable Bay Area TDMs. The Bickford Ranch Specific Plan FEIR[45] requires that emissions be reduced by 40% by implementing many of these measures. The Old Greenwood Planned Development DEIR[46] requires, among others, paying an air quality mitigation fee to offset PM10 emissions from vehicle exhaust and re-entrained road dust to zero. Therefore, the above-listed measures should be assumed feasible unless otherwise demonstrated, and used by this Project to reduce traffic emissions to the extent feasible.

III.D.2 Feasible Maritime Mitigation Measures

P25a-27

The operation of port-related facilities at the West Complex will emit substantial amounts of engine exhaust containing NOx, CO, ROG, PM10, and toxic air contaminants. These emissions arise from marine vessels, e.g.,

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[42] City of Elk Grove, Lent Ranch Marketplace, Draft Environmental Impact Report, for example Table 4.3-21, page 3.0-96, and Table 12-2, October 2000.

[43] NASA Ames Research Center, NASA Ames Development Plan, Draft Programmatic Environmental Impact Statement, pp. O-11 to O-16, November 2001.

[44] Santa Clara County, Draft Environmental Impact Report, Stanford University Draft Community Plan and General Use Permit Application, Table 4.11-6, June 23, 2000.

[45] County of Placer, Bickford Ranch Specific Plan Final Environmental Impact Report, Section 8.3.2 and 8.4, November 13, 2000.

[46] City of Truckee, Draft Environmental Impact Report, Old Greenwood Planned Development, pp. 4.5-10 to 4.5-13, February 2002.

freighters and tugboats, yard equipment, and train locomotives. (DEIR, Appx. E.) The DEIR proposed no mitigation at all for the marine vessels or trains, proposed only to reduce the idling time of trucks, which would have a de minimus impact on emissions (see Comment III.B.3), and only proposed the use of new cargo-handling diesel equipment to mitigate the impacts of yard equipment. (DEIR, p. 4.4-22.) The marine vessels and trucks are the major source of NOx emissions. There are many additional feasible mitigation measures that have been required and implemented at other ports to reduce engine exhaust that should be required for this Project.

A recent Stipulated Judgment between plaintiffs and the Port of Los Angeles requires that yard tractors, top picks, and side picks use emulsified diesel fuel and/or oxidation catalysts, as well as alternative-fuel-powered yard tractors. This Judgment also requires the Port of Los Angeles to install the necessary electrical infrastructure at two berths (cold ironing) to provide shoreside electrical power for ship hoteling. (Ex. 1.[47]) P25a-27 (Cont.)

The Port of Oakland has adopted the Vision 2000 Air Quality Mitigation Program as mitigation for significant air quality impacts associated with the proposed expansion of the Port. These are described in the Berths 55-58 final EIR[48] and the status reports included in Exhibit 2. The mitigation measures were formally adopted by the Board of Port Commissioners on April 8, 1999. The Port committed $8.98 million to fund this program. The Port of Oakland established a Technical Review Committee ("TRC") to advise the Port. The TRC includes members from the public, CARB, EPA, BAAQMD, and the Port and meets regularly. The Port of Oakland program includes the following mitigation measures:

- Subsidy toward the cost of retrofitting diesel truck engines with new engines meeting California emission standards for new diesel engines, or add-on exhaust treatment devices.
- Installation of add-on exhaust devices on 40 local trucks doing business in the near-port area as a demonstration project.

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[47] Natural Resources Defense Council, Inc. et al v. City of Los Angeles, Port of Los Angeles, and Los Angeles Board of Harbor Commissioners, [Proposed] Stipulated Judgment, Modification of Stay, and Order Thereon, Superior Court of the State of California, County of Los Angeles, march 6, 2003.

[48] Port of Oakland, Berths 55-58 Project, Final Environmental Impact Report, April 8, 1999.

- Subsidy toward the cost of replacing diesel engines in all 363 pieces of maritime related cargo-handling equipment and/or installation of add-on exhaust treatment devices on cargo handling equipment.
- Retrofit of one tug with a low-emission engine and exhaust treatment device as a demonstration project.
- Replacement of diesel engines in 27 AC Transit buses operating in the port vicinity.
- Encouragement of early re-powering of diesel engines on switch trains.
- Subsidizing an engineering study to determine whether cost-effective measures exist to reduce ROG emissions from local businesses.
- Evaluation of an emission testing station for heavy-duty diesel trucks in the port area.
- A suite of 10 measure to be incorporate into project design and future operations such as cost-ironing for tugs, participating in "Spare the Air Days" and mass transit subsidies for port and tenant employees.

Additional detail on these measures is contained in the status reports and other information in Exhibits 2 and 3. Several of these measures -- the AC Transit bus repower, the electrical connection, parking lot improvements, engineering studies of nearby businesses – have been completed. Most of the others are on going. See status reports in Exhibit 2 and the description of the truck mitigation program in Exhibit 3. P25a-27 (Cont.)

The DEIR should be revised to evaluate and require all feasible mitigation measures that are applicable to maritime activities as described in Exhibits 1-3. These should include cold ironing, retrofitting marine engines with new engines and/or post-combustion controls, retrofitting trucks that serve the Port of Stockton with new engines and/or post-combustion controls, retrofitting existing yard equipment with new engines and/or post-combustion controls, and requiring new engines and post-combustion controls for all yard equipment, among others. The Port should also setup a Technical Review Committee similar to that used by the Port of Oakland to assure that affected parties have a voice in the design and implementation of the mitigation program.

III.D.3 Feasible Mitigation For Heat Island Impacts

The Project would substantially increase the amount of blacktop in the area, raising ambient temperature and increasing the formation of ozone. These impacts can be reduced by implementing mitigation measures that reduce the amount of blacktop. Some of these measures, such as cool roofs, not only reduce P25a-28

the heat island effect, but also reduce energy consumption and hence indirect emissions from electricity generation and fuel combustion for heating, air conditions, and ventilation.

Reduce Standard Paving

Parking lots and roads are typically constructed by mixing asphalt with aggregate. The aggregate provides strength and the asphalt binds the aggregate together against the forces of traffic and weather. The resulting pavement is black and absorbs about 85% to 95% of sunlight that falls on it, becoming one of the hottest surfaces in urban areas. The hot surfaces of pavement (and similarly dark roofs) quickly warm the air over urban areas, leading to the creation of summer urban "heat islands." On a clear summer afternoon, the air temperature in urban areas can be 2°F to 9°F hotter than the surrounding rural area. The elevated temperature increases cooling energy demand, accelerates the rate of smog production, and increases evaporative losses of organic compounds from gasoline tanks of vehicles parked over the hot surfaces.

This effect can be mitigated by reflecting the sunlight off the pavement before it heats up through use of lighter-colored, reflective pavement materials. These materials reduce the urban heat island effect, reducing the formation of ozone, and reducing evaporative emissions from vehicles that park on and use the pavement. This measure advocates the use of grass paving or reflective surfaces on unshaded parking lots, driveways, and fire lanes to reduce standard paving by 10%. This measure should be considered because, as discussed below, it is widely used, technically feasible, provides air quality benefits, and is economic. P25a-28 (Cont.)

There are a large number of options that can be used to comply with this measure, ranging from porous block pavement systems to conventional asphalt pavements using light aggregate to conventional concrete pavements. Some are comparable in cost to conventional pavements and have added benefits besides reducing air quality impacts.

Install Light-colored, Reflective Roof Products

Most buildings have dark roofs. Dark roofs absorb 80% to 90% of the incident sunlight, heating the roof and plenum space. Because the air distribution system is typically installed in the plenum space between the roof deck and the dropped ceiling over the finished interior space, this raises the summertime cooling demand. In addition, heating the roof heats the air that passes over the roof. Thus, the entire region around a dark roof becomes warmer.

As discussed above, dark roofs (and parking lots) quickly warm the air over urban areas, leading to the creation of summer urban "heat islands." The additional air conditioning demand created by this temperature effect is responsible for 5% to 10% of urban peak electric demand. The increased power demand leads to higher emissions from power plants. This increase in temperature causes a 10% to 20% increase in urban ozone, and in some cases, generates as much ozone as all on-road motor vehicles.[49] Measures to reverse the heat island effect include planting shade trees and other vegetation and incorporating reflective roofs and pavements into urban landscapes.

Intercepting the sunlight before it heats a building keeps its surface cooler and reduces the heat flow into the building. This reduces the demand for air conditioning. This can be accomplished by using light-colored, reflective roofs. A light-colored roof can reduce the amount of energy needed for cooling by 20% to 70%, depending on the amount of insulation under the roof and design of the air ducting system. This is achieved by reflecting most of the energy, rather than absorbing it. The difference between the roof surface and ambient air temperatures may be as high as 90°F, while for reflective roofs, the difference is only about 18°F. This reduces peak cooling demand, cooling costs, the size of the HVAC system, and the rating and amount of insulation required in a building, and increases the lifetime of the roof. This also reduces air pollution by reducing the amount of external power that must be produced and the amount of ambient ozone that is formed in the vicinity of the development from the heat island effect. P25a-28 (Cont.)

IV. CUMULATIVE IMPACTS ARE SIGNIFICANT AND UNMITIGATED

An EIR must discuss significant "cumulative impacts." CEQA Guidelines section 15130(a). This requirement flows from CEQA section 21083, which requires a finding that a project may have a significant effect on the environment if "the possible effects of a project are individually limited but cumulatively considerable. . . . 'Cumulatively considerable' means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." "Cumulative impacts" are defined as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." CEQA Guidelines section P25a-29

[49] Hashem Akbari, Cool Roofs Save Energy, ASHRAE Transactions, v. 104, Pt. 1, 1998; H. Taha, Modeling the Impacts of Large-Scale Albedo Changes on Ozone Air Quality in the South Coast Air Basin, Atmospheric Environment, v. 31, no. 11, 1997, pp. 1667-1676.

15355(a). "[I]ndividual effects may be changes resulting from a single project or a number of separate projects." CEQA Guidelines section 15355(a).

"The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time." *Communities for a Better Environment v. Cal. Resources Agency*, 103 Cal. App. 4th 98, 117 (2002). A legally adequate "cumulative impacts analysis" views a particular project over time and in conjunction with other related past, present, and reasonably foreseeable probable future projects whose impacts might compound or interrelate with those of the project at hand. "Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time." CEQA Guidelines section 15355(b).

As the court recently stated in *Communities for a Better Environment v. California Resources Agency*, 103 Cal. App. 4th 98, 114 (2002):

> Cumulative impact analysis is necessary because the full environmental impact of a proposed project cannot be gauged in a vacuum. One of the most important environmental lessons that has been learned is that environmental damage often occurs incrementally from a variety of small sources. These sources appear insignificant when considered individually, but assume threatening dimensions when considered collectively with other sources with which they interact.

P25a-29 (Cont.)

(Citations omitted).

In *Kings County Farm Bureau v. City of Hanford*, 221 Cal. App. 3d at 718, the court concluded that an EIR inadequately considered an air pollution (ozone) cumulative impact. The court said: "The []EIR concludes the project's contributions to ozone levels in the area would be immeasurable and, therefore, insignificant because the [cogeneration] plant would emit relatively minor amounts of [ozone] precursors compared to the total volume of [ozone] precursors emitted in Kings County. The EIR's analysis uses the magnitude of the current ozone problem in the air basin in order to trivialize the project's impact." The court concluded: "The relevant question to be addressed in the EIR is not the relative amount of precursors emitted by the project when compared with preexisting emissions, but whether any additional amount of precursor emissions should be considered significant in light of the serious nature of the

ozone problems in this air basin."[50] The *Kings County* case was recently reaffirmed in *Communities for a Better Environment v. Calif. Resources Agency,* 103 Cal. App. 4th at 116, where the court rejected cases with a narrower construction of cumulative impacts.

In *Friends of Eel River v. Sonoma County Water Agency,* 108 Cal. App. 4th 859 (2003), the court recently held that the EIR for a project that would divert water from the Eel River had to consider the cumulative impacts of the project together with other past, present and reasonably foreseeable future projects that also divert water from the same river system. The court held that the EIR even had to disclose and analyze projects that were merely proposed, but not yet approved. The court stated, CEQA requires "the Agency to consider 'past, present, and probable future projects producing related or cumulative impacts . . . .' (Guidelines, § 15130, subd. (b)(1)(A).) The Agency must interpret this requirement in such a way as to 'afford the fullest possible protection of the environment.'" *Id.* at 867, 869. The court held that the failure of the EIR to analyze the impacts of the project together with other proposed projects rendered the document invalid. "The absence of this analysis makes the EIR an inadequate informational document." *Id.* at 872. P25a-29 (Cont.)

Under almost identical circumstances to this case, the court in *Citizens to Preserve the Ojai v. Bd. of Supervisors,* 176 Cal. App. 3d 421 (1985), held that an EIR prepared to consider the expansion and modification of an oil refinery was inadequate because it failed to consider the cumulative air quality impacts of other oil refining and extraction activities combined with the project. The court held that the EIR's reliance on an Air District Air Emissions Inventory did not constitute an adequate cumulative impacts analysis. The court ordered the agency to prepare a new EIR analyzing the combined impacts of the proposed refinery expansion together with the other oil extraction projects.

The DEIR is even more deficient than the EIRs deemed inadequate in *Citizens to Preserve the Ojai* and *Kings County*. The DEIR's cumulative impact analysis for airborne emissions is two short paragraphs, in which the document concludes that since the Project's air quality impacts are significant, then its cumulative impacts will also be significant. (DEIR, p. 4.2-32) In other words, the

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[50] *Los Angeles Unified v. City of Los Angeles,* 58 Cal. App. 4th at 1024-1026 found an EIR inadequate for concluding that a project's additional increase in noise level of another 2.8 to 3.3 dBA was insignificant given that the existing noise level of 72 dBA already exceeded the regulatory recommended maximum of 70 dBA. The court concluded that this "ratio theory" trivialized the project's noise impact by focusing on individual inputs rather than their collective significance. The relevant issue was not the relative amount of traffic noise resulting from the project when compared to existing traffic noise, but whether any additional amount of traffic noise should be considered significant given the nature of the existing traffic noise problem.

DEIR contains no real cumulative impact analysis. The proffered cumulative impact analysis is deficient for numerous reasons. (DEIR, Sec. 8.2.)

First, there is no cumulative impact analysis at all, but instead, conclusory statements based on CEQA guidance.

Second, the DEIR fails to identify cumulative projects or estimate cumulative emissions.

Third, the DEIR concludes that construction impacts are not cumulatively considerable because the Project-level impact is mitigated. This is incorrect. The DEIR failed to identify a number of significant impacts and thus contains no mitigation whatsoever for them, e.g., exhaust NOx, CO, and PM10 emissions from construction, significant ozone impacts from heat island effect, significant emissions of NOx from dredging. Further, the DEIR concludes that operational emissions are significant and unavoidable and thus not mitigated. Finally, even the impacts that the DEIR claims are fully mitigated in fact are not, e.g., construction fugitive PM10 emissions. Thus, even assuming the Project level impact is properly mitigated (which it is not), construction impacts could still be cumulatively significant and a cumulative impacts analysis would still be required.

P25a-29 (Cont.)

In *Communities for a Better Environment v. Calif. Resources Agency,* 103 Cal. App. 4th at 118, the court struck down an attempt by the California Resources Agency to create a "de minimis" exception to CEQA's cumulative impacts analysis requirement. The court held that even if a Project had only de minimis impacts, it may still have a significant cumulative impact when viewed in conjunction with other past, present and reasonably foreseeable future projects. The court explained that the de minis approach:

> would turn cumulative impact analysis on its head by diminishing the need to do a cumulative impact analysis as the cumulative impact problem worsens. The reason for this incongruity is that the de minimis approach of Guidelines sections 15064(i)(4) and 15130(a)(4) compares the incremental effect of the proposed project against the collective cumulative impact of all relevant projects. This comparative approach is contrary to CEQA section 21083 and to the Guidelines section 15355 definition of cumulative impacts, set forth above; this approach also contravenes CEQA case law.

Communities for a Better Environment v. Calif. Resources Agency, 103 Cal. App. 4th at 118.

Thus, the court struck down the provisions as revised by the Resources Agency. The Court held that "the guiding criterion on the subject of cumulative impact is whether any additional effect caused by the proposed project should be considered significant given the existing cumulative effect." *Id.* at 118. The *CBE* court agreed with the *Kings County* court that "The relevant question to be addressed in the EIR is not the relative amount of precursors emitted by the project when compared with preexisting emissions, but whether any additional amount of precursor emissions should be considered significant in light of the serious nature of the ozone problems in this air basin." *Id.*

The DEIR makes absolutely no attempt to consider the Project's impact in conjunction with emissions, particularly ozone-forming emission, from other past, present and reasonably foreseeable future projects. For example, the DEIR admits the existence of the Port Industrial Redevelopment Area (DEIR, p. 8-3), but fails to evaluate cumulative impacts from this nearby project.

CEQA prohibits the Port from viewing the Project in a vacuum. Its ozone precursor emission will be combined with local growth and numerous other residential and industrial projects currently underway or being proposed throughout the region. CEQA requires a cumulative impacts analysis to analyze these combined impacts and to consider alternatives and mitigation measures. Without such analysis, the DEIR fails to perform its public information purpose. P25a-29 (Cont.)

An understanding of the nature of ozone pollution will help to understand why a cumulative impacts analysis is so vitally important to understand the impacts of the Project. Ozone, the principal element of smog, is a secondary pollutant produced when two precursor air pollutants — volatile ROG and NOx — react in sunlight. *American Petroleum Institute v. Costle*, 665 F.2d 1176, 1181 (D.C. Cir. 1981). ROG and NOx are emitted by a variety of sources, including cars, trucks, industrial facilities, petroleum-based solvents, and diesel engines.

The human health and associated societal costs from ozone pollution are extreme. In proposing a new rulemaking limiting emissions of NOx and particulate matter from certain diesel engines, EPA summarized the effects of ozone on public health:

> A large body of evidence shows that ozone can cause harmful respiratory effects, including chest pain, coughing and shortness of breath, which affect people with compromised respiratory systems most severely. When inhaled, ozone can cause acute respiratory problems; aggravate asthma; cause significant temporary decreases in lung function of 15 to over 20 percent in some healthy adults;

> cause inflammation of lung tissue, produce changes in lung tissue and structure; may increase hospital admissions and emergency room visits; and impair the body's immune system defenses, making people more susceptible to respiratory illnesses. (66 Fed. Reg. 5002, 5012 (Jan. 18, 2001).)

Moreover, ozone is not an equal opportunity pollutant, striking hardest the most vulnerable segments of our population: children, the elderly, and people with respiratory ailments. (*Id.*) Children are at greater risk because their lung capacity is still developing, because they spend significantly more time outdoors than adults — especially in the summertime when ozone levels are the highest, and because they are generally engaged in relatively intense physical activity that causes them to breathe more ozone pollution. (*Id.*)

Ozone has severe impacts on millions of Americans with asthma. While it is as yet unclear whether smog actually causes asthma, there is no doubt that it exacerbates the condition. (*See* 66 Fed. Reg. 5002, 5012 (Jan. 18, 2001) (EPA points to "strong and convincing evidence that exposure to ozone is associated with exacerbation of asthma-related symptoms").) Moreover, as EPA observes, the impacts of ozone on "asthmatics are of special concern particularly in light of the growing asthma problem in the United States and the increased rates of asthma-related mortality and hospitalizations, especially in children in general and black children in particular." (62 Fed. Reg. At 38864.) In fact: P25a-29 (Cont.)

> "[A]sthma is one of the most common and costly diseases in the United States. . . . Today, more than 5 percent of the US population has asthma [and] [o]n average *15 people died every day* from asthma in 1995. . .. In 1998, the cost of asthma to the U.S. economy was estimated to be $11.3 billion, with hospitalizations accounting for the largest single portion of the costs." (66 Fed. Reg. at 5012.)

The health and societal costs of asthma are wreaking havoc here in California. There are currently 2.2 million Californians suffering from asthma.[51] In 1997 alone, nearly 56,413 residents, including 16,705 children, required hospitalization because their asthma attacks were so severe. Shockingly, asthma is now the leading cause of hospital admissions of young children in California. *Id.* at 1. Combined with very real human suffering is the huge financial drain of asthma hospitalizations on the state's health care system. The most recent data indicate that the statewide financial cost of these hospitalizations was nearly

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[51] California Department of Health Services, California County Asthma Hospitalization Chart Book, August 1, 2000.

$350,000,000, with nearly a third of the bill paid by the State Medi-Cal program. (*Id.* at 4.)

Thus, a supplemental EIR is required to analyze the cumulative impacts of the Project together with other past, present and reasonably foreseeable future projects in the region. As in *Kings County*, these emissions are highly significant because the region already exceeds state and federal health-based standards for ozone. The emissions from the Project will combine with emissions from numerous other Projects to exacerbate the regional ozone problem. This impact must be analyzed and mitigation measures proposed in a supplemental EIR. P25a-29 (Cont.)

ATTACHMENT 1
TO EXHIBIT A

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LOS ANGELES SUPERIOR COURT

SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF LOS ANGELES

NATURAL RESOURCES DEFENSE COUNCIL, INC., SAN PEDRO AND PENINSULA HOMEOWNERS' COALITION, SAN PEDRO PENINSULA HOMEOWNERS UNITED, INC., and COALITION FOR CLEAN AIR, INC., Petitioners, v. CITY OF LOS ANGELES, a Municipal Corporation, PORT OF LOS ANGELES, and LOS ANGELES BOARD OF HARBOR COMMISSIONERS, Respondents. CHINA SHIPPING HOLDING COMPANY, LTD., and DOES I-V, Real Parties in Interest.	Case No.: BS 070017 **[PROPOSED] STIPULATED JUDGMENT, MODIFICATION OF STAY, AND ORDER THEREON** Dept: 85, Honorable Dzintra Janavs

WHEREAS, the Court of Appeal has denied Respondents' request for a rehearing, the California Supreme Court has denied Respondents' petition for review and their request for a stay of the Court of Appeal's order, and the Los Angeles Superior Court has directed the Respondents and Petitioners to prepare and submit an order and writ in accordance with the Court's direction given at a hearing on February 6, 2003;

WHEREAS, Petitioners desire to ensure that an adequate environmental review of the impacts of container terminal operations at Berths 97-109 is prepared and considered by Respondents in compliance with CEQA, Respondents desire to provide for the operation of Phase I of the China Shipping Terminal while the China Shipping EIR is being prepared, and Petitioners and Respondents **(the "Parties")** seek to provide a mechanism to resolve future disputes over the China Shipping EIR; and

WHEREAS, the Parties now desire to settle the disputes between them, to have this agreement and stipulated judgment (the "Stipulated Judgment") entered as a stipulated judgment in this Action, and further desire that the Los Angeles Superior Court confirm and approve this Stipulated Judgment and modify the terms of the injunction consistent with this Stipulated Judgment.

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NOW, THEREFORE, EACH OF THE PARTIES TO THIS STIPULATED JUDGMENT AND MODIFICATION OF STAY AGREE, AND THIS COURT HEREBY FINDS, ORDERS, ADJUDGES AND DECREES AS FOLLOWS:

I

JURISDICTION

This Court has subject matter jurisdiction over this matter and has personal jurisdiction over the Petitioners and Respondents in this action. The Parties intend, and the Court hereby does, retain continuing jurisdiction over this Judgment to administer and enforce its terms.

II

PARTIES BOUND

The provisions of this Judgment shall apply to and be binding upon the Parties, their officers, directors, successors and assigns. The undersigned representatives of the respective signatories certify that they are fully authorized by the party that they represent to enter into the terms and conditions of this Judgment, to execute this Judgment on behalf of the party that they represent, and to legally bind the party that they represent.

III

DEFINITIONS

Words used in this Stipulated Judgment are to be taken and understood in their natural and ordinary sense unless this Stipulated Judgment indicates that a different meaning was intended. Whenever the following terms are used in this Stipulated Judgment, the following meanings shall apply:

A. The term "**this Agreement**" or "**this Stipulated Judgment**" shall mean this Stipulated Judgment.

B. The terms "**Lease**" or "**China Shipping Lease**" shall mean Permit 999 granted by the Port and City to the China Shipping Holding Co., Ltd. on March 28, 2001 and May 8, 2001, respectively.

C. The term "**China Shipping Project**" or "**Project**" shall mean the project to construct and operate the three-phase container terminal at Berths 97-109 in the West Basin area of the Port of Los Angeles described in the Lease.

D. The term "**China Shipping EIR**" shall mean the project-specific EIR to be prepared for the China Shipping Project pursuant to section VI of this Agreement.

E. The term "**CEQA**" shall mean the California Environmental Quality Act (Public Resources Code § 21000 *et seq.*) and the State CEQA Guidelines and applicable case law.

F. The term "**Parties**" shall mean Petitioners and Respondents.

G. The term "**Petitioners**" shall mean Petitioners Natural Resources Defense Council, Inc.; San Pedro and Peninsula Homeowners Coalition; San Pedro Peninsula Homeowners United, Inc; and the Coalition for Clean Air, Inc.

H. The term "**Port of Los Angeles Community Advisory Committee**" or "**PCAC**" shall mean that entity entitled the Port of Los Angeles Community Advisory Committee as created by resolution of the Board of Harbor Commissioners on October 10, 2001.

I. The term "**Respondents**" shall mean Respondents the City of Los Angeles, the Port of Los Angeles, and the Los Angeles Board of Harbor Commissioners.

J. The term "**Phase I**" shall mean Phase I of the China Shipping Project as defined in the Lease.

IV

DECLARATION OF GOALS AND PURPOSES

The Parties have stipulated to enter this Stipulated Judgment to address Respondents' desire to provide for the operation of Phase I of the China Shipping Project while the China Shipping EIR is prepared and to modify the stay and injunction imposed by the Court of Appeal to allow such operation, Petitioners' desire to ensure that an adequate environmental review of the impacts of container terminal operations at Berths 97-109 is prepared and considered by Respondents in compliance with CEQA and the Parties desire to seek to provide a mechanism to resolve any future disputes concerning the China Shipping EIR.

V

OPERATION OF PHASE ONE OF THE CHINA SHIPPING/BERTH 97-109 PROJECT PENDING COMPLETION OF A NEW EIR

A. Phase One Operation May Proceed. In consideration of the additional mitigation and other terms of this Judgment, the Port may complete construction and commence or allow operation of Phase I of the China Shipping Project, as described in the Lease, immediately upon the effective date of this Judgment. The Port may also continue to operate or allow the operation of Phase I while the China Shipping EIR is being prepared, and while any legal disputes regarding the China Shipping EIR are resolved. However, nothing in this Judgment shall prevent Petitioners from requesting the superior court to stay construction and/or operation of Phase I of the China Shipping Project on the basis of an inadequacy of the China Shipping EIR that is significant enough to warrant a stay in light of the agreed upon mitigation measures in this Stipulated Judgment, or for a material failure to implement the mitigation measures set forth in

section VIII of this Judgment, provided such request is first submitted to the Arbitrator. The Port shall be subject to the capacity cap set forth in section XI of this Judgment, below, during the period that the China Shipping EIR is being prepared and while any legal disputes regarding the China Shipping EIR are resolved.

B. Modification of Stay and Injunction. In its October 30, 2002 decision in this Action, the Second District Court of Appeal remanded this Action to this Court with directions that this Court issue a writ of mandate requiring preparation of "an EIR in connection with all three phases of the China Shipping project" and issue an injunction incorporating the terms of the stay issued by the Court of Appeal on October 23, 2002. A copy of that stay order is attached to this Judgment as Exhibit "A". The Parties agree that the injunction shall be modified to allow the following, subject to the provisions of section V.D of this Judgment: completion of the wharf at Berth 100, erection and operation of the four cranes at Berth 100, subject to the provisions of section VIII.A.2 of this Judgment, and operation of Phase I of the China Shipping Project, subject to the capacity cap set forth in section XI of this Judgment. The injunction of Phases II and III of the China Shipping Project is not modified by this provision, and shall stay in place until lifted by a court of competent jurisdiction, consistent with the writ of mandate issued by the Los Angeles Superior Court.

C. Further Actions to Allow Operation. By executing this Judgment, the Parties intend that the stay imposed by the Court of Appeal and the injunction to be issued in accordance with that stay shall be modified by the Los Angeles Superior Court as described herein.

D. Termination of Lease. The purpose of this Stipulated Judgment from the Port's perspective is to obtain the ability to complete and operate Phase I of the China Shipping Project. Accordingly, upon written notice by Respondents to counsel for Petitioners that (1) China

Shipping has terminated the Lease, has provided notice of termination of the Lease, or otherwise will not use Berths 97-109, and (2) that the site will not otherwise be utilized for container terminal operations, then sections V (A) through (C), VIII, and XI, of this Stipulated Judgment shall be tolled. In such an event, any money already paid by Respondents pursuant to section VIII of this Judgment shall not be refunded and shall be fully distributed and used in accordance with the provisions of section VIII, and the Port shall not be required to make further payments pursuant to section VIII, except as provided in sections V.D.1 through 3 of this Stipulated Judgment.

1. If China Shipping later intends to commence container terminal operations at Berths 97-109, whether under the Lease or a new agreement, alone or in combination with any other company, then Respondents shall provide written notice to counsel for Petitioners and all the provisions of this Judgment shall become fully effective 30 days after receipt of such written notice, and any deadlines for payments pursuant to section VIII shall be extended by the period of tolling.

2. If the Port later intends to allow anyone other than China Shipping to operate Berths 97-109 for container terminal operations, the Port shall provide written notice of such intent to counsel for Petitioners upon the earliest commitment by the Port to lease Berths 97-109 or otherwise allow Berths 97-109 to be used for container operations, including but not limited to the execution of a notice of intent or a memorandum of understanding, at which time section VIII of this Judgment shall become fully effective.

3. If section V.A through C of this Judgment is tolled pursuant to this provision and remains tolled for a period of 90 days, then the Port shall, within one year, either sell or move the four cranes currently at Berths 97-109 to another location, or pay the additional

amount of $2 million towards community aesthetic mitigation pursuant to Section VIII.B of this Judgment. The obligation to move the cranes or pay additional mitigation shall be extinguished if container uses commence at Berths 97-109, except as provided in section VIII.A.2 of this Judgment.

4. The Port currently has the right to allow the use of the backlands at Berths 97-109 for container storage pursuant to the decision of the Second District Court of Appeal and the writ issued by the Los Angeles Superior Court. Notwithstanding the provisions of Section V.D (1) through (3), if Section VIII of this Stipulated Judgment is tolled pursuant to this Section V. D, then such use of the backlands limited to that use as specifically allowed by the Court of Appeal shall not constitute operation of Phase I for purposes of this section V.D. This provision does not authorize any use of the backlands beyond that allowed by the Court of Appeal and the Superior Court writ, and does not limit the Port's obligation to conduct CEQA review for any expansion of such use beyond that allowed by the Court of Appeal and the Superior Court writ.

5. If provisions of this Agreement are tolled and remain tolled for a period of five years, then this Agreement shall terminate.

VI

PREPARATION OF A PROJECT-SPECIFIC EIR FOR THE CHINA SHIPPING/BERTH 97-109 PROJECT AND RECONSIDERATION OF THE CHINA SHIPPING LEASE AND COASTAL DEVELOPMENT PERMIT

A. Preparation of a Project-Specific EIR for the China Shipping Project.

1. Project-Specific EIR. The Port shall prepare a project-specific EIR evaluating the impacts of the construction and operation of all three phases combined of the China Shipping Project. Such EIR shall be certified by Respondents under CEQA for their use

in the reconsideration of the approval of the Lease and Coastal Development Permit or for the approval of any container terminal use at Berths 97-109, and Respondents shall process and consider such EIR under CEQA and otherwise comply with all obligations under CEQA applicable to an EIR which must serve as the basis for any such project approval. The China Shipping EIR shall: (a) evaluate all project-specific and cumulative impacts from the China Shipping Project (development and operation of Berths 97-109 as described in the Lease) alone, and not as part of any larger West Basin project or other project, (b) assess mitigation measures to reduce those impacts, and (c) consider alternatives to the China Shipping Project with reduced environmental impacts, including alternative "Port-related uses" other than a shipping terminal at the site of the China Shipping Project and alternatives to the size, magnitude and configuration of the proposed China Shipping Project. The Port shall prepare and distribute a new notice of preparation, conduct and complete a new scoping process, circulate a new draft EIR for public and agency review, and complete and certify the China Shipping EIR.

Nothing in this agreement shall prevent the Port from preparing and certifying EIRs for other projects, including, but not limited to, a possible proposal to develop a project that combines operation of the China Shipping Project with the Berths 121-131 Yang Ming Terminal and a possible EIR that addresses other terminals in the West Basin and/or the West Basin as a whole, including Berth 97-109. The Port's preparation of any such other EIR will not supercede or replace or otherwise alter the Port's obligation to complete and certify the China Shipping EIR in compliance with CEQA and the provisions of this Judgment and to adopt the mitigation measures identified in the China Shipping EIR for the China Shipping Project, as provided in section VI.C below. The Port shall certify the China Shipping EIR prior to or at the same time

that it certifies any other EIR that evaluates the Berth 97-109 site as part of that other EIR's proposed project.

2. Baseline. The baseline for consideration of impacts from the China Shipping Project shall be either zero or the baseline for Berths 97-109 prior to approval of the Lease in March 2001.

3. Scope of Review. The China Shipping EIR will cover all three phases of the China Shipping Project, as described in the Lease. The China Shipping EIR will evaluate the following categories of impacts on the Port, the surrounding communities of San Pedro and Wilmington, and the South Coast Air Basin, and will set forth mitigation measures for any impacts in these categories which are potentially significant: (a) geology, seismicity, and topography, (b) groundwater, soils and sediments; (c) meteorology and air quality; (d) toxic emissions and risk; (e) hydrology, water quality and oceanography; (f) biota and habitats; (g) ground transportation and circulation; (h) marine vessel transportation; (i) noise; (j) public health and safety; (k) public services; (l) energy; (m) utilities; (n) land use; (o) aesthetics, visual resources and light and glare; (p) recreation; (q) cultural resources and (r) environmental justice.

4. Consultant. The primary consultants to prepare the China Shipping EIR shall be:

Lead consultant:	CH2M Hill
Traffic consultant:	Mayer Mohades and Kaku Associates
Air quality consultant:	CH2M Hill and an additional firm to be determined
Aesthetics consultant:	CH2M Hill and Takata and Associates.

The Port will retain an additional consultant to assist in the air quality impact analysis or review of such analysis, and shall employ TIAX LLC as that additional air quality consultant if TIAX LLC meets the contracting requirements of the City of Los Angeles.

B. Reconsideration of China Shipping Project. Respondents shall reconsider their approvals of the use of Berths 97-109 as a container terminal, and for that purpose they shall first consider the China Shipping EIR in the manner prescribed by CEQA and in accordance with the provisions of this Judgment, and shall certify the China Shipping EIR for that purpose. Following certification of the China Shipping EIR, the Board of Harbor Commissioners ("Board") shall reconsider its issuance of a Coastal Development Permit for the Project in light of the new China Shipping EIR and the Port and City shall each reconsider their approvals of the Lease in light of the new China Shipping EIR. Alternatively, if Berths 97-109 (or any part thereof) is leased under a different agreement, the Port and City shall first complete the China Shipping EIR and shall consider the approval of any such agreement in light of the new China Shipping EIR. Nothing in this provision shall prevent Respondents from using the backlands for container storage as allowed by the Second District Court of Appeal in its October 30, 2002 decision.

C. Adoption of Feasible Mitigation Measures. If the Port takes any further action to approve use of Berths 97-109 as a container terminal, whether through the re-approval of the China Shipping Lease or the Coastal Development Permit or through any other approval for container terminal use of Berths 97-109, including in combination with the Yang Ming terminal, then the Port will adopt all mitigation measures identified in the China Shipping EIR for all environmental impacts of the China Shipping Project found in the China Shipping EIR to be significant, provided that the Board finds the measure to be feasible. In addition, if the City

takes any further action to approve use of Berths 97-109 as a container terminal, whether through the re-approval of the China Shipping Lease or the Coastal Development Permit or through any other approval for container terminal use of Berths 97-109, including in combination with the Yang Ming terminal, then the City will adopt all mitigation measures identified in the China Shipping EIR for all environmental impacts of the China Shipping Project found in the China Shipping EIR to be significant, provided that the City finds the measure to be feasible. Consistent with the obligations of a lead agency decisionmaking body under CEQA, the feasibility of mitigation measures identified in the China Shipping EIR shall be determined by the Board and the City, respectively, based upon substantial evidence in the record. Where a mitigation measure is proposed for adoption in the China Shipping EIR in order to reduce a significant impact to insignificance and that measure is rejected as infeasible by the Board or the City, the Board or the City shall adopt specific findings based upon substantial evidence explaining such determination, consistent with the requirements of CEQA. Any dispute regarding the "feasibility" of mitigation measures will be resolved by arbitration, as set forth in section VII below.

D. Alternatives. Before the Port or City takes any further action to approve use of Berths 97-109 as a container terminal, whether through the re-approval of the China Shipping Lease or the Coastal Development Permit or through any other approval for container terminal use of Berths 97-109, including in combination with the Yang Ming terminal, each shall consider the alternatives to the China Shipping Project analyzed in the China Shipping EIR. In addition, if the Port prepares a separate EIR for a combined China Shipping/Yang Ming terminal, it will consider the same alternatives for the use of Berths 97-109 in that EIR and it will also consider the combined terminal as an alternative in the China Shipping EIR.

VII

ARBITRATION

A. Any disputes between the Parties arising under this Judgment, including but not limited to disputes regarding the adequacy of the China Shipping EIR, regarding time limits, regarding the determination of feasibility of mitigation measures identified in the China Shipping EIR, or relating to Respondents' obligations pursuant to and in compliance with section VIII shall be submitted to Justice Steven Stone (retired) for non-binding arbitration. Should Justice Stone become unavailable, the Parties will agree on a replacement arbitrator. If the parties cannot reach agreement, Justice Stone, or the superior court if he is unavailable, shall designate a replacement arbitrator.

B. The Parties intend that arbitration shall be used only to resolve actual disputes between the Parties and shall not be used to obtain advisory opinions, and accordingly, any dispute to submitted to the arbitrator must be an actual dispute that could be litigated between the Parties. The Parties agree that to initiate an arbitration, the party wishing to arbitrate must first attempt in good-faith to resolve the dispute directly with the other party. The Parties agree that they will enter into stipulations, tolling agreements or other agreements needed to extend the time periods for filing suit set forth in Public Resources Code section 21167 where such a time extension is necessary to allow such arbitration required by this Judgment. No Party shall file suit with respect to any dispute that is subject to arbitration under this Agreement unless the dispute first has been arbitrated and the arbitrator has issued his or her non-binding written determination concerning the dispute.

C. Nothing in this section shall prevent Petitioners from requesting the superior court to issue a temporary restraining order or preliminary injunction to stay construction and/or

operation of any container terminal project at Berths 97-109 on the basis of a material failure of Respondents to comply with CEQA or to implement the mitigation measures set forth in section VIII of this Stipulated Judgment, pending arbitration of such dispute, provided that Petitioners shall have first provided the Port with an opportunity to cure the alleged breach and also submitted the dispute to the Arbitrator.

D. If any legal action is brought by a third party not a Party to this Judgment challenging the China Shipping EIR or an EIR evaluating joint operation of China Shipping and Yang Ming if the claims relate primarily to China Shipping, or challenging the approval of the China Shipping Project, then, if requested by the Port, Petitioners shall not object to inclusion of such third party lawsuit in any ongoing arbitration under this section challenging the same EIR.

E. The Port shall pay costs incurred by the arbitrator for resolution of disputes between the Parties, but such costs shall be no more than $30,000 annually. Where the $30,000 cap is met and Respondents refuse to pay the costs of additional arbitration, Petitioners shall have the option of paying for additional arbitration or seeking relief directly from the superior court. If another legal action by a third party not a Party to this Judgment is included within such a non-binding arbitration, then the costs shall be equitably allocated by the arbitrator, and the portion allocable to arbitration of disputes between the Parties shall be paid by the Port and count toward the $30,000 cap.

F. When any dispute is decided by the Arbitrator, the Parties shall require the arbitrator to issue a statement of the rationale and reasoning for the arbitrator's determination, and such statement shall be part of the record presented to any court where the dispute is subsequently litigated.

VIII

MITIGATION OF CHINA SHIPPING TERMINAL AND OTHER PORT IMPACTS

A. Mitigation Measures

1. Alternative Fuels for Container Handling Equipment. The Port shall require that yard tractors used at Berths 97-109 be powered only by alternative fuels ("alternative fuels"), as defined by the California Air Resources Board (CARB). The Port shall require all top picks and side picks used at Berths 97-109 to utilize emulsified diesel fuel and diesel oxidation catalysts unless the Port provides to Petitioners written documentation by the operator that emulsified diesel fuel and/or diesel oxidation catalysts cannot for technical or safety reasons be used for a particular application. The Port will require that the terminal operator for Berths 97-109 place an order for alternative fuel powered yard tractors within 30 days of the date of entry of this Judgment, or as soon thereafter as the engine is certified or the manufacturer accepts orders, for delivery at the earliest practicable time, but no later than seven months after the date of entry of judgment, unless a showing is made to the Arbitrator of good faith efforts and good cause for a delay. The Port shall require the terminal operator to begin using the alternative fuel yard tractors in place of existing yard tractors within the later of commencement of operations or one week after delivery of the alternative fuel yard tractors. Until said alternative-fuel yard tractors are delivered, the Port shall use only yard tractors at Berths 97-109 that use lower emitting "emulsified diesel fuel." The Port shall require the terminal operator to place an order for diesel oxidation catalysts for diesel yard tractors within 30 days following the effective date of this Stipulated Judgment, and to install the diesel oxidation catalysts as soon as they can be delivered from the manufacturer, unless a showing is made to the Petitioners of good faith efforts and good cause for a delay. The Parties shall submit any dispute regarding such delay to the

Arbitrator. These requirements that yard tractors be powered by alternative fuels shall apply unless the Port provides to Petitioners written documentation by the operator that an alternative-fuel yard tractor cannot for technical reasons be used for a particular application. Whenever this subsection applies to allow the use or purchase of yard tractors that are not powered by alternative fuels, only equipment operated by emulsified diesel fuel and equipped with diesel oxidation catalysts or low sulfur diesel fuel with particulate traps shall be used.

2. Marine Terminal Cranes. The Port shall replace the four existing cranes at Berths 97-109 with "low profile" cranes that are designed to reduce visual impact. Low profile cranes include cranes that are designed to reduce visual impact by the use of a horizontal boom that does not need to be raised up when the crane is not in use such that the overall crane height is reduced to 185 feet or less when the crane is not in use and mobile harbor cranes. The Port shall make a good faith effort to determine whether such cranes may feasibly be constructed and operated with collapsible, retractable or telescoping legs that further reduce the height of the crane while the crane is not in use, and if such cranes can feasibly be constructed and operated with such legs, the replacement low profile cranes shall be so constructed. Within 90 days of the effective date of this Stipulated Judgment, the Port shall investigate the operational feasibility and cost of different types of cranes that qualify as low-profile cranes under this provision for use at Berths 97-109. As part of this investigation, the Port shall within 30 days of the effective date of this Stipulated Judgment issue a request for proposal ("RFP") requesting that crane fabricators provide drawings, specifications, and prices for cranes that would be available for use at Berths 97-109 that would qualify as low-profile cranes under this provision. The Port shall cause such low profile cranes to be ordered within 90 days of the date of entry of this Judgment, and to provide for delivery of such cranes as soon as is practicable, but in no case later than two years

from the date of entry of this Judgment. The Port shall, if necessary, fund the excess cost of such low profile cranes up to a maximum sale price of $8 million each. If the Port determines that it is not feasible to replace the four existing cranes with low profile cranes at a price of $8 million each or less, then (i) the Port shall report that determination to the Parties, and the Parties may arbitrate any dispute over such feasibility pursuant to the provisions of section VII; and (ii) the Port shall contribute to community aesthetic mitigation pursuant to section VIII.B.3 below, a sum equal to an additional $800,000 per crane or $3.2 million plus the avoided cost of low profile cranes. Such avoided costs shall be calculated based on the cost of reinforcement of the wharf and transport of the existing four cranes that would be required to install low-profile cranes.

3. Alternative Power During Hoteling of Ships. The Port shall install the necessary electrical infrastructure at Berths 100 and 102 to provide shoreside electrical power for ship hoteling. The infrastructure for Berth 100 shall be completed no later than one year from the date of entry of this Judgment and shall be provided at Berth 102 prior to operation of the berth. The Port shall pay the costs of retrofitting of China Shipping's ships so they may use the electrical power while docked at Berths 97-109 up to $5 million. Notwithstanding the $5 million cap, the Port shall require that ships docking at Berths 97-109 use the electric power for hoteling.

4. Creation and Implementation of a Traffic Mitigation Plan. (a) The Port shall conduct a traffic study as part of the China Shipping EIR, which study shall be completed by May 1, 2003. The Port shall begin implementation of mitigation for traffic impacts of operation of Phase I within 30 days of the completion of this study. The Parties acknowledge that this traffic study may be issued prior to the issuance of the China Shipping EIR, and that the traffic study may be revised as part of the completion of the EIR process. (b) The Port shall

create and implement a traffic mitigation plan for San Pedro and Wilmington in response to the baseline study of traffic impacts of Port operations currently underway, and shall begin implementation of the plan within three months of completion of the traffic study, which shall be completed by September 1, 2003. The traffic study is one of the seven studies ordered by the Board of Harbor Commissioners on October 10, 2001.

B. Mitigation Payment. The Port shall act to mitigate the environmental and other effects of Port operations on and off Port lands and on the neighboring communities of San Pedro and Wilmington by depositing into a separate designated mitigation account $10 million per year in five installments, for a total of $50 million. The first $10 million payment shall be made within 30 days of the date of entry of this Judgment, and subsequent payments shall be made one year from the date of the first payment for the following four years.

Of the mitigation payments, $10 million shall be used for the Gateway Cities Program, as set forth in section VIII.B.1. Out of the remaining payments, $20 million shall be used for air quality mitigation (as set forth in section VIII.B.2 below), and $20 million shall be used for community aesthetic mitigation (as set forth in section VIII.B.3 below), so that overall, sixty percent of these funds shall be used for air quality mitigation and forty percent of these funds shall be used for community aesthetic mitigation. Payments into the account shall be made on the following schedule:

30 days from Entry of Judgment ("First Payment Date") -- $5 million for the Gateway Cities Program, $1 million for air quality mitigation, and $4 million for community aesthetic mitigation;

1 year from First Payment Date -- $2.5 million for the Gateway Cities Program; $3.5 million for air quality mitigation, and $4 million for community aesthetic mitigation;

2 years from First Payment Date -- $2.5 million for the Gateway Cities Program; $3.5 million for air quality mitigation, and $4 million for community aesthetic mitigation;

3 years from First Payment Date -- $6 million for air quality mitigation, and $4 million for community aesthetic mitigation; and

4 years from First Payment Date -- $6 million for air quality mitigation, and $4 million for community aesthetic mitigation.

All funds shall be committed for use pursuant to this section within five years. If at the conclusion of the five years any funds remain that have not yet been committed, within 30 days these funds shall be applied to an independent air quality mitigation program available to administer the funds and mutually agreeable to the Parties, with restrictions sufficient to ensure that such funds are used to reduce Port-related emissions. If the Parties cannot agree on the program to receive the remaining funds, the Parties shall submit the issue to the Arbitrator.

1. Gateway Cities Program. The $10 million allocated to the Gateway Cities Program shall be used for incentives to replace, repower or retrofit existing diesel-powered on-road trucks consistent with the existing written guidelines for distribution of funds by that Program. However, funding under this section may only be allocated to registered truck owners who verify to the Gateway Cities Program that they have made 100 deliveries to or from the Port of Los Angeles over the last year, and upon request by the Gateway Cities Program provide documentation through bills of lading or similar documentation. The Gateway Cities Program shall be required as a condition of receipt of the funds to provide a verifiable report and accounting on a quarterly basis confirming that the funds were used for trucks calling at the Port in compliance with the requirements of this Judgment. The Port shall have the right to have a City auditor examine all relevant records and verify that these funds were properly disbursed.

2. Air quality mitigation. The portion of the mitigation funds to be used for the reduction of air quality impacts from Port operations shall be deposited into a separate

designated account to be maintained by the Port for expenditures to be made pursuant to this section. These funds shall be expended only for programs and improvements that reduce emissions from Port operations that affect the communities of San Pedro and Wilmington. These funds shall also be expended only pursuant to the following requirements:

a. funding may be allocated to improvements, facilities, engines and equipment, and incentives to make alternative fuels available for Port operations (provided that funding for engines and equipment may not be allocated to the costs of complying with SCAQMD rules governing yard tractors, although funding may be allocated to mitigation that exceeds SCAQMD requirements, or that achieves compliance at an earlier time than otherwise required);

b. funding may be allocated to emission reductions from locomotives that regularly serve the Port;

c. funding may be allocated to emission reductions from ships only if the ship owner certifies and the Port confirms that the ship regularly calls at the Port;

d. funding may be allocated to emission reductions from tugs and other harbor craft only if the craft is located at and directly serves the Port; and

e. funding may be allocated to improvements on trucks only if the registered truck owner certifies to the Port that they have made 100 or more annual deliveries to or from the Port over the past year. Funding of projects pursuant to subsections (a) through (d) above shall have priority over funding of projects pursuant to this subsection (e).

The Port shall provide a report and accounting on a quarterly basis verifying that the funds have been allocated in compliance with these terms.

3. Community aesthetic mitigation. The Port shall expend a total of $20 million dollars over a four-year period for the reduction of aesthetic impacts from Port facilities and operations. All projects funded under this subsection shall be port-related projects on Port land, or shall be projects not on Port land that have a demonstrable nexus or connection to the environmental, aesthetic, and/or public health impacts of the Port's operations and facilities. Projects to receive funding under this subsection shall fall within the following categories and be

prioritized as follows: (i) open space and parks; (ii) landscaping and beautification; and (iii) funding for educational, arts, and athletic facilities consistent with the Tidelands Trust. Proceeds for projects funded under this section shall be divided approximately evenly between projects benefiting San Pedro and Wilmington.

4. Funding Procedures. The following procedures shall be followed before the air quality and community aesthetic mitigation funds are disbursed by the Port pursuant to section VIII.B.2 and VIII.B.3, above. First, any party proposing such funding shall submit a proposal simultaneously to the PCAC and to the Port's Environmental Mitigation Coordinator. Second, PCAC and the Port's Environmental Mitigation Coordinator shall evaluate the submitted proposal. PCAC and the Port's Environmental Mitigation Coordinator shall consult with the Technical Advisory Committee as to air quality mitigation proposals submitted pursuant to section VIII.B.2 above. Third, the proposal shall be considered by PCAC, which will recommend approval, denial, or approval with modifications. If the PCAC recommends approval of the proposal (including any modifications to the proposal which PCAC may recommend), then the proposal shall be forwarded to the Board for consideration. At a public meeting, after considering the PCAC recommendation, any recommendation of the Technical Advisory Committee on the proposal, and any staff reports on the proposal and the record at the meeting, the Board shall approve, or deny the PCAC recommendation or return the proposal to the PCAC for consideration of modifications. If the Board denies the PCAC recommendation, it shall adopt specific findings explaining such actions. If the Board approves the PCAC recommendation, the project shall be funded. The Port shall prepare a quarterly report to the Board and the PCAC regarding the status of all approved projects and available mitigation funds in the designated account for specific types of mitigation. This Agreement shall not affect the procedure for approval and funding of mitigation measures not recommended by PCAC with funds other than those defined in this Agreement.

The Technical Advisory Committee shall consist of one representative with technical expertise regarding air pollution reductions applicable to ports appointed by each of the following entities: (1) the California Air Resources Board; (2) the U.S. Environmental Protection

Agency; (3) the South Coast Air Quality Management District (SCAQMD); (4) the Mobile Source Reduction Committee for the South Coast Air Basin; (5) South Coast Carl Moyer Memorial Air Quality Fund. The members of the Technical Advisory Committee shall serve without compensation and shall meet on a regular basis to advise the PCAC and the Port's Environmental Mitigation Coordinator on how best to utilize the air quality mitigation funds to maximize air quality emission reductions at the Port, including but not limited to the development of requests for proposals and evaluation of proposals submitted for funding. If an agency does not designate a representative to the Committee, the Committee may proceed with participation from the remaining agencies.

5. Restrictions on Use of Mitigation Funds. The mitigation funds disbursed by the Port shall not be used for (a) mitigation measures committed to in Section VIII.A of this Judgment; (b) funds already committed to in any prior settlement or other document by the Port or City; (c) funds already budgeted for the current or future fiscal year by the Port or City or in an amount and type allocated for mitigation of Port impacts in prior years; (d) measures identified in future CEQA documents to mitigate impacts from projects not yet approved by the Port (although future CEQA documents may consider programs and activities funded pursuant to this provision in the baseline discussion); or (e) used as a substitute for existing budgeted municipal functions or programs. Funds to be allocated pursuant to this section VIII shall come from Port revenues, and may not come from grants, matching funds, or other sources of funds. The Port's expenditure of monies in this Agreement must be: (a) for programs to mitigate existing or future impacts of Port operations on the surrounding communities; (b) consistent with the State Tidelands Trust and the public trust doctrine; (c) consistent with the Los Angeles City Charter; (d) consistent with the California Coastal Act; and (e) consistent with any other applicable laws and regulations.

6. Resolution of Disputes. Any disputes regarding allocation of these mitigation funds shall be resolved by the Arbitrator.

C. Reporting Requirements. The Port shall provide quarterly reports to Petitioners setting forth the status of its compliance with Section VIII of this Stipulated Judgment.

IX

CHANGES TO THE PORT COMMUNITY ADVISORY COMMITTEE

A. Continued Existence of PCAC. This Stipulated Judgment shall not become effective until the Board has adopted a resolution providing for continued existence of the PCAC subject to applicable law and for the PCAC to operate under the continued governance of the Board.

B. Board Consideration of PCAC Resolutions. This Stipulated Judgment shall not become effective until the Board has adopted a resolution providing that: (a) the Board will consider all resolutions adopted by the PCAC in an expeditious and timely manner; and (b) the Board shall issue a written statement of reasons and appropriate findings for any PCAC resolution rejected by the Board.

X

NOTICE OF UPCOMING CEQA ACTIONS

The Port shall on a monthly basis provide a description of all proposed projects and a schedule for upcoming decisions on port projects to the PCAC and neighborhood councils, including but not limited to issuance of notices of preparation of environmental documents, negative declarations, EIRs and other project approvals, with as much advance notice and description of such proposed projects and CEQA decisions as reasonably possible. The Port shall use its best efforts to provide such monthly notice as to minor exemptions from CEQA, and to ensure that all anticipated projects and CEQA decisions are included in the notice. The Parties understand that some matters may arise after such a monthly notice has been provided, and the fact that a project was not included on such a monthly notice shall not prevent Port staff or the Port Board from taking action on the matter.

XI

LIMIT ON INTERIM OPERATION OF BERTH 100 AND ADDITIONAL MITIGATION PAYMENT IF LIMIT IS EXCEEDED

During the interim period when operation of Phase I of the China Shipping Terminal is allowed pursuant to section V, above, the annual capacity of additional container cargo to be

offloaded and handled at Berth 100 shall not exceed 328,000 TEUs per calendar year. If the China Shipping EIR is prepared in less than a calendar year, this capacity limit shall be determined based on the period of time between the effective date of this Judgment and the date that the China Shipping EIR is completed, prorated accordingly. If the container throughput exceeds the agreed-upon capacity, the Port shall make an additional payment to the mitigation fund described in section VIII.B, above, of $30 per TEU in excess of the cap.

The Port shall provide to counsel for Petitioners a quarterly report with supporting documentation of the TEU throughput at Berth 97-109. This quarterly report may be provided on a confidential basis if such confidentiality is requested by the terminal operator, in which case Petitioners shall maintain the confidentiality of the report, and agree if any such document is submitted to the Arbitrator or a court, it shall be submitted under an agreement of confidentiality or under seal.

After the Board and City have each certified the China Shipping EIR and issued their respective decisions regarding the use of Berths 97-109, the capacity limit shall terminate. However, if a Petitioner brings a legal action (including required arbitration) challenging the adequacy of the China Shipping EIR or otherwise challenging the legality of the City's or the Port's decisions regarding the use of Berths 97-109, then the capacity limit shall immediately and provisionally be placed back in effect while the action is resolved, and the penalty payment of $30 per TEU shall be placed into a separate designated account pending the outcome of the litigation. If the action is resolved with a finding that the Port abused its discretion and the abuse was prejudicial, the funds will be paid as additional mitigation as described in section VIII.B above, in approximately equal shares to air quality mitigation and community aesthetic mitigation. Otherwise, the Port will recover and retain these funds.

XII

ATTORNEYS FEES IN THIS ACTION

A. Petitioners' Fees. The Port shall pay Petitioners reasonable attorneys' fees and costs for this Action, based upon reasonable hourly rates, in the amount of $1,426,000.

B. Enforcement. Petitioners shall be entitled to reasonable attorneys' fees and costs incurred in the enforcement of this Judgment, including but not limited to the fees and costs incurred by Petitioners for arbitration pursuant to section VII, when Petitioners are the prevailing party as defined under Code of Civil Procedure section 1021.5. The amount of attorneys' fees and costs to be awarded for enforcement of this Judgment shall be determined either through negotiation or by binding arbitration before the arbitrator.

XIII

FUTURE COOPERATION BETWEEN THE PORT AND PETITIONERS

The Parties agree that this settlement and this Judgment have been reached in the mutual best interests of the Parties. In that spirit, the Parties shall cooperate to implement this Judgment, including the execution and filing of any court papers in this action necessary to implement the terms of this Judgment.

In addition, the Parties agree to cooperatively address and respond to any future environmental issue at the Port and in San Pedro and Wilmington. This cooperation may consist of meetings and discussions among the Parties, the purpose of which will be to attempt to coordinate the Parties' efforts at considering or resolving such future environmental issues. Nothing in this section shall limit the Parties' ability to bring future litigation against any other party or in any way create a condition precedent to the commencement of future lawsuits or other legal action by the Parties.

XIV

STATEMENTS TO THE PRESS

The Parties agree to provide advance copies of their draft press releases to announce this settlement and Stipulated Judgment for review and comment by all other parties, and to make no other statements regarding this Stipulated Judgment until the agreed upon date and time for release of the written statements. The Parties will attempt in good faith to address concerns raised by any other party as to the draft press release. The Parties will also provide a copy of their final press releases to all other Parties before the effective date of this Stipulated Judgment.

XV

SETTLEMENT CONTINGENT ON COUNCIL APPROVAL AND SETTLEMENT OF FEDERAL LAWSUIT

This Stipulated Judgment requires approval of the Los Angeles City Council, and is subject to and contingent upon such Council approval. This Stipulated Judgment is also contingent upon a settlement of the federal lawsuit *Natural Resources Defense Council, Inc., et al. v. United States Army Corps of Engineers, et al.*, Case No. 02-04793 MMM (Ex).

XVI

FORCE MAJEURE

If an event of force majeure occurs, such as civil commotion, war, acts of public enemies, fire, explosion, earthquake or other natural disaster or action of the elements, or acts of God, or unforeseen circumstances which result in a prolonged interruption of operations of the Port, and if such event of force majeure is so severe that it prevents the Port from fulfilling its obligations under this Agreement, then those obligations to that extent shall be suspended during the period of force majeure, but not thereafter. This provision shall not apply to the obligations under section VIII.B, except that the obligations under section VIII.B shall be suspended if the event of force majeure results in the cessation of operations at the China Shipping Terminal prior to certification of the China Shipping EIR and shall resume as soon as such cessation ends. The Port shall provide to Petitioners notice of an event of force majeure within five days of its occurrence. Any disputes concerning the application of this force majeure provision shall be submitted to the Arbitrator.

XVII

INTEGRATION AND SEVERABILITY

The Parties agree that this Stipulated Judgment sets forth the final entire agreement between them relating to their settlement and that this document merges and supersedes all prior discussions, agreements, understandings, representations, and all other communications between them relating to the subject matter of this Stipulated Judgment.

Each provision of this Stipulated Judgment shall be interpreted in such a manner as to be valid and enforceable under applicable law, but if any provision of this Stipulated Judgment is hereinafter modified or invalidated by further order of a court of competent jurisdiction, that provision shall be invalidated only to that extent, without thereby invalidating the remainder of that provision or of any other provision. If any provision of this Stipulated Judgment is modified or invalidated as set forth above, or any funding decision made pursuant to the Stipulated Judgment, becomes prohibited or invalid under any applicable law, then the Parties shall negotiate in good faith and seek to agree upon a substitute provision or funding decision consistent with the intent of this Agreement which avoids the legal defect that resulted in the prohibition or invalidity. If the Parties cannot agree on such a substitute provision or funding decision, the Parties shall submit the issue to the Arbitrator.

XVIII

RELEASE OF CLAIMS

The parties hereby release all claims relating to the issuance of the China Shipping Lease and Coastal Development Permit for the China Shipping Project alleged in this action entitled *Natural Resources Defense Council, Inc., et al. v. City of Los Angeles, et al.* This limited release shall not extend to any other matter, does not release any of the rights and obligations under this Stipulated Judgment, and shall not extend to any action to enforce or interpret the provisions of this Agreement. This release shall not extend to any dispute regarding the adequacy or compliance with CEQA of the China Shipping EIR to be prepared pursuant to this Agreement.

XIX

ADDITIONAL PROVISIONS

A. No Admission. Nothing in this Stipulated Judgment shall be construed as or deemed for any purpose to be an admission or denial as to the validity of any claims or defenses. The Parties agree that if this Stipulated Judgment is not entered as a stipulated judgment by the Los Angeles Superior Court and therefore does not become effective, no Party can use any part of this Stipulated Judgment in any way in any legal proceeding.

B. Warranty of Authority. Each of the Parties represents and warrants that it has the right, power and authority to execute this Stipulated Judgment.

C. Written Waiver. A waiver of any provision of this Stipulated Judgment shall not be effective unless such a waiver is made expressly in writing. A written waiver of any one breach shall not be deemed a waiver of any other breach of the same or any other provision of this Stipulated Judgment.

D. Legal Counsel and Joint Preparation. The Parties affirm that they have been represented by counsel of their own choosing regarding the preparation and negotiation of this Stipulated Judgment and the matters set forth herein, and that each of them has read this Stipulated Judgment Agreement and is fully aware of its contents and its legal effect. The language of all parts of this Stipulated Judgment shall in all cases be construed as a whole, according to its fair meaning, and not strictly for or against any Party. No presumptions or rules of interpretation based upon the identity of the Party preparing or drafting the Stipulated Judgment, or any part thereof, shall be applicable or invoked.

E. Binding on Successors. This Stipulated Judgment shall be binding on and inure to the benefit of the successors and assigns of the Parties.

F. Counterparts. This Stipulated Judgment may be executed in counterparts, and when all Parties have executed this Stipulated Judgment, each counterpart will be deemed an original.

G. Captions. Captions are included herein for ease of reference only. The captions are not intended to affect the meaning of the contents or scope of this Settlement Agreement.

H. Notices. Notices or other communications given or required to be given under this Stipulated Judgment, shall be effective only if rendered or given in writing by overnight mail, hand delivery, or email or facsimile transmission if such email or facsimile transmission is confirmed by live telephone conversation, to the Party's representative identified below:

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For Respondents: Larry Keller, Executive Director
Port of Los Angeles
425 South Palos Verdes Street
San Pedro CA 90731
Facsimile No.: (310) 831-6936
Email: lkeller@portla.org
Telephone: (310) 732-3456

Dr. Ralph Appy,
Director of Environmental Management
Port of Los Angeles
425 South Palos Verdes Street
San Pedro CA 90731
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Email: rappy@portla.org
Telephone: (310) 732-3497

Thomas A. Russell, Senior Assistant City Attorney
Harbor Department, City Attorney's Office
415 South Palos Verdes Street
Facsimile No.: (310) 831-9778
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Telephone: (310) 732-3750

For Petitioners: Julie Masters, Esq.
Natural Resources Defense Council
6310 San Vicente Boulevard, Ste. 250
Los Angeles, California 90048
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Email: jmasters@nrdc.org
Telephone: (323) 934-6900

Andrew Mardesich, President
San Pedro Peninsula Homeowners United, Inc.
1931 Bardale Ave.
San Pedro, CA 90731
Facsimile No.: (310) 832-4919
Email: amardesich@earthlink.net
Telephone: (310) 832-4919

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Noel Park, President
San Pedro and Peninsula Homeowners' Coalition
3233 South Walker Avenue
San Pedro, CA 90731
Facsimile No.: (562) 804-5210
Email: jdcorvette@telis.org
Telephone: (562) 804-5205

Todd Campbell, Policy Director
Coalition for Clean Air
10780 Santa Monica Blvd #210
Los Angeles, CA 90025
Facsimile No.: (310) 446-4362
Email: todd@coalitionforcleanair.org
Telephone: (310) 441-1544

I. Effective Date. This Stipulated Judgment shall be effective on the date that it is entered as a stipulated judgment by the Los Angeles Superior Court, provided that the requirements of Section IX and Section XV have been satisfied. If the provisions of Section IX and Section XV have not been satisfied by the date that this Stipulated Judgment is entered, then this Stipulated Judgment shall be effective on the date that the requirements of Section IX and Section XV have been satisfied.

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NOW, THEREFORE, IT IS ORDERED THAT:

(1) A writ of mandate has already been issued by this Court requiring preparation of a project-specific EIR for Phases I, II, and III the China Shipping Project.

(2) Operation of Phases II and III is continued to be enjoined, pending certification of that EIR.

(3) Based on this Agreement of the Parties, the writ of mandate and injunction previously issued by this Court are hereby modified so that construction and operation of Phase I may continue subject to the terms of this Stipulated Judgment, including the capacity cap set forth in Section XI.

(4) This Court retains jurisdiction to enforce and administer the terms of this Stipulated Judgment. ~~Within ten days of the date of the Court's approval as set forth below, the Parties are directed to prepare and file with this Court a revised Judgment and Writ incorporating the terms of this Stipulated Judgment, and such revised Judgment and Writ shall then supersede the prior Judgment and Writ entered and issued by this Court.~~

IT IS SO ORDERED.

Dated: MAR 06 2003

DZINTRA I. JANAVS

Honorable Dzintra Janavs
Judge, Los Angeles County Superior Court

(parties' signatures follow)

SIGNATURES OF PARTIES:

DATED: 2-27-03
The Los Angeles Board of Harbor Commissioners

By: _____
Nicholas Tonsich, President

DATED: 2-27-03
The City of Los Angeles Harbor Department and the City of Los Angeles by its Board of Harbor Commissioners

By: _____
Larry Keller, Executive Director

DATED: _____

Attest: _____
Board Secretary

DATED: _____
Natural Resources Defense Council, Inc.

By: _____
Gail Ruderman Feuer, Senior Attorney

DATED: _____
San Pedro and Peninsula Homeowners Coalition

By: _____
Noel Park, President

DATED: _____
San Pedro Peninsula Homeowners United, Inc.

By: _____
Andrew Mardesich, President

DATED: _____
Coalition for Clean Air, Inc.

By: _____
David Allgood, President

SIGNATURES OF PARTIES:

DATED:_____
The Los Angeles Board of Harbor Commissioners

By:_____
Nicholas Tonsich, President

DATED:_____
The City of Los Angeles Harbor Department and the City of Los Angeles by its Board of Harbor Commissioners

By:_____
Larry Keller, Executive Director

DATED: 3/5/03

Attest: Audrey H. Yamaki
Board Secretary

DATED:_____
Natural Resources Defense Council, Inc.

By:_____
Gail Ruderman Feuer, Senior Attorney

DATED:_____
San Pedro and Peninsula Homeowners Coalition

By:_____
Noel Park, President

DATED:_____
San Pedro Peninsula Homeowners United, Inc.

By:_____
Andrew Mardesich, President

DATED:_____
Coalition for Clean Air, Inc.

By:_____
David Allgood, President

SIGNATURES OF PARTIES:

Dated:_____ PORT OF LOS ANGELES

By:_____
Larry Keller, Executive Director

Dated: 2/13/03 NATURAL RESOURCES DEFENSE COUNCIL, INC.

By:_____
Gail Ruderman Feuer, Senior Attorney

Dated:_____ SAN PEDRO AND PENINSULA HOMEOWNERS COALITION

By:_____
Noel Park, President

Dated:_____ SAN PEDRO PENINSULA HOMEOWNERS UNITED, INC.

By:_____
Andrew Mardesich, President

Dated: 2/13/03 COALITION FOR CLEAN AIR, INC.

By:_____
David Allgood, President

SIGNATURES OF PARTIES:

Dated:_____ PORT OF LOS ANGELES

By:_____
Larry Keller, Executive Director

Dated:_____ NATURAL RESOURCES DEFENSE COUNCIL, INC.

By:_____
Gail Ruderman Feuer, Senior Attorney

Dated: February 20, 2003 SAN PEDRO AND PENINSULA HOMEOWNERS COALITION

By: Noel Park
Noel Park, President

Dated:_____ SAN PEDRO PENINSULA HOMEOWNERS UNITED, INC.

By:_____
Andrew Mardesich, President

Dated:_____ COALITION FOR CLEAN AIR, INC.

By:_____
David Allgood, President

SIGNATURES OF PARTIES:

Dated:_____ PORT OF LOS ANGELES

By:_____
Larry Keller, Executive Director

Dated:_____ NATURAL RESOURCES DEFENSE COUNCIL, INC.

By:_____
Gail Ruderman Feuer, Senior Attorney

Dated:_____ SAN PEDRO AND PENINSULA HOMEOWNERS COALITION

By:_____
Noel Park, President

Dated: 2-18-03 SAN PEDRO PENINSULA HOMEOWNERS UNITED, INC.

By:_____
Andrew Mardesich, President

Dated:_____ COALITION FOR CLEAN AIR, INC.

By:_____
David Allgood, President

APPROVED AS TO FORM:

DATED: 2-28-03
ROCKARD J. DELGADILLO, City Attorney

By: _____
Thomas A. Russell
Senior Assistant City Attorney
City of Los Angeles

DATED: _____
NATURAL RESOURCES DEFENSE COUNCIL, INC.; SAN PEDRO AND PENINSULA HOMEOWNERS COALITION; SAN PEDRO PENINSULA HOMEOWNERS UNITED, INC.; COALITION FOR CLEAN AIR, INC.

By: _____
Gail Ruderman Feuer
Senior Attorney
Natural Resources Defense Council, Inc.

APPROVED AS TO FORM:

DATED:_____
ROCKARD J. DELGADILLO, City Attorney

By:_____
Thomas A. Russell
Senior Assistant City Attorney
City of Los Angeles

DATED: 2/28/03
NATURAL RESOURCES DEFENSE COUNCIL, INC.; SAN PEDRO AND PENINSULA HOMEOWNERS COALITION; SAN PEDRO PENINSULA HOMEOWNERS UNITED, INC.; COALITION FOR CLEAN AIR, INC.

By:_____
Gail Ruderman Feuer
Senior Attorney
Natural Resources Defense Council, Inc.

ATTACHMENT 2
TO EXHIBIT A

49065 126

Report #2

PORT OF OAKLAND

RECEIVED
JAN 20 2004
PORT OF STOCKTON

June 1, 2000

Mr. Alan Ramo
Environmental Law and Justice Clinic
Golden Gate University School of Law
536 Mission Street
San Francisco, CA 94105-2968

Dear Mr. Ramo,

In accordance with the commitment set forth in the April 16, 1999 settlement letter between the Port and the West Oakland Neighbors, the Port is hereby sending you the attached "Summary Report #2 of the Vision 2000 Air Quality Mitigation Program," dated May 31, 2000. This report summarizes the progress of the implementation of air quality mitigation measures during the period from the start date of the Air Quality Mitigation Program on April 20, 1999, through May 2000. For a better understanding, the Port edited the October 28, 1999 Summary Report # 1 and updated the progress to date.

As of October 28, 1999, the Port has initiated implementation of approximately 11 of the 19 measures, and incorporated all of the construction related measures into the development project specifications currently under contract.

The Port is committed to ongoing progress on the program, and looks forward to continued engagement with the West Oakland community, your office and the regulatory stakeholders.

If you have any questions regarding this program, please contact Mr. Stefan Seum, Port Environmental Planner at (510) 627-1180, or Mr. Richard Sinkoff, Environmental Assessment Supervisor at (510) 627-1182.

Sincerely,

Mr. Joseph K. Wong
Director of Engineering

Cc: Mr. Michael Beritzhoff, Port of Oakland
Mr. Tom Clark, Port of Oakland
Ms. Lauren Eisele, Port of Oakland
Mr. Jim McGrath, Port of Oakland
Mr. Harold Jones, Port of Oakland
Mr. Willie Keyes, Plaintiff
Mrs. Nancy Nadel, Councilmember, City of Oakland
Mr. Stefan Seum, Port of Oakland
Mr. Richard Sinkoff, Port of Oakland

Attachment: "Summary Report #2 Vision 2000 Air Quality Mitigation Program"

530 Water Street ■ Jack London Square ■ P.O. Box 2064 ■ Oakland, California 94604-2064
Telephone (510) 272-1100 ■ Fax (510) 272-1172 ■ TDD (510) 763-5703 ■ Cable address, PORTOFOAK, Oakland

Summary Report # 2
Vision 2000 Air Quality Mitigation Program

May 31, 2000

1. Background

On September 9, 1997, the Board of Port Commissioners certified the Final Environmental Impact Statement (EIS)/ Environmental Impact Report (EIR) for the Disposal and Reuse of the Fleet and Industrial Supply Center Oakland, Vision 2000 Maritime Development Program (FISCO EIS/EIR) and adopted the FISCO EIS/EIR Mitigation Monitoring and Reporting Program (MMRP). The Vision 2000 Maritime Development Program projects include the development of four new marine terminals, a new road, Middle Harbor Shoreline Park, the Joint Intermodal Terminal, and the realignment of 7th Street. On April 20, 1999, the Board of Port Commissioners adopted the Vision 2000 Air Quality Mitigation Program (V2K AQMP) when it certified the Berths 55-58 Final EIR (Resolution # 99153). On June 15, 1999, the Board also certified the Joint Intermodal Terminal (JIT) Project Final EIR and adopted the JIT project MMRP. These two MMRPs have been merged along with the FISCO EIS/EIR MMRP and are being simultaneously implemented to constitute the Vision 2000 Program MMRP (V2K MMRP). With the V2K AQMP as part of the V2K MMRP, the Port of Oakland has committed to mitigate operational air quality impacts of the entire Vision 2000 Maritime Development Program. The V2K AQMP provides funding to reduce air quality impacts related to operations at the Port. Although the regulation of emissions from trains, trucks, cargo handling equipment and cargo vessels is subject to the jurisdiction and authority of other agencies, the Port has committed to spending $ 8.98 million in emission reduction programs and demonstration projects to promote technological advances in improving air quality. The Port's proposed air quality mitigation program has received support from the Bay Area Air Quality Management District.

There are nineteen recommended air quality improvement projects that include:

- Mitigation 3.3-3/M1 (A) (ID # 99):
  Subsidy toward the cost of retrofitting diesel truck engines with new engines meeting California emission standards for new diesel engines, or add-on exhaust treatment device ($ 1,480,000).
- Mitigation 3.3-3/M1 (ID # 285):
  Installation of add-on exhaust devices on 40 local trucks doing business in the near-Port area as demonstration projects ($ 90,000).
- Mitigation 3.3-3/M2 (ID # 100):
  Subsidy toward the cost of replacing diesel engines in all 363 pieces of maritime

related cargo-handling equipment and/or installation of add-on exhaust treatment devices on cargo handling equipment ($ 5,245,000).

- Mitigation 3.3-3/M 3 (ID # 101):
  Retrofit of one tug with a low-emission engine and exhaust treatment device as a demonstration project ($ 500,000).
- Mitigation 3.3-3/M4 (ID # 102):
  Replacement of diesel engines in 27 AC Transit buses operating in the Port vicinity ($ 700,000).
- Mitigation 3.3-3/M5 (ID # 103):
  Encouragement of early re-powering of diesel engines on switch trains using the proposed JIT ($ 10,000).
- Mitigation 3.3-3/M7 (ID # 113):
  Subsidize an engineering study to determine whether cost-effective measures exist to reduce ROG emissions from the Red Star Yeast facility in West Oakland, and subsidize control measures if cost-effective ($ 525,000).
- Mitigation 3.3-3/M8 (ID # 114):
  Subsidize engineering study to determine whether cost-effective measures exist to reduce ROG emissions from the Precision Cast facility in West Oakland ($ 30,000).
- Mitigation 3.3-3/M9 (ID # 115):
  Evaluation of an emission testing station for heavy-duty diesel trucks in the Port area ($ 5,000).
- Mitigation 3.3-3/M6.1-M6.10 (ID # 104-112):
  A suite of 10 measures to be incorporated into project design and future operations such as cold-ironing for tugs at Berth 59, participating in "Spare the Air Days" and mass transit subsidies for Port and tenant employees ($ 390,000).

The implementation of this package of air quality mitigation measures could potentially reduce the nitrogen oxides (NO_X) emissions by 419 tons per year, particulate matter (PM_{10}) by 36 tons per year, and reactive organic carbons (ROG) by 111 tons per year. The implementation of the air quality mitigation measures will follow the overall goal of maximizing the quantity of emissions reduced for the dollar spent, with a preference for reducing diesel particulates and for measures that will reduce local near-Port emissions. The allocation of funding by measures may be modified based upon this overall goal and the performance of the measures.

2. Funding

With the Board of Port Commissioner's Resolution # 99153, the Port of Oakland committed to spend $ 8.98 million on air quality mitigation. The measures will be implemented in conjunction with the development and operations of the new marine terminals and the Joint Intermodal Terminal. The measures provide mitigation for long-term regional impacts caused by additional regional emissions resulting from the planned

operations of project-related sources, including marine vessels, tugs, cargo-handling equipment, transport trucks and trains.

3. Progress to date

Mitigation measures identified in the FISCO EIS/EIR, the Berths 55-58 Project EIR, and the JIT EIR were incorporated into the planning, design and the MMRPs of the individual Vision 2000 Maritime Development Projects. Air Quality related measures are part of the project design (i.e. the use of electric dredges), are being implemented during construction (i.e. dust control measures, etc.), or as "stand alone measures" to improve local air quality.

Work on the V2K AQMP has already begun. Many of the activities during the past twelve months provide a foundation for several mitigation measures. Table 3 gives a brief description of the work that has been done to date on the air quality mitigation measures. Section 4 gives a more detailed summary of the status of these measures.

3.1 Vision 2000 Mitigation Monitoring and Reporting Program - Administration

The Vision 2000 Mitigation Monitoring and Reporting Program (V2K MMRP) has been established to track, report and evaluate the implementation of all Vision 2000 mitigation and control measures. The Port of Oakland Environmental Planning Department has initiated the following program administration projects:

- A paper file for each mitigation measure;
- A Microsoft ACCESS database to list and coordinate the measures;
- A V2K MMRP Field Manual to establish standard procedures for mitigation tracking and monitoring, communication, and quality assurance/quality control;
- Different standard checklists for on-site monitoring of construction.

A detailed description of the work that has been done to date is provided in section 4.

3.2 Air Quality Mitigation Measures Implementation Status

Table 3 summarizes the status of the air quality mitigation measures. A detailed description of the work that has been done to date is provided in section 4.

Table 3: Status of Implementation of the Vision 2000 Air Quality Mitigation Program

Mitigation measure #	V2K MMRP ID #	Short title	Status of implementation
3.3-3/M1 and 3.3-3/M1 (A)	99 285	AQ trucks	• Funded the Seaport Liquid Natural Gas Study. • Prepared a proposal on how to track implementation and effectiveness of truck related measures. • Gathering information on new technological advances of alternative fuel vehicles and exhaust after treatment devices through literature review and conferences. • Evaluating the feasibility of different diesel emission control technologies for on-road trucks. • Evaluating the feasibility of using aqueous diesel for trucks that serve the Port. • Conducted the West Oakland Trucking Inventory and Activity Survey to support program implementation. • Negotiating with the City of Oakland and other stakeholders to find solutions for trucking related problems in the Port's vicinity. • Evaluated the feasibility of installing a Compressed Natural Gas fueling station near the maritime area.
3.3-3/M2	100	AQ cargo handling equipment	• Funded the Seaport Liquid Natural Gas Study. • Evaluated the feasibility of installing a Compressed Natural Gas fueling station near the maritime area. • Prepared a proposal on how to track implementation and effectiveness of cargo handling equipment related measures. • Established a Container Terminal Equipment Repower and Retrofit Program implementation strategy and schedule. • Conducted an inventory of all cargo handling equipment to update the baseline emission inventory of the Berth 55-58 EIR, and to support

Table 3: Status of Implementation of the Vision 2000 Air Quality Mitigation Program

Mitigation measure #	V2K MMRP ID #	Short title	Status of implementation
			the program's implementation. • Gathering information on new technological advances of alternative fuel vehicles and exhaust after treatment devices through literature review and conferences. • Held a presentation on Emission Control Technologies for off-road diesel equipment. • Established a Technical Review Panel as an advisory panel for program implementation. • Defining participation criteria and emission targets for funding through the Container Terminal Equipment Repower and Retrofit Program. • Conducting economic feasibility studies for different implementation options. • Evaluating the feasibility of diesel emission control technologies for off-road mobile sources. • Evaluating the feasibility of using selective catalytic converter for large cargo handling equipment. • Evaluating the effect and feasibility of using ultra-low sulfur diesel fuel at the Port's container terminals. • Evaluating the feasibility of using aqueous diesel fuel in combination with other emission control measures, for cargo handling equipment.
3.3-3/M3	101	AQ tugboat	• Funded the Seaport Liquid Natural Gas Study. • Studied the potential emission reduction of different repower options for a tugboat. • Evaluating the feasibility of Selective Catalytic Reduction for marine

Table 3: Status of Implementation of the Vision 2000 Air Quality Mitigation Program

Mitigation measure #	V2K MMRP ID #	Short title	Status of implementation
			vessels. • Evaluating the feasibility of emission control strategies for marine vessels. • Provided technical support for a Carl Moyer Grant application to repower a tugboat. • Established an incentive based funding program for a tugboat repower or retrofit project. • Created participation and project evaluation criteria based on the program's objectives. • Requested project proposals from eligible tugboat companies. Deadline for project proposals is May 22, 2000.
3.3-3/M4	102	AQ AC Transit buses	• Prepared a Memorandum of Understanding (MOU) with AC Transit to support AC Transit's bus repower project. • Committed to subsidize the repower of 27 AC Transit buses with low emission engines and catalyzed soot traps (Resolution # 99396) • Signed the MOU between the Port of Oakland and AC Transit for the bus retrofit project. • Celebrated the project partnership between AC Transit and the Port of Oakland on December 16, 1999. Submitted a check of $ 659,124.00 to AC Transit. • One bus-repower was completed in May 2000. Three additional buses are currently being repowered.
3.3-3/M5	103	AQ train switch engines	• Proposal on how to track implementation and effectiveness of switch train related measures.
3.3-3/M6.1	104	AQ electric connection Berth 59	• Electric connection has been provided to power electric dredges

Table 3: Status of Implementation of the Vision 2000 Air Quality Mitigation Program

Mitigation measure #	V2K MMRP ID #	Short title	Status of implementation
			currently being used for construction. Electric connection would be sufficient to power a tugboat facility.
3.3-3/M6.2	105	AQ 24h truck parking	• Not commenced.
3.3-3/M6.3	106	AQ configure parking	• Included in the terminal design.
3.3-3/M6.4	107	AQ synchronize traffic signals	• Not commenced.
3.3-3/M6.5	108	AQ Spare the Air	• Port has committed to the Bay Area Air Quality Management District to support the "spare the air" program.
3.3-3/M6.6-M6.8	109	AQ work trip program	• Not commenced.
3.3-3/M6.9	111	AQ maintenance facility	• Not commenced.
3.3-3/M6.10	112	AQ truck driver education	• Not commenced.
3.3-3/M7	113	AQ Red Star Yeast	• Preparing the scope of work for the engineering study. • Information exchange with a consultant that has worked with Red Star Yeast in the past. • Establishing a program implementation strategy and schedule.
3.3-3/M8	114	AQ Precision Cast	• Preparing the scope of work for the engineering study. • Establishing a program implementation strategy and schedule.
3.3-3/M9	115	AQ emission testing station	• Not commenced.

For detailed description of the activities, please see chapter 4.

4. Detailed description of the progress to date

Although most of the air quality mitigation measures have already been implemented or initiated, implementation of the air quality measures will take several months to years, due to their complexity, volume and the constant technological advances in emission control technologies. The increased air emissions related to the Vision 2000 Maritime Development Program would occur over the next years, when new maritime facilities start operation. A number of Vision 2000 air quality mitigation measures will improve the air quality of maritime operations or target sources of pollution in the direct vicinity of the Port of Oakland. The following paragraphs give a brief description of the work that has been done to date.

4.1 Vision 2000 Mitigation Monitoring and Reporting Program - Administration

As described in the Summary Report # 1, a Microsoft ACCESS database has been created that contains all mitigation measures and relevant data for their implementation (April 20 – Oct. 20, 1999). The ACCESS database acts as an internal informational tool, to ensure implementation and adequate tracking, documentation and reporting of the implementation of the measures.

Additionally, a paper file catalog has been set up to manually track the implementation of the mitigation measures. The paper file catalog is linked with the ACCESS database and documents the legally binding texts and commitments the Port of Oakland has made through all its certified environmental documents and related statutory and regulatory permits and compliance processes. The paper files will act as the control texts that reflect the certified EIRs, MOUs, MOAs and permit conditions. The paper files also contains background documentation for each measure.

A V2K MMRP Management Manual and a V2K MMRP Field Manual have been prepared to establish standard procedures to implement the measures and to track their performance (November 17, 1999). The Management Manual defines roles and responsibilities, communication structures and emergency response structures, whereas the Field Manual defines field procedures of implementation and monitoring, as well as standard checklists for tracking and monitoring. The next step of the V2K MMRP will be the creation of a mitigation measures implementation schedule.

The V2K MMRP will fulfill the reporting requirements under CEQA, and will document and track the process of implementation as well as evaluate the effectiveness of implemented measures. Part of the V2K MMRP will be bi-annual reporting to the Port's community stakeholders, including West Oakland Neighbors.

The responsibility of implementing, tracking and reporting the program has been delegated to the Director of Engineering by the Board Resolution # 99153 (April 20, 1999). Reports will be prepared by the Port's Environmental Planning Department.

4.2 Air Quality Mitigation Measures

The Port's Vision 2000 Air Quality Mitigation Program is designed as a dynamic and responsive program that will change and grow with the rapid development of new technologies to reduce emissions from on-road and off-road equipment. The Port is continuously tracking policy developments and technological developments to reduce air emissions. The Port participated at the "Northern California Natural Gas Truck and Bus Exposition" on June 23, 1999, the "Exploring New Technologies for Clean Air" conference, October 5-7, 1999, the "19th North American Motor Vehicle Emission Control Conference", December 12-15, 1999, and the "Diesel Emission Control Retrofit Workshop", March 22 and 23, 2000. Port staff conducts on-going scientific literature reviews to gather information on technological advances. The following points summarize the Port's efforts since April 20, 1999 to implement the air quality mitigation measures.

- The Port of Oakland co-funded the "Seaport Liquid Natural Gas Study" prepared by CALSTART-WestStart. The study, published February 1999, analyses the feasibility and usage of Liquid Natural Gas for ground vehicles, yard equipment, heavy-duty trucks and on-road trucking operations associated with the Port of Oakland and the Port of Los Angeles. CALSTART-WestStart was under contract with Brookhaven National Laboratory, with co-funding from the Port of Oakland, Port of Los Angeles, and Pacific Gas & Electric. The Port of Oakland Environmental Planning Department commenced to evaluate the use of natural gas for Port operations, and trucks that serve the Port. Liquid Natural Gas and Compressed Natural Gas are the cleanest burning fuels currently on the market, and would lead to a substantial emission reduction of nitrogen oxides and particulate matter. There are economical and operational constraints that render difficult the implementation of natural gas for Port uses. However, the Port of Oakland, Environmental Planning Department will continue to explore the feasibility of potential projects and to coordinate with relevant stakeholders, such as the California Air Resources Board, regional Air Quality Management Districts, Environmental Protection Agency, East Bay Clean Cities Coalition, Clean Air Transportation Fund, the West Oakland Community and others to track the status of technological developments.

  Meetings included the CALSTART-WestStart presentation to the Port of Oakland staff of the Liquid Natural Gas Study on May 17, 1999; a conference on CNG/LNG held by PG&E on June 23, 1999; and conversations with Michael Murphy (BAAQMD), Brian Stokes and Chris Ferrara (PG&E), and several trucking companies.

- The Environmental Planning Department retained URS Greiner/ Woodward Clyde to draft a proposal dated August 1999 regarding implementation of mitigation measure 3.3-3/M1 (repower and retrofit of transport trucks) and mitigation measure 3.3-3/M2 (repower and retrofit of container terminal equipment). The objectives of the proposal are to compare emission monitoring versus ambient air monitoring, and emission testing versus emission modeling in order to measure the effectiveness of air quality measures. URS Greiner/ Woodward Clyde recommended against ambient air

quality monitoring, because it would not be economically feasible. Further URS Greiner/Woodward Clyde recommends:

- Tracking emission changes with implementing air quality projects;
- Quantifying changes in emissions by calculation, rather than physical testing;
- Collecting more specific information on the existing equipment that will be affected by the air quality mitigation measures (Inventory).

The implementation of mitigation measures 3.3-3/M1 and /M1A face difficulties based on a heterogeneous owner and operator structure of trucks that provide service for the Port. Since the Port does not own trucks, and has no control over their movements, it would not be effective to retrofit trucks that may only temporarily operate in the vicinity of the Port. The Port decided to focus its efforts on trucking companies that are located in West Oakland and that provide service to the Port of Oakland, in order to accomplish the goal of improving local air quality. At present the Port is proposing to prepare an inventory of the West Oakland trucking fleets, to identify which engines would be most effectively retrofitted, and to calculate emission reductions projected by modeling engine operational information, rather than by air quality testing.

- The Port of Oakland conducted an inventory of all container terminal equipment that operates on Oakland's maritime facilities. This inventory provides accurate data for updating the emission calculation of the Berths 55-58 Project EIR. It also provides important information necessary to design, select and implement air quality improvement projects on container terminal equipment. All gathered data are being held confidential.

  Port environmental staff will prepare a summary container terminal inventory report, including the updated baseline emission calculations.

- To date, the Port has gathered information on diesel emission control technologies and alternative fuels. The Port is evaluating the feasibility of different emission control strategies for marine vessels, off-road equipment and on-road trucks. The Port is working in close contact with regulatory agencies, such as the California Air Resources Board, California Energy Commission and the Environmental Protection Agency, as well as vendors of emission control technology in order to gather most recent information.

  The market of diesel emission control technologies is very dynamic. More technologies are becoming commercially available or are currently being tested. Port staff participated in several conferences to gather recent information and to establish contacts with relevant stakeholders. Most of the emission control technologies, although very promising, lack experiences in real-time applications around marine operations (i.e. on container terminal equipment). It is therefore very important to solicit the interest of vendors and regulators to apply new emission control technologies on cargo equipment.

- Port Environmental staff is currently conducting a technical review of emission controls that might be applicable for maritime related equipment to determine its feasibility. Emission control technologies and alternative fuel measures have been evaluated for:

  a) Marine Vessels,
  b) Container Terminal Equipment,
  c) On-Road Trucks.

  a) Emission control technologies for marine vessels include the replacement of old, uncontrolled diesel engines with new low emission diesel engines, engine modification (i.e. turbocharging, cam shaft modification, time retardation, ceramic coating etc.) the installation of selective catalytic reduction devices or diesel oxidation catalysts. Alternative fuels for marine vessels was deemed to be unfeasible to date because of unsolved safety concerns, the associated infrastructure costs and difficulties to obtain necessary permits. The Port has created an incentive-based voluntary funding program and is currently accepting project proposals for tugboat repower and retrofit projects (details see below).

  b) Emission control technologies for container terminal equipment includes the replacement of pre-1996, unregulated diesel engines with new diesel or alternative fuel engines, engine modifications (i.e. turbocharging, cam shaft modifications, and ceramic coating) the installation of exhaust after treatment devices on new, repowered or existing equipment, and fuel related measures. The Port has created an incentive based voluntary Container Terminal Equipment Repower and Retrofit Program to implement mitigation measure 3.3-3/M2 (details see below).

  c) Emission control technologies for on-road trucks include the replacement of older diesel engines with new low emission diesel engines or alternative fuel engines, engine modifications (i.e. turbocharging, cam shaft modifications, and ceramic coating) the installation of exhaust after treatment devices, or fuel related measures.

- The mitigation measure 3.3-3/M2, "subsidize cargo-handling equipment engine replacements and/or add-on exhaust treatment", is the biggest air quality mitigation project under the Vision 2000 AQMP. Work on this measure was initiated in October 1999 and completion of the first tier of repowering and retrofitting container terminal equipment is anticipated for summer 2001. Besides the information gathering on technological advances in diesel emission control technologies and the inventory of container terminal equipment, major work that has been done to date includes:

  a) Program objectives, a draft implementation strategy, and an implementation schedule that was prepared in December 1999.

  b) The development of an incentive based, voluntary Container Terminal Equipment Repower and Retrofit Program that provides funding for engine replacement and add-on exhaust after treatment devices for marine terminal equipment. The funding is covered by the allocated $ 5.245 million of the V2K AQMP.

c) The establishment of a Technical Review Panel for the program's implementation. The Technical Review Panel consists of representatives from regulatory agencies, the community, Port of Oakland and Marine Terminal Operators, and technical advisors. The Technical Review Panel reviews and comments on participation criteria, program strategies and proposed projects.

d) The development of participation criteria for Marine Terminal Operators to apply for funding through the Container Terminal Equipment Repower and Retrofit Program. Port environmental staff is evaluating the economic feasibility and effects of different implementation options. Port staff proposes to finalize participation criteria and program strategy by the end of May. It is anticipated to get the approval of the Board of Port Commissioners on July 18, 2000, making the funding for the program available.

e) A presentation on emission control technologies for off-road diesel equipment held by Mr. Dale McKinnon, Deputy Director of the Manufacturer of Emission Controls Association, Washington DC, on April 19, 2000. The purpose of the presentation was to provide a question and answering forum for Marine Terminal Operators and Port staff.

f) Port environmental staff is currently preparing a fact sheet in order to evaluate the technical feasibility and emission reduction potentials of different diesel emission control options. Besides the replacement of old diesel engines with new diesel engines meeting current or forthcoming California diesel emission standards, evaluated technologies include engine modifications, diesel emission control technologies, fuel based emission controls, and the use of ultra-low sulfur diesel. Contacts have been established to the major original engine manufacturer, Ceryx Inc., Enelhard Corp./Cinco Group Inc., Emission Control Systems Ltd./ Lubrizol Corp., Johnson Matthey Corp., Nett Technologies Inc., and Siemens Westinghouse Corp. as manufacturer of emission controls.

- The Port in conjunction with the City of Oakland prepared a West Oakland Trucking Inventory and Activity Survey. A final report is currently being prepared. The findings of the survey will support the Port's efforts in identifying eligible trucking companies for its Truck Repower and Retrofit Program. Table 1 summarizes the bulk numbers of the survey.

Table 1: Summary of Quantifiable Topics

(Number of trucks, trips per day and employees.)

A	B	C	D	E	F
Total # of companies surveyed	# of companies responded	# of Companies provided data to survey topic	**Survey topic**	Total number of column D	Avg., # of column D per company
57	38	25	**Trucks in Fleet**	**413**	**17**
57	38	26	**Trips Per Day**	**2466**	**95**
57	38	28	**Employees**	**718**	**26**

Source: The West Oakland Trucking Company Inventory and Activity Survey, December 30, 1999.

Twenty-seven of the surveyed trucking companies are located in West Oakland and have been identified to provide container services to Port tenants. These twenty-seven companies operate 29 own trucks and 104 owner/operator subcontracted trucks. Additionally 423 trucks were mentioned without information regarding their owner structure.

Vast majorities of trucking companies do not own their own trucks. Most trucks are Owner Operated and contracted on a daily basis. This owner structure will make the implementation of the Port's program more difficult.

- The Environmental Department is currently evaluating the possibility of using aqueous diesel for trucks that serve the Port. Recently, a new formula of aqueous diesel, based on a "water-in-diesel" emulsion was introduced to the market. The use of this fuel would substantially reduce the emissions of nitrogen oxides, in particular with older diesel trucks that do not adhere to forthcoming emission standards. This project has the possibility of a high cost efficiency, but might face some implementation constraints caused by the specific owner/operator structure of the trucks that provide service to the Port.

  Contacts have been established with Lubrizol Corporation. Meetings were held with Bill Hagstrand (Lubrizol) and Greg Gilbert (SAAQMD) and Port staff in May, June and September 1999.

- With Resolution # 99295, on September 20, 1999, the Board of Port Commissioners allocated up to $ 500,000 to support a selected tugboat repower project, and to prepare and submit an application to the Bay Area Air Quality Management District (BAAQMD) Carl Moyer Grant Program for additional funding. However, a potential conflict between the Carl Moyer Program guidelines and the CEQA guidelines forced the Port to withdraw its participation in the Carl Moyer Grant program for that

tugboat project. As a result, the Port established an incentive based funding program to repower and/or retrofit tugboats that provide service to Port tenants.

Prior to the Board action, Port environmental staff analyzed five different repower options for a tugboat and selected one project. All options were diesel to diesel repower projects that would have installed new, low emission diesel engines. The alternative to retrofitting the existing engines to liquid natural gas was rejected due to the lack of infrastructure for LNG supply, problematic permitting requirements, and the relatively small emission benefits compared to some of the diesel to diesel projects.

Additionally, the Port studied the feasibility of using an aqueous diesel formula on a tug. The use of aqueous diesel on tugboats may be carried out as demonstration project.

Regular meetings have been held with Oscar Niemeth (Niemeth Towing Inc.) and the Bay Area Air Quality Management District between May and October, 1999. In addition, the Port has contacted engine manufactures, Lubrizol Corporation, and Energy Conversion Inc., who specialize in retrofitting big diesel engines to liquid natural gas engines.

The Port created an incentive based funding program to repower and/or retrofit one or more tugboats that provide services to Port tenants. The participation criteria for funding applications were finalized on April 6, 2000. Eight tugboat companies have been asked to participate in the Port's program. The deadline for project proposals is May 22, 2000. The proposed projects will be evaluated based on the participation criteria and projects will be selected regarding their cost efficiency in reducing Near-Port emissions down the list until the funding has been spent.

- With Resolution # 99396, on September 20, 1999, the Board of Port Commissioners authorized the Memorandum of Understanding between the Port of Oakland and AC Transit to repower 27 Transit buses with new, low emission engines. Additional catalytic soot filters will be installed on all 27 buses to further reduce particulate matter, carbon monoxide, hydrocarbons and volatile organic compounds. These 27 buses have two stroke diesel engines that would be otherwise rebuilt and remain in service. These 27 buses serve the Port vicinity, thereby reducing key emissions in the West Oakland, Emeryville, and Alameda areas. The project represents an immediate action to reduce the emissions caused by AC Transit buses to cover a period until more advanced technology, such as hybrid-electric or fuel-cell powered transit buses become economically and technically feasible.

  The California Air Resources Board (CARB) is currently proposing a new Public Transit Bus Fleet Rule and Urban Bus Engine Standards. CARB is developing a proposal with two different options, a "conventional/advanced technology" and an "incentive" option. The partner project of the Port of Oakland and AC Transit adheres to the "conventional/advanced technology" option, and the new standards of

0.5 g/bhp-hr NO_X and 0.01 g/bhp-hr PM[1] would apply after January 1, 2005. This would require early investments in hybrid-electric and fuel-cell technologies in order to meet the standards, unless advances in after treatment devices would achieve sufficient emission reduction.

A Memorandum of Understanding between the Port of Oakland and AC Transit was signed in December 1999. A check over $ 659,124 to retrofit 27 AC Transit buses was submitted on December 16, 1999. To date, one bus has been repowered with a new engine and equipped with a catalytic soot filter. Three additional buses are currently being repowered.

Another component of the retrofit project is to support AC Transit's existing apprenticeship program (AC Transit Apprenticeship Program), which provides training and employment on a high quality level. The Port will work with AC Transit to identify qualified applicants for service employee, bus driver, and apprentice mechanics positions. AC Transit agreed to make concentrated efforts to recruit employees from the West Oakland neighborhood and to assist residents through the application and hiring process. The different components were specified in the Memorandum Of Understanding between the Port of Oakland and AC Transit.

Meetings were held with AC Transit to identify the components of the retrofit project. Port staff participates in the discussion regarding new regulations for transit agencies, and keeps track of new technological advances such as hybrid-electric and fuel-cell powered buses.

- The Port evaluated the installation a Compressed Natural Gas (CNG) fueling station. The installation and operation of a CNG fueling station would be in cooperation with the City of Oakland, the owner of the station, and which is seeking a location for this facility. Several locations in the Commercial Real Estate and Maritime areas have been considered.

  No feasible site could be identified within the given time frame. A CNG fueling station at most of the waterfront sites would be in conflict with the Oakland Estuary Plan. Other sites were to remote from downtown Oakland or would have limited public access. The City of Oakland is currently evaluating the installation of a public CNG fueling station at City property near downtown Oakland.

  Meetings were held with Bruce Jaussaud (City of Oakland), Chris Ferrara (PG&E), Joe English (Clean Fuels), and Steven Van (Port of Oakland, Aviation Department) in June and July 1999, communications thereafter.

- The Port has committed to the Bay Area Air Quality Management District to participate in "Spare the Air" days.

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[1] NO_X = nitrogen oxides; PM = particulate matter. Emission standards are set based on the emission per bulk horsepower (bhp) and hour of operation (hr). Engines are certified under these standards.

4.3 Dust Control Measures

The Port has committed to thirteen dust control measures during construction of the Vision 2000 projects. These control measures are described as basic, enhanced or optional control measures by the Bay Area Air Quality Management District (BAAQMD 1996). The purpose of these control measures is to reduce the construction related dust emissions to a level of insignificance. The measures have been incorporated in the Plans and Specification for the Berths 55-56 and the Joint Intermodal Terminal projects. The Environmental Planning Department conducted quality control on the draft plans and specifications prior to distribution to potential bidders. The construction contractors will be responsible for implementing the dust control measures during construction. The Port has established a monitoring and tracking system to ensure implementation and to apply remedial actions, if necessary (Field Manual).

The dust control measures are being implemented for all ongoing Vision 2000 Program construction activities. No major dust incidents have been reported to date.

4.4 Particulate Monitoring Program

Additionally, the Port of Oakland was retained Orion Environmental Associates to conduct an air quality monitoring program to measure the levels of particulate air pollution in West Oakland. The program started on April 22, 1997 and will continue until April, 2004. Two sampling locations, one in the Port area, one in the West Oakland residential area, gather data for particulate matter (PM) and meteorological conditions. The PM concentrations followed the same pattern on both stations, which indicates the influence of meteorological conditions and regional sources rather than point sources. The concentration of PM at the Port site was in general slightly higher than that of the residential site (Orion 1999).

5 Next steps

The next steps involved in development of the V2K MMRP program are.

- Commence contacts with trucking companies in the Vision 2000 local planning area.
- Develop a strategy and schedule for implementing the on-road truck repower and/or retrofit program.
- Continue the implementation of the Container Terminal Equipment Repower and Retrofit Program's first phase until summer 2001.
- Evaluate and select tugboat repower and/or retrofit projects based on the participation criteria.
- Develop a Request for Proposal to carry out a feasibility study for emission control measures for the Red Star Yeast and Precision Cast facilities in West Oakland.
- The Port will continue its analysis of alternative fuels and technological advances for emission controls. The Port will proceed in establishing contacts with technology

providers and engine manufactures in order to implement the Vision 2000 Air Quality mitigation measures.

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Summary Report # 3
Vision 2000 Air Quality Mitigation Program

Port of Oakland,
December 28, 2000

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Vision 2000 Air Quality Mitigation Program

December 28, 2000

I. EXECUTIVE SUMMARY 1

A. OVERVIEW 1
B. MITIGATION MEASURES 3
C. CONCLUSIONS 5

1. BACKGROUND 8

2. FUNDING 9

3. PROGRESS TO DATE AS OF DECEMBER 21, 2000 10

3.1 ADMINISTRATION 10
3.2 AIR QUALITY MITIGATION MEASURES IMPLEMENTATION STATUS 10

4. DETAILED DESCRIPTION OF THE PROGRESS TO DATE 18

4.1 VISION 2000 MITIGATION MONITORING AND REPORTING PROGRAM - ADMINISTRATION 18
4.2 AIR QUALITY MITIGATION MEASURES 19
4.3 DUST CONTROL MEASURES 29
4.4 PARTICULATE MONITORING PROGRAM 29

5 NEXT STEPS 30

6 REFERENCES 30

I. Executive Summary

The purpose of the executive summary is to highlight new developments in the implementation of the Port of Oakland's Vision 2000 Air Quality Mitigation Program (V2K AQMP) since the last Summary Report # 2 from May 31, 2000. All changes are incorporated in the text of Summary Report #3.

A. Overview

On April 20, 1999, the Board of Port Commissioners adopted the Vision 2000 Mitigation Monitoring and Reporting Program including the commitment to air quality mitigation measures. During the first twenty months (April 20, 1999 – December 2000) of program implementation, Port staff have devoted resources to refining our overall strategic approach to the Vision 2000 Air Quality Mitigation Program, developing the administrative structure for the program, building advanced technical knowledge and expertise, designing specific implementation procedures for individual mitigation measures and implementing and reporting on specific measures. These twenty months constitute Phase I of the V2K AQMP.

During Phase I, Port Environmental Planning staff designed program components and initiated specific projects. In particular, two smaller projects, the AC-Transit partnership and the tugboat repower project, are well underway. These smaller projects served to initiate the program and develop staff expertise in designing program components. The Tugboat Repower Project exceeded the expected emission reductions three-fold for particulate matter and six-fold for nitrogen oxides. The AC-Transit project performed slightly below the expectations regarding emission reductions (table I). Both projects stayed below their budget (AC-Transit project variance = +$27,500 and the tugboat project variance = +$60,000).

The Port also launched Tier I of the Container Terminal Equipment Repower and Retrofit Program for its marine terminal operators on October 12, 2000, when it sent out the request of proposals for Port funding. All terminal operators submitted funding applications to repower and retrofit more than 90% of eligible pieces of equipment. The proposed projects of the Container Terminal Equipment Repower and Retrofit Program will reduce particulate matter emissions by more than 70%, hydrocarbon by approximately 80% and nitrogen oxides by approximately 30%. The Port will have spent approximately fifty percent of the total V2K AQMP budget, after completion of the Tier I of the Container Terminal Equipment Repower and Retrofit Program (approximately $4.5 million).

As of December 1, 2000, the Port has spent 32% of its budgeted administrative cost for implementing the Vision 2000 Air Quality Program ($232,000 of $730,000).

Administration and Management:

For purposes of managing the overall program, Port staff have found it practical to structure the program in phases. The phased approach allows Port staff to assess the performance of specific measures against the program's overall emission reduction objectives and to adjust the design of the program in response to changed circumstances (i.e. new technologies, wide performance variances, etc.) Port staff anticipates three additional implementation phases, each appromixately 18 months long, to largely complete the program, as follows:

- Phase II: Dec 00 – April 02
- Phase III: April 02- October 03 (approx. completion of V2K construction)
- Phase IV: October 03 – April 05 (approx. completion of 5-year CIP and 1.5 years of terminal operations at the new terminals)

Phase II will be characterized by continued implementation of major program components and the "cleaning up" of mobile sources. Concurrently in Phase II, Port Environmental staff anticipates assessing the program, its achieved emission reductions and cost efficiency of reducing emissions. This re-evaluation of the Vision 2000 Air Quality Program will guide modifications to strategic decisions, program procedures, and future projects.

During Phase III, Port Environmental Planning staff plans to carry out modified mitigation projects for local mobile sources.

Phase IV will target implementation of operations-related air quality measures and strategic planning efforts for future Port air quality programs.

B. Mitigation Measures

Mitigation measure 3.3-1/M1 (AQ construction equipment):

The Port Environmental Planning Department prepared a Field Manual for the Vision 2000 construction phase to assist and monitor implementation of construction-related mitigation measures, i.e. dust control measures. In July 2000, the Port issued a Technical Service Order ("TSO") to URS Corporation, one of the Port's approved "As Needed" consulting firms, to support the Port's monitoring function and to assure that visible airborne particulate is suppressed so as not to reach the general public. The measures taken in the field have proven to be effective. Furthermore, the field monitoring has helped to keep construction personnel alerted to and conscientious of air quality issues as well as to other environmental issues that may result from construction activities.

Two field monitors are currently deployed on a full-time basis to monitor implementation of all V2K mitigation measures, including air quality. A weekly summary report of implementation activities is produced.

Mitigation measure 3.3-3/M1 and 3.3-3/M1A (AQ truck repower and retrofit):

The Port is currently evaluating the feasibility of using aqueous diesel and diesel oxidation catalysts on on-highway trucks. In particular, the combination of aqueous diesel fuel with diesel oxidation catalysts promises significant emission reductions at reasonable costs. The Port has designed a demonstration program which would test aqueous diesel and diesel oxidation catalysts on trucks that are located in West Oakland and that provide service to Port tenants. The demonstration is scheduled for a three-month period and would include emission verification testing. Port staff anticipates conducting the demonstration in the first half of 2001. A letter inviting eligible trucking companies to participate in the demonstration was sent out on December 12, 2000.

Mitigation measure 3.3-3/M2 (AQ cargo-handling equipment):

For implementation of mitigation measure 3.3-3/M2, the repower and retrofit of cargo-handling equipment, budgeted with $5.245 million, the Port of Oakland has developed an incentive-based grant program, the Container Terminal Equipment Repower and Retrofit Program (CTERRP), for marine terminal operators (Board of Port Commissioners, July 18, 2000). The CTERRP provides funding for engine replacement and emission control technologies, such as catalytic converters and cleaner burning fuels. The program targets engines of model year 1989 to 1995 for engine replacement. Additionally, a system of monetary incentives encourages marine terminal operators to apply emission control technologies to their equipment. The Request for Proposals for Port Funding was sent out in November 2000. In response, all marine terminal operators at the Port of Oakland plan to participate in the program and submitted funding applications.

A Technical Review Panel (TRP) has been assisting in the implementation of the Port's Container Terminal Equipment Repower and Retrofit Program. The TRP was established in March 2000 and includes representative of the Port, the community and agencies such as the Bay Area Air Quality Management District, California Air Resources Board and California Energy Commission. The TRP reviewed and commented on the structure of the program and will also review the proposed projects. The fourth meeting of the TRP is scheduled for Thursday, January 18, 2001. The West Oakland representative will attend.

Mitigation measure 3.3-3/M3 (AQ tugboat repower or retrofit)

In April 2000, the Port of Oakland designed a grant program to replace engines or install emission control technologies on a tugboat that provides service to Port tenants. Two tugboat companies submitted three project applications for funding. The Board of Port Commissioners approved funding on July 18, 2000 to replace two diesel engines in the tugboat "Silver Eagle" with two new, low-emission diesel engines. The project represents an early engine replacement of marine diesel engines that would otherwise be in service for approximately 16 years. The funding amount of $408,300 was conveyed to Oscar Niemeth Towing Inc. on October 17, 2000, at a public ceremony held on the lawn in front of 530 Water Street. Public officials, including Councilmember Nancy Nadel, attended. The installation of the engines is scheduled for April 2001. The projected reductions of near-Port emissions are 1.0 tons particulate matter and 27.5 tons nitrogen oxides per year. 16.4 tons of particulate and 445 tons of nitrogen oxide emissions are projected over the project lifetime.

Mitigation measure 3.3-3/M4 (AQ AC-Transit Buses):

The retrofit of 27 AC-Transit buses with funding by the Port of Oakland began on December 15, 1999, when AC-Transit entered into a Memorandum of Understanding with the Port of Oakland to provide partial funding for the district's engine repower project. The project would reduce 3.9 tons particulate matter and 39.7 tons nitrogen oxides, once the project is completed. A prototye bus was repowered in February 2000. As of September 15, 2000[1], seven buses have been repowered with low-emission diesel engines and retrofited with particulate soot traps. Two are currently being repowered and three are scheduled for repowering.

Additionally, AC Transit increased its outreach efforts to facilitate the hiring of Oakland residents for district jobs. As of September 2000, AC Transit hired 48 people from the West Oakland area, mostly as bus drivers.

Mitigation measure 3.3-3/M7 and 3.3-3/M8 (AQ Red Star Yeast and Precision Cast):

The Port of Oakland Environmental Planning Department prepared a Request for Proposals for an engineering studies to identify control measures to reduce reactive organic carbon emissions at the Red Star Yeast and Precision Cast facilities. The Red Star Yeast facility, owned by Universal Foods Corporation, requested a deferral of its

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[1] AC-Transit Bus Re-Power Project Progress Report No. 2; March 16, 2000 – September 15, 2000.

participation in the study because the yeast manufacturing branch of Universal Foods is currently for sale.

The Port of Oakland is proceeding with the engineering study at the Precision Cast facility and selected a consultant to conduct the study (Board approval on November 7, 2000). Contract negotiations are currently underway and it is anticipated that the engineering study would start in early 2001. The engineering study will most likely be completed 4 months after commencing the work.

C. Conclusions

The status of the program allows some quantitative and mostly qualitative assessments. The two most progressed projects, the partnership with AC-Transit and the tugboat repower project, show successful implementation. The likely success of the AC-Transit partnership was anticipated because the Port joined an existing program. Implementing the tugboat repower project showed that the emissions from old tug-, crew- and work-boats are higher than expected and that marine engines with low nitrogen oxide and particulate matter levels are available. These two factors make air quality projects on marine applications very attractive and cost effective and a viable option for the future. Additionally, analysis showed the feasibility and benefits of emission control technologies on marine vessels.

From a program perspective it must be noted that the Vision 2000 Air Quality Mitigation Program has been designed without involving the 'end-user' of Port funding. The proposed and initiated projects under the Vision 2000 Air Quality Mitigation Program are one of the few pure 'voluntary' air quality improvement projects. All suggested air quality projects target equipment or facilities that are privately owned and none of these owners has a contractual obligation to emission reductions. Further, no legislation or legally binding agreement currently compels these owners to implement or participate in the program. This fact has posed the biggest challenge to the program's success. For example, one of the stationary sources in West Oakland deferred participation because pending a corporate sale. Trucking companies, which operate on a very small profit margin, have been less willing to participate in air quality programs, unless they offered an economic profit.

The initial response to the request for Port funding under the Container Terminal Equipment Repower and Retrofit Program however, shows that the private sector can be motivated to participate in the Port's program. Every marine terminal operator at the Port of Oakland is proposing air quality improvements. This participation is a positive indicator that the design of the Port's program is compatible with private sector criteria. Port staff has concluded that the marine terminal operators are participating in the program due to the formula of subsidy and monetary incentives.

Moreover, Port staff were able to foster the installation of advanced emission control technologies that have not been applied to marine terminal equipment to date. The importance of on-going education and development of staff expertise cannot be underestimated. Port staff used this expertise to achieve the objectives of the Container

Terminal Equipment Repower and Retrofit Program to maximize particulate matter emission reductions and cost efficiency, to motivate broad voluntary participation, and to promote advanced emission control technologies, while staying within the overall budget and a reasonable timeframe.

Table I: Performance Results of V2K Air Quality Mitigation Program

Realized emission reduction after full implementation; dollars spent excluding program administration.

Mitigation Measure	Projected PM reduction per year [t/y]	Realized PM reduction per year [t/y]	Realized PM reduction over project life [t]	Projected NOx reduction per year [t/y]	Realized NOx reduction per year [t/y]	Realized NOx reduction over project life [t]	Budgeted dollars	Spent dollars[2]
3.3-3/M4: AC Transit Repower Project	< 1	0.43	3.9	5	4.4	39.7	$ 700,000.00	$ 659,124.00
3.3-3/M3: Tugboat Repower Project	0.3	1.0	16.4	4.5	27	445	$ 500,000.00	$ 408,300.00

[2] Excluding administrative costs.

1. Background

On September 9, 1997, the Board of Port Commissioners certified the Final Environmental Impact Statement (EIS)/ Environmental Impact Report (EIR) for the Disposal and Reuse of the Fleet and Industrial Supply Center Oakland, Vision 2000 Maritime Development Program (FISCO EIS/EIR) and adopted the FISCO EIS/EIR Mitigation Monitoring and Reporting Program (MMRP). The Vision 2000 Maritime Development Program projects include the development of four new marine terminals, a new road, Middle Harbor Shoreline Park, the Joint Intermodal Terminal, and the realignment of 7th Street.

On April 20, 1999, the Board of Port Commissioners adopted the Vision 2000 Air Quality Mitigation Program (V2K AQMP) when it certified the Berths 55-58 Final EIR (Resolution # 99153). On June 15, 1999, the Board also certified the Joint Intermodal Terminal (JIT) Project Final EIR and adopted the JIT project MMRP. These two mitigation programs have been merged along with the FISCO EIS/EIR MMRP and are being simultaneously implemented to constitute the Vision 2000 Program MMRP (V2K MMRP).

With the V2K AQMP, the Port of Oakland has committed to mitigate operational air quality impacts of the entire Vision 2000 Maritime Development Program. The V2K AQMP provides funding to reduce air quality impacts related to operations at the Port. Although the regulation of emissions from trains, trucks, cargo handling equipment and cargo vessels is subject to the jurisdiction and authority of other agencies, the Port has committed to spending $ 8.98 million in emission reduction programs and demonstration projects to promote technological advances in improving air quality. The Port's proposed air quality mitigation program has received support from the Bay Area Air Quality Management District.

There are nineteen recommended air quality improvement projects that include:

- Mitigation 3.3-3/M1 (A) (ID # 99):
  Subsidy toward the cost of retrofitting diesel truck engines with new engines meeting California emission standards for new diesel engines, or add-on exhaust treatment device ($ 1,480,000).
- Mitigation 3.3-3/M1 (ID # 285):
  Installation of add-on exhaust devices on 40 local trucks doing business in the near-Port area as demonstration projects ($ 90,000).
- Mitigation 3.3-3/M2 (ID # 100):
  Subsidy toward the cost of replacing diesel engines in all 363 pieces of maritime related cargo-handling equipment and/or installation of add-on exhaust treatment devices on cargo handling equipment ($ 5,245,000).
- Mitigation 3.3-3/M 3 (ID # 101):
  Retrofit of one tug with a low-emission engine and exhaust treatment device as a demonstration project ($ 500,000).

- Mitigation 3.3-3/M4 (ID # 102):
  Replacement of diesel engines in 27 AC Transit buses operating in the Port vicinity ($ 700,000).
- Mitigation 3.3-3/M5 (ID # 103):
  Encouragement of early re-powering of diesel engines on switch trains using the proposed JIT ($ 10,000).
- Mitigation 3.3-3/M7 (ID # 113):
  Subsidize an engineering study to determine whether cost-effective measures exist to reduce ROG emissions from the Red Star Yeast facility in West Oakland, and subsidize control measures if cost-effective ($ 525,000).
- Mitigation 3.3-3/M8 (ID # 114):
  Subsidize engineering study to determine whether cost-effective measures exist to reduce ROG emissions from the Precision Cast facility in West Oakland ($ 30,000).
- Mitigation 3.3-3/M9 (ID # 115):
  Evaluation of an emission testing station for heavy-duty diesel trucks in the Port area ($ 5,000).
- Mitigation 3.3-3/M6.1-M6.10 (ID # 104-112):
  A suite of 10 measures to be incorporated into project design and future operations such as cold-ironing for tugs at Berth 59, participating in "Spare the Air Days" and mass transit subsidies for Port and tenant employees ($ 390,000).

The implementation of this package of air quality mitigation measures could potentially reduce the nitrogen oxides (NO_X) emissions by 419 tons per year, particulate matter (PM_{10}) by 36 tons per year, and reactive organic carbons (ROG) by 111 tons per year. The implementation of the air quality mitigation measures will follow the overall goal of maximizing the quantity of emissions reduced for the dollar spent, with a preference for reducing diesel particulates and for measures that will reduce local near-Port emissions. The allocation of funding by measures may be modified based upon this overall goal and the performance of the measures.

2. Funding

With the Board of Port Commissioner's Resolution # 99153, the Port of Oakland committed to spend $ 8.98 million on air quality mitigation. The measures will be implemented in conjunction with the development and operations of the new marine terminals and the Joint Intermodal Terminal. The measures provide mitigation for long-term regional impacts caused by additional regional emissions resulting from the planned operations of project-related sources, including marine vessels, tugs, cargo-handling equipment, transport trucks and trains.

3. Progress to date as of December 21, 2000

Mitigation measures identified in the FISCO EIS/EIR, the Berths 55-58 Project EIR, and the JIT EIR were incorporated into the planning, design and the MMRPs of the individual Vision 2000 Maritime Development Projects. Some air quality related measures are part of the project design (i.e. the use of electric dredges), others are being implemented during construction (i.e. dust control measures), or as "stand alone measures" to improve local air quality.

Work on the V2K AQMP is underway. Progress of the air quality mitigation measures were reported in Report #1 to the West Oakland Neighbors, October 21, 1999, and Summary Report #2 – Vision 2000 Air Quality Mitigation Program, May 15, 2000. Many of the activities during the past twenty months provide a foundation for several mitigation measures. Table 3 gives a brief description of the work that has been done to date on the air quality mitigation measures. Section 4 gives a more detailed summary of the status of these measures.

3.1 Administration

The Vision 2000 Mitigation Monitoring and Reporting Program (V2K MMRP) has been established to track, report and evaluate the implementation of all Vision 2000 mitigation and control measures. The Port of Oakland Environmental Planning Department has initiated the following program administration projects:

- A paper file for each mitigation measure;
- A Microsoft ACCESS database to list and coordinate the measures;
- A V2K MMRP Field Manual to establish standard procedures for mitigation tracking and monitoring, communication, and quality assurance/quality control during construction;
- Different standard checklists for on-site monitoring of construction.

A detailed description of the work that has been done to date is provided in section 4.

3.2 Air Quality Mitigation Measures Implementation Status

Table 3 summarizes the status of the air quality mitigation measures. A detailed description of the work that has been done to date is provided in section 4.

Table 1: Status of Implementation of the Vision 2000 Air Quality Mitigation Program

Mitigation measure #	V2K MMRP ID #	Short title	Status of implementation
3.3-1/M1	34	AQ Construction Equipment	• Requirements for equipment tune up and use of California low-sulfur diesel incorporated in Plans and Specifications. • Hired JADA Consulting on July 26, 2000, to perform daily field monitoring and reporting. Cost for six months period = $70,200 • Monitor and enforce contractors' compliance with dust control measures during V2K construction activities. • Required contractors to replace site equipment that show visible emissions (smoke).
3.3-3/M1 and 3.3-3/M1 (A)	99 285	AQ trucks exhaust treatment; AQ trucks retrofit	• Funded the Seaport Liquid Natural Gas Study. • Prepared a proposal on how to track implementation and effectiveness of truck related measures. • Conducted the West Oakland Trucking Inventory and Activity Survey to support program implementation. • Evaluated the feasibility of installing a Compressed Natural Gas fueling station near the maritime area. • Gathering information on new technological advances of alternative fuel vehicles and exhaust after treatment devices through literature review and conferences. • Evaluating the feasibility of different diesel emission control technologies for on-road trucks. • Evaluating the feasibility of using aqueous diesel for trucks that serve the Port. • Negotiating with the City of Oakland and other stakeholders to find solutions for trucking related problems in the Port's vicinity. • Preliminary design of a demonstration project using aqueous diesel

Table 1: Status of Implementation of the Vision 2000 Air Quality Mitigation Program

Mitigation measure #	V2K MMRP ID #	Short title	Status of implementation
			and diesel exhaust after-treatment on trucks serving the Port of Oakland. Proposed project would require approval by the Board of Port Commissioners. •
3.3-3/M2	100	AQ cargo handling equipment	• Funded the Seaport Liquid Natural Gas Study. • Evaluated the feasibility of installing a Compressed Natural Gas fueling station near the maritime area. • Prepared a proposal on how to track implementation and effectiveness of cargo handling equipment related measures. • Established a Container Terminal Equipment Repower and Retrofit Program (CTERRP), including implementation strategy and schedule. • Conducted an inventory of all cargo handling equipment to update the baseline emission inventory of the Berth 55-58 EIR, and to support the program's implementation (April 7, 2000). • Gathered information on new technological advances of alternative fuel vehicles and exhaust after treatment devices through literature review and conferences. • Held a presentation on Emission Control Technologies for off-road diesel equipment (April 19, 2000). • Evaluating the feasibility of diesel emission control technologies for off-road mobile sources. • Evaluating the feasibility of using selective catalytic converter for large cargo handling equipment. • Evaluating the effect and feasibility of using ultra-low sulfur diesel fuel at the Port's container terminals.

Table 1: Status of Implementation of the Vision 2000 Air Quality Mitigation Program

Mitigation measure #	V2K MMRP ID #	Short title	Status of implementation
			• Evaluating the feasibility of using aqueous diesel fuel in combination with other emission control measures, for cargo handling equipment. • Established a Technical Review Panel as an advisory panel for program implementation.. Meetings held on 3/16/00, 4/20/00 and 5/25/00. • Prepared funding guidelines and participation criteria for the Container Terminal Equipment Repower and Retrofit Program. Board adopted the funding guidelines on July 18, 2000. (Resolution # 20280) • Conducting economic feasibility studies for different implementation options. • Prepared Request for Proposal for Port funding (RFP) documents. These documents include reference information and guidelines how to fill out the Funding Application Form, and a fact sheet on diesel emission controls for diesel engine retrofit projects. • Send out the RFP documents on October 13, 2000 with a deadline for project proposals on Tuesday, November 27, 2000. • Soliciting funding applications under the Container Terminal Equipment Repower and Retrofit Program. • Conducting cost efficiency analysis of proposed retrofit projects. Selection of proposed projects anticipated for February 2001.
3.3-3/M3	101	AQ tugboat	• Funded the Seaport Liquid Natural Gas Study. • Studied the potential emission reduction of different repower options for a tugboat. • Evaluated the feasibility of Selective Catalytic Reduction for marine

Table 1: Status of Implementation of the Vision 2000 Air Quality Mitigation Program

Mitigation measure #	V2K MMRP ID #	Short title	Status of implementation
			vessels. • Evaluated the feasibility of emission control strategies for marine vessels. • Provided technical support for a Carl Moyer Grant application to repower a tugboat. • Established an incentive based voluntary funding program for a tugboat repower or retrofit project. • Created participation and project evaluation criteria based on the program's objectives. (April 7, 2000) • Received two project applications on May 22, 2000. Port environmental staff analyzed emission reduction and cost efficiency of proposed projects and selected the project with greater merits for air quality. • On July 18, 2000, the Board of Port Commissioners approved funding of the selected engine repower project, proposed by Oscar Niemeth Towing Inc. $408,300 was the total funding authorized • The project will replace two two-stroke engines with two low-emission diesel engines on Oscar Niemeth's tug "Silver Eagle". • The projected emission reductions are 9.9 tons of PM and 455 tons of NO_X over the project lifetime of 16.5 years. • Port and Douglas Niemeth, President of Oscar Niemeth, signed a MOU on September 6, 2000. • Media event and check hand-over scheduled for October 17, 2000.
3.3-3/M4	102	AQ AC Transit buses	• Prepared a Memorandum of Understanding (MOU) with AC Transit to support AC Transit's bus repower project.

Table 1: Status of Implementation of the Vision 2000 Air Quality Mitigation Program

Mitigation measure #	V2K MMRP ID #	Short title	Status of implementation
			• Committed to subsidize the repower of 27 AC Transit buses with low emission engines and catalyzed soot traps (Resolution # 99396) • Signed the MOU between the Port of Oakland and AC Transit for the bus retrofit project. • Celebrated the project partnership between AC Transit and the Port of Oakland on December 16, 1999. Submitted a check of $ 659,124.00 to AC Transit. • The projected emission reductions with implementing this project are 3.9 tons of particulate matter and 39.7 tons of nitrogen oxides over the project lifetime of nine years. • The prototype repowered bus went into service at Division 4, which serves West Oakland in May 2000. • To date seven buses have been repowered, two are currently being repowered and three are scheduled for repowering. (status 09/00).
3.3-3/M5	103	AQ train switch engines	• Prepared a proposal on how to track implementation and effectiveness of switch train related measures.
3.3-3/M6.1	104	AQ electric connection Berth 59	• Electric connection has been provided near Berth 59 to power electric dredges currently being used for construction. Electric connection would be sufficient to power a tugboat facility.
3.3-3/M6.2	105	AQ 24h truck parking	• Not commenced. (The former Union Pacific round-house property being used as 24hr truck parking since beginning of V2K construction 01/2000)
3.3-3/M6.3	106	AQ configure parking	• Included in the terminal design.
3.3-3/M6.4	107	AQ synchronize traffic signals	• Not commenced.
3.3-3/M6.5	108	AQ Spare the Air	• Port has committed to the Bay Area Air Quality Management District

Table 1: Status of Implementation of the Vision 2000 Air Quality Mitigation Program

Mitigation measure #	V2K MMRP ID #	Short title	Status of implementation
			to support the "spare the air" program. • Provisions encouraging carpooling during "spare the air" days was included in Plans and Specifications for all construction contracts.
3.3-3/M6.6-M6.8	109	AQ work trip program	• Not commenced.
3.3-3/M6.9	111	AQ maintenance facility	• Not commenced.
3.3-3/M6.10	112	AQ truck driver education	• Not commenced.
3.3-3/M7	113	AQ Red Star Yeast	• Prepared the scope of work for the engineering study. • Information exchange with a consultant that has worked with Red Star Yeast in the past. • Prepared a Request for Proposal for an engineering study to identify feasible reactive organic gas emission control measures at the facility. • Received two proposals on 8/28/00. • The engineering study for the Red Star Yeast facility is put on hold because the company is currently being purchased by a new owner. • Board approved funding for the engineering study on November 7, 2000.
3.3-3/M8	114	AQ Precision Cast	• Preparing the scope of work for the engineering study. • Establishing a program implementation strategy and schedule. • Prepared a Request for Proposal for an engineering study to identify feasible air emission control measures at the facility. • Received two proposals on 8/28/00. • Selected a consultant to conduct the engineering study and started negotiations to contract the study. • Board approved funding for the engineering study on November 7,

Table 1: Status of Implementation of the Vision 2000 Air Quality Mitigation Program

Mitigation measure #	V2K MMRP ID #	Short title	Status of implementation
			2000.
3.3-3/M9	115	AQ emission testing station	• Not commenced. (measure has been dropped because it deemed unfeasible and conflict with jurisdiction of other agencies)

V2K AQMP, December 1, 2000 © Port of Oakland

For detailed description of the activities, please see Section 4.

4. Detailed description of the progress to date

Although most of the air quality mitigation measures have already been initiated, full implementation of the air quality measures will take several months to years, due to their complexity, volume and the constant technological advances in emission control technologies. The projected increase in air emissions related to the operations of the Vision 2000 Maritime Development Program would occur over the next years, when new maritime facilities start operation. A number of Vision 2000 air quality mitigation measures will improve the air quality of maritime operations or target sources of pollution in the direct vicinity of the Port of Oakland prior to commencement of operations. The following paragraphs give a brief description of the work that has been done to date.

4.1 Vision 2000 Mitigation Monitoring and Reporting Program - Administration

As described in the October 21, 1999 Summary Report # 1, a Microsoft ACCESS database has been created that contains all mitigation measures and relevant data for their implementation (April 20 – Oct. 20, 1999). The ACCESS database acts as an internal informational tool, to ensure implementation and adequate tracking, documentation and reporting of the implementation of the measures.

Additionally, a paper file catalog has been set up to manually track the implementation of the mitigation measures. The paper file catalog is linked with the ACCESS database and documents the legally binding texts and commitments the Port of Oakland has made through all its certified environmental documents and related statutory and regulatory permits and compliance processes. The paper files will act as the control texts that reflect the certified EIRs, MOUs, MOAs and permit conditions. The paper files also contain background documentation for each measure.

A V2K MMRP Management Manual and a V2K MMRP Field Manual have been prepared to establish standard procedures to implement the measures and to track their performance (November 17, 1999). The Management Manual defines roles and responsibilities, communication structures and emergency response structures, whereas the Field Manual defines field procedures of implementation and monitoring, as well as standard checklists for tracking and monitoring. The next step of the V2K MMRP will be the creation of a mitigation measures implementation schedule.

The V2K MMRP will fulfill the reporting requirements under CEQA, and will document and track the process of implementation as well as evaluate the effectiveness of implemented measures. Part of the V2K MMRP will be bi-annual reporting to the Port's community stakeholders, including West Oakland Neighbors.

The responsibility of implementing, tracking and reporting the program has been delegated to the Director of Engineering by the Board Resolution # 99153 (April 20, 1999). Reports will be prepared by the Port's Environmental Planning Department.

4.2 Air Quality Mitigation Measures

The Port's Vision 2000 Air Quality Mitigation Program is designed as a dynamic and responsive program that will change and grow with the rapid development of new technologies to reduce emissions from on-road and off-road equipment. The Port is continuously tracking policy developments and technological developments to reduce air emissions. The Port participated at the "Northern California Natural Gas Truck and Bus Exposition" on June 23, 1999; the "Exploring New Technologies for Clean Air" conference, October 5-7, 1999; the "19th North American Motor Vehicle Emission Control Conference", December 12-15, 1999; the "Diesel Emission Control Retrofit Workshop", March 22 and 23, 2000 and the presentation of the "Emergency Clean Air Transportation Program (SECAT) of the Sacramento Air Quality Management District. Port staff conducts on-going scientific literature reviews to gather information on technological advances. The following points summarize the Port's efforts since April 20, 1999 to implement the air quality mitigation measures.

Mitigation measure 3.3-1/M1 (AQ construction equipment):

- The Port prepared the V2K Field Manual that establishes procedures to assure that air quality is monitored and reported daily in the field (see dust control measures). The construction managers for each project within Vision 2000 are responsible for monitoring their contractors to assure ambient area air quality is maintained.

  Examples of measures taken to improve air quality include requiring contractors to maintain pieces of equipment that appears to have excess emissions. Some contractors have been required to replace site equipment when satisfactory visible emissions could not be achieved. Where nuisance odors have been identified, contractors have been required to stop and modify operations to minimize or eliminate odor-causing activity.

Multiple mitigation measures of the V2K MMRP:

- The Port of Oakland co-funded the "Seaport Liquid Natural Gas Study" prepared by CALSTART-WestStart. The study, published February 1999, analyses the feasibility and usage of Liquid Natural Gas for ground vehicles, yard equipment, heavy-duty trucks and on-road trucking operations associated with the Port of Oakland and the Port of Los Angeles. CALSTART-WestStart was under contract with Brookhaven National Laboratory, with co-funding from the Port of Oakland, Port of Los Angeles, and Pacific Gas & Electric. The Port of Oakland Environmental Planning Department commenced to evaluate the use of natural gas for Port operations, and trucks that serve the Port. Liquid Natural Gas and Compressed Natural Gas are the cleanest burning fuels currently on the market, and would lead to a substantial emission reduction of nitrogen oxides and particulate matter. There are economical and operational constraints that render difficult the implementation of natural gas for Port uses. However, the Port of Oakland, Environmental Planning Department will continue to explore the feasibility of potential projects and to coordinate with relevant stakeholders, such as the California Air Resources Board, regional Air Quality Management Districts, Environmental Protection Agency, East Bay Clean Cities

Coalition, Clean Air Transportation Fund, the West Oakland Community and others to track the status of technological developments.

Meetings included the CALSTART-WestStart presentation to the Port of Oakland staff of the Liquid Natural Gas Study on May 17, 1999; a conference on CNG/LNG held by PG&E on June 23, 1999; and conversations with Michael Murphy (BAAQMD), Brian Stokes and Chris Ferrara (PG&E), and several trucking companies.

- The Environmental Planning Department retained URS Greiner/ Woodward Clyde to draft a proposal dated August 1999 regarding implementation of mitigation measure 3.3-3/M1 (repower and retrofit of transport trucks) and mitigation measure 3.3-3/M2 (repower and retrofit of container terminal equipment). The objectives of the proposal are to compare emission monitoring versus ambient air monitoring, and emission testing versus emission modeling in order to measure the effectiveness of air quality measures. URS Greiner/ Woodward Clyde recommended against ambient air quality monitoring, because it would not be economically feasible. Further URS Greiner/Woodward Clyde recommends:

  - Tracking emission changes with implementing air quality projects;
  - Quantifying changes in emissions by calculation, rather than physical testing;
  - Collecting more specific information on the existing equipment that will be affected by the air quality mitigation measures (Inventory).

  The implementation of mitigation measures 3.3-3/M1 and 3.3-3/M1A face difficulties based on a heterogeneous owner and operator structure of trucks that provide service for the Port. Since the Port does not own trucks, and has no control over their movements, it would not be effective to retrofit trucks that may only temporarily operate in the vicinity of the Port. The Port decided to focus its efforts on trucking companies that are located in West Oakland and that provide service to the Port of Oakland, in order to accomplish the goal of improving local air quality. The Port conducted an inventory of the West Oakland trucking fleets, to identify which engines would be most effectively retrofitted, and to calculate emission reductions projected by modeling engine and operational information, rather than by air quality testing.

- To date, the Port has gathered information on diesel emission control technologies and alternative fuels. The Port is evaluating the feasibility of different emission control strategies for marine vessels, off-road equipment and on-road trucks. The Port is working in close contact with regulatory agencies, such as the California Air Resources Board, California Energy Commission and the Environmental Protection Agency, as well as vendors of emission control technology in order to gather most recent information.

  The market of diesel emission control technologies is very dynamic. More technologies are becoming commercially available or are currently being tested. Port staff participated in several conferences to gather recent information and to establish contacts with relevant stakeholders. Most of the emission control technologies,

although very promising, lack experiences in real-time applications around marine operations (i.e. on container terminal equipment). It is therefore very important to solicit the interest of vendors and regulators to apply new emission control technologies on cargo equipment.

- Port Environmental staff is currently conducting a technical review of emission controls that might be applicable for maritime related equipment to determine its feasibility. Emission control technologies and alternative fuel measures have been evaluated for:

  a) Marine Vessels,
  b) Container Terminal Equipment,
  c) On-Road Trucks.

  a) Emission control technologies for marine vessels include the replacement of old, uncontrolled diesel engines with new low emission diesel engines, engine modification (i.e. turbocharging, cam shaft modification, time retardation, ceramic coating etc.) the installation of selective catalytic reduction devices or diesel oxidation catalysts. Alternative fuels for marine vessels was deemed to be unfeasible to date because of unsolved safety concerns, the associated infrastructure costs and difficulties to obtain necessary permits. The Port has created an incentive-based voluntary funding program and is currently accepting project proposals for tugboat repower and retrofit projects (details see below).

  b) Emission control technologies for container terminal equipment includes the replacement of pre-1996, unregulated diesel engines with new diesel or alternative fuel engines, engine modifications (i.e. turbocharging, cam shaft modifications, and ceramic coating) the installation of exhaust after treatment devices on new, repowered or existing equipment, and fuel related measures. The Port has created an incentive based voluntary Container Terminal Equipment Repower and Retrofit Program to implement mitigation measure 3.3-3/M2 (details see below).

  c) Emission control technologies for on-road trucks include the replacement of older diesel engines with new low emission diesel engines or alternative fuel engines, engine modifications (i.e. turbocharging, cam shaft modifications, and ceramic coating) the installation of exhaust after treatment devices, or fuel related measures.

Mitigation measure 3.3-3/M1 and 3.3-3/M1A (AQ truck repower and retrofit):

- The Port in conjunction with the City of Oakland prepared a West Oakland Trucking Inventory and Activity Survey. A final report is currently being prepared. The findings of the survey will support the Port's efforts in identifying eligible trucking companies for the Truck Repower and Retrofit Program (Mitigation 3.3-3/M1 and 3.3-3/M1A). Table 1 summarizes the results of the survey.

Table 2: Summary of Quantifiable Topics

(Number of trucks, trips per day and employees.)

A	B	C	D	E	F
Total # of companies surveyed	# of companies responded	# of Companies provided data to survey topic	**Survey topic**	Total number of column D	Avg., # of column D per company
57	38	25	**Trucks in Fleet**	**413**	**17**
57	38	26	**Trips Per Day**	**2466**	**95**
57	38	28	**Employees**	**718**	**26**

Source: The West Oakland Trucking Company Inventory and Activity Survey, December 30, 1999.

Twenty-seven of the surveyed trucking companies are located in West Oakland and have been identified to provide container transport services to Port tenants. These twenty-seven companies operate 29 trucks and 104 owner/operator subcontracted trucks. Additionally 423 trucks were mentioned without information regarding their owner structure.

Vast majorities of trucking companies do not own their own trucks. Most trucks are owner-operated and contracted on a daily basis. This owner-operator structure will make the implementation of the Port's program more difficult.

- The Environmental Department is currently evaluating the possibility of using aqueous diesel for trucks that serve the Port. Recently, a new formula of aqueous diesel, based on a "water-in-diesel" emulsion was introduced to the market. The use of this fuel would substantially reduce the emissions of nitrogen oxides, in particular with older diesel trucks that do not adhere to forthcoming emission standards. This project has the possibility of a high cost efficiency, in particular when combining the aqueous diesel fuel with diesel oxidation catalyst.

- Staff is currently planning a demonstration project using aqueous diesel at trucks that are located in West Oakland and that provides service to Port tenants. On December 12, 2000, the Port invited 14 trucking companies that are located in West Oakland and operate 10 to 30 trucks for participation in this demonstration project. The demonstration would test the use of PuriNOx™ aqueous diesel fuel for a period of three months. Additionally, diesel oxidation catalysts would be installed at three or more trucks. The Port would conduct emission testing on at least two trucks to verify emission reduction and cost efficiency of this technology.

  Contacts have been established with Lubrizol Corporation. Meetings were held with Bill Hagstrand (Lubrizol) and Greg Gilbert (SAAQMD) and Port staff in May, June and September 1999. Further meetings have been held with Port staff, Lubrizol and a West Oakland based trucking company in August and September 2000.

Mitigation measure 3.3-3/M2 (AQ cargo-handling equipment):

- The Port of Oakland conducted a spring 2000 inventory of all container terminal equipment that operates on Oakland's maritime facilities (completed on 04/07/2000). This inventory provides accurate data for updating the emission calculation of the Berths 55-58 Project EIR. It also provides important information necessary to design, select and implement air quality improvement projects on container terminal equipment. The inventory has been updated during the request for proposal process under the Container Terminal Equipment Repower and Retrofit Program. All gathered data are being held confidential.

- The updated spring 2000 inventory of container terminal equipment counted a total of 408 pieces of equipment operating at the Oakland marine terminals. These were 15 Transtainers, 58 Tophandlers, 26 Sidepicks, 278 Yard Hustlers and 31 Forklifts.. Detailed information on engine models, model years, horsepower and hours of operation enabled the Port's consultant to refine the baseline emission inventory published in the Berths 55-58 Project EIR. For example, the current emissions for hydrocarbons, nitrogen oxides and particulate matter from the container terminal equipment are lower than previously calculated because of lower hours of operation than anticipated in the Berths 55-58 Project analysis. Only the carbon monoxide emissions were found to be higher than estimated in the Berths 55-58 Project EIR, mostly because of different engine families in the category Tophandlers and Forklifts.

  Only 17% of the terminal equipment-engines are of model years before 1988. In 1988 many off-road engines, although still unregulated, became cleaner due to technological development in the on-road sector that was used also for off-road engines. The majority of the terminal equipment is of model years 1988 to 1995. One third of the equipment was purchased after 1996. With model year 1996, off-road equipment became regulated for the first time, and thus engine models after 1996 have significantly lower emission factors than those before that date. There is a regular turnover of terminal equipment and the Port assumes that the number of engines of model years prior to 1988 will continuously decrease.

- The mitigation measure 3.3-3/M2, "subsidize cargo-handling equipment engine replacements and/or add-on exhaust treatment", is the largest air quality mitigation project under the Vision 2000 AQMP. Work on this measure was initiated in October 1999 and completion of the first tier of repowering and retrofitting container terminal equipment is anticipated for summer 2001. Besides the information gathering on technological advances in diesel emission control technologies and the inventory of container terminal equipment, major work that has been done to date includes:

  a) Preparation of program objectives, draft implementation strategy, and an implementation schedule in December 1999.

  b) A presentation on emission control technologies for off-road diesel equipment held by Mr. Dale McKinnon, Deputy Director of the Manufacturer of Emission Controls Association, Washington DC, on April 19, 2000. The purpose of the presentation was to provide a question and answering forum for Marine Terminal Operators and Port staff.

c) The establishment of a Technical Review Panel for the program's implementation. The Technical Review Panel consists of representatives from regulatory agencies, the community, Port of Oakland and Marine Terminal Operators, and technical advisors. The Technical Review Panel reviews and comments on participation criteria, program strategies and proposed projects. The Technical Review Panel met on March 16, April 20 and May 25, 2000 to provide input in the development of the Port's mitigation measure 3.3-3/M2.

d) The development of an incentive based grant program for terminal operators at the Port of Oakland. The "Container Terminal Equipment Repower and Retrofit Program" (CTERRP) provides funding for engine replacement, add-on exhaust after treatment devices and cleaner burning fuels for marine terminal equipment. The funding is covered by the allocated $ 5.245 million of the V2K AQMP.

e) Economic feasibility analysis to develop goals and objectives under the Port's CTERRP. Principle funding guidelines and participation criteria for Marine Terminal Operators (MTO) to apply for funding through the CTERRP have been developed and were approved by the Board of Port Commissioners on July 18, 2000.

f) The preparation of "Request for Proposal for Port Funding", sent out on October 11, 2000 with a deadline for project proposals from MTO on November 27, 2000. The Request for Proposal for Port Funding documents includes a fact sheet for emission controls for diesel engines, informing the MTO regarding retrofit options to reduce the exhaust emissions of terminal equipment.

The mitigation measure 3.3-3/M2 will be implemented through the Container Terminal Equipment Repower and Retrofit Program (CTERRP). The CTERRP comprises partial funding for engine replacements on engine of model years 1989 to 1995 with engines that meet a 0.15 g/bhp-hr particulate emission standard. The Port will also fund the installation of emission control technologies on equipment with a remaining useful life of at least five years.

The participation in this program is voluntary. However, participation for engine replacements could be expected due to its operational benefits for MTO. Incentives for participation in additional efforts to clean up terminal equipment are provided through a system of increasing subsidy with the installation of emission control technologies and with using cleaner burning fuels. The installation of emission control technologies would be rewarded with a specific dollar award due to their capability to reduce particulate matter or nitrogen oxides. Measures that would be considered under the CTERRP are diesel oxidation catalysts, diesel particulate filters, selective catalytic reduction, ultra-low-sulfur diesel fuel, and aqueous diesel fuel.

All marine terminal operators plan to participate in the program and submitted project applications to the Port of Oakland. Port Environmental Planning Department staff is currently reviewing the project proposals and gathering additional information to complete the applications. All proposed retrofit projects with emission control technologies will be subject to a cost efficiency analysis. A minimum cost efficiency of

$5,000 per reduction of one ton of NO_X and 20 ton of particulate matter is required in the program.

The revised inventory (updated as of December 1, 2000) shows 306 eligible pieces of equipment. Two percent of these pieces plan to repowered the equipment with new engines only. Thirty percent anticipate to repowered and retrofit the equipment with new engines and emission control technologies, such as diesel oxidation catalyst, diesel particulate filter and ultra-low-sulfur diesel. Fifty-nine percent of the eligible equipment proposes to install emission controls only. This would reduce the hydrocarbon emissions by 28 tons per year or 80%, the carbon monoxide emissions by 97 tons per year or 69%, nitrogen oxide emissions by 99 tons per year or 27% and the particulate matter emissions by 14 tons per year or 74%[3]. Details see exhibit 1.

The Port plans to finalize the applications and to write contractual agreements (Memorandum of Understanding) with the marine terminal operators by the end of January 2001. The Technical Review Panel will review the proposed projects within this process. Timetables for implementing the proposed projects will be specified in the Memorandums of Understanding between the Port and the terminal operators.

Mitigation measure 3.3-3/M3 (AQ tugboat repower or retrofit):

- With Resolution # 99295, on September 20, 1999, the Board of Port Commissioners allocated up to $ 500,000 to support a selected tugboat repower project, and to prepare and submit an application to the Bay Area Air Quality Management District (BAAQMD) Carl Moyer Grant Program for additional funding. However, a potential conflict between the Carl Moyer Program guidelines and the CEQA guidelines forced the Port to withdraw its participation in the Carl Moyer Grant program for that tugboat project. As a result, the Port established an incentive-based funding program to repower and/or retrofit tugboats that provide service to Port tenants.

  Prior to the Board action, Port environmental staff analyzed five different repower options for a tugboat and selected one project. All options were diesel to diesel repower projects that would have installed new, low emission diesel engines. The alternative to retrofitting the existing engines to liquid natural gas was rejected due to the lack of infrastructure for LNG supply, problematic permitting requirements, and the relatively small emission benefits compared to some of the diesel to diesel projects.

  Additionally, the Port studied the feasibility of using an aqueous diesel formula on a tug. The use of aqueous diesel on tugboats may be carried out as demonstration project.

  Regular meetings have been held with Oscar Niemeth (Niemeth Towing Inc.) and the Bay Area Air Quality Management District between May and October, 1999. In addition, the Port has contacted engine manufactures, Lubrizol Corporation, and

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3 Percent values based on all eligible pieces of equipment. Non-eligible pieces of equipment are anticipated to be replaced through cyclical replacement shortly.

Energy Conversion Inc., who specialize in retrofitting big diesel engines to liquid natural gas engines.

- The Port created an incentive-based funding program to repower and/or retrofit one or more tugboats that provide services to Port tenants. The participation criteria for funding applications were finalized on April 6, 2000. Eight tugboat companies were invited to participate in the Port's program. Two project proposals were received by May 22, 2000. The submitted projects were both diesel to diesel engine replacements, one with an additional option to install a selective catalytic reduction (exhaust after-treatment) system.

  Port Environmental Staff conducted emission reduction and cost efficiency analysis of the proposed projects. In part due to the remaining useful life of its engines, Port staff recommended to fund the engine replacement of the tugboat "Silver Eagle" of Oscar Niemeth Towing, Inc with $408,300. The "Silver Eagle" deemed to be an ideal candidate because its engines are uncontrolled two-stroke diesel engines that would remain in service for approximately another 16.5 years. The Board of Port Commissioners approved funding of this project on July 18, 2000.

  The projected emission reductions with the replacement of the two diesel engines with new, low-emission diesel engines are 1.0 tons particulate matter and 27.5 tons nitrogen oxides per year, and 16.4 tons particulate matter and 445 tons nitrogen oxides over its project lifetime[4]. Project analysis showed a cost efficiency of $1,645 per ton of pollutant[5].

  The Port delivered the check of $408,300 in a ceremony on October 17, 2000 to Oscar Niemeth Towing Inc. The low-emission engines have been purchased and installations are anticipated to take place in April 2001.

  The proposed second component, the installation of a selective catalytic reduction, reached a competitive cost efficiency. This project could not be realized since the engine replacement was proposed as a pre-requisite and funding for both components would have exceeded the allocated funding of $500,000. However, this project could be considered a 'back-up' in the case that other projects would become infeasible because of its beneficial cost efficiency and emission reduction.

Mitigation measure 3.3-3/M4 (AQ AC-Transit buses):

- With Resolution # 99396, on September 20, 1999, the Board of Port Commissioners authorized the Memorandum of Understanding between the Port of Oakland and AC Transit to repower 27 Transit buses with new, low emission engines. Additional

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4 Updated engine specifications became available after ONT purchased the new engines. The specifications showed particulate emission factor of 0.1 g/bhp-hr, which is ~50% lower than previously anticipated. The projected particulate emission reduction were adjusted accordingly.

5 Cost efficiency calculation based on the reduction of nitrogen oxides and thirty times particulate matter emissions. The weighting of particulate matter was introduced to make the cost efficiency standard, which was developed for nitrogen oxides only, applicable to particulate matter reductions.

catalytic soot filters will be installed on all 27 buses to further reduce particulate matter, carbon monoxide, hydrocarbons and volatile organic compounds. These 27 buses have two stroke diesel engines that would be otherwise rebuilt and remain in service. These 27 buses serve the Port vicinity, thereby reducing key emissions in the West Oakland, Emeryville, and Alameda areas. The implementation of the repower and retrofit of 27 buses would reduce 3.9 tons of particulate matter and 39.7 tons of nitrogen oxides. The project represents an immediate action to reduce the emissions caused by AC Transit buses to cover a period until more advanced technology, such as hybrid-electric or fuel-cell powered transit buses become economically and technically feasible.

The California Air Resources Board (CARB) is currently proposing a new Public Transit Bus Fleet Rule and Urban Bus Engine Standards. CARB is developing a proposal with two different options, a "conventional/advanced technology" and an "incentive" option. The partner project of the Port of Oakland and AC Transit adheres to the "conventional/advanced technology" option, and the new standards of 0.5 g/bhp-hr NO_X and 0.01 g/bhp-hr PM[6] would apply after January 1, 2005. This would require early investments in hybrid-electric and fuel-cell technologies in order to meet the standards, unless advances in after treatment devices would achieve sufficient emission reduction.

A Memorandum of Understanding between the Port of Oakland and AC Transit was signed in December 1999. A check over $ 659,124 to retrofit 27 AC Transit buses was submitted on December 16, 1999. The prototype bus went into service in Division 4 late May 2000. To date, seven buses have been repowered and equipped with soot traps, two are currently being repowered and three are scheduled for repowering.

Another component of the retrofit project is to support AC Transit's existing apprenticeship program (AC Transit Apprenticeship Program), which provides training and employment on a high quality level. The Port will work with AC Transit to identify qualified applicants for service employee, bus driver, and apprentice mechanics positions. AC Transit agreed to make concentrated efforts to recruit employees from the West Oakland neighborhood and to assist residents through the application and hiring process. The different components were specified in the Memorandum Of Understanding between the Port of Oakland and AC Transit.

AC Transit's Human Resource Department conducted outreach efforts in the West Oakland community to facilitate the hiring of its residents. The efforts included participation in six job fairs in Oakland. As of September 2000, AC transit has hired 48 people from the West Oakland area. Most of these positions were part-time bus drivers.

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6 NO_X = nitrogen oxides; PM = particulate matter. Emission standards are set based on the emission per bulk horsepower (bhp) and hour of operation (hr). Engines are certified under these standards.

Meetings were held with AC Transit to identify the components of the retrofit project. Port staff participates in the discussion regarding new regulations for transit agencies, and keeps track of new technological advances such as hybrid-electric and fuel-cell powered buses.

Mitigation measure 3.3-3/M7 and 3.3-3/M8 (AQ Red Star Yeast and Precision Cast):

- The Port of Oakland Environmental Planning Department prepared a Request for Proposal for an engineering study to identify control measures for reducing reactive organic carbon emissions from the Red Star Yeast and Precision Cast facilities in West Oakland. The two facilities were identified as stationary sources in the vicinity of the Port of Oakland, where emission control measures could potentially reduce emissions of reactive organic gases. The analysis of stationary sources in West Oakland was conducted by URS Greiner Woodward Clyde during their preparation of the air quality impact study for the Berths 55-58 Project EIR. The selection was based on a mobile field survey and public permit data provided by the Bay Area Air Quality Management District.

  It was anticipated that the engineering studies would be carried out in cooperation with the facilities in order to identify potentials to reduce reactive organic carbon emissions. The Vision 2000 Mitigation Monitoring and Reporting Program allocated $500,000 for the Red Star Yeast facility to implement emission control measures, if feasible measures would be identified. The Port prepared a Request for Proposal for the two engineering studies. The Port received two proposals on August 28, 2000.

  Simultaneously, the Red Star Yeast facility, owned by Universal Food Corporation, requested a deferral of its participation in the study because the yeast manufacturing branch of Universal Food is currently for sale.

  The Port of Oakland is proceeding with the engineering study at the Precision Cast facility and selected a consultant to conduct the study. The Board of Port Commissioners approved the selection on November 7, 2000. Contract negotiations are currently underway and it is anticipated that the engineering study would start beginning of 2001. The engineering study would be completed approximately four months after commencing the work.

Others:

- The Port evaluated the installation a Compressed Natural Gas (CNG) fueling station. The installation and operation of a CNG fueling station would be in cooperation with the City of Oakland, the owner of the station, and which is seeking a location for this facility. Several locations in the Commercial Real Estate and Maritime areas have been considered.

  No feasible site could be identified within the given time frame. A CNG fueling station at most of the waterfront sites would be in conflict with the Oakland Estuary Plan. Other sites were to remote from downtown Oakland or would have limited

public access. The City of Oakland is currently evaluating the installation of a public CNG fueling station at City property near downtown Oakland.

Meetings were held with Bruce Jaussaud (City of Oakland), Chris Ferrara (PG&E), Joe English (Clean Fuels), and Steven Van (Port of Oakland, Aviation Department) in June and July 1999, communications thereafter.

- The Port has committed to the Bay Area Air Quality Management District to participate in "Spare the Air" days.

4.3 Dust Control Measures

The Port has committed to thirteen dust control measures during construction of the Vision 2000 projects. These control measures are described as basic, enhanced or optional control measures by the Bay Area Air Quality Management District (BAAQMD 1996). The purpose of these control measures is to reduce the construction-related dust emissions to a level of insignificance. The measures have been incorporated in the Plans and Specification for the Berths 55-56 and the Joint Intermodal Terminal projects. The Environmental Planning Department conducted quality control on the draft plans and specifications prior to distribution to potential bidders. The construction contractors are responsible for implementing the dust control measures during construction. The Port has established a monitoring and reporting system to ensure implementation and to apply remedial actions, if necessary (Field Manual).

The Field Manual requires Construction Manager inspectors to monitor project borders intermittently to assure that visible airborne particulate is suppressed before it reaches the general public and to fill out a monitoring checklist daily. Additionally, construction equipment emissions are monitored and dust suppression equipment such as water trucks are proactively employed to help maintain air quality.

The dust control measures are being implemented for all ongoing Vision 2000 Program construction activities. Consultants from JADA consulting have been contracted to monitor the implementation of construction related mitigation measures and to report to the Port Environmental Planning Department. The measures taken in the field have been proven to be effective. No major dust incidents have been reported to date. Furthermore, the field monitoring have helped to keep construction personnel alerted to and conscientious of air quality as well as other environmental issues that may result from construction activities.

4.4 Particulate Monitoring Program

The Port of Oakland contracted Orion Environmental Associates and recently awarded the continuation of the program to GAIA Consulting, Inc., to conduct an air quality monitoring program to measure the levels of particulate air pollution in West Oakland. The program started on April 22, 1997 and will continue until April, 2004. The new consultant will assess the validity of the program, evaluate the project to ensure the sampling equipment and methods still meet EPA and BAAQMD criteria, and suggest possible improvements to the program.

Two sampling locations, one in the Port area, one in the West Oakland residential area downwind of the Port facilities, gather data for particulate matter (PM_{10} and $PM_{2.5}$) and meteorological conditions. The PM concentrations have generally been well below the federal and state particulate air quality standards. The data followed the same pattern on both stations, which indicates the influence of meteorological conditions and regional sources rather than point sources. The concentration of PM at the Port site was in general slightly higher than that of the residential site (Orion 1999).

5 Next steps

The next steps involved in development of the V2K MMRP program are.

- Commence contacts with trucking companies in the Vision 2000 local planning area.
- Develop a strategy and schedule for implementing the on-road truck repower and/or retrofit program.
- Continue the implementation of the Container Terminal Equipment Repower and Retrofit Program's first phase in 2001.
- Monitor and track the implementation of the tugboat repower project.
- Evaluate the merits of implementing emission control projects on marine vessels.
- Carry out a feasibility study for emission control measures for the Precision Cast facilities in West Oakland.
- Evaluate the success of measures that have been implemented or initiated to date in order to make recommendations for changes to the program.
- The Port will continue its analysis of alternative fuels and technological advances for emission controls. The Port will proceed in establishing contacts with technology providers and engine manufactures in order to implement the Vision 2000 Air Quality mitigation measures.

6 References

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Port of Oakland; July 18, 2000: Resolution 20280, Resolution Authorizing Adoption of Principal Implementation Strategy and Participation Criteria for the Container Terminal Equipment Repower and Retrofit Program, Mitigation Measure 3.3-3/M2 under the Vision 2000 Air Quality Mitigation Program, and Authorizing the Executive Director to Allocate Funding to Select Projects.

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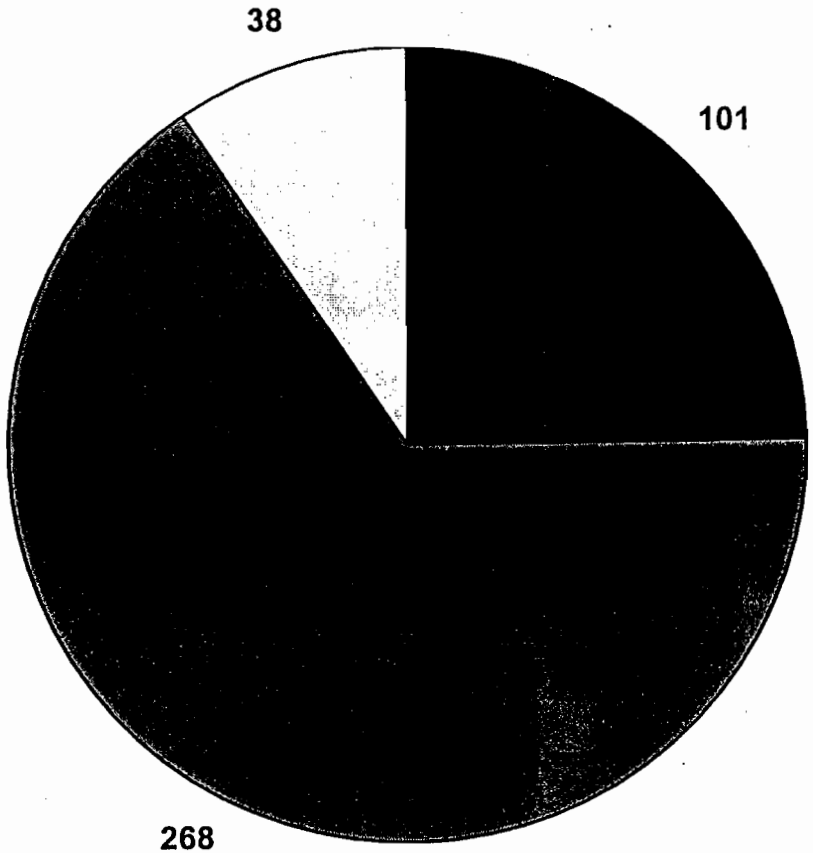
Summary Report # 3
Vision 2000 Air Quality Mitigation Program

Exhibit A:

Preliminary Participation Data and Anticipated Emission Reductions under the Container Terminal Equipment Repower and Retrofit Program.

Container Terminal Equipment Repower and Retrofit Program
Total Number of Equipment (a)



■ Non-eligible equipment (pre 1989)

▩ Eligible equipment (Model Year 1989-1999)

□ Equipment added in year 2000 (eligible for retrofit)

Total Inventory:
Eligible Equipment: 306
Non-eligible Equipment: 101

(a) Port of Oakland V2K MMRP Inventory - completed April 7, 2000. Equipment purchased in year 2000 added to total inventory.

PORT OF OAKLAND

July 2, 2001

Mr. Alan Ramo, Esq.
Environmental Law and Justice Clinic
Golden Gate University School of Law
536 Mission Street
San Francisco, CA 94105-2968

Subject: Summary Report #4, Vision 2000 Air Quality Mitigation Program (July 2, 2001).

Dear Mr. Ramo:

In accordance with the commitment set forth in the April 16, 1999 settlement between the Port and the West Oakland Neighbors, the Port is pleased to send you the attached "Summary Report #4, Vision 2000 Air Quality Mitigation Program (V2K AQMP)", dated July 2, 2001. This report summarizes the progress of implementation of air quality mitigation measures during the period from December 2000 until June 2001.

The report updates the previous reports in the form of an Executive Summary. It contains an overview of new developments and some qualitative conclusions based on projections from the Container Terminal Equipment Repower and Retrofit Program.

The next phase of the V2K AQMP (Phase II, December 2000 to April 2002) will be characterized by continued implementation of program components, most notably the Container Terminal Equipment Repower and Retrofit Program. Port staff will also proceed with the planning and implementation of the aqueous diesel demonstration project on on-road trucks. Port staff anticipate that many of the currently proposed projects will be implemented at the end of Phase II and that an evaluation of the program will be possible for the spring 2002 report.

If you have any questions regarding the program, please contact Mr. Stefan Seum, Port Environmental Planner at (510) 627-1180, or Mr. Richard Sinkoff, Environmental Assessment Supervisor at (510) 627-1182.

Sincerely,

Mr. Joseph K. Wong
Director of Engineering

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Cc: Mr. Raymond Boyle, Director of Maritime, Port of Oakland
Mr. Michael Beritzhoff, Sr. Maritime Project Administrator, Port of Oakland,
Mr. Tom Clark, Port Attorney, Port of Oakland,
Mr. Harold Jones, Director Communications Division, Port of Oakland,
Mr. Jim McGrath, Manager Environmental Planning, Port of Oakland,
Ms. Nancy Nadel, Councilmember, City of Oakland,
Mr. Willie Keyes, West Oakland Neighbors,
Mr. Richard Sinkoff, Supervisor Environmental Planning, Port of Oakland,
Mr. Stefan Seum, Assistant Port Environmental Planner, Port of Oakland,

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Summary Report # 4
Vision 2000 Air Quality Mitigation Program

Port of Oakland,
July 2, 2001

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Summary Report # 4
Vision 2000 Air Quality Mitigation Program

July 2, 2001

I. EXECUTIVE SUMMARY 1
A. OVERVIEW 1
B. MITIGATION MEASURES PROGRESS SINCE DECEMBER 2000 3
C. CONCLUSIONS 7

I. Executive Summary

The purpose of the Executive Summary is to highlight new developments in the implementation of the Port of Oakland's Vision 2000 Air Quality Mitigation Program (V2K AQMP) since the last Summary Report # 3 from December 28, 2000. Some air quality mitigation projects achieved important milestones. However, due to the short period of time, new developments in implementing the Port's V2K AQMP are limited. The Summary Report # 4 will therefore provide only an update of the Report #3 with this executive summary.

A. Overview

On April 20, 1999, the Board of Port Commissioners adopted the Vision 2000 Mitigation Monitoring and Reporting Program including the commitment to air quality mitigation measures. During the first twenty months (April 20, 1999 – December 2000) of program implementation, Port staff have devoted resources to refining our overall strategic approach to the Vision 2000 Air Quality Mitigation Program, developing the administrative structure for the program, building advanced technical knowledge and expertise, designing specific implementation procedures for individual mitigation measures and implementing and reporting on specific measures. These twenty months constitute Phase I of the V2K AQMP.

During Phase I, Port Environmental Planning staff designed program components and initiated specific projects. In particular, two smaller projects, the AC-Transit partnership and the tugboat repower project, are well underway. These smaller projects served to initiate the program and develop staff expertise in designing program components. The Tugboat Repower Project is projected to exceed the expected emission reductions three-fold for particulate matter and six-fold for nitrogen oxides. The AC-Transit project is projected to perform slightly below the expectations regarding emission reductions (table I). The tugboat project stayed below its budget (tugboat project variance = +$33,923) while the AC-Transit project slightly exceeded its budget (AC-Transit project variance = -$7,626).

The Port also launched Tier I of the Container Terminal Equipment Repower and Retrofit Program for its marine terminal operators on October 12, 2000, when it sent out the

request of proposals for Port funding. All terminal operators submitted funding applications to repower and retrofit more than 90% of eligible pieces of equipment. The proposed projects of the Container Terminal Equipment Repower and Retrofit Program will reduce particulate matter emissions of eligible terminal equipment by more than 70%, hydrocarbon by approximately 80% and nitrogen oxides by approximately 30%. The Port will have spent approximately fifty percent of the total V2K AQMP budget, after completion of the Tier I of the Container Terminal Equipment Repower and Retrofit Program (approximately $4.5 million).

As of June 1, 2001, the Port has spent 47% of its administrative budget to implement the Vision 2000 Air Quality Program ($345,179 of $730,000).

Administration and Management:

For purposes of managing the overall program, Port staff have found it practical to structure the program in phases. The phased approach allows Port staff to assess the performance of specific measures against the program's overall emission reduction objectives and to adjust the design of the program in response to changed circumstances (i.e. new technologies, wide performance variances, etc.) Port staff anticipate three additional implementation phases, each approximately 18 months long, to complete the program, as follows:

- Phase II: Dec 00 – April 02
- Phase III: April 02- October 03 (approx. completion of V2K construction)
- Phase IV: October 03 – April 05 (approx. completion of 5-year CIP and 2 years of terminal operations at the new terminals)

Phase II will be characterized by continued implementation of major program components and the "cleaning up" of mobile sources. Concurrently in Phase II, Port Environmental staff anticipates assessing the program, its achieved emission reductions and cost efficiency of reducing emissions. This re-evaluation of the Vision 2000 Air Quality Program will guide modifications to strategic decisions, program procedures, and future projects.

During Phase III, Port Environmental Planning staff plans to carry out modified mitigation projects for local mobile sources.

Phase IV will target implementation of operations-related air quality measures and strategic planning efforts for future Port air quality programs.

B. Mitigation Measures Progress since December 2000

Mitigation measure 3.3-1/M1 (AQ construction equipment):

The Port Environmental Planning Department prepared a Field Manual for the Vision 2000 construction phase to assist and monitor implementation of construction-related mitigation measures, i.e. dust control measures. In July 2000, the Port issued a Technical Service Order ("TSO") to URS Corporation, one of the Port's approved "As Needed" consulting firms, to support the Port's monitoring function and to ensure suppression of visible airborne particulate. The measures taken in the field have proven to be effective. Furthermore, the field monitoring has helped to keep construction personnel alerted to and conscientious of air quality issues as well as to other environmental issues that may result from construction activities.

Two field monitors are currently deployed on a full-time basis to monitor implementation of all V2K mitigation measures, including air quality. Remedial actions have been applied when visible dust was created. A weekly summary report of implementation activities has been produced. With completion of the Berths 55-56 wharves and terminals, this contract changes to a part-time basis.

Mitigation measure 3.3-3/M1 and 3.3-3/M1A (AQ truck repower and retrofit):

The Port is currently evaluating the feasibility of using aqueous diesel and diesel oxidation catalysts on on-highway trucks. In particular, the combination of aqueous diesel fuel with diesel oxidation catalysts promises significant emission reductions at reasonable costs. The Port has designed a demonstration program which would test aqueous diesel and diesel oxidation catalysts on trucks that are located in West Oakland and that provide service to Port tenants. The demonstration is scheduled for a six-month period and would include emission verification testing.

The Port invited eligible trucking companies to participate in the demonstration in December 2000. One trucking company that is located in West Oakland seems best suitable for the demonstration project. Port staff is currently negotiating with other stakeholders to resolve outstanding questions regarding the fuel supply, incentive for the participants and contractual relationships. Port staff anticipate approaching the Board of Port Commissioners in summer 2001 and conducting the demonstration project in the second half of 2001.

Mitigation measure 3.3-3/M2 (AQ cargo-handling equipment):

For implementation of mitigation measure 3.3-3/M2, the repower and retrofit of cargo-handling equipment, budgeted with $5.245 million, the Port of Oakland has developed an incentive-based grant program, the Container Terminal Equipment Repower and Retrofit Program (CTERRP), for marine terminal operators (Board of Port Commissioners, July 18, 2000). The CTERRP provides funding for engine replacement and emission control technologies, such as catalytic converters and cleaner burning fuels. The program targets engines of model year 1989 to 1995 for engine replacement. Additionally, a system of

monetary incentives encourages marine terminal operators to apply emission control technologies to their equipment. The Request for Proposals for Port Funding was sent out in November 2000. In response, all marine terminal operators at the Port of Oakland plan to participate in the program and submitted funding applications.

A Technical Review Panel (TRP) has been assisting in the implementation of the Port's Container Terminal Equipment Repower and Retrofit Program. The TRP was established in March 2000 and includes representative of the Port, the community and agencies such as the Bay Area Air Quality Management District, California Air Resources Board and California Energy Commission. The TRP reviewed and commented on the structure of the program and will also review the proposed projects. The fourth meeting of the TRP was held on January 18, 2001 discussing the project proposals and funding procedures. The West Oakland representative attended the meeting.

Port Environmental Planning Department staff is currently negotiating final grant agreements with each individual marine terminal operator (MTO). Stipulations in all grant agreements include specifications of the proposed projects, conditions of engine replacements and applications of emission controls, and terms of funding payments. All grant agreements specify that repowered and retrofitted equipment stay at the Port of Oakland terminals, and that replaced equipment will be destroyed or sold outside the air basin. Furthermore, the grant agreements require the marine terminal operators to report to the Port of Oakland on the status and experience of the program, and to allow emission testing on repowered and retrofitted pieces of equipment.

To date, one terminal operator has signed the final grant agreement, whereas the others are in their final negotiation phases. Terminal operators are required to start implementation within eight weeks after execution of the contracts. The duration of implementing the projects differs and can take up to 18 months. The contractual agreements will end on June 30, 2003.

Currently, the application of diesel particulate filter, diesel oxidation catalyst and ultra-low-sulfur diesel is being tested on marine terminal equipment, as a proactive effort to determine feasibility. Test results will help to implement the program and to refine project proposals.

Figures #1 to #8 in Exhibit B to this Executive Summary present statistical data analyzing the projected results of the proposed projects under the Container Terminal Equipment Repower and Retrofit Program.

The Port conducted an inventory of all container terminal equipment in spring 2000 and revised its emission projections using the same methodology as in the Berths 55-58 Project FEIR. A total of 411 pieces of equipment was counted in the spring 2000 inventory. Three hundred sixty eight (368) pieces of terminal equipment were determined eligible for funding under the CTERRP (Exhibit B, Figure #1). Ninety (90) pieces of equipment are model year 1988 or older and were determined not eligible for funding under the program. The Port expects that these pieces of equipment will be replaced shortly or being used only as backup equipment[1]. However, MTOs propose to

[1] Port of Oakland equipment age analysis and communication with MTOs.

replace 47 (52%) of these non-eligible pieces of equipment by using the program's dollar incentive – a collateral effect of the program structure that the Port was hoping to see.

Under the current applications, MTOs would repower and retrofit 320 pieces of equipment, representing 87% of all eligible pieces of equipment (Exhibit B, Figure #2). Approximately 150 diesel engines of model years 1989 to 1995 would be replaced with new, low emission diesel engines. Approximately 150 diesel oxidation catalysts, 160 diesel particulate filters would be installed and around 50% of the terminals would use ultra-low-sulfur diesel with a sulfur content of 0.015% (15 ppm). MTOs will predominately install emission control technologies on yard hustlers (Figure #3, Exhibit B).

Another result of the inventory was that the existing equipment at the Port of Oakland significantly emits less than previously projected in the Berths 55-58 Project FEIR. Figure #4, Exhibit B, compares the results of the spring 2000 inventory emission calculations with the Berths 55-58 Project FEIR analysis. Except for carbon monoxide, all revised calculated emissions from 411 pieces of equipment are less than the previously calculated emissions from the estimated 363 pieces of equipment in the Berths 55-58 Project FEIR. This is most significant for nitrogen oxides, where 411 pieces of equipment emit approximately 30% less than the estimated 363 pieces of equipment in the Berths 55-58 Project FEIR. This effect is caused by a generally younger fleet average than assumed in the Berths 55-58 Project FEIR analysis and, sometimes, fewer operational hours.

The lower emissions of container terminal equipment, although positive from an environmental perspective, will make it more difficult for the Port to achieve the anticipated amount of emission reductions. This is simply an effect of lower baseline emission levels. The delta, for example, of nitrogen oxide emissions from existing equipment to new low-emission equipment is smaller due to the lower emission factors of a younger fleet average. Furthermore, the percent reduction achievable with the installation of emission control technology will result in less tons of pollutants reduced because of the overall lower baseline emissions to start with. Moreover, the Port would have to target more pieces of equipment in order to achieve close to the anticipated emission reductions because more vehicles emit less pollutants. Given the technical preconditions and the limited amount of funding it may be unlikely to achieve the anticipated tons of emissions reduced for container terminal equipment.

However, the CTERRP meets and exceeds the expectations regarding the percent emissions reduced. The Berths 55-58 Project FEIR presented a 74% reduction target for particulate matter, 33% for nitrogen oxides and 65% for hydrocarbon emissions (calculated from Berths 55-58 Project FEIR, Volume 3, table 3.3-11, page 5-3). Considering the proposed projects, the Port's CTERRP will exceed the targeted percent emission reductions for hydrocarbons (76%) and nearly achieve the targeted percent emission reductions for particulate matter (71%) and nitrogen oxides (32%)(Exhibit B, Figure #5). The calculation takes all eligible pieces of equipment into account, including those which do not participate in the program.

The proposed projects would reduce particulate matter emissions of all eligible (368) pieces of equipment by 18 tons per year, and nitrogen oxides by 140 tons per year. Hydrocarbon emissions, many of which are toxic and carcinogenic, would be reduced by over 35 tons per year (Exhibit B, Figure #6). These represent a reduction of 60 tons of particulate matter, more than 470 tons of nitrogen oxides and 150 tons of hydrocarbons over the project lifetime. Port staff use realistic remaining useful life assumptions for the lifetime emission calculation, which represents a rather conservative methodology.

This conservative but realistic methodology is reflected in figures number 7 and 8 of Exhibit B. For both, particulate matter and nitrogen oxide emission reduction, the engine replacements are more effective in the first year after implementation, whereas the effect of emission control technologies are greater over a longer period of time. The emission reduction benefits for the engine replacements are accounted only for the remaining useful life of the replaced engines and therefore limited in their duration. Emission control technologies, however, will be installed on equipment with a remaining useful life of at least five years and often on new engines of repowered equipment. Therefore, the emission control technologies will be in operation for a longer period of time, although implemented on generally younger engines.

The Port will have spent approximately $3.5 to 3.9 million for this measure after completion of the proposed engine replacements and retrofits.

Mitigation measure 3.3-3/M3 (AQ tugboat repower or retrofit)

In April 2000, the Port of Oakland designed a grant program to replace engines or install emission control technologies on a tugboat that provides service to Port tenants. Two tugboat companies submitted three project applications for funding. The Board of Port Commissioners approved funding on July 18, 2000, to replace two diesel engines in the tugboat "Silver Eagle" with two new, low-emission diesel engines.

The project represents an early engine replacement of marine diesel engines that would otherwise be in service for approximately 16 years. The funding amount of $408,300 was conveyed to Oscar Niemeth Towing Inc. on October 17, 2000, at a public ceremony held on the lawn in front of 530 Water Street. Public officials, including Councilmember Nancy Nadel, attended.

The projected reductions of near-Port emissions are 1.0 tons particulate matter and 27.5 tons nitrogen oxides per year. 16.4 tons of particulate and 445 tons of nitrogen oxide emissions are projected over the project lifetime. Moreover, the projected emission reductions are significantly higher than the expected ones despite the application of a rather conservative methodology of calculating emission reductions. Port staff use conservative assumptions in order reflect emission reductions more closely to reality.

In May 2001, Oscar Niemeth Towing Inc. begun with preliminary steelwork on the tugboat in preparation for the engine replacement. The delivery of the engines is scheduled for June and installation anticipated for summer 2001.

Mitigation measure 3.3-3/M4 (AQ AC-Transit Buses):

The retrofit of 27 AC-Transit buses with funding by the Port of Oakland began on December 15, 1999, when AC-Transit entered into a Memorandum of Understanding with the Port of Oakland to provide partial funding for the district's engine repower project. The project would reduce 3.6 tons particulate matter and 39.7 tons nitrogen oxides, once the project is completed. A prototye bus was repowered in February 2000. As of March 16, 2001[2], twenty buses have been repowered with low-emission diesel engines and retrofited with particulate soot traps. Three are currently being repowered or scheduled for repowering.

Additionally, AC Transit increased its outreach efforts to facilitate the hiring of Oakland residents for district jobs. As of March 2001, AC Transit hired 71 people from the West Oakland area, most as bus drivers. One hire was an apprentice mechanic. AC Transit participated in the October 20, 2000 job fair at the Oakland Marriott and the March 14, 2001 job fair at Laney College.

Mitigation measure 3.3-3/M7 and 3.3-3/M8 (AQ Red Star Yeast and Precision Cast):

The Port of Oakland Environmental Planning Department prepared a Request for Proposals for engineering studies to identify control measures to reduce reactive organic carbon emissions at the Red Star Yeast and Precision Cast facilities. After selecting a consultant for the Precision Cast study, the Precision Cast facility announced the sale of its property and its relocation to the Central Valley area. However, after a delay of the Red Star Yeast study, due to a change in ownership of this facility, planning for the Red Star Yeast Engineering study began again in May 2001.

Contract negotiations are currently underway and it is anticipated that the engineering study would start in summer 2001. The engineering study will most likely be completed 4 months after commencing the work. The engineering study would provide information on potential emission control measures for volatile organic carbon emissions from the Red Star Yeast facility. If feasible measures are identified, the Port would make a maximum of $500,000 funding available to implement these measures.

C. Conclusions

The status of the program allows some quantitative and mostly qualitative assessments. The two projects that demonstrate the most progress, the partnership with AC-Transit and the tugboat repower project, show successful implementation (Table 1, Exhibit A).

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[2] AC-Transit Bus Re-Power Project Progress Report No. 2; March 16, 2000 – September 15, 2000.

The likely success of the AC-Transit partnership was anticipated because the Port joined an existing program. However, the calculated nitrogen oxide emission reduction is less than projected in the Berths 55-58 Project FEIR analysis, due to the lower than anticipated baseline emission from the original transit buses.

Implementing the tugboat repower project showed that the emissions from old tug-, crew- and work-boats are higher than expected and that marine engines with low nitrogen oxide and particulate matter levels are available. These two factors make air quality projects on marine applications very attractive and cost effective and a viable option for the future. The projected particulate emission reduction of the tugboat repower project, although calculated with conservative assumptions, exceeds the Berths 55-58 Project EIR analysis more than threefold and the projected nitrogen oxide emission reductions more than six-fold. Moreover, feasibility analysis showed that additional emission control technologies on marine vessels have a great and competitive reduction potential.

From a program perspective it must be noted that the Vision 2000 Air Quality Mitigation Program during the Berths 55-58 Project EIR process did not involve extensive consultation with the 'end-user'. The proposed and initiated projects under the Vision 2000 Air Quality Mitigation Program are one of the few pure 'voluntary' air quality improvement projects. All suggested air quality projects target equipment or facilities that are privately owned and none of these owners have contractual obligations to emission reductions. No legislation or legally binding agreement currently compels these owners to implement or participate in the program. These facts have posed the biggest challenge to the program's success. For example, trucking companies, which operate on a very small profit margin, have been less willing to participate in air quality programs, unless they offered an economic profit.

Furthermore, in the past few weeks, the Port has received information regarding one of the major suppliers of diesel filter for the program. The supplier may not be able to deliver the product. This underscores the fact that the Port's program and schedule are subject to business cycles and conditions.

The initial response to the request for Port funding under the Container Terminal Equipment Repower and Retrofit Program however, shows that the private sector can be motivated to participate in the Port's program. Every marine terminal operator at the Port of Oakland is proposing air quality improvements. This 100% participation is a positive indicator that the design of the Port's program is compatible with private sector criteria. Port staff have concluded that the marine terminal operators are participating in the program due to the formula of subsidy and monetary incentives.

Moreover, Port staff were able to foster the installation of advanced emission control technologies that have not been applied to marine terminal equipment to date. The importance of on-going education and development of staff expertise cannot be overestimated. Port staff used this expertise to achieve the objectives of the Container Terminal Equipment Repower and Retrofit Program. These were 1) to maximize particulate matter emission reductions and cost efficiency, 2) to motivate broad voluntary participation, and 3) to promote advanced emission control technologies, while staying within the overall budget and a reasonable timeframe.

Exhibit A

Performance of measures in progress

Table 1: Performance Results of V2K Air Quality Mitigation Program

Realized emission reduction after full implementation; dollars spent excluding program administration.

Mitigation Measure	Projected PM reduction per year [t/y]	Realized PM reduction per year [t/y]	Realized PM reduction over project life [t]	Projected NOx reduction per year [t/y]	Realized NOx reduction per year [t/y]	Realized NOx reduction over project life [t]	Budgeted dollars	Spent dollars[3]
3.3-3/M4: AC Transit Repower Project	< 1	0.4	3.6	5	4.4	39.7	$ 700,000.00	$ 659,124.00
3.3-3/M3: Tugboat Repower Project	0.3	1.0	16.4	4.5	27	445	$ 500,000.00	$ 408,300.00

Source: Port of Oakland, emission calculations (June 21, 2001).

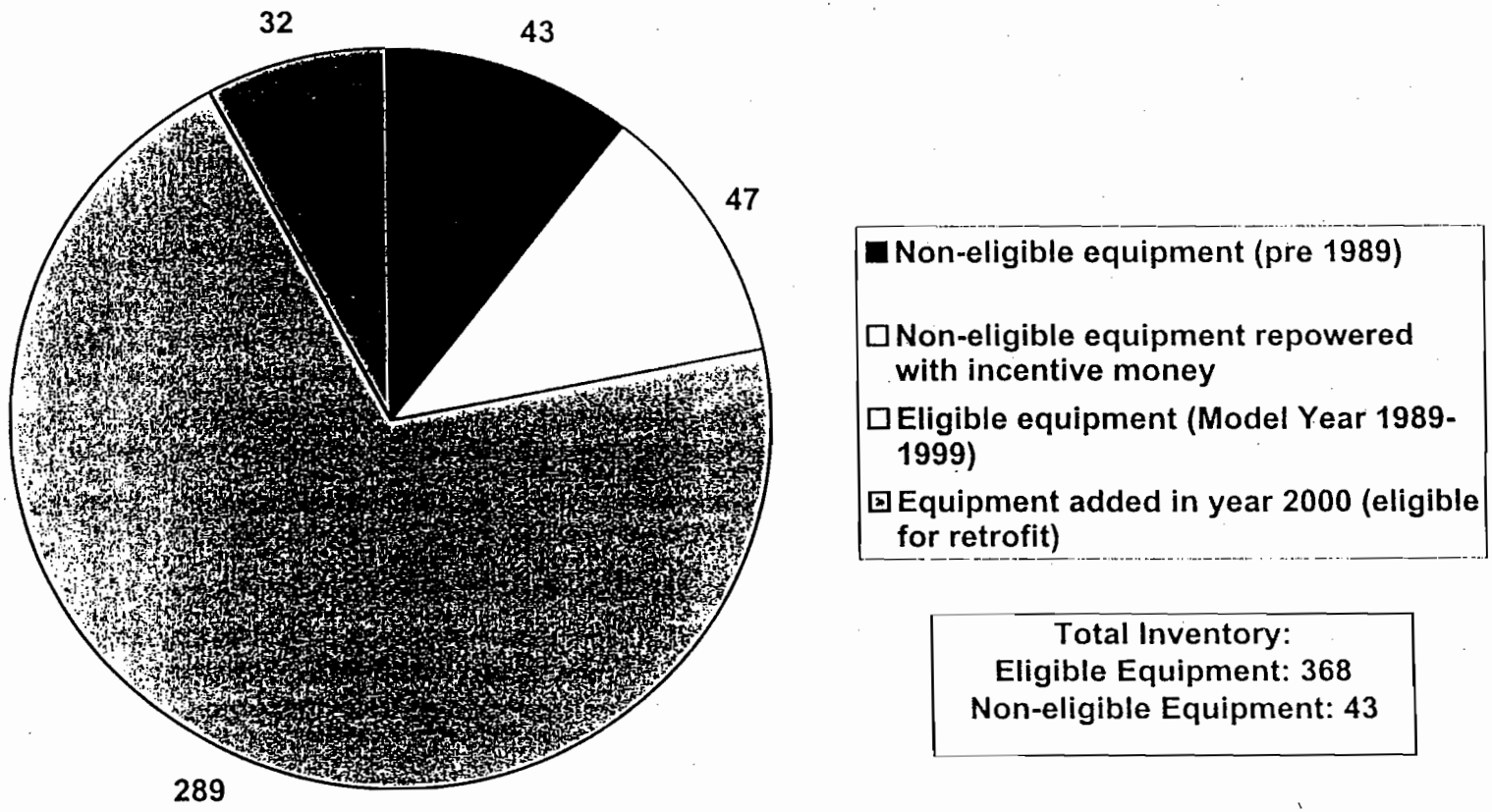
[3] Excluding administrative costs.

Exhibit B

Projections for the Container Terminal Equipment Repower and Retrofit Program (CTERRP)

Figure 1: CTERRP - Total Number of Equipment (a)

Source: Port of Oakland, Vision 2000 Air Quality Mitigation Program, Summary Report #4, July 2,



(a) Port of Oakland V2K MMRP Inventory - completed April 7, 2000. Equipment purchased in year 2000 added to total inventory.

Figure 2: CTERRP - Proposed Repower and Retrofit Projects of Eligible Equipment

Source: Port of Oakland, Vision 2000 Air Quality Mitigation Program, Summary Report #4, July 2, 2001

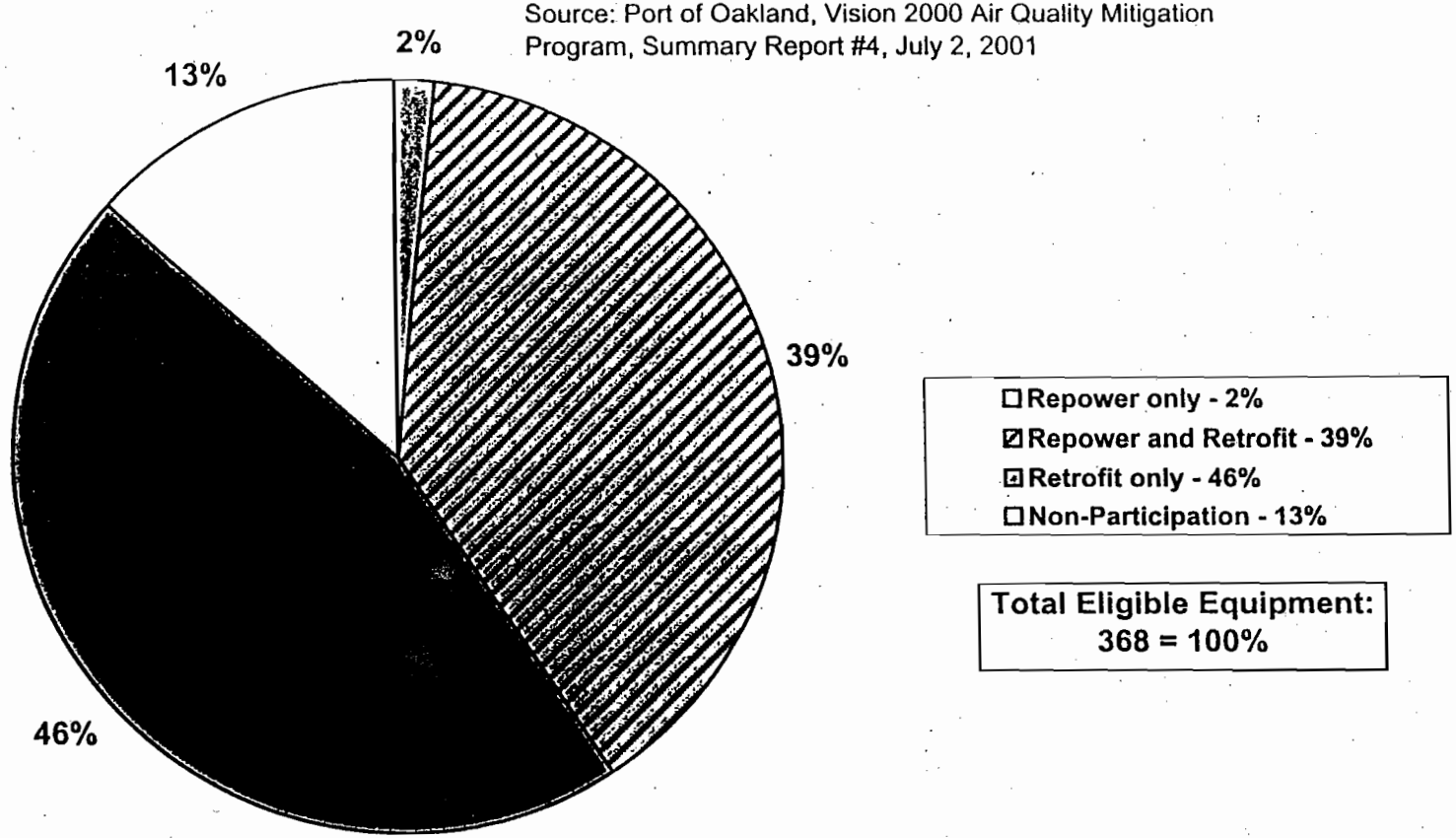


Figure 3: CTERRP - Distribution of Proposed Projects for Equipment Categories

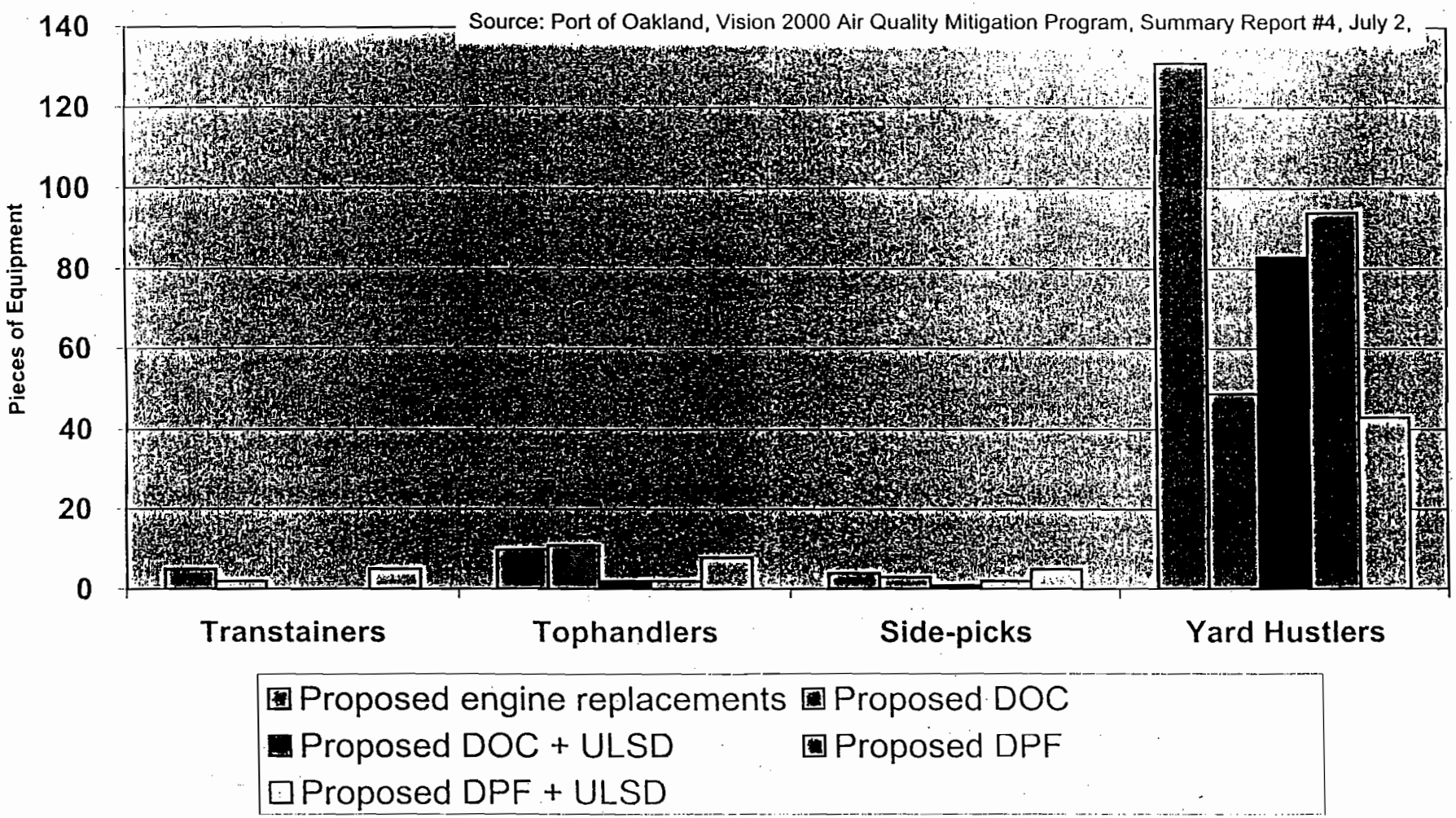


Figure 4: CTERRP: Container Terminal Equipment Emissions - Year 2000 Inventory Data and Berths 55-58 EIR Predictions

Source: Port of Oakland, Vision 2000 Air Quality Mitigation Program, Summary Report #4, July 2,

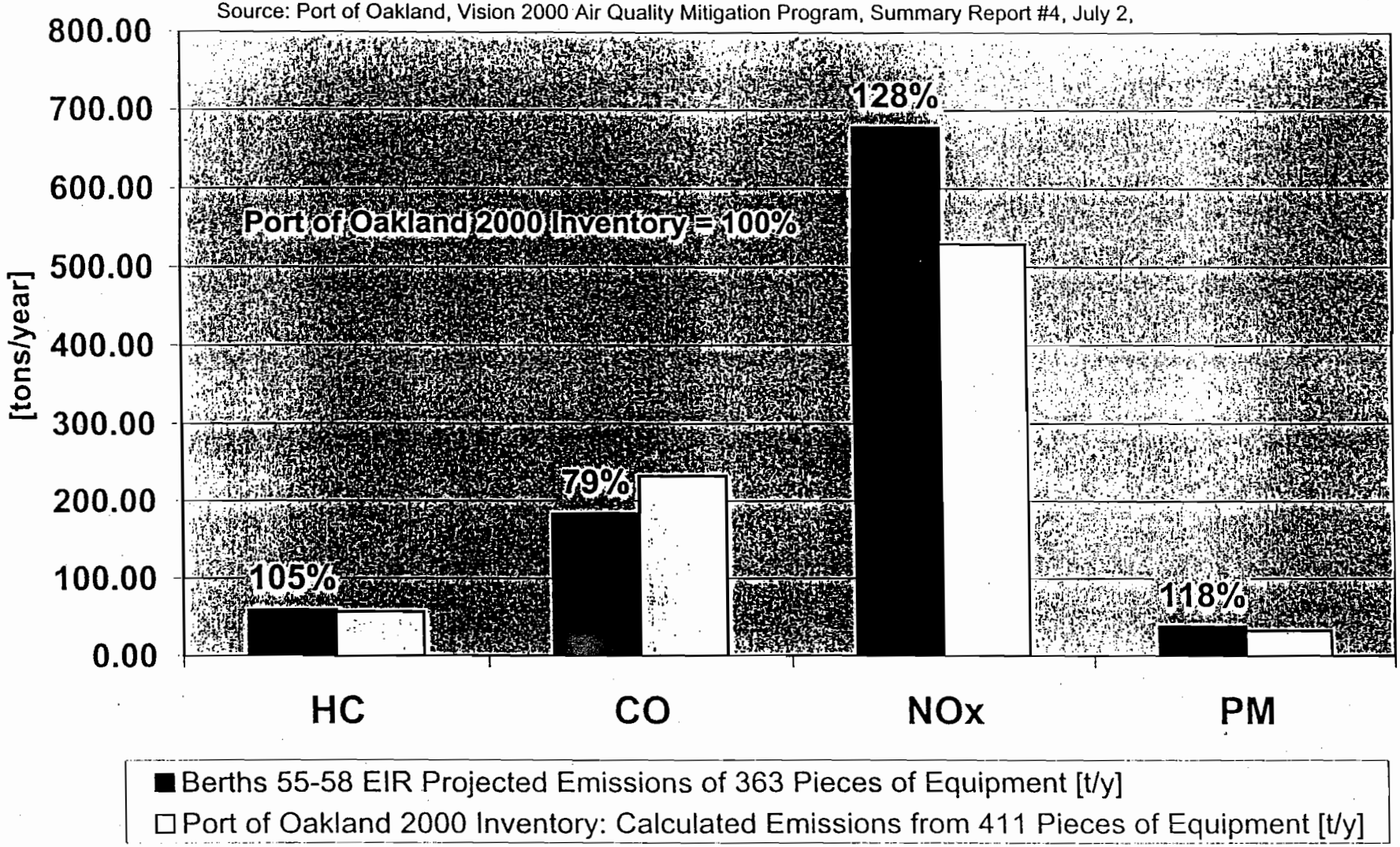


Figure 5: CTERRP - Proposed Emission Reduction of All Eligible Equipment

Source: Port of Oakland, Vision 2000 Air Quality Mitigation Program, Summary Report #4, July 2,

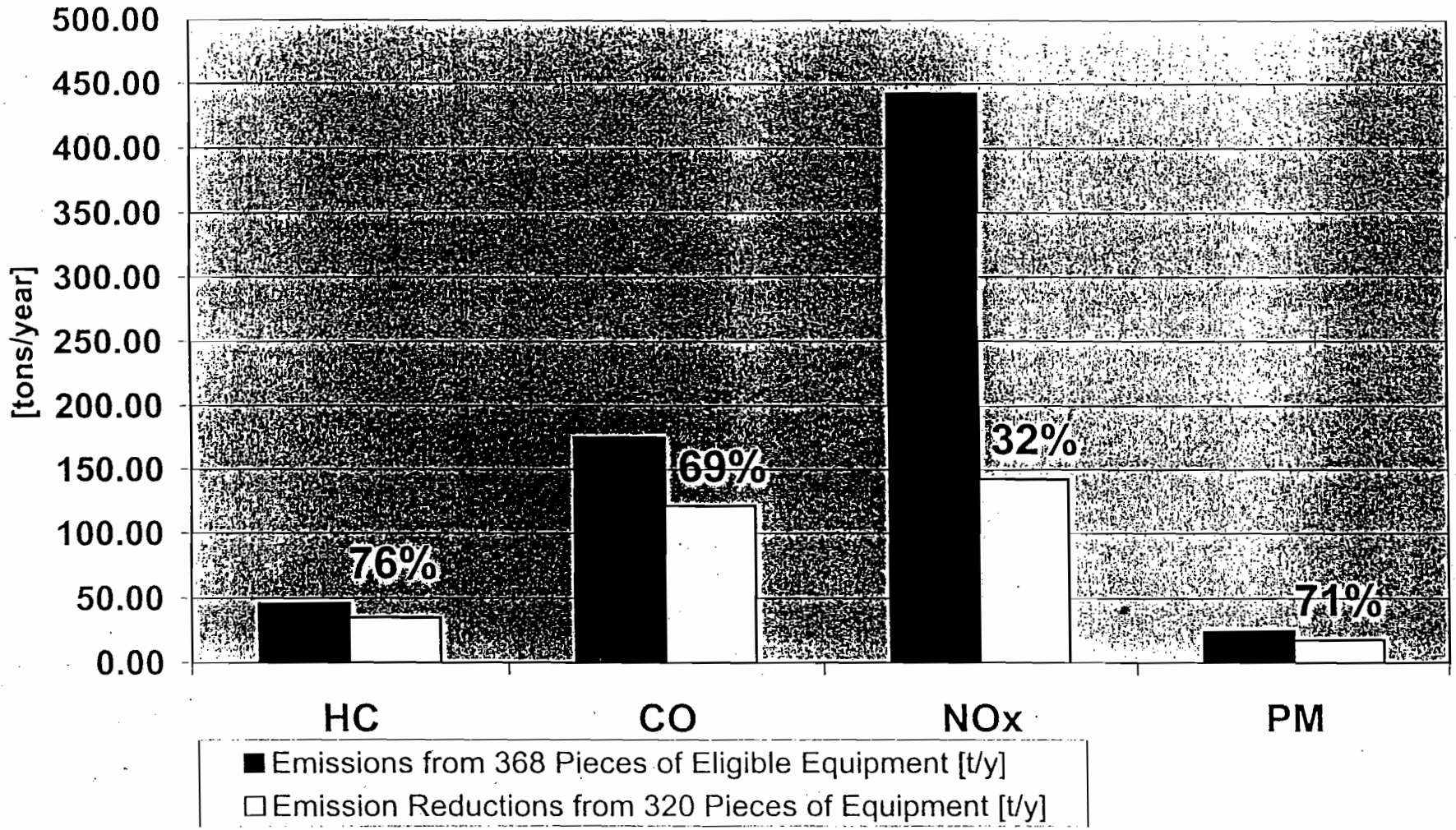


Figure 6: CTERRP - Projected Emissions After Implementing Proposed Projects, excluding pre-1989 equipment

Source: Port of Oakland, Vision 2000 Air Quality Mitigation Program, Summary Report #4, July 2,

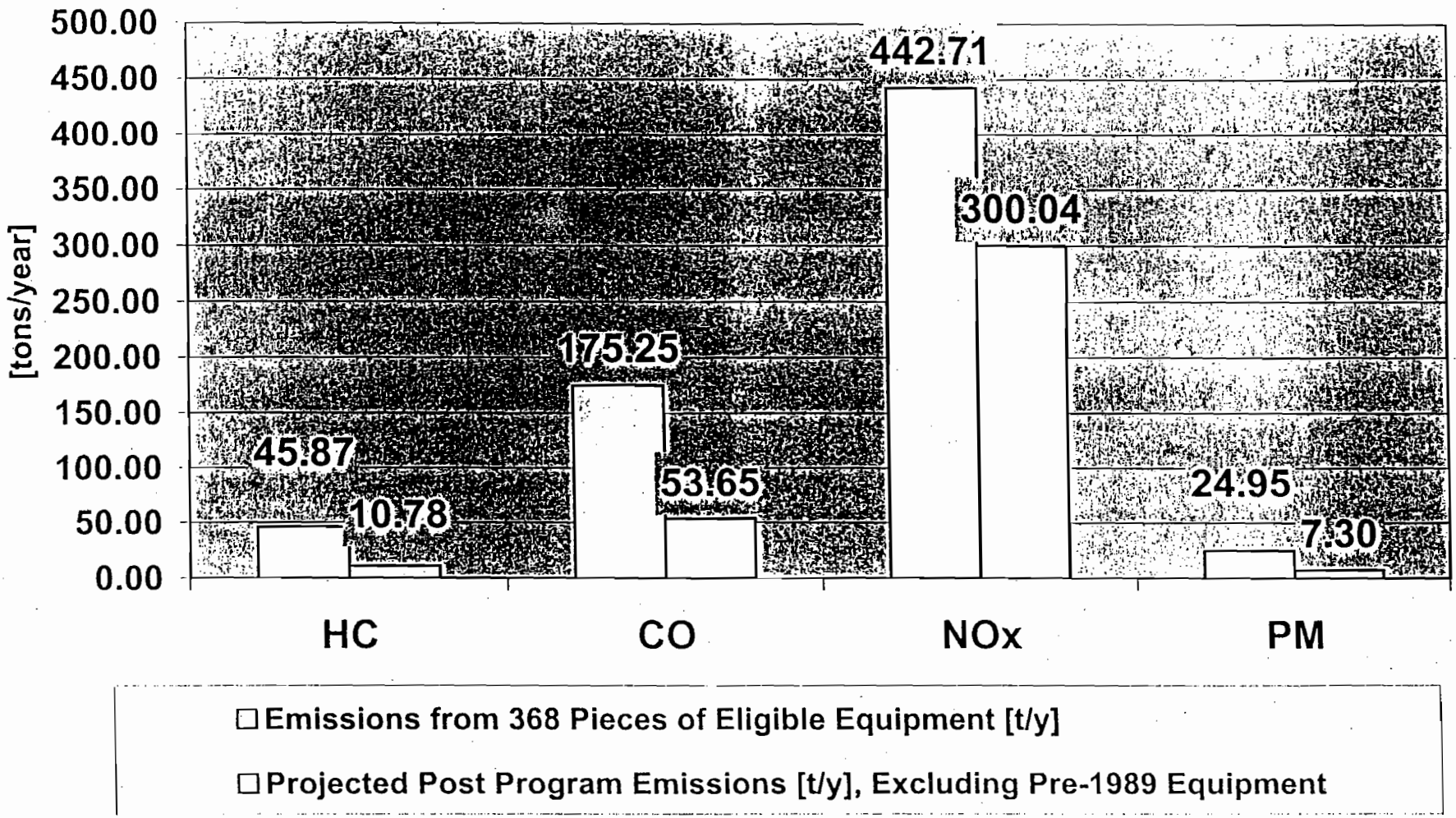
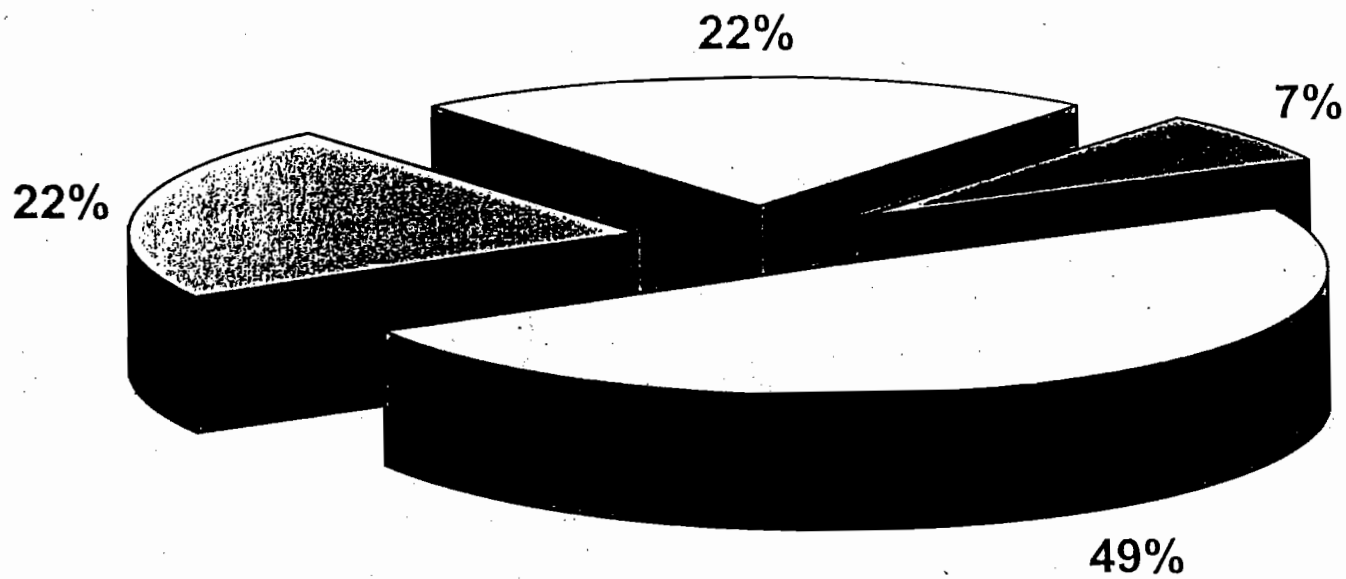


Figure 7: CTERRP - Comparison of Particulate Matter Reduction Efficiency of the CTERRP's Repower versus Retrofit Component

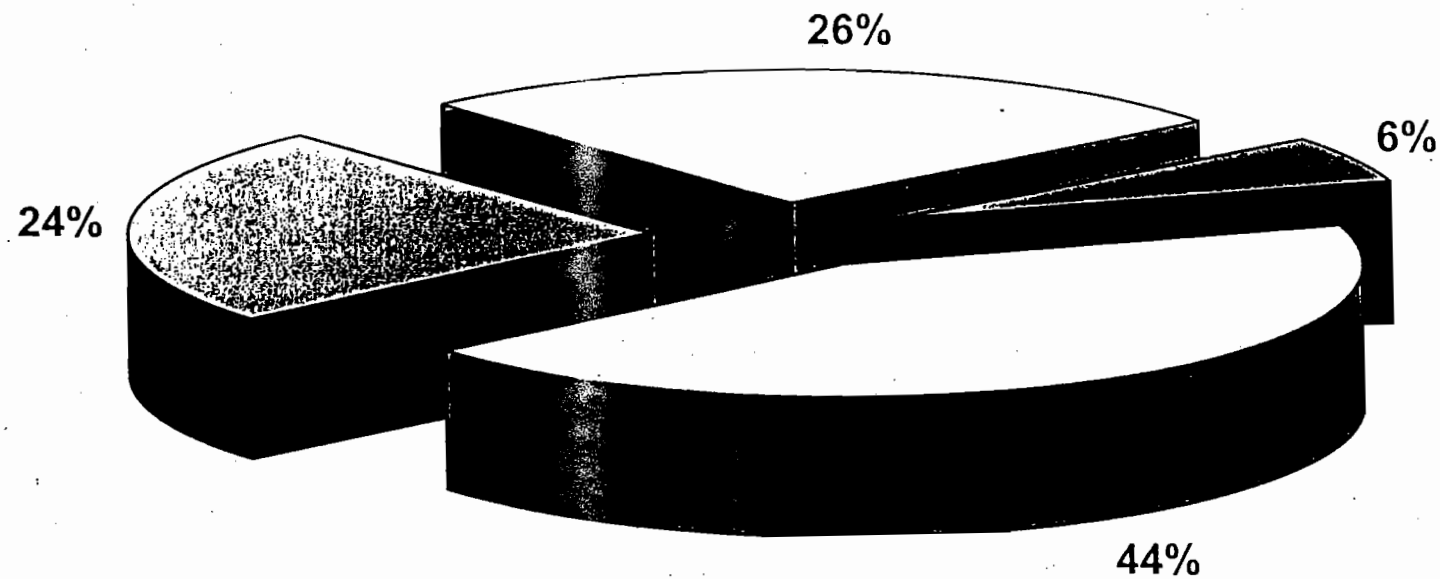
Source: Port of Oakland, Vision 2000 Air Quality Mitigation Program, Summary Report #4, July 2,



PM reduction repower first year [t]
PM reduction repower rest of project life [t]
PM reduction retrofit first year [t]
PM reduction retrofit rest of project life [t]

Figure 8: CTERRP - Comparison of Nitrogen Oxides Reduction Efficiency of the CTERRP's Repower versus Retrofit Component

Source: Port of Oakland, Vision 2000 Air Quality Mitigation Program, Summary Report #4, July 2,



☐ NOx reduction repower first year [t]
☐ NOx reduction repower rest of project life [t]
■ NOx reduction retrofit first year [t]
☐ NOx reduction retrofit rest of project life [t]

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Summary Report #7
Vision 2000 Air Quality Mitigation Program

February 2003

Port of Oakland
Environmental Planning Department
530 Water Street
Oakland, California 94607

Summary Report #7
Vision 2000 Air Quality Mitigation Program

February 2003

Executive Summary	1
1. Introduction	2
2. Status of Each Mitigation Measure	3
3. Related Port Projects	10
4. Related State Projects	12
5. Next Steps	13
Table 1: Update on Program	14
Appendix A: AQMP Funding Allocation	A-1

EXECUTIVE SUMMARY

The Port of Oakland is nearing completion of a series of projects collectively known as the "Vision 2000 Maritime Development Program." This program includes developing new marine terminals, roadways, a railyard, park, and ancillary facilities. As part of the development program, the Port established an Air Quality Mitigation Program (AQMP) in 1999. The air quality program includes projects to reduce air emissions from tugboats, on-terminal equipment, trucks, local buses, and local manufacturing plants. Since the program's inception, the Port has prepared Summary Reports twice a year to provide updates on the program's progress. This report, Summary Report #7, provides the current status of each project within the AQMP and highlights progress made since Summary Report #6 was compiled in August 2002.

In the last six months, additional pieces of on-terminal, cargo-handling equipment were repowered with new engines and retrofitted with exhaust controls; the ROG (reactive organic gas) Emission Reduction Feasibility Study for Lesaffre (Red Star) Yeast Corporation's Oakland plant was completed; and planning for the truck project and aqueous diesel demonstration project progressed. Monitoring for particulate matter also continued at the port and residential stations. From April through August 2002, the most recent period for which data are available, there were no exceedances of state or federal standards.

It is expected that in the next six months, the cargo-handling equipment repowering and retrofitting program will be nearing its midpoint, the feasibility of installing equipment at Lesaffre will be determined, and the transport-road truck demonstration project will be well underway.

1. INTRODUCTION

Vision 2000 Maritime Development Program. The Port of Oakland's Vision 2000 Maritime Development Program is an expansion program that includes constructing new berths (Berths 55-59), about 270 acres of wharves and container yards, new and reconfigured access roads, a joint intermodal terminal including rail facilities, a shoreline park, and ancillary support facilities.

The Vision 2000 maritime facilities are nearing completion. Berths 55 and 56, known as the "Hanjin Terminal," opened in June 2001. Berths 57, 58, and 59, known as the "Stevedoring Services of America (SSA) Terminal," opened in October 2002. Both terminals are adjacent to the new Joint Intermodal Terminal, which opened in June 2002 and is operated by the Burlington Northern Santa Fe. A few small buildings remain to be completed. Two areas of the new park, Middle Harbor Shoreline Park, are now open to the public; the remainder of the park will open in Summer 2003.

Vision 2000 Air Quality Management Program. In 1999, the Board of Port Commissioners adopted the Vision 2000 Air Quality Mitigation Program (AQMP) when it certified and adopted the Final Environmental Impact Report for the Berths 55-58 project. Although the regulation of emissions from trains, trucks, cargo handling equipment and cargo vessels is subject to the jurisdiction and authority of other agencies, the Port committed to spend $8.98 million on emission reduction programs and demonstration projects to promote technological advances in improving air quality. The history of the Vision 2000 AQMP was further described in Summary Report #2.

The AQMP projects are intended to reduce emissions from a variety of maritime and other local sources. These sources include, for example, tugboats, cargo-handling equipment, trucks, public buses, other vehicles, and local stationary sources. Specific projects are described in Section 2 below. The amount of funding allocated to each mitigation measure is shown in Appendix A to this report.

AQMP Timeline. The AQMP is, for planning purposes, divided into four phases, beginning in April 1999 and ending in April 2005. The phases reflect the steps necessary to progress from program design to full implementation, and to complement the Vision 2000 construction schedule. The current phase, Phase III, coincides with the final construction phase of the Vision 2000 facilities. During this phase, the various air quality projects are progressing and Port staff is assessing the actual emission reductions and cost-efficiencies of the various emission reduction strategies. Funds remaining in the program may be redirected to the other projects within the AQMP that prove to be the most cost-efficient for controlling local emissions. The four phases of the AQMP were further described in Summary Reports #5 and #6.

Technical Review Panel. Throughout the development of the AQMP, the Port has received guidance from a Technical Review Panel (TRP). Initially, the Port convened the TRP to assist with the design of the program for cargo-handling equipment. However, over the years, the TRP has also provided input on other projects, and is currently focusing on potential projects for on-road trucks. The membership of the TRP has expanded over the years to reflect the expanding nature of the program, and now includes representatives of the Bay Area Air Quality Management District, California Air Resources Board, California Energy Commission, National Resources Defense Council, U.S. Environmental Protection Agency's Region IX, West Oakland Neighbors, and other individuals and organizations with technical expertise. The panel members participate voluntarily and have been an invaluable resource.

2. STATUS OF EACH MITIGATION MEASURE

This section provides background on each mitigation measure in the AQMP, and summarizes progress made since the last Summary Report was compiled in August 2002. A summary of the updates is also shown in Table 1 at the end of this document.

A. Mitigation Measures 3.3-3/M1 and M1A (Truck repower and retrofit)

Measures: M1: As a demonstration project, install add-on exhaust treatment devices for diesel transport trucks.

M1(A): The Port will subsidize retrofit of diesel truck engines with new engines meeting California emission standards for new diesel engines, or add-on exhaust treatment devices, including soot traps and catalytic converters. This subsidy would be prioritized for those pieces of equipment that have the longest remaining period of useful life.

Background: The Port views these two measures in tandem and is pursuing the demonstration project (Measure M1) as the first phase of the combined program. For the demonstration project, Port staff evaluated the feasibility of several emission control strategies, including using exhaust treatment devices alone as well as treatment devices in combination with a new blend of diesel fuel known as "aqueous diesel" (or "water-blended diesel"). Staff concluded that the treatment devices plus aqueous diesel together could be expected to provide cost-effective reductions of the target emissions, which are particulate matter.

The Port then designed a demonstration project to test diesel oxidation catalysts (a type of exhaust treatment device) and aqueous diesel on trucks that transport shipping containers for Port tenants and that are based in West Oakland. The demonstration project entails installing a temporary fuel storage tank for aqueous diesel at a truck yard in West Oakland; and fueling a portion of the truck fleet with aqueous diesel ("PuriNOx" made by Lubrizol Corp.). A subset of these trucks will also be equipped with diesel oxidation catalysts (DOCs). Throughout the demonstration project, the project partners will monitor emissions, cost, engine wear, and driver satisfaction.

In December 2000, the Port invited eligible trucking companies to participate, and subsequently selected Quintero Trucking Company for the demonstration project. In October 2001, the Port and Quintero Trucking Company submitted a grant application via the Bay Area Air Quality Management District (BAAQMD) to the California Air Resources Board (CARB) to partially fund the demonstration project. In December 2001, the CARB awarded the grant to the BAAQMD.

During early implementation of the project, the Port encountered logistical and permitting hurdles while trying to install a fueling infrastructure at the Quintero yard. The Quintero trucks do not currently fuel onsite. Installing a new fueling system at the yard or a neighboring diesel station would have significantly delayed this project. As a result, Port staff approached another trucking company, CSX Lines, to partner on this project. CSX Lines is located in the Port area and already fuels its trucks onsite. CSX Lines hauls containers between the Port and destinations in the Bay Area, Northern California, and Nevada.

Progress: The grant agreement with the BAAQMD for the aqueous diesel demonstration project was executed in January 2003. Agreements with the other parties involved (e.g., CSX Lines) are being drafted.

Concurrent with the demonstration project, the design of a full-scale truck program is beginning to take shape. The Port has recently discussed several program options with the Technical Review Panel, local members of the California Trucking Association, equipment vendors, the California Air Resources Board, and others.

To kick-off this effort, the Technical Review Panel (TRP) discussed potential programs at its meeting on December 4, 2002. In particular, the TRP reviewed programs sponsored in the Sacramento Air Basin and Los Angeles County, state and federal regulations, new trends in engine design, available and upcoming exhaust control technologies and alternative fuels, and the nature of the truck fleet serving the Port.[1] Based on all of these factors, the TRP encouraged the Port to move ahead with the full-scale program and to design a program that focuses on:

1) exhaust controls (e.g., diesel oxidation catalysts and diesel particulate filters),
2) cleaner fuels (especially ultra-low-sulfur diesel and aqueous diesel), and
3) cost-effective measures, such as engine reflashing or other adjustments to reduce NOx.

Then, as funding allows:

4) engine repowering/fleet modernization.

Following the TRP's guidance, the Port has been researching the feasibility of installing diesel oxidation catalysts (DOCs) on trucks as quickly as possible, and ways to make cleaner fuels available locally. On February 11, 2003, the Port met with local members of the California Trucking Association (CTA) to discuss incentives for truckers and general logistics. The truckers emphasized the need to demonstrate what, if any, affects DOCs have on truck engine performance. Thus, the Port is in the midst of searching for representative equipment for demonstration. The CTA members also volunteered to form a working group for the Port's program and to provide ongoing feedback on incentives and outreach.

During this program design phase, it has become apparent that additional information about the characteristics of the local truck fleet, such as a profile of engine ages, is needed to effectively tailor the program to the local fleet. To this end, the Port has been discussing information-gathering efforts with the U.S. Environmental Protection Agency and others.

On a parallel track, Port staff is also researching cost-effective ways to measure and verify actual emissions reductions. The California Air Resources Board's inspection teams have offered their services, as have private emissions testing providers. At this phase in program design, the Port is leaning towards using less costly forms of emissions testing that are less costly, albeit also less precise, in order to direct as much funding as possible towards installing emissions reductions equipment and making cleaner fuels available.

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[1] The referenced Sacramento program is the Sacramento Emergency Clean Air and Transportation (SECAT) Program. It is jointly sponsored by the Sacramento Metropolitan Air Quality Management District (SMAQMD) and Sacramento Area Council of Governments (SACOG), and was initiated in the fall of 2000. More recently, the SMAQMD and SACOG added a fleet modernization program to replace older trucks with newer trucks. In southern California, the Gateway Cities Council of Governments in southeastern Los Angeles County is designing a program to offset the cost of buying cleaner engines and fuels, and retrofitting equipment. Each of these programs focuses primarily on emissions of nitrogen oxides (NOx), whereas the Port of Oakland's program focuses primarily on emissions of particulate matter (PM).

In the next several months, the Port will continue to meet with the TRP, equipment and fuel vendors, the BAAQMD, CARB, and CTA to further develop the full-scale truck program.

B. Mitigation Measure 3.3-3/M2 (Cargo-handling equipment)

Measure: Subsidize retrofit of diesel cargo-handling equipment with new engines meeting California emission standards for new diesel engines or add-on exhaust treatment devices, including soot traps and catalytic converters. This measure applies to cargo-handling equipment at existing container yards.

Background: This measure targets the off-road, heavy-duty, diesel-powered equipment that moves cargo containers within the terminal yards. Such equipment includes, for example, toppicks, sidepicks, transtainers, and yard tractors. In July 2000, the Board of Port Commissioners approved the guidelines for an incentive-based grant program for the marine terminal operators to repower and retrofit their equipment in order to reduce emissions of particulate matter (PM) and nitrogen oxides (NOx). The Port then created the Container Terminal Equipment Repower and Retrofit Program (CTERRP), which provides grants to marine terminal operators to:

(1) repower older diesel engines with new cleaner-burning engines,
(2) retrofit equipment with emissions control technologies, and
(3) use ultra-low-sulfur-diesel (ULSD) fuel.[2]

The marine terminal operators may receive partial funding for purchasing and installing new engines, full funding for purchasing and installing emission control technologies (up to a cap), and a one-time payment for using ultra-low-sulfur diesel. The funding for these three activities is considered the "primary funding." In addition, when the terminal operators install emission control technologies, they may receive additional funding to use at their discretion to increase the partial funding for the engine replacements or for other measures that reduce emissions at the terminals. This funding is referred to as the "incentive funding."

Grant agreements have been executed with five of the six marine terminal operators eligible for this program. The sixth marine terminal operator, SSA, has recently moved into its new Vision 2000 terminal and is compiling a new inventory of its fleet.

Under the six grant agreements (including SSA's fleet before the move), the marine terminal operators will replace and/or retrofit 372 (or 90 percent) of the 414 pieces of cargo-handling equipment operating at the Port. The program is expected to reduce PM emissions by 19 tons per year, or 79 percent, and NOx emissions by 118 tons per year, or 27 percent. The CTERRP was described in more detail in Appendix A of Summary Report #5.

When CTERRP was first designed, two types of exhaust treatment devices were available for cargo-handling equipment: diesel particulate filters (DPFs) and diesel oxidation catalysts (DOCs). Four of the six marine terminal operators originally elected to retrofit their equipment with DPFs, and two with DOCs. In general, the Port prefers DPFs to DOCs because they are more than twice as effective at reducing PM emissions. However, field testing conducted at the Port last year indicated that DPFs may operate effectively on some toppicks and sidepicks, but not on yard tractors. This finding affects about 137 yard tractors (assuming six grant agreements).

Following an evaluation of alternatives, Port staff recommended that the terminal operators (a) retrofit all of the yard tractors with DOCs as soon as possible, (b) use ultra-low-sulfur diesel as originally planned to

[2] For this program, ULSD refers to diesel with less than or equal to 50 ppm sulfur.

increase the effectiveness of the DOCs, and (c) when feasible, replace some or all of the DOCs with DPFs. It is estimated that this "switch" from DPFs to DOCs on yard tractors will reduce CTERRP's program-wide emissions reductions by 10 to 28 percent. The low end of this range assumes that DPFs become feasible for yard tractors in the next year or two, and the high end assumes that the DPFs do not become feasible during the life of the program.

Progress: Year 2002 was the first year that CTERRP moved from the planning stages into implementation. During 2002, all five of the marine terminal operators repowered and/or retrofitted equipment in their fleets. The number of pieces of equipment repowered and retrofitted are discussed below and summarized in Table 2.

Repowering. The Port approved the first invoice for repowering in February 2002. By the end of 2002, all five terminal operators had repowered one or more pieces of equipment. Collectively, the terminal operators repowered 39 pieces of equipment, which represent 36 percent of the eligible equipment. One terminal operator, TransBay Container Terminal, repowered 100 percent of its eligible equipment. Another terminal operator, TransPacific Container Service (TraPac), applied part of its incentive funding to upgrade new yard tractor engines from mechanically-controlled engines to electronically-controlled engines, which further reduces NOx emissions.

Retrofits. The Port approved the first invoice for retrofits in May 2002. By the end of the year, three terminal operators had installed DOCs. Together, they installed 76 DOCs, which represent 33 percent of the equipment in the program. One terminal operator, Marine Terminal Corporation, completed the retrofits on 100 percent of its equipment in 2002. Another terminal operator, TransBay Container Terminal, completed the retrofits on 100 percent of its eligible equipment in February 2003. DOCs for at least an additional 15 percent of the equipment are on order and expected to be installed in early 2003.

No DPFs have been installed to date.[3] To further test their feasibility for toppicks and sidepicks, exhaust temperature tests were scheduled for fall 2002, but were delayed by the labor dispute in September and October. The testing then proceeded in December, when operations at the terminals returned to more normal conditions and the equipment returned to more typical duty cycles. The test results indicate that insulation may increase the exhaust temperatures sufficiently on select pieces of equipment to adequately regenerate the DPFs. In February 2003, one terminal operator agreed to try one DPF with the additional insulation and has ordered the equipment. However, the vendor estimates that it will need 10 to 16 weeks to manufacture and deliver the DPF. In the meantime, DOCs will continue to be installed on the remaining equipment.

ULSD. Of the five marine terminal operators with signed agreements, three were planning to switch to ultra-low-sulfur diesel (ULSD). All three operators have done so, and a fourth operator has also voluntarily switched to the cleaner fuel. Most of the terminal operators are now fueling all of their diesel equipment with ULSD.

[3] Other than the two Ceryx DPFs that were installed in year 2000, before Ceryx filed for bankruptcy.

Table 2: Port of Oakland
Container Terminal Equipment Repower and Retrofit Program
Activity Completed in 2002

Activity	Pieces of Eligible Equipment	Number Completed	Percent Completed
Repowering	106	39	36
Retrofits	230	76	33
ULSD	3 terminals	4 terminals	133

Notes:
a) All figures are based on agreements with five marine terminal operators.
b) The repowering figures include only repowering completed with primary funding. One additional repowering was completed with incentive funding.

From: Port of Oakland, "Summary Report #7, Vision 2000 Air Quality Management Program," February 2003.

C. Mitigation Measure 3.3-3/M3 (Tugboat repowering)

Measure: Subsidize retrofit of one diesel tugboat as a demonstration project with a new engine meeting California emission standards for new diesel engines or an add-on exhaust treatment device such as a soot trap and catalytic converter.

Background: In October 2000, the Port conveyed funding to Oscar Niemeth Towing Inc. to replace the two main diesel engines on its tugboat, the *Silver Eagle*, with new, low-emission, diesel engines. The tugboat repowering is estimated to reduce nitrogen oxide (NOx) emissions by 27 tons per year, or 445 tons over the life of the project. The repowering is also estimated to reduce PM emissions one ton per year, or 16.4 tons over the life of the project. As of the last Summary Report, Oscar Niemeth had ordered the engines and begun the steelwork on the boat to accommodate the new engines. In the meantime, Oscar Niemeth also received a grant from the BAAQMD's Carl Moyer Program to replace the *Silver Eagle's* auxiliary engines with cleaner-burning engines.

Progress: The steelwork has progressed, most of the engine and related parts have arrived, and Oscar Niemeth has secured most of the additional funding necessary to complete all of the improvements. Oscar Niemeth estimates that the installation will be completed in spring 2003.

D. Mitigation Measure 3.3-3/M4 (AC Transit buses)

Measure: Subsidize retrofit of diesel bus engines with new engines meeting California emission standards for new diesel engines or retrofit buses with alternative fuels. This measure is targeted to those buses that operate in the West Oakland, Emeryville, and Alameda areas.

Background: In December 1999, the Port and the Alameda-Contra Costa Transit District (AC Transit) entered into a Memorandum of Understanding (MOU) to repower approximately 27 local buses with new, cleaner-burning engines. Between March and October 2001, AC Transit replaced the engines in eight more buses, and expended the last of the funding for this project. Thus, as a result of this project, a total of 28 buses have been repowered with cleaner-burning engines, and have been retrofitted with diesel oxidation catalysts to further reduce PM emissions.

This project was originally estimated to reduce PM emissions by "less than one ton per year." That estimate has been refined to 0.4 tons per year, which equates to 3.6 tons over the life of the equipment. The NOx emissions reductions were originally estimated to be 5 tons per year, and have been lowered to 4.4 tons per year. The 4.4 tons per year equate to a 39.7 ton reduction over the life of the equipment. The current estimates are lower than the original estimates in the Berths 55-58 Environmental Impact Report because the emissions from the old engines were lower than originally estimated.

As part of the MOU between AC Transit and the Port, AC Transit stated that it would make a concerted effort to recruit employees from the West Oakland neighborhood. AC Transit reports that, as of September 30, 2001, it has hired a total of 97 people from the West Oakland community.

Status: The project was completed in October 2001.

E. Mitigation Measure 3.3-3/M5 (Train switching operations)

Measure. When the new Joint Intermodal Terminal (JIT) is built, request the operator of [train] switch engines operating at the terminal to use engines that meet the requirements of the recently promulgated federal regulation limiting locomotive emissions. Implementation of this measure will require that the allocation of switching locomotives with new or rebuilt engines take into account the desire of the Port to minimize emissions related to switching activities.

Background: The JIT is designed as a railyard that allows for moving shipping containers directly between trucks and trains. The Port began construction of the JIT in 1999. In February 2002, the Port signed a lease agreement with the Burlington Northern Santa Fe (BNSF) to lease and operate the JIT. Per the mitigation measure, the agreement stipulates that the diesel-operated locomotives used in train-switching operations are to be locomotives that are subject to the federal air emission regulations for diesel operated locomotives as set forth in federal air quality regulations.[4] In addition, the BNSF and the Port are to exchange information with the goal of investigating options to accelerate compliance with the Tier 0, Tier 1, and Tier 2 requirements of the federal regulations. The JIT facilities opened in March 2002, and the term of the operating agreement with the BSNF took effect May 1, 2002.

Status: With the execution of the agreement and opening of the facility, the mitigation measure was largely fulfilled. However, in accordance with the operating agreement, the Port will over time exchange information with the BNSF with the goal of investigating options to accelerate compliance with the federal regulations.

F. Mitigation Measures 3.3-3/M6.1 through 6.10 (Design and operational features)

Measures: This mitigation measure includes a suite of 10 measures to be incorporated into the design and operations of new facilities. The measures include, for example, electric connections so that tugs at Berth 59 can "cold iron" while berthed, subsidized 24-hour truck parking facilities in the maritime area, and encouraging employees and tenants to use alternative transportation on "Spare the Air" days called by the BAAQMD.[5]

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4 40 Code of Federal Regulations Part 92.

5 "Cold ironing" refers to a vessel connecting to shore-side electrical power rather than running on diesel.

Progress: These measures are in various stages of implementation. To date, the Vision 2000 AQMP has focused on the engine repowering and retrofitting mitigation measures as they will potentially provide the greatest air quality benefits. The status of the individual measures is outlined in Table 1.

G. Mitigation Measures 3.3-3/M7 (Lesaffre Yeast – formerly Red Star Yeast)

Measure: M7: Subsidize an engineering study to determine whether cost-effective measures exist to reduce reactive organic gas (ROG) emissions from the Red Star Yeast facility in West Oakland, and if cost-effective, subsidize such measures.

Background: The Port solicited proposals for the engineering study and selected a consulting team to prepare the study. In February 2001, the Red Star Yeast Division was acquired by Lesaffre Yeast Corporation, and the terms of the study were renegotiated with the new owners.

Progress: The ROG Emission Reduction Feasibility Study was completed in September 2002. Port staff are now discussing the results of the study with Lesaffre, the BAAQMD, and others to determine whether the retrofit technologies would be cost-effective, given that Lasaffre implemented operational changes in 2002 and continues to implement changes that reduce air emissions at the plant.

H. Mitigation Measure 3.3-3M8 (Precision Cast)

Measure: Subsidize an engineering study and control measures to reduce ROG emissions from the Precision Cast facility in West Oakland.

Background: Concurrent with the Red Star Yeast study mentioned above, the Port solicited proposals for the engineering study for Precision Cast, selected a consulting team, and negotiated a contract with them to prepare the study. During the summer of 2001, the Port learned that Precision Cast ceased operating its West Oakland plant at the end of May 2001. The business was sold to a company located in Lodi, California. The building was sold separately and will no longer be operated as an industrial facility. Thus this source of ROG emissions no longer exists. The funding for this mitigation measure may be reallocated to another mitigation measure within the AQMP in the future.

Status: As the subject facility has closed, this measure is infeasible.

I. Mitigation Measure 3.3-3/M9 (Emissions testing station)

Measure: Contact the California Air Resources Board (CARB) and work with them to determine the feasibility and potential benefits of establishing a heavy-duty diesel truck emissions testing station in the Port area.

Background: Upon discussion, the Port and other agencies have determined that this measure is infeasible and in conflict with the jurisdiction of other agencies. In the future, the funding for this measure may be reallocated to another measure within the AQMP.

Status: This measure is infeasible.

3. RELATED PORT PROJECTS

1. Dust Control Measures incorporated into Project Design

Background: The Port committed to implement 13 dust control measures during construction of the Vision 2000 projects. These are the measures that are described by the BAAQMD as "basic," "enhanced," or "optional" dust control measures for construction projects.

The Port has incorporated the measures into the Plans and Specifications for all Vision 2000 projects. The construction contractors are then responsible for implementing these measures. To monitor compliance with the specifications, the Port contracted with JADA Consultants to inspect the sites daily and review the construction manager's daily summary checklists. In early spring 2002, Port staff assumed the daily monitoring of the construction sites, and JADA Consultants continued to review the daily summary checklists.

Update: Dust control measures were again incorporated into the Plans and Specifications of new Vision 2000 construction contracts. The dust control measures also continue to be implemented for all active construction projects. The dust control measures include, but are not limited to, water trucks, street sweepers, and ingress/egress protections. Port staff now conduct the daily monitoring and review the summary checklists. No major dust incidents were reported in the last six months. The ongoing, onsite monitoring has continued to help prevent potential problems and quickly resolve others.

2. Mitigation Measure 3.3-1/M1 (Construction equipment engines)

Measure: Implement construction-related equipment engine emissions controls, including equipment tune up, and use of California low-sulfur, low-aromatic diesel fuel in equipment that is not required under state law to use low-sulfur diesel.

Background: The Port incorporated requirements for equipment tune-ups and the use of California low-sulfur diesel into the Plans and Specifications for the Vision 2000 projects. Port staff conduct daily field inspections to ensure that emissions from construction equipment are normal (i.e., not excessive).

Progress: Port staff continues to monitor and enforce contractors' compliance daily. Remedial actions have been applied when visible emissions were created. For the past year, there have been no excessive emissions from construction equipment.

3. Mitigation Measure 3.3-1/M2 (Construction worker carpooling)

Measure: Encourage carpooling among construction workers, especially on [the BAAQMD's] "Spare the Air" days.

Background: The Port has encouraged construction contractors to promote carpooling and other commute alternatives, especially during Spare the Air days. Requirements have been included in Plans and Specifications.

Status: Ongoing.

4. Particulate Monitoring Program

Background: The Port initiated an air quality and meteorological monitoring program in April 1997 to measure the PM levels in West Oakland. The purpose of the program is to measure particulate levels prior to construction of the Vision 2000 projects, to monitor particulate levels during construction, and to monitor particulate levels during the early operation of the facilities.

The program measures PM-10 and PM-2.5 concentrations at two monitoring stations: one at the Port (the "Port station") and at one in the West Oakland residential area downwind of the Port facilities (the "Residential station"). Meteorological data are also recorded at the Port station. The Port intends to continue tracking particulate and meteorological data until April 2004.

The sampling results are used to determine if there are localized sources of particulate air contaminants in the West Oakland area (i.e., if particulate levels at the West Oakland site exceed regional levels), and, if evidence of any such local sources is found, to identify them if possible. All sampling procedures are coordinated with the BAAQMD.

In July 2002, the Port station was moved from its original location, as the building on which it stood was slated for demolition. The original location was near the intersection of 7th Street and Middle Harbor Road. The new location is on Building "D851," which is at 1717 Middle Harbor Road. The new location is near to and directly south of the original location, is closer to the Port's current construction activities, and continues to be downwind of the Port's maritime development projects.

Update: Particulate sampling is ongoing. During the period from April 2, 2002 to August 30, 2002, the period for which the most recent data are available, the PM-10 concentrations stayed well under the federal and state standards. During this same period, there were no exceedances of the federal PM-2.5 standard at either station, and the PM-2.5 levels at the Residential station were below the regional average.[6]

The data continued to correlate well between the West Oakland monitoring stations and the BAAQMD monitoring stations, indicating that particulate matter levels are more influenced by regional phenomena than by local phenomena.

5. Neighborhood Electric Vehicles

Last fall, the Ford Motor Company donated 50 neighborhood electric vehicles (NEVs) to the Port. These NEVs are small vehicles approved for use on roads with speed limits up to 35 miles per hour. The majority of the NEVs will be used at Oakland Airport. About 15 of them will be made available for use at the marine terminals. The NEVs are zero-emission vehicles, and thus, to the extent that they replace the use of diesel- or gas-powered vehicles, will reduce emissions in the maritime area.

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[6] The federal standard for PM-2.5 is 65 micrograms per cubic meter. There is no California standard for PM-2.5. However, the California standard for PM-10 includes PM-2.5 particulates and is indirectly a more stringent criterion than the federal standard.

6. SynchroMet™

On February 18, 2002, the Board of Port Commissioners approved entering into an agreement with SynchroNet Marine, Inc. to develop a computer system that will reduce truck traffic at the Port. Specifically, SynchroNet is developing a tracking system for empty containers. Currently, empty containers are stored at the marine terminals. SynchroNet's service, "SynchroMet™," will allow trucking companies to transfer empty containers at non-Port locations. For example, a trucker in Sacramento could pick up an empty container from a trucker in Davis, return to Sacramento to fill it, then deliver the full container to the Port. This exchange would save both the Sacramento and Davis truckers a trip to the Port. SynchroNet estimates that its service will reduce 10 to 20 percent of truck trips for empty containers. The reduced truck trips will translate into reduced truck emissions at and near the Port.

4. RELATED STATE PROJECTS

1. ARB's Marine Vessel Technology Demonstration Project

The California Air Resources Board (ARB) and others are together exploring ways to reduce emissions from cargo ships. The group is designing a demonstration project to identify and test one or more emissions control options on a ship that transits the central California coast. Partners in this effort include the U.S. Maritime Administration (MARAD), U.S. Environmental Protection Agency, local air pollution control districts (including the BAAQMD), several port authorities, shipping companies, and others. MARAD has offered to manage the project, with funding from public and private agencies, carriers, control technology providers, and others. The ARB and MARAD expect that the demonstration project will begin in 2003. The Port of Oakland has been participating in the discussions as part of the ARB's working group for this effort.

2. AB 2650, the "Lowenthal Bill"

State Assembly Bill No. 2650 (the "Lowenthal Bill") became effective January 1, 2003. The stated intent of the statute is to reduce "emissions of particulate matter that are caused by trucks idling at marine terminals and ports in the state." The new law imposes a 30-minute idling limit on trucks waiting to enter a marine terminal and authorizes the BAAQMD to assess fines on marine terminals in its district that operate in a manner that causes trucks to exceed the 30-minute limit. The statute provides various exemptions from fines, including appointment systems for trucks and expanded gate hours. In January and February 2003, the Port facilitated meetings between the BAAQMD, terminal operators, and trucking representatives to discuss the various exemption options and their potential effects on the terminals and trucking companies. The BAAQMD is taking the lead on this effort and planning to continue the discussions with the affected parties.

5. NEXT STEPS

It is expected that in the next six months (by September 2003):

- CSX Lines will install DOCs on several of its trucks and will be fueling them with aqueous diesel;
- the design of the full-scale truck repower and retrofit program will be completed;
- the marine terminal operators will continue to repower and retrofit their cargo-handling equipment, and one or more terminal operators will complete their CTERRP activities;
- Oscar Niemeth will complete repowering its tugboat, the *Silver Eagle*;
- the Port and Lesaffre (Red Star) Yeast will select which, if any, of the available emissions-reductions technologies will be cost-effective and feasible for the Oakland yeast plant; and
- the Port's program-wide evaluation of the AQMP will begin.

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Table 1: Update on the Port of Oakland's Vision 2000 Air Quality Mitigation Program, February 2003

Mitigation Measure #	Short Title	Update of February 2003 (Updates since August 2002 are shown in bold.)
3.3-3/M1 and 3.3-3/M1 (A)	Transport Trucks	• Ongoing. ***Demonstration Project:*** **The grant agreement with the BAAQMD for the aqueous diesel demonstration project was executed in January 2003. Agreements with other participating parties are being drafted.** ***Full-scale Project:*** **Preliminary design is underway and focuses on 1) installing exhaust controls on trucks, 2) making cleaner fuels available locally, and 3) providing engine reflashing.**
3.3-3/M2	Cargo-handling Equipment (a.k.a. the Container Terminal Equipment Repower and Retrofit Program (CTERRP))	• Ongoing. Grant agreements are in place with five of the six marine terminal operators. • **As of the end of 2002, the first year of program implementation, 36% of the eligible equipment had been repowered with cleaner engines and 33% retrofitted with exhaust control devices. Four terminal operators have switched to ultra-low-sulfur diesel.**
3.3-3/M3	Tugboat Repowering	• Ongoing. Oscar Neimeth Towing Inc. continued to prepare the *Silver Eagle* for the new engines, and expects to complete the installation in **Spring 2003**.
3.3-3/M4	AC Transit Bus Repowering	• Completed. AC Transit replaced the engines in 28 buses. Emissions reductions are estimated to be 3.6 tons of particulate matter and 39.7 tons of nitrogen oxides over the project lifetime of 9 years. During this project, AC Transit hired 97 employees from West Oakland.
3.3-3/M5	Train Switching Engines at the Joint Intermodal Terminal (JIT)	• Ongoing. The Port signed a lease agreement in February 2002 with the Burlington Northern-Santa Fe (BNSF) to lease and operate the JIT. The Agreement requires the BNSF to use locomotives that are subject to the federal air emission regulations and to exchange information with the Port. The JIT facilities opened in March 2002; the Agreement with BNSF took effect May 1, 2002.
3.3-3/M6.1	Electric Connection at Berth 59	• Completed. An electric connection was provided near Berth 59 to power the electric dredges used for construction of Berths 55-59.
3.3-3/M6.2	24-hour Truck Parking	• Ongoing. The former Union Pacific round-house property has been used for 24-hour truck parking since the beginning of Vision 2000 construction in

Table 1: Update on the Port of Oakland's Vision 2000 Air Quality Mitigation Program, February 2003

Mitigation Measure #	Short Title	Update of February 2003 (Updates since August 2002 are shown in bold.)
		1/2000.
3.3-3/M6.3	Parking Configuration	• Completed; was included in the design of the terminals.
3.3-3/M6.4	Traffic Signal Synchronization	• Not commenced.
3.3-3/M6.5	Spare-the-Air Days	• Ongoing. The Port continued to participate in the BAAQMD's Spare-the-Air program. When the BAAQMD predicts Spare-the-Air Days, the Port notifies all employees and encourages them to use alternative transportation. • The Port included provisions encouraging carpooling during Spare-the-Air Days in the Plans and Specifications for all construction contracts.
3.3-3/M6.6	Employee Mass Transit Subsidies	• Not commenced.
3.3-3/M6.7	Employee Cashout Policy	• Infeasible. The measure conflicts with the marine terminal operators' agreements with the labor unions.
3.3-3M/M6.8	Tenant Parking	• Not commenced.
3.3-3/M6.9	Vehicle Maintenance Education	• Ongoing. The Port required frequent vehicle maintenance in the Plans and Specifications for the construction contracts. The Port is planning to add information to the Port's *Truckers Guide* that encourages drivers to keep their vehicles in good operating condition.
3.3-3/M6.10	Truck Driver Education	• Not commenced.
3.3-3/M7	Lesaffre (Red Star) Yeast	• Ongoing. **The ROG Emission Reduction Feasibility Study for the plant was completed in September 2002. Port staff are discussing the results of the study with Lesaffre, the BAAQMD, and others to determine whether retrofit technologies would be cost-effective, given that Lesaffre implemented operational changes in 2002 and continues to implement changes that reduce air emissions at the plant.**
3.3-3/M8	Precision Cast	• Infeasible. Precision Cast ceased operating its West Oakland plant in May 2001. The building has been sold and will no longer be operated as an industrial facility.
3.3-3/M9	Emission Testing Station	• Infeasible. The Port and other agencies have determined that this measure is infeasible and in conflict with the jurisdiction of the other agencies.

Table 1: Update on the Port of Oakland's Vision 2000 Air Quality Mitigation Program, February 2003

Mitigation Measure #	Short Title	Update of February 2003 (Updates since August 2002 are shown in bold.)
		infeasible and in conflict with the jurisdiction of the other agencies.
RELATED VISION 2000 PORT PROJECTS		
--	BAAQMD's Dust Control Measures	• Ongoing. The dust control measures continued to be implemented at all active construction sites. **Port staff now conduct the daily monitoring and review the construction contractors' summary checklists. No major dust incidents were reported in the last six months.**
3.3-1/M1	Construction Equipment Engines	• Ongoing. Port staff continued to monitor and enforce contractors' compliance daily. Remedial actions have been applied when visible emissions were created.
3.3-1/M2	Construction Worker Carpooling	• Ongoing. The Port has encouraged construction contractors to promote carpooling and other commute alternatives. Requirements have been included in construction Plans and Specifications.
--	Particulate Monitoring	• Ongoing. Sampling at the two stations continued. **From April 2, 2002 to August 30, 2002, PM-10 concentrations stayed well under federal and state standards, there were no exceedances of the federal PM-2.5 standard, and PM-2.5 levels at the Residential station were below the regional average.**

APPENDIX A

PORT OF OAKLAND
VISION 2000 AIR QUALITY MITIGATION PROGRAM FUNDING

Approved by the Board of Port Commissioners, April 1999

Mitigation Measure 3.3-3 -- Long-term Regional Impacts		(in dollars)
M1	Exhaust Treatment for Trucks (demonstration)	90,000
MIA	Repower/Retrofit Trucks	1,480,000
M2	Cargo-handling Equipment	5,245,000
M3	Tugboat	500,000
M4	AC Transit Buses	700,000
M5	Train Switching Locomotives	10,000
M6	Design and Operation Features 1. cold-ironing for tugboats 2. 24-hour truck parking 3. configure parking 4. synchronize traffic signals 5. participate in Spare the Air Days 6. mass transit subsidies for employees 7. employee cash-out at terminals 8. restrict tenant parking supply 9. truck engine maintenance education 10. truck idling education (Truckers' Guide)	390,000
M7	Red Star Yeast	525,000
M8	Precision Cast	30,000
M9	CARB Truck Inspection Station	5,000
	TOTAL	8,975,000

A-1

ATTACHMENT 3
TO EXHIBIT A

RECEIVED
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PORT OF STOCKTON

PORT OF OAKLAND
VISION 2000 AIR QUALITY MITIGATION PROGRAM

GENERAL PROGRAM GUIDELINES FOR THE TRUCK MITIGATION PROGRAM

February 2003

1. Introduction
2. Program Purpose
3. Program Design
4. Program Management

1. INTRODUCTION

In 1999, the Port of Oakland's Board of Port Commissioners, as part of the Vision 2000 Maritime Development Program, certified the Environmental Impact Report (EIR) for the Berths 55-58 Project, and adopted measures to mitigate potential impacts to air quality (Resolution Number 99153). These measures are collectively known as the Vision 2000 Air Quality Mitigation Program (AQMP). One of the measures, Mitigation Measure 3.3-3/M1A, states:

> The Port will subsidize the retrofit of diesel truck engines with new engines meeting California emission standards for new diesel engines, or add-on exhaust treatment devices, including soot traps and catalytic converters. This subsidy would be prioritized for those pieces of equipment that have the longest remaining period of useful life.

This document provides guidelines for the implementation of this mitigation measure.

2. PROGRAM PURPOSE

The purpose of the Truck Program is to implement Mitigation Measure 3.3-3/M1A. Specifically, the Truck Program is to reduce emissions from the on-road, heavy-duty diesel trucks that haul shipping containers to and from the Port's marine and rail terminals. The emissions of concern are primarily particulate matter and secondarily nitrogen oxides.

3. PROGRAM DESIGN

3.1. Voluntary. The Program is voluntary for truck owners.

3.2. Incentive-based. The Program is incentive based. Incentives may include grants to truck owners for the express purpose of reducing air emissions.

3.3. Trucks at the Port. The Program targets on-road, heavy-duty diesel trucks that haul shipping containers to and from the Port's marine and rail terminals.

3.4. Shuttle Trucks. Initially, the Program will target "shuttle trucks," which are defined here as trucks that primarily shuttle shipping containers between facilities in the Port area.

3.5. Emission Reduction Strategies. Truck owners may be awarded funding to:

1) Install a diesel oxidation catalyst, or
2) Replace an old truck with newer, lower-emission truck, and destroy the old truck.

3.6. Project Eligibility. The Executive Committee is to establish criteria for specific projects within the emission reduction strategies. The criteria are to include cost-effectiveness. The methodology used to determine cost-effectiveness is to be based on a State-approved methodology (e.g., the California Air Resources Board's (CARB's) emissions factor model EMFAC2002), with modifications as necessary to account for local operations, the local fleet, and emissions of particulate matter.

3.7. Applicant Eligibility. Any individual or company may apply to receive grant. If the applicant does not own or control the vehicle in question, then the application must include a satisfactory, binding contract with the person(s) or organization(s) that does own or control the vehicle.

3.8. Equipment Eligibility. An exhaust control purchased under the program must be approved by the CARB for sale in California. ***[is this the correct wording?].*** A vehicle purchased under the program must be emission certified or verified by the CARB.

3.9. Funding Cycles. The program will be rolled out in three funding cycles. Funding for each cycle will be budgeted in equal amounts of approximately one-third of the total funding available for grants.

3.10. Funding Allocations. In the first funding cycle, fifty (50) percent of the cycle's funds will be allocated to retrofits with diesel oxidization catalysts and fifty (50) percent to replacing older trucks with newer trucks. This allocation may be repeated in subsequent funding cycles, or adjusted as necessary to advance the program.

3.11. Funding Set-Aside. In the first funding cycle, twenty (20) percent of the cycle's funds will be designated for trucks that (a) are shuttle trucks, (b) have pre-1994 engines, and (c) are owned and operated by individual owners and operators.

3.12. Outreach and Marketing. The outreach and marketing program is to:

- Focus on the owners of the target trucks,
- Be bi- or multi-lingual,
- Involve local truck owners during program design, and
- Involve local community members during program design and implementation.

3.13. Fast-track Approval Process. The Executive Committee is to develop a Fast Track Approval Process for applications that meet the project, applicant, and equipment eligibility criteria.

3.14. Projects Not Eligible for the Fast Track Approval Process. If an application does not meet the criteria for fast-track approval, then it may be forwarded to the Executive Committee for consideration.

3.15. Project Approval. Authority to approve projects rests with the Executive Committee.

3.16. Program Safeguards. The program will include safeguards to ensure that trucks participating in the program remain operating in the Port area for a prescribed period of time.

3.17. Monitoring, Evaluation, and Reporting. Port staff will provide quarterly progress reports to the Executive Committee and Technical Advisory Committee. Each report will include quantitative data regarding the applications received and projects approved, and will include qualitative discussions of the program's implementation.

3.18. Administrative Costs. The program will minimize administrative costs in order to maximize the funding available to truck owners.

4. PROGRAM MANAGEMENT

4.1. Board of Port Commissioners. As the Truck Program is a mitigation measure under the Environmental Impact Report for the Port's Berths 55-58 Project, the Board of Port Commissioners is ultimately responsible for the success of this program.

4.2. Port's Executive Director. The Port's Executive Director is authorized to sign agreements with program participants, including, for example, project applicants, truck dealerships, salvage yards, equipment vendors, technical contractors, and outreach contractors. The Executive Director may appoint one or more designees for some or all of these agreements. For example, the Executive Director may choose to retain authority for agreements with technical contractors, but appoint a designee for agreements with truck dealerships.

4.3. Program's Executive Committee. The mission of the Executive Committee is to make any necessary adjustments to the program, while maintaining financial accountability and assuring effective outreach. The Executive Committee will establish criteria for evaluating applications, establish administrative procedures that ensure the timely disbursement of funds, review marketing and outreach programs that may be funded, review the progress of the program, and adjust the program's criteria and procedures as necessary ensure a successful program. The Executive Committee will include the:

- Director of the Maritime Division,
- Director of the Social Responsibility Division, and
- Director of the Engineering Department.

4.4. Program's Technical Advisory Committee. The Technical Advisory Committee for the Truck Program (TAC) will be advisory to the Executive Committee. Members of the TAC will include one representative each of the:

- Bay Area Air Quality Management District,
- California Air Resources Board,
- US Environmental Protection Agency, Region IX,
- West Oakland Neighbors, and
- Trucking Industry.

The TAC's meetings will be open to the public.

4.5. Port Staff. The day-to-day operations of the program will be conducted by Port staff, unless the Executive Committee directs otherwise. Day-to-day operations include program set-up, applicant assistance, application review, inspections, and program monitoring, evaluation, and reporting.

DRAFT 12-21-03 **BOARD MTG. DATE:** 2/3/04

AGENDA REPORT

TITLE: Vision 2000 Air Quality Mitigation Program for Trucks: Approval of General Program Guidelines and Allocation of Funds Within the Program

AMOUNT: This action does not involve any costs beyond those previously committed to by the Board of Port Commissioners for the Vision 2000 Air Quality Mitigation Program.

PARTIES INVOLVED:

Agency Name	Location
Port of Oakland	Oakland, California

TYPE OF ACTION: Resolution

SUBMITTED BY: Gerald Serventi, Director of Engineering

COMMITTEE ASSIGNED: Maritime

HEARD BY COMMITTEE: January 22, 2004

APPROVED BY: Tay Yoshitani, Executive Director

SUMMARY

In 1999, the Board of Port Commissioners adopted an air quality mitigation program (AQMP) for the Vision 2000 Maritime Development Program. The Port has steadily progressed with implementation of many of the AQMP's measures. The last primary measure to implement is the one to reduce air emissions from the privately-owned trucks that serve the Port's terminals. This Agenda Report proposes General Program Guidelines for the truck program and recommends that funds be reallocated within the Air Quality Mitigation Program to increase the total amount of funds available to the truck program.

The design of the proposed truck program is based on similar programs in other areas and on the recommendations of the Port's Technical Review Panel for the AQMP. The program would provide grants to truck owners to either install exhaust controls on their trucks or replace older trucks with newer trucks. The General Program Guidelines identify key elements of the program's design, and describe an administrative structure.

FACTUAL BACKGROUND

In 1999, as part of the Vision 2000 Maritime Development Program, the Board of Port Commissioners certified the Berths 55-58 Environmental Impact Report (EIR) and adopted the Vision 2000 Mitigation Monitoring and Reporting Program (MMRP) (Resolution Number 99153). Within the MMRP are measures to mitigate potential impacts to air quality. Collectively, these measures are known as the "Vision 2000 Air Quality Mitigation Program" (AQMP). The Board subsequently committed $8.98 million to the AQMP.

The AQMP includes 19 measures to reduce air emissions from a variety of sources, including trucks, cargo-handling equipment, tugboats, local transit buses, and local manufacturing businesses. Several of these measures have been fully implemented, others initiated, and still others determined to be infeasible. Attachment A to this Agenda Report provides a status report of the 19 measures.

The last major mitigation measure to be implemented is the one regarding the trucks that serve the Port's marine and rail terminals. The measure states: "The Port will subsidize the retrofit of diesel truck engines with new engines meeting California emission standards for new diesel engines, or add-on exhaust treatment devices, including soot raps and catalytic converters. This subsidy would be prioritized for those pieces of equipment that have the longest remaining period of useful life" (Mitigation Measure 3.3-3/M1A). This Agenda Report proposes General Program Guidelines for implementing the truck mitigation program.

When the Board adopted the AQMP, it allocated a total of $8.98 million to the Program, of which $1.48 million were designated for the truck program. In September 2003, Port staff submitted a grant application for $1.5 million to the Bay Area Air Quality Management District (Air District) for a project that would complement the Port's truck program. The Air District expects to select the grantees in February 2004.

ANALYSIS

Program Design. The design of the Truck Program has presented two primary challenges: (1) finding appropriate emissions reductions technologies, and (2) making the selected technologies attractive to the owners of the trucks that serve the Port's terminals.

As a first step, many technologies were evaluated according to a host of criteria, including the technology's applicability to the local truck population and cost-effectiveness. Three primary alternatives emerged:

(1) retrofitting trucks with diesel oxidation catalysts (an exhaust control),
(2) replacing older trucks with newer (but not necessarily new) trucks, and
(3) replacing old engines with the newest engines.

Surveys of the local truck population then found several key fleet characteristics. About 40% of the trucks have engines that pre-date 1994, which is when less-polluting engines were first produced. These are also the trucks that tend to travel in the Port area the most. The trucking companies that serve the Port's terminals generally fall into one of two categories: (1)

companies that primarily shuttle containers within the Port area, or (2) companies that primarily transport containers to and from points beyond the Port area. The first category, the "shuttle companies" reported that almost all of their business is Port-related; intermodal shuttles constitute 50 to 100 percent of their business; and they own relatively few trucks, but dispatch as many as 15 to 65 independently owned and operated trucks. These independently owned and operated trucks are generally owned and operated by individuals, and these individuals generally own and operate only one truck. These independently owned and operated trucks tend to be the oldest and most polluting trucks in the Port area.

Thus the truck program's challenge then became finding incentives that would motivate independent owners and operators, and companies with candidate trucks, to employ one of the emissions reductions alternatives. Discussions with trucking companies and drivers have netted many suggestions -- the most frequent being grants. The proposed General Program Guidelines are based on grants for retrofitting trucks with catalysts (Alternative 1 above) and for replacing older trucks with newer trucks (Alternative 2 above). If the Air District selects the Port's grant application for funding, it would be used to provide grants to truck owners for replacing old engines with new engines (Alternative 3 above).

Technical Review Panel. Early in the implementation of the AQMP, the Port convened a Technical Review Panel (Panel) to provide guidance on specific measures. The membership and focus of the Panel have evolved as needed to address the various measures. In the last year, the Panel has included representatives of AB Trucking, the Bay Area Air Quality Management District, California Air Resources Board, Citizens for West Oakland Revitalization, City of Oakland Councilmember Nancy Nadel, National Resources Defense Council, Pacific Institute, U.S. Environmental Protection Agency's Region IX, West Oakland Neighbors, and other individuals and organizations with technical expertise.

On November 5, 2003, the Panel recommended that the Port (1) move forward on implementation of the truck program immediately, (2) target the "shuttle" trucks, (3) target the oldest trucks, (4) reallocate funds from infeasible AQMP measures to the truck program so that the funds available in the truck program total $1.5 million, (5) allocate 50% of the funds to retrofitting trucks with catalysts and 50% of the funds to replacing older trucks with newer trucks, (6) for the truck replacements, initially offer subsidies of about $7,500 per truck and do not also retrofit these trucks with exhaust controls, (7) institute a process of ongoing program feedback, and if necessary, reallocate the funds between catalysts, truck replacements, and truck repowering, and (8) continue to seek outside funding to supplement the program. These recommendations are reflected in the recommendations presented to the Board today.

Model Programs. The General Program Guidelines and associated institutional structure proposed today are based on the success of two similar incentive-based programs for heavy-duty trucks in California -- the SECAT[1] program in Sacramento and the Gateway Cities Clean Air Program in southern California. The SECAT program was created in 2000, was the first of its kind, and is a partnership of the Sacramento Area Council of Governments (SACOG) and five air quality management districts. SACOG, the fiduciary arm of the partnership, first (a) adopted program guidelines with an administrative structure that established an Executive Committee and Air Quality Policy Group with a Technical Advisory Committee, and then (b)

[1] "SECAT" is the acronym for the Sacramento Emergency Clean Air and Transportation Program.

charged the committees with developing the program details. The SECAT program has now entered into more than 500 contracts with truck owners and approved emissions reductions changes to more than 1200 trucks.

More recently, the Gateway Cities Council of Governments teamed with the California Air Resources Board and the Port of Long Beach to create the Gateway Cities Clean Air Pilot Program. As noted in the program's guidelines, the "...pioneering effort, embodied in the SECAT Program, is the foundation upon which our program is built. In most instances, and with the permission and encouragement of the staff of SACOG and the SMAQMD[2], we have used the very same guidelines. This is due to the quality of their efforts...." [3]

General Program Guidelines. The proposed General Program Guidelines (1) state the purpose of the program, (2) specify key elements of the program design, and (3) establish an administrative structure for program implementation. The full text of the guidelines is shown in Exhibit 1 of Attachment B to this Agenda Report.

1. *Program Purpose.* The purpose of the program is to implement Mitigation Measure 3.3-3/M1A in the Vision 2000 AQMP.

2. *Program Design.* The program would be voluntary for truck owners, and would be incentive based. The program would initially target "shuttle" trucks, and would provide grants for installing catalysts and replacing older trucks with newer trucks (Alternatives 1 and 2 above). The program would be conducted in three funding cycles in order to provide opportunities for internal review of the program and adjustments if necessary. Funding for each cycle would be budgeted in equal amounts of approximately one-third of the total funding available for grants.

In accordance with the mitigation measure, the funding would be prioritized for the trucks that have the longest remaining period of useful life, that is, the newest trucks. These are the trucks that are most suitable for catalysts. However, it is unlikely that enough new trucks would install catalysts to expend the program's full funding. Further, there are substantial air quality advantages to replacing older trucks with newer trucks. Thus, for the first cycle, one-half of the cycle's funds would be allocated to catalysts and one-half to truck replacements.

To further ensure that the funding is available to the owners of the target trucks, in the first funding cycle, 20 percent of the first-cycle's funds would be designated for trucks that (a) are shuttle trucks, (b) have pre-1994 engines, and (c) are owned and operated by individual owners and operators.

Initially, the grants for truck replacements would be for about $7,500 per truck. In today's market this is about half the cost of a new truck. Safeguards would be put in place to ensure that these new trucks would remain in use in the Port area for a prescribed period of time. Both the SECAT and Gateway Cities' Programs provide models for such safeguards.

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[2] :"SMAQMD" refers to the Sacramento Metropolitan Air Quality Management District."
[3] From "Clean Air Program Guidelines" for the Gateway Cities Clean Air Program. Page 1.

Outreach and marketing would be key to the program's success. The Guidelines propose that the outreach and marking program (a) focus on the owners of the target trucks, (b) be bi- or multi-lingual, (c) involve local truck owners during program design, and (d) involve local community members during program design and implementation.

Ongoing monitoring and evaluation would also be key to the success of this nascent program. Both quantitative and qualitative aspects of the program would be monitored, and the results used to adjust the program as necessary within the General Program Guidelines during each funding cycle.

3. Administrative Structure. The proposed Guidelines describe the roles of five primary parties. (1) As the truck program is a Vision 2000 mitigation program, the Board would continue to carry ultimate responsibility for the success of the program. (2) As proposed, the Board would authorize the Port's Executive Director to sign agreements with program participants, including, for example, project applicants, truck dealerships, salvage yards, equipment vendors, technical contractors, and outreach contractors. (3) A three-person Executive Committee would establish criteria for evaluating applications from truck owners, establish administrative procedures for the program, review the progress of the program and adjust it as necessary within the General Program Guidelines. The mission of the Executive Committee would be to make any necessary adjustments to the program, while maintaining financial accountability and assuring outreach. The Executive Committee would include the Directors of the Maritime Division, Social Responsibility Division, and Engineering Department. (4) A Technical Advisory Committee for the truck program would advise the Executive Committee on the technical aspects of the program, including eligibility. This Committee would include one representative each of the Bay Area Air Quality Management District, California Air Resources Board, U.S. Environmental Protection Agency's Region IX, West Oakland Neighbors, and the trucking industry. The Committee's meetings would be open to the public. (5) The day-to-day operations of the program would be conducted by Port staff, unless the Executive Committee directs otherwise. This would not preclude technical, administrative, or outreach assistance from other parties. Port staff is exploring whether some or all of the program's day-to-day administrative tasks could be most cost-effectively provided by other parties.

BUDGET & FINANCIAL IMPACT

In 1999, the Board committed $8.98 million to the Vision 2000 AQMP, of which $1.48 million were allocated to the truck program. Some of these funds have been expended on program research and design; about $_____ remain.

Also within the AQMP, more than $_____ remain attached to measures that have been found to be infeasible. Reallocating some of the funds from the infeasible measures to the truck program as proposed, would have a budget and financial effect only within the AQMP. Should the Air District select the Port's grant application for funding, then the Port will return to the Board to discuss potential budget and financial impacts related to administering the grant. These potential impacts would also be only within the AQMP.

STAFFING IMPACT

Staffing costs for the program would continue to funded by the AQMP.

SUSTAINABILITY

The Truck Program provides benefits for each of the "3E's:" economics, environment, and social equity. Further the Program includes active outreach to minority owners in an effort to fulfill our social equity objectives. ***[SM: elaborate]***

ENVIRONMENTAL

This program was evaluated in the Environmental Impact Report for the Berths 55-58 Project, and is an adopted mitigation measure for the project (Resolution 99153). No additional review under the California Environmental Quality Act is required.

MAPLA

The provisions of the Port Maritime and Aviation Project Labor Agreement do not apply to this action. ***[SM: Check with Bernida and May for more complete wording.]***

OCIP

(Owner Controlled Insurance Program) ***[SM: Check with OCIP, Dave Piexotto, Chris Alonzi]***

GENERAL PLAN

The General Plan does not apply to this project.

LIVING WAGE

Neither the Port's Living Wage Ordinance (Port Ordinance No. 3666) nor living wage requirements set forth in Section 728 of the Charter of the City of Oakland apply to this action. [***SM: Verify with May]***

OPTIONS

Options include:

1. As recommended by Port staff, approve the General Program Guidelines and reallocate funds within the AQMP to total $1.5 million for the truck program.

2. Accept Port staff recommendation as described in Option "1" above with amendments to the General Program Guidelines and/or reallocation of funds within the AQMP. Amendments may include, for example, revisions to the proposed program design or administrative structure.

3. Decline to act on the proposed truck program at this time and direct staff to develop an alternative approach to the mitigation measure.

RECOMMENDATION

It is recommended that the Board adopt the Resolution attached heerto as Attachment B and by so doing:

1. Adopt the Port's General Program Guidelines for the Truck Program, which are attached as Exhibit 1 of Attachment B to this Agenda Report.

2. Establish a Port Executive Committee and Technical Advisory Committee for the Truck Program, with the membership and responsibilities identified in the General Program Guidelines.

3. Authorize staff to solicit contract assistance for technical assistance, administration, and outreach.

4. Authorize the Executive Director, or his designee, to enter into agreements with truck dealerships, salvage yards, and other parties as necessary to implement this program.

5. Authorize the Executive Director, or his designee to issue checks for approved projects.

6. Reallocate funding from infeasible measures within the AQMP to the Truck Program so that the funds available to the Truck Program total $1.5 million.

7. Encourage staff to continue to seek additional funds to further reduce the emissions from on-road trucks that serve the Port's marine and rail terminals.

Attachments
A. Status Report of AQMP Measures
B. Resolution
   Exhibit 1: General Program Guidelines

PORT OF OAKLAND

MEMO

TO: Technical Review Panel for the Vision 2000 Air Quality Mitigation Program

FROM: Sharon Maves, Environmental Planning Department

DATE: August 8, 2003

SUBJECT: **Truck Mitigation Program -- Memo for Discussion Purposes**

At the last meeting of the Technical Review Panel (TRP) for the Port's Vision 2000 Air Quality Mitigation Program, the TRP discussed the alternatives available for the Port's truck mitigation program. The TRP then recommended that the Port (a) gather additional information about the local truck population, (b) consider additional program alternatives, (c) compare the cost-effectiveness of various program alternatives, and (d) search for additional funding. This memo provides updates on these action items and recommendations for proceeding with program implementation. This memo is organized as follows:

Executive Summary
A. Local Truck Population
B. Program Alternatives -- the "6 Rs"
- Repair
- Retrofit
- Reflash
- Repower
- Replace
- Refuel
- Other Fuels and Technologies

C. Comparison of Alternatives
- Cost-effectiveness
- Other Factors

D. Funding
E. Sample Funding Allocations
F. Recommendations
G. References
Attachments

Please note that for convenience, the term "Port fleet" is used in this memo to describe the trucks that serve the marine and rail terminals in the Port's maritime area. These trucks are not owned by the Port, but by private companies and individuals. The term "local truck population" is used to describe all heavy-duty diesel trucks operating in the West Oakland area, including the "Port fleet."

EXUCUTIVE SUMMARY

In 1999, the Port of Oakland adopted the Vision 20000 Air Quality Mitigation Program (AQMP) to mitigate impacts associated with its Vision 2000 Maritime Development Program. The AQMP is designed to reduce emissions from a variety of maritime and other local sources, including tugboats, cargo-handling equipment, trucks, public buses, and local stationary sources.

As part of the AQMP, the Board of Port Commissioners committed $1.48 million to reduce emissions from local transport trucks. The Port has since researched various technologies for trucks and program alternatives. In April 2003, the Technical Review Panel for the Port's AQMP discussed the available alternatives and recommended that the Port (a) gather additional information about the local truck population, (b) consider additional program alternatives, (c) compare the cost-effectiveness of various program alternatives, and (d) search for additional funding. This memo provides updates on these action items and recommendations for proceeding with program implementation.

Local Truck Population. Two surveys were recently conducted to provide additional information on the local truck population. The first survey focused on individual trucks entering the Port's marine terminals. The second survey focused on trucking companies that serve the Port's terminals, as well as other local trucking companies that do little or no Port-related business. The first survey reports that Cummins, Caterpillar, and Detroit Diesel engines together account for more than 95% of the truck engines. About 40 percent of the trucks are pre-1994.

The 19 trucking companies interviewed for the second survey were divided into two categories: the "Port fleet" and "non-Port fleet." The "Port fleet" was further divided into companies that primarily provide shuttle services within the Port area, and companies that primarily serve destinations outside the Port area. The shuttle companies have four main features in common: greater than 90% of their business is Port-related; their trucks make on average four to six container-trips per truck per day (some trucks make as many as 10 to 12 trips per day); they own few trucks but dispatch substantial numbers of independent owner/operated trucks; and the owner/operators are responsible for their own truck maintenance. Trucking companies that are in the "Port fleet," but provide little shuttle service report that 15 to 100% of their business is Port-related, they own most of the trucks they dispatch, and their fueling and maintenance operations vary substantially between companies.

In the "non-Port fleet," at least five private companies and two public agencies maintain diesel fleets in West Oakland. Unlike the companies in the "Port fleet," these companies and agencies own almost of the trucks they use, purchase their fuel in bulk and dispense it themselves, and rely on their own maintenance shops.

Program Alternatives. The program alternatives currently under consideration include "the 6 R's:" **repair** truck engines; **retrofit** trucks with exhaust controls such as diesel oxidation catalysts (DOCs), diesel particulate filters (DPFs), and the Cleaire Longview; **reflash** engine software for electronically-controlled engines with low-NOx calibration; **repower** trucks with new engines; **replace** older trucks with newer trucks; and **refuel** trucks with ultra-low-sulfur diesel (ULSD). All of these options are technically viable, though not all options are applicable to all sectors of the local truck population.

Comparison of Alternatives. The cost-effectiveness of the alternatives was calculated for tons of particulate matter (PM) reduced, and tons of PM plus nitrogen oxides (NOx) reduced. For PM reductions alone, the alternatives fall into three tiers. (1) Retrofits with DOCs and DPFs are the most cost-effective, as is a ULSD subsidy of 1 to 3 cents per gallon. (2) Retrofits with the Cleaire Longview,

repowering, and a ULSD subsidy of 4 to 7 cents per gallon are the next most cost-effective. (3) Replacing trucks and ULSD subsidies above 7 cents per gallon are the least cost-effective.

For PM plus NOx reductions, the Cleaire Longview is the most cost-effective alternative, followed by repowering trucks, and then by replacing trucks. (The cost-effectiveness of reducing NOx by reflashing was not calculated.)

Other factors that vary among alternatives include the suitability of the various technologies for a given sector of the truck population, the relative need for ongoing monitoring and maintenance, and necessary investment per truck.

Funding. Unspent funds in the Port's AQMP may be redirected to the truck program. Port staff is currently reviewing all of the AQMP expenditures to date to determine how much funding may be available for redirection. In addition, a variety of non-Port funding sources was identified, including regional, state, and federal agencies; a legal settlement; and private entities.

Sample Funding Allocations. For comparative purposes, five sample funding allocations were created. The sample allocations show the number of trucks that would be affected and resulting emissions reductions on a per truck basis. The simplest allocation -- retrofits with DOCs -- would benefit on the order 375 trucks per $1,000,000 investment. On the other hand, replacing trucks and installing DPFs on them would benefit about 18 trucks per $1,000,000 investment. These per truck investments include the costs of planning, implementing, and monitoring the respective alternatives.

Recommendations. Based on the analysis above, the following actions items are recommended: (1) Reflash as many trucks as possible by the end of 2004. (2) Repower or replace 10 of the oldest trucks in the shuttle portion of the "Port fleet" and install DOCs or DPFs on them. (3) With the remaining funds, install DOCs on as many trucks as possible. Offer DOCs first to trucking companies and owner/operators in the "Port fleet" that provide shuttle services. (4) As part of the outreach for the program elements above, provide education to truckers about the air quality benefits of regular truck maintenance and repair. (6) Determine how much funding is available in the AQMP for transfer to the truck program. (7) Continue to seek additional non-Port funding.

Together these action items provide both PM and NOx reductions, provide options for many ages and types of trucks, invest the mitigation funds cost-effectively, target the trucks that acquire most of their mileage in the Port area, and provide a springboard for future program expansion should additional funding become available.

A. LOCAL TRUCK POPULATION

Two surveys of truck companies based or operating in the Port and West Oakland area were conducted this spring and summer. In April, CCS Planning and Engineering, Inc. (CCS) conducted a survey of truckers entering the Port's marine terminals. In July, based on the results of CCS' survey and other data-gathering efforts, the Port interviewed 19 companies to provide additional fleet information. The sections below describe the "Port fleet," the local non-"Port-fleet," and the two fleets combined as the "local truck population."

1. "Port Fleet"

Regarding engine types and ages, the CCS survey reports that Cummins, Caterpillar, and Detroit Diesel engines account for over 95% of the "Port-fleet"; Cummins engines alone account for close to 1/2 of the engines in the "Port fleet." About 20% of the trucks are from the 1980s, 70% from the 1990s, and 5% from the 2000s. Notably, about 40% of the trucks have pre-1994 engines. Note, however, that several drivers of the pre-1990 trucks reported anecdotally that the engines in their trucks had been rebuilt one or more times. Additional detail about the survey is provided in Attachments 1 and 2.

The follow-up interviews in July included 12 trucking companies in the "Port fleet." These companies represent a variety of the most active trucking companies serving the Port. However, it is not known what percentage these companies represent of the total number of companies that serve the Port, nor what percentage of Port-related activity they represent.

The Port-related trucking companies were divided into two groups: (a) companies that primarily shuttle containers within the Port area, and (b) companies that primarily transport containers to and from points beyond the Port area. The characteristics of each group are described below.

Shuttles. For the purposes of this survey, companies that derive 50% or more of their business from shuttles within the Port area are referred to as "shuttle companies." Some of these companies provide primarily intermodal service, that is, move containers between the Port's seven marine terminals and two rail terminals. Other companies shuttle between the terminals and local warehouses, transloaders, consolidated freight stations, customs exam areas, container depots, and other local shipping-related services within the Port area. Several companies maintain contracts with one of the shipping lines or rail terminal operators and circulate almost continuously within the Port area.

Five of the 12 companies interviewed fall into the shuttle category. They reported:[1]

- Almost all of their business (greater than 90%) is Port-related.
- Intermodal shuttles between the marine and rail terminals constitute 50 to 100% of their business.
- All of them maintain yards in the Port area.
- One company owns two trucks, the other companies own no trucks.
- Each company dispatches 15 to 65 independently owned and operated trucks. They collectively dispatch about 210 trucks.
- The trucks circulating within the Port area make, on average, 4 to 6 container-trips per day. Some trucks make as many as 10 to 12 container moves per day.

[1] The "shuttle" companies that were interviewed include AAAA Transportation Inc., Kamal Trucking Company, Lehman Transportation, Pacific Coast Container, and Pacific Rim Transport Inc. (PRTI).

- The owner/operators work for one trucking company at a time.
- Some of the owner/operators have stayed with the trucking company for more than ten years, others for less than one year.
- None of the companies provides fuel directly; one company provides an account at a local station for the convenience of the drivers, but does not pay for the fuel.
- None of the companies provides maintenance services; the owner/operators are responsible for their own maintenance.
- All of the companies are willing to distribute information about the Port's air quality programs to their owner/operators.

Port-fleet, but Not Shuttles. The seven companies in this category reported:[2]

- Port-related trips account for 15 to 100% of their business.
- Less than 10% of their trips are shuttles between the marine and rail terminals; many of their trips are direct deliveries to customers outside the Port/West Oakland area.
- Five of these companies have yards in the Port/West Oakland area; one company is based in Hayward, and the other company is based in West Sacramento.
- Some companies dispatch primarily their own trucks; others work predominately with owner/operators.
- Collectively, these companies own about 165 trucks and dispatch an additional 240 independent owner/operated trucks.
- The fueling arrangements vary substantially among these companies. Most fuel their own trucks locally; but their owner/operators primarily fuel out of the area where fuel prices are lower. Several companies provide accounts at local stations for the convenience of their drivers, one company provides fuel at its yard, and two maintain their own tanks on-site for fueling the trucks they own.
- Half of these companies maintain a shop on-site and service their own trucks. The owner/operators, however, are responsible for their own maintenance. One or two companies provide regular or periodic mobile services at their yards.

2. Local "Non-Port Fleets"

At least five private companies and two public agencies in West Oakland maintain diesel truck fleets that do not transport shipping containers to or from the Port's marine or rail terminals. The largest private companies include Bill Lang Trucking Company, Horizon Beverages, Matheson Trucking Company, Roadway Express, and Svenhard's Swedish Bakery. The two public agencies are the East Bay Municipal Utility District (EBMUD) and the US Postal Service. Other than the Postal Service, these companies and agencies do very little or no business with the Port's marine or rail terminals. The Postal Service bases a substantial number of trucks at its center in West Oakland, however, the bulk of its work is contracted to two other local companies: Bill Lang Trucking Company and Matheson Trucking Company. The Postal Service does send about six trucks per day to the Port's marine and rail terminals.

Each "non-Port fleet " company was interviewed regarding its fleet, service area, fueling arrangements, and maintenance operations. There are noticeable trends among these non-Port fleet companies that distinguish them from the Port-fleet companies. The non-Port-related trucking companies report that:

- They own almost all of the trucks they use (except the Postal Service).

[2] The "Port fleet, but not shuttle" companies that were interviewed include AB Trucking, Arrow Trucking Company of California, Inc., Bob Rich Schroeder, C-Line Express, Devine and Peters Intermodal Inc., Mutual Express Company, and Pacific Commodities.

- Collectively they base 287 company-owned trucks in their local yards and do not dispatch any independent owner/operated trucks.
- Most of these trucking companies are part of a larger entity that determines in part how they conduct their operations.
- Six of the seven companies purchase their fuel in bulk and dispense it on-site.
- The majority have their own maintenance shops on-site; some use local shops or mobile services to supplement.
- While some have a preponderance of a particular truck type, in general, they maintain a variety of truck types and ages.
- A couple companies continually modernize their fleets, but few have invested in air quality measures per se. Matheson Truck Company participated in Cummins' Flash and Match program. (This is further described below.) EBMUD has experimented with CNG trucks and biodiesel, but has returned to using conventional diesel trucks and fuel. EBMUD also received a grant to retrofit some of its vehicles with diesel particulate filters (DPFs), but has since tested the vehicles and found that DPFs would not work effectively on them.

3. Local Truck Population

A summary of the "Port fleet" plus non-"Port fleet" is shown below in Table 1. Note that the "Port fleet" described here represents a portion of the total "Port fleet."

Within the "Port fleet," the 12 companies interviewed collectively own about 160 trucks and dispatch another 450 owner/operated trucks, for a total of about 610 trucks. However, not all of these trucks are making Port-related trips. For some of the companies, the Port-related trips constitute less than 50% of their business.

Adding in the "Non-Port" fleet, brings the total number of trucks owned to about 450, but adds no owner/operated trucks. Coincidentally, this interviewed truck population contains an equal number of company-owned trucks (450) and owner/operated trucks (450). Thus, the local truck population represented by this survey totals about 900 trucks.

Table 1. Summary of Trucking Companies Interviewed in the Port of Oakland and West Oakland Areas, July 2003

Segment of Local Truck Population	Number of Companies Interviewed	Number of Trucks Owned	Number of Owner/Operated Trucks Dispatched	Number of Companies with Own Fuel Tank
"Port-fleet" -Shuttles	5*	2	210	0
"Port-fleet" - Non-Shuttles	7*	165	240	2
SUBTOTAL For "Port-fleet"	**12***	**167**	**450**	**2**
Local Non-"Port Fleet"	7	287	0	6
TOTAL Local Truck Population	**19**	**454**	**450**	**8**

* Represents portion of total number of companies in "Port fleet."

B. PROGRAM ALTERNATIVES

The program alternatives are organized below according to "the 6 R's": repair, retrofit, reflash, repower, replace, and refuel. They are then followed by a section on other fuels and emerging technologies.

1. Repair and Maintenance

Regular engine repair and maintenance has been shown to decrease air emissions. As injectors, pumps, and other components deteriorate, engine efficiency decreases, and PM emissions increase. A study in Colorado reported that repairs on 20 "gross smoke emitters" from years 1986 to 1999 reduced, on average, particulate matter (PM) emissions by 40%. The repairs involved fuel injectors, fuel pumps, fuel pump calibration, throttle control, and injection timing. The repairs cost on average $1,088 per truck. The study also found that while the repairs reduced PM emissions, the repairs also tended to increase nitrogen oxide (NOx) emissions. This was expected because of the usual PM/NOx trade-off whereby increasing combustion efficiency and temperature typically decreases PM emissions but increases NOx emissions. In the study, the NOx emissions increased only to levels close to the original engine emission standards (Colorado 2000).

2. Retrofitting Trucks with Exhaust Controls

In order to retrofit a truck with an exhaust control device in California, the California Air Resources Board (ARB) must have granted the device an Executive Order that exempts it from the State anti-tampering laws, or verified the device to reduce particulate matter (PM) emissions. Verification is the more rigorous of the two approval processes, and is required for retrofits that are funded by State funds. The ARB is continuously granting Executive Orders and verifications. Since the TRP's meeting in April, the ARB has verified another device, expanded the type of applicable engines for an already-verified device, and granted an Executive Order for a third device.

The devices that have received Executive Orders or been verified are listed in Attachment 3, and described below. In Attachment 3, Table 1 lists the devices that may be used with regular California diesel (CARB #2) or ultra-low-sulfur diesel (ULSD). Table 2 lists the devices that require ULSD.

DOCs. For on-road trucks, the ARB has verified two diesel oxidation catalysts (DOCs): the Donaldson DCM and Spiracle, and the Cleaire Flash and Match. Both have received Level 1 verification, that is, they are verified to reduce PM by at least 25%.

The Donaldson DCM and Spiracle system includes installing a DOC (the DCM) and closing the crankcase filtration system using the Spiracle. Both of these actions are necessary to reduce PM emissions by at least 25%. The Donaldson system is verified for a wide variety of engine makes, including Cummins, Caterpillar, Detroit Diesel, and others.

The Cleaire Flash and Match system is also a two-part system. It includes installing a DOC to reduce PM emissions, and reflashing the engine and replacing the fuel injectors to reduce nitrogen oxide (NOx) emissions. (Reflashing is further described below.) The ARB has verified the system to reduce NOx emissions by at least 25%. This Cleaire system is verified for Cummins engines only.

The ARB has also granted Executive Orders to two additional DOC families: the ECS AZ Purifier and Purimuffler, and the Engelhard CCX and CCM. While the ARB has not verified the emissions

reductions from these DOCs, the US Environmental Protection Agency (EPA) has verified the PM reductions to be at least 20%. These DOCs may be installed on a wide variety of engine types, but only on trucks that do not already have aftertreatment devices.

DPFs. The ARB has verified four diesel particulate filters (DPFs) for on-road trucks: the Engelhard DPX, Johnson Matthey CRT, Cleaire Flash and Catch, and Cleaire Longview. All of them have received Level 3 verification, that is, they are verified to reduce PM by at least 85%.

The Engelhard, Johnson Matthey, and Cleaire Longview DPFs may be installed as is; the Cleaire Flash and Catch includes installing a DPF, reflashing the engine, and replacing the fuel injectors. In addition to reducing PM emissions, the Cleaire Flash and Catch reduces NOx emissions by at least 25%. The Cleaire Longview includes a lean NOx catalyst and reduces NOx emissions 25 to 35%.

3. Reflashing Engine Software to Reduce NOx Emissions

Consent Decrees. In 1998, seven engine manufacturers signed Consent Decrees with the US Environmental Protection Agency (EPA), ARB, and others to recalibrate ("reflash") the engine software on certain 1993 to 1998 electronically-controlled engines to reduce NOx emissions. The Consent Decrees require that the low-NOx software upgrades occur at the time of normal engine rebuild, which is typically around 200,000 to 300,000 miles of service.

ARB's Proposed Regulations. According to the ARB, less than 4% of the applicable engines have been upgraded to date. The ARB has thus proposed regulations that would require all of the upgrades to be completed by the end of 2004 (ARB 2003a). The regulations could affect about 1/2 of the "Port fleet," as shown in Attachment 4. The ARB staff held a workshop on the proposed regulations on June 25th, and expects to forward them to the ARB Board for consideration and adoption this October (ARB 2003b).

Cost. Quotes were obtained from five local shops that carry the necessary recalibration software.[3] Together these shops can recalibrate Caterpillar, Cummins, Volvo, and possibly Detroit Diesel engines. The price quotes range from $95 to $400 per truck, with one exception. Cummins West in San Leandro currently offers free recalibrations on Cummins engines. The local Caterpillar dealer has offered to reflash Caterpillar engines for $95 per truck. Cummins and Caterpillar engines together account for more than half of the "Port fleet" (however, not all of these trucks are electronically-controlled and thus suitable for reflashing.

Port's Program. Regardless of the status of the ARB's regulations, reflashing could be made a part of the Port's truck program at relatively little or no cost to the Port. Further, if the ARB regulations are adopted, they may provide an additional incentive for truckers to participate in the Port's program.

4. Repowering Old Engines with New Engines

"Repowering" is used here to mean switching out an old engine for a new engine in the same truck, or rebuilding the engine to newer specifications. In general, due to the configurations of the engine compartments, mechanically-controlled engines are repowered with mechanically-controlled engines, and electronically-controlled engines are repowered with electronically-controlled engines. However,

[3] Quotes were obtained from Bay Area Kenworth Company, Cummins West, Golden Gate Truck Center, Oakland Truck Center, and Peterson Power Systems.

occasionally mechanically-controlled engines can be repowered with electronically-controlled engines. Repowering costs about $35,000 per truck and reduces both PM and NOx emissions.

5. Replacing Older Trucks with Newer Trucks (Fleet Modernization)

Due to current economics and the availability of used trucks, replacing a whole truck with a newer used truck can be a better investment for the truck owner than just repowering the engine. A quick scan of local truck dealerships and websites indicates that trucks of model years 1996, 1997, and 1998 are currently available for about $25,000 to $45,000, and that many such trucks are available locally.

As discussed at the TRP meeting last December, two truck replacement (a.k.a. "fleet modernization") programs are operating in California: the Sacramento Emergency Clean Air and Transportation (SECAT) Program in the Sacramento Air Basin, and the Gateway Cities' Clean Air Program in the Los Angeles area.[4] Both programs replace pre-1991 trucks with 1994 and newer trucks. The Gateway Cities Program now provides an average grant of $20,000 to $25,000, depending on the age of the truck and how many miles it has been driven in the past two years. Typically, the older the truck and the more miles it has been driven, the larger the grant. The grant amount is intended to be a partial reimbursement. Both programs operate through a network of participating truck dealers.

6. Refueling with ULSD

Background. According to state and federal regulations, diesel sold today for vehicle use may contain up to 500 ppm sulfur. However, ARB regulations also limit the amount of aromatic hydrocarbons that diesel sold in California may contain, which effectively also lowers the amount of sulfur.[5] Today, diesel sold outside of California typically contains 350 to 400 ppm sulfur, and diesel sold in California (CARB #2 diesel) averages 140 ppm sulfur (ARB 2003c). ULSD with a sulfur content of 5 to 15 ppm is also available in California; about 20% of the diesel production in the state meets the 15 ppm limit.

ULSD is currently produced in the Bay Area by BP (Arco), ConocoPhillips, and Shell. The local Chevron refinery is also preparing to produce ULSD this year. All of the local refineries are planning to produce, or increase production of, ULSD in the coming months.

Today virtually all of the ULSD produced in the Bay Area is being sold through bulk contracts, not retail service stations. However, Olympian Oil, in a partnership with BP, has started to gradually roll out ULSD and expects to offer ULSD by the end of the summer at four of its Bay Area stations. Olympian Oil does not have a station in Oakland; the closest station is on Davis Street in San Leandro.

Timing. According to federal regulations adopted in 2001, all diesel sold for vehicle use must be USLD by September 2006. The ARB is considering adopting a similar requirement this summer; the California

[4] The SECAT Program is jointly sponsored by the Sacramento Metropolitan Air Quality Management District and Sacramento Area Council of Governments. The Gateway Cities Clean Air Program is managed by the Gateway Cities Council of Governments of Southeast Los Angeles County, in partnership with the Port of Long Beach, ARB, and US EPA.

[5] The ARB's regulations were adopted in 1988 and took effect in 1993.

deadline would match the federal deadline.[6] Thus, in about three years, ULSD will be the standard diesel nationwide.[7]

Emissions Reductions. According to the ARB, reducing the sulfur content from the California average of 140 ppm to an average of 10 ppm will reduce PM emissions by 4% and NOx emissions by 7% (ARB 2003c). In combination with DOCs and DPFs, the PM reductions will be even greater.

Performance, Maintenance, and Older Engines. There appears to be no difference in performance between California diesel and ULSD. However, some have cautioned that ULSD provides less lubricity and thus regular truck maintenance is especially important when using ULSD. The Diesel Technology Forum (DTF) notes that when the sulfur content in diesel was reduced to 500 ppm in 1993, certain new fuel formulations were incompatible with the rubber and elastomer seals and hoses used in older engines. The DTF adds, "The causes of this problem are now well understood by the refining industry, fuel injection manufacturers and engine manufacturers...and these problems have been eliminated for new engines built since 1993. However, users should contact their original equipment manufacturers before using ULSD in older, pre-1994 engines to ensure that the fuel [with 15ppm sulfur] is compatible with certain engine components" (DTF 2003). This may or may not be a concern for older engines switching from CARB #2 diesel to ULSD.

Prices. In the Bay Area, ULSD has been running 4 to 10 cents per gallon more than CARB #2 diesel. The ARB estimates that by the time ULSD is mandatory in 2006, the price difference will be 2 to 4 cents per gallon (ARB 2003c).

Local Stations and Tanks. More than 1/3 of the truckers surveyed by CCS in April reported that they fuel primarily in Oakland; however, the survey did not distinguish between stations in West Oakland and other Oakland neighborhoods, nor distinguish between retail stations and private trucking company tanks. Eight of the trucking companies that were interviewed in July maintain their own diesel tanks on-site; six of these eight companies are in the local non-"Port-fleet."

There are three retail diesel service stations in West Oakland: J&O on Poplar Street near West Grand, Rinehart's Oakland Truck Stop on 5th Street near Adeline, and Trucker Fuel on 7th Street near Mandela. The owner of each station was interviewed in July regarding the station's volumes and suppliers. Two stations maintain only one tank for diesel; the third station dedicates one full tank and one compartment of a dual tank to diesel. Together the three stations sell approximately 430,000 gallons of diesel per month. None of the stations is currently carrying ULSD, however, one station reports that its primary supplier expects to be supplying it with only ULSD by the end of the year.

Potential Subsidy. The total cost for subsidies of 2, 5, and 8 cents per gallon of ULSD at the three West Oakland retail stations are shown in Table 2 below. The totals are shown for one month, one year, and the three years until the sale of ULSD becomes mandatory per federal regulations. At these levels of subsidy, the totals range from $8,600 to $34,400 per month.

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[6] The ARB will be holding a public hearing to consider the proposed ULSD requirements on July 24, 2003.

[7] The ARB staff is discussing the standards for aromatic hydrocarbons in ULSD sold in California, which may again create a fuel standard unique to California.

Table 2. Cost of Subsidizing ULSD at Three West Oakland Retail Diesel Stations

Subsidy (cents/gallon)	Total for One Month ($)	Total for One Year ($)	Total for Three Years ($)
2	8,600	103,200	309,600
5	21,500	258,000	774,000
8	34,400	412,800	1,238,400

All totals are based on 430,000 gallons of diesel per month.

7. Other Fuels and Emerging Technologies

Other fuels and technologies that are available or emerging include emulsified diesel fuel (a.k.a. aqueous diesel); biodiesel; compressed natural gas (CNG); liquefied natural gas (LNG), natural gas/diesel dual-fuel engines, hybrid diesel/electric engines, fuel cells, exhaust gas recirculation (EGR), and selective catalytic reduction (SCR). These fuels and technologies have been discussed by the TRP in the past and are not considered at this time for widespread use in this program. However, the TRP has indicated that it may be desirable to allocate a limited amount of funding for promising fuels and technologies as part of a research and development component to this program.

C. COMPARISON OF ALTERNATIVES

1. Cost-effectiveness

Equipment and Installation. In July, the Bay Area Air Quality Management District (BAAQMD) provided cost-effectiveness calculations for program alternatives applicable to the local truck population. The State's standard cost-effectiveness (C/E) methodology was used, with one significant exception. The State's methodology is designed to calculate the cost-effectiveness of NOx reductions. However, as the Port is also interested in PM reductions, the methodology was adjusted to provide the cost-effectiveness of PM reductions alone, and PM reductions combined with NOx reductions. To do this, the cost-effectiveness formula was adjusted to account for the weight differential between PM and NOx emissions; the ratio of NOx emissions to PM emissions is assumed to be 1:20.[8] Thus, the resulting cost-effectiveness figures for the Port's alternatives may not be comparable to the cost-effectiveness figures reported by other programs that calculate only the cost-effectiveness of the NOx reductions. Also, the C/E figures presented in this analysis are for the lifetime of the truck, whereas other programs may calculate C/E for the first-year of emissions reductions only.

The cost-effectiveness for each alternative is expressed as cost per ton of emission reduced, and thus the lower the cost-effectiveness figure, the greater is its actual cost-effectiveness. For example, it is more cost-effective to invest $10,000/ton than $20,000/ton.

Table 3 below compares the cost-effectiveness of six alternatives: retrofitting with DOCs, DPFs, and the Cleaire Alliance; repowering trucks; replacing trucks; and subsidizing the sale of ULSD at the three West Oakland stations for three years. Reflashing is not included in this comparison as it is primarily a NOx strategy; however, its cost-effectiveness for NOx reductions is very good. Similarly, the Cleaire Flash and Match and Cleaire Flash and Catch systems are not itemized below; however, the C/E of their PM reductions are comparable to the DOC and DPF alternatives respectively, plus they also provide NOx reductions through reflashing.

For each alternative except ULSD, the C/E figures are shown in a range that reflects the C/E of that alternative for different model year engines. The range for DPFs, for example, reflects the years for which DPFs have been State-approved.

[8] The same adjustment for PM emissions was made for the Port's air quality program for off-road equipment (the Container Terminal Equipment Repower and Retrofit Program).

Table 3. Cost-Effectiveness of Truck Program Alternatives for the Port of Oakland Air Quality Mitigation Program, July 2003

Alternative	Adjusted PM C/E ($/ton adjusted)	Adjusted PM + NOx C/E ($/ton adjusted)	Cost per Truck	Number Trucks per $1,000,000	Administrative Costs
Repair	N/C	N/C	N/C	N/C	Low
Retrofit:					
DOC	$4,000-10,000	--	$2,000	500 trucks	Low
DPF	$4,000-9,000	--	$7,000	140 trucks	Medium
Cleaire Longview	$15,000-22,000	$4,000-6,000	$18,000	55 trucks	Medium
Reflash	N/C	N/C	N/C	N/C	Low
Repower Truck and Install DPF	$15,000-102,000 ($15,000-26,000)	$8,000-24,000 ($8,000-12,000)	$35,000	23-28 trucks	High
Replace Truck and Install DPF	$37,000-83,000 ($42,000-83,000)	$23,000-51,000 ($26,000-51,000)	$35,000	23-28 trucks	High
Refuel with ULSD	$4,000-35,000 ($21,000)	N/C	N/C	6 cents/gallon subsidy	Low

Notes:

- *N/C* = not calculated.
- *All Costs* expressed in dollars are for equipment and installation only; they do not include the costs of planning, administering, and evaluating the program; nor the costs for the necessary incentives or any other costs associated with implementing that alternative.
- *Adjusted PM.* Refers to adjustment made in C/E methodology for emissions of PM.
- *Repower and Replace.* The C/E figures assume that a DPF is also installed on each truck when it is repowered or replaced. Repower assumes the new engine is year 2004. Replace assumes a pre-1991 engine is replaced with a 1996/7 engine.
- *Repower and Replace:* The C/E figures not in parentheses are for a fleet-wide spectrum of engine ages. The C/E figures in parentheses are for years 1987 through 1991.
- *Replace.* The C/E assumes a Port investment of $35,000 per truck, which would cover the majority, but not full, cost of the truck.
- *Single Exhaust System.* All of the alternatives assume a single exhaust system per truck.
- *ULSD:* The range of C/E is for 1 to 10 cents/gallon subsidy. $1,000,000 would provide a subsidy of 6 cents/gallon for 3 years. At 6 cents/gallon, the C/E is $21,000 per ton adjusted PM. The PM + NOx emissions reductions were not calculated for this analysis, however, ULSD is estimated to reduce NOx emissions by 7%.

Caveat: The C/E calculations in this table include a weighed factor for PM. Thus, these figures may not be comparable to figures that calculate C/E for NOx only. Note also that these calculations are per truck lifetime and thus are not comparable to calculations for a single year.
Source: (BAAQMD 2003).

For PM reductions alone, the alternatives fall into three tiers of cost-effectiveness:

(Tier 1) Retrofits with DOCs and DPFs are in the first tier as the most cost-effective alternatives, as is ULSD if subsidized at 1 to 3 cents per gallon. The cost-effectiveness of DOCs and DPFs ranges from $4,000 to $10,000 per ton of PM reduced, depending on model year of truck. Retrofits with DOCs and DPFs are equally cost-effective. While DOCs are less expensive than DPFs to purchase and install, they are also less effective at reducing emissions.

(Tier 2) The Cleaire Longview, repowering, and subsidizing ULSD at 4 to 7 cents per gallon are in the second tier as the next most cost-effective alternatives. Their cost-effectiveness ranges from about $15,000 to $26,000 per ton of PM reduced.

(Tier 3) Replacing trucks is the least cost-effective alternative at about $42,000 to $83,000 per ton reduced. While it has been assumed that the cost per truck is the same whether it is repowered or replaced, replacing a truck provides lower emissions reductions. This is attributable to the assumption in this analysis that a repowered truck will receive a year 2004 engine, but a replacement truck will contain a 1996/7 engine. The additional emissions reductions from the new engines in the repowered trucks provide the better cost-effectiveness. ULSD subsidies of 8 to 10 cents per gallon also fall into this third tier of cost-effectiveness as they require $28,000 to $35,000 per ton reduced.

For PM plus NOx reductions, the alternatives again fall into three tiers.

(Tier 1) The Cleaire Longview is the most cost-effective alternative at $4,000 to $6,000 per ton of PM + NOx reduced.

(Tier 2) Repowering trucks is half as cost-effective at $8,000 to $12,000 per ton PM + NOx reduced.

(Tier 3) Replacing trucks is the least cost-effective at $26,000 to $51,000 per ton PM + NOx reduced.

Number of Participating Trucks. The fifth column in the table above shows how many trucks could benefit per $1,000,000 investment in equipment and installation. Note that this investment does not include the costs of advertising or implementing the program. Retrofits with DOCs would involve by far the greatest number of trucks. For $1,000,000, DOCs could be installed on about 500 trucks, DPFs on 140 trucks, and the Cleaire Longview on 55 trucks. A ULSD subsidy could also potentially involve, or benefit, a large number of trucks. By comparison, $1,000,000 would repower and include DPFs, or replace and include DPFs, for about 23-28 trucks.

Administrative Costs. The last column of Table 3 above qualitatively describes the level of administrative costs associated with each alternative. These costs include the planning, legal, and administrative costs for designing, implementing, inspecting, and reporting for each program alternative. The levels of costs are based in information supplied by the BAAQMD, the SECAT program, Gateway Cities, and Port staff. In general, the alternatives rank from lowest to highest administrative costs as follows: ULSD, exhaust controls, and engine repowering and replacements. Engine reflashing is assumed to piggy-back on other programs, and thus be relatively low cost. The administrative costs are primarily influenced by the number of parties involved, number of necessary contracts, and degree of outreach necessary to achieve sufficient participation in the program.

2. Comparison of Other Factors

In addition to cost-effectiveness, factors that may affect the feasibility of particular program alternatives include the duty cycle of specific trucks, the applicability of the technology to the target fleet (fleet penetration), need for ongoing maintenance and monitoring, and the future use of each truck. Each factor is briefly discussed below.

Duty Cycle. Some technologies may not be suitable for a target truck population. For example, the ARB's verifications for DPFs assume that the trucks are operating on long-haul routes. Trucks in the "Port fleet" that primarily shuttle containers within the Port area may not provide the duty cycles and exhaust temperatures necessary to support DPFs. Thus, DPFs may be more suitable for trucks on direct delivery routes to and from destinations outside the Port area.

Fleet Penetration. Some of the technologies that are most cost-effective and the easiest to implement apply to only a small number of trucks. For example, Cummins West has offered to reflash certain Cummins trucks at no cost. While this is an attractive and desirable alternative, it applies only to certain electronically-controlled engines of model years 1993 to 1998, and thus should be combined with other alternatives for a complete program.

Need for Ongoing Monitoring and Maintenance. While some technologies lend themselves to "fit and forget," other technologies require ongoing monitoring and maintenance. DPFs, for example, must be continuously monitored for backpressure. Should backpressure increase, the DPF must then be recharged. Recharge stations are available at relatively low cost if shared by a number of trucks. The availability of, or installation of, recharge stations should be included as part of any program that involves DPF retrofits.

Future Use of Truck. While it is desirable that all trucks participating in the air quality program remain in the Port or West Oakland area, it becomes increasingly important that they stay local as the level of investment increases. For example, a truck repowered with a $35,000 Port investment is more valuable on a per truck basis than a truck retrofitted with a DOC for $2,000. Thus, more sophisticated tracking systems may be desirable for trucks receiving large investments. This may require a commitment by the Port to a long-term monitoring program and should be accounted for in the cost of the program.

D. FUNDING

1. Port Funds

The Port Resolution that established the Vision 2000 Air Quality Mitigation Program (AQMP) in 1999 allocated $1.48 million to the truck mitigation program. Some of these funds have been expended over the last four years on tracking and researching the emissions reductions options. Thus, an amount somewhat less than the $1.48 million remains for implementation.

Also during the last four years, other mitigation measures within the AQMP have been wholly implemented, partially implemented, and/or proven infeasible. The Port Resolution that established the AQMP states that "The Port also will make good faith efforts to increase the $1.48 million funding for local truck engine replacement if any of the measures currently recommended for implementation [in the AQMP] are shown to be infeasible or less expensive than assumed...." Port staff is currently reviewing all of the AQMP expenditures to date to determine how much funding may be available for reallocation to the truck program or other measures within the AQMP.

2. Non-Port Funds

Several grant and financing programs may be able to provide additional funds to supplement this program or to add program elements that would otherwise not be possible with Port funding alone. A few of these potential funding sources are described below.

ARB/BAAQMD's Carl Moyer Program. The Carl Moyer Memorial Air Quality Standards Program provides grants to reduce emissions from heavy-duty diesel engines. The program is sponsored by the ARB and locally administered through the BAAQMD. Funding is available to cover some or all of the costs associated with (1) purchasing new equipment with emissions below applicable sate and federal standards, (2) retrofitting older diesel engines with emission control devices, and (3) replacing older diesel engines with new, lower emission engines. Individuals, companies and public agencies that own and operate heavy-duty diesel equipment may apply.

The BAAQMD opened a new funding cycle on July 18, 2003, will accept applications through September 19, 2003, and anticipates awarding grants in November or December 2003. A total of $3.2 million are available in the BAAQMD during this cycle.

The primary focus of the Carl Moyer Program is on near-term reductions in NOx emissions. Projects must meet a cost-effectiveness threshold of $13,600 per ton of NOx reduced, as calculated according to the ARB's guidelines. (The C/E figures in Table 4 of this memo do not follow these guidelines and are not comparable.) Retrofits, for example, are to show at least a 15% reduction in NOx emissions. However, the program also includes a voluntary goal of a 25% or more reduction in PM emissions from funded projects. The BAAQMD staff expects that funding those projects that most cost-effectively reduce NOx emissions will exceed the PM goal.

BAAQMD Emission Reduction Credits. In California, mobile source emission reduction credits (ERCs) may be created when the reductions exceed those required by law, the local air district's rules and regulations, and the local air district's air quality attainment plans. These credits may then be banked, sold, and traded. Elements of the Port's truck program may be able to create credits.

MTC and CMAQ. The San Francisco Bay Area Metropolitan Transportation Commission (MTC) administers state and federal funds for local transportation projects, including funds laid out in the federal Intermodal Surface Transportation Efficiency Act (ISTEA). One of the ISTEA funds administered by the MTC is for Congestion Mitigation and Air Quality Improvement (CMAQ) projects. The Port has been discussing the availability of these funds for truck-related projects with MTC staff, and will continue to do so during the coming months.

Toyota Settlement. Toyota and the US EPA reached a settlement earlier this year whereby Toyota will spend $20 million to retrofit up to 3,000 diesel vehicles in public fleets. As the trucks in the "Port fleet" are privately owned, they would not be eligible for this funding. However, public fleets in the area may be eligible and interested. Further, under the settlement, Toyota may also subsidize the purchase of ULSD for vehicles retrofitted under the settlement. Thus, it may be possible to work with local public fleets, such as cities and school districts, to increase the local use of ULSD and perhaps reduce its cost.

US EPA Diesel Retrofit Program. In April, the US EPA announced a new funding assistance program to help fleets retrofit existing diesel engines with technologies that have been verified to reduce emissions under EPA's Voluntary Diesel Retrofit Program. Funds are only available for state and local agencies. The EPA estimated that funding available in fiscal year 2003 would total $500,000, and would be awarded to five to 10 projects ranging from $50,000 to $100,000 each. Applications for the 2003 funding cycle were due in May 2003; additional funding cycles may occur in the future.

US EPA's Environmental Justice Program. The US EPA's Environmental Justice Through Pollution Prevention (EJP2) Program provides funds to local governments and non-profit organizations to encourage pollution prevention in minority and low-income communities. Past grants have included projects for planning, training, and outreach. In 2001, the EJP2 Program awarded a $75,000 grant to the Northeast Metro Pollution Prevention Alliance in Commerce City, Colorado to create a Best Diesel Practices Program to educate fleet operators about maintenance and fuel alternatives.

US EPA's OTAQ. The US EPA's Office of Transportation and Air Quality (OTAQ) administers various grant programs to assist local air pollution control districts in developing and implementing programs to reduce emissions from mobile sources. Eligibility and funding varies from year to year. In 1998, for example, OTAQ awarded a grant to the San Joaquin Valley United Air Pollution Control District for a heavy-duty vehicle emission reduction outreach program. In 2002, OTAQ awarded a grant to Erie County, New York for a diesel school bus education initiative. Potentially, in future funding cycles, the Port could partner with the BAAQMD to apply for grant for outreach assistance.

Loans for Truckers. At the last TRP meeting, several panel members inquired about the feasibility of offering or guaranteeing low-interest loans to assist with local modernization. Two truck-related entities have indicated that they may offer financing programs. Discussions will continue with these two entities and potentially with other lenders.

E. SAMPLE FUNDING ALLOCATIONS

To better compare what is possible with the available funding, five sample funding allocations are presented below. They are:

- Sample Funding Allocation A: Retrofit with DOCs
- Sample Funding Allocation B: Retrofit with DPFs and Subsidize ULSD
- Sample Funding Allocation C: Replace Old Trucks with Newer Trucks and DPFs
- Sample Funding Allocation D: All Options Under $30,000/ton PM+NOx Reduced
- Sample Funding Allocation E: Full Menu.

For all five allocations:

- It is assumed that the initial funding available totals $1 million. This amount can be readily adjusted proportionally upwards or downwards.

- "Planning and outreach" refers to all of the non-equipment expenses of the program, such as planning, outreach, incentives for participants, program administration, legal requirements, reporting, and evaluation.

- A 10% contingency is reserved during the early phases of implementation to cover unforeseen expenses and to reserve funds to be used in the future as matching funds potentially required by outside funding sources.

- Research and development (R&D) may include, for example, subsidizing and testing a CNG truck, hybrid truck, fuel cell truck, or other technology or fuel.

Each sample funding allocation is described below and shown in Table 4 below.

Sample Allocation A -- Retrofit with DOCs

This allocation emphasizes PM reductions and low planning and outreach costs. Due to the "fit and forget" nature of DOCs, this retrofit option requires relatively simple logistics and essentially no monitoring. For $1,000,000, about 375 trucks could be retrofitted with DOCs that would be applicable to a wide variety of engine types and ages. By comparison, the shuttle portion of the "Port fleet" includes at last 210 trucks. This allocation would not provide NOx emission reductions.

Sample Funding Allocation B -- Retrofit with DPFs and Subsidize ULSD

This allocation also emphasizes PM reductions, but with the use of DPFs. As DPFs require ULSD to be most effective, it is assumed in this allocation that ULSD at the three West Oakland stations is subsidized at 2 cents per gallon for three years. This is a low level of subsidy, however a higher subsidy would leave relatively little for other program elements. After the ULSD subsidy, the remaining funding is then allocated to installing DPFs. About 55 trucks would receive DPFs, and an additional unknown number would benefit from fueling with ULSD. The retrofits would provide an 85% reduction in PM from the 55 trucks, and the ULSD would provide a 4% reduction in PM and 7% reduction in NOx for all of the trucks that fuel at the three local stations.

Sample Funding Allocation C – Replace Old Trucks with Newer Trucks and DPFs

This allocation emphasizes replacing the oldest trucks with newer trucks, and installing DPFs in them. Due to the greater investment per truck and complexity of the program, planning and outreach costs increase to mid-range. Even though replacing the trucks would also involve DPFs, it has not been assumed that ULSD will be locally subsidized. This is due to the relatively small number of trucks that could be replaced with the available funding. This allocation would provide on the order of ____ to ___ of PM and ____ to ____ of NOx reductions for each of the 18 trucks.

Sample Funding Allocation D – All Options Under $30,000/ton PM+NOx Reduced

All of the alternatives fit entirely or partially under the $30,000/ton PM + NOx reduced threshold. Due to the complexity of offering such a variety of options, planning and outreach costs would be high. In this allocation, it is assumed that ULSD is subsidized at two cents per gallon for three years. The remaining funds are then distributed between repowering and replacement (each assume a $35,000 investment/truck) and retrofits. For comparative purposes, this allocation assumes that the retrofits are done with the Cleaire Longview, which provides both PM and NOx reductions. Under this allocation, about four trucks could be repowered or replaced and an additional eight trucks could be retrofitted with the Cleaire Longview.

Sample Funding Allocation E – Full Menu

The Full Menu allocation incorporates all of the main program alternatives plus a nominal amount for R&D. Planning and research costs are also high for this broad array of program elements. As with the other allocations for ULSD, it is assumed that ULSD is subsidized at two cents per gallon. However, for this allocation, it is assumed that ULSD is subsidized for only two years for comparative purposes. This allocation also specifies that $10,000 be allocated for reflashing. The remaining funding is then allocated to retrofits with DOCs, retrofits with DPFs, and repowering or replacing a set of trucks and retrofitting them with DPFs. This allocation would involve a total of 50 trucks plus the trucks that fuel at the three West Oakland stations.

Table 4. Sample Funding Allocations for Port of Oakland Truck Mitigation Program, July 2003

Sample Funding Allocation A -- Retrofit with DOCs

Activity	% Allocation	$	No. Trucks Affected	% PM Reduction per Truck	% NOx Reduction per Truck	Comments
Retrofit w/ DOCs	75	750,000	375	25	--	1991-2003
Planning/Outreach	15	150,000	--	--	--	
Contingency	10	100,000	--	--	--	
Total	100	1,000,000	375	25	--	

Sample Funding Allocation B -- Retrofit with DPFs and Subsidize ULSD

Activity	% Allocation	$	No. Trucks Affected	% PM Reduction per Truck	% NOx Reduction per Truck	Comments
Retrofit w/ DPFs	39	390,000	55	85	--	1994-2003
ULSD @ $.02 for 3 years	31	310,000	Many	4% for trucks w/o DPFs	7% for trucks w/o DPFs	All years
Planning/Outreach	20	200,000	--	--	--	
Contingency	10	100,000	--	--	--	
Total	100	1,000,000	55 +	4 or 85	7	

Sample Funding Allocation C -- Replace Old Trucks with Newer Trucks and DPFs

Activity	% Allocation	$	No. Trucks Affected	% PM Reduction per Truck	% NOx Reduction per Truck	Comments
Replace Trucks, Retrofit w/ DPFs	65	650,000	18	85	??	Replace pre-1991 with post-1994
Planning/Outreach	25	250,000	--	--	--	
Contingency	10	100,000	--	--	--	
Total	100	1,000,000	18	85	??	

Page 20 of 23

Sample Funding Allocation D -- All Options Under $30,000/ton PM + NOx Reduced

Activity	% Allocation	$	No. Trucks Affected	% PM Reduction per Truck	% NOx Reduction per Truck	Comments
Retrofit w/ Longview	15	150,000	8	85	25-35	1994-1997
Replace Trucks, Retrofit w/ DPFs	15	150,000	4	??	??	Assume pre-1991 with post-1993
ULSD @ $.02 for 3 years	31	310,000	Many	4% for trucks w/o DPFs	7% for trucks w/o DPFs	All years
Planning/Outreach	30	300,000	--	--	--	
Contingency	10	100,000	--	--	--	
Total	101	1,000,000	12 +	4 or 85	7 to 35	

Sample Funding Allocation E -- Full Menu

Activity	% Allocation	$	No. Trucks Affected	% PM Reduction per Truck	% NOx Reduction per Truck	Comments
Retrofit w/ DOCs	7	70,000	35	25	--	1991-2003
Retrofit w/ DPFs	7	70,000	10	25	--	1994-2002
Reflashing	1	10,000	Many	--	??	1993-1998
Repower or Replace Trucks, & Retrofit w/ DPFs	20	200,000	5	??	??	Assume pre-1991 with post-1993
ULSD @ $.02 for 2 years	21	210,000	Many	4% for trucks w/o DPFs	7% for trucks w/o DPFs	All years
R&D	4	40,000	Unknown	Unknown	Unknown	
Planning/Outreach	30	300,000	--	--	--	
Contingency	10	100,000	--	--	--	
Total	100	1,000,000	50 +	25 to ??	7 to ??	

Page 21 of 23

F. RECOMMENDATIONS

Based on the information presented in the previous sections, the following action items are recommended for the Port's truck mitigation program.

1) Reflash as many trucks as possible by the end of 2004.

2) Repower or replace 10 of the oldest trucks in the shuttle portion of the "Port fleet" and install DOCs or DPFs on them.

3) With the remaining portion of the initial investment of $1,000,000, install DOCs on as many trucks as possible. Offer DOCs first to trucking companies and owner/operators in the "Port-fleet" that provide shuttle services, then to trucking companies and owner/operators in the "Port-fleet" that do not provide shuttle services.

4) As part of the outreach for the program elements above, provide education to truckers about the air quality benefits of regular truck maintenance and repair.

5) Determine how much funding is available in the AQMP for transfer to the truck program.

6) Continue to seek additional non-Port funding. If additional funding becomes available, direct it to one of the program elements above or to another cost-effective alternative described in this memo, such as a low-level subsidy of ULSD.

Together these action items provide both PM and NOx reductions, provide options for many ages and types of trucks, invest the mitigation funds cost-effectively, target the trucks that acquire most of their mileage in the Port area, and provide a springboard for future program expansion should additional funding become available.

The approximate funding allocation for the actions items above, assuming an initial investment of $1,000,000, is shown below.

Approximate Funding Allocation -- Reflash, Repower or Replace, and Retrofit

Activity	% Allocation	$	No. Trucks Affected	% PM Reduction per Truck	% NOx Reduction per Truck	Comments
Reflash	2	20,000	Up to 48% of fleet	--	??	1993-1998
Repower or Replace Trucks, Retrofit w/ DOCs or DPFs	35	350,000	10	??	??	Pre-1991 with post-1993
Retrofit w/ DOCs	28	280,000	140	25	--	1994-1997
Planning/Outreach	25	250,000	--	--	--	
Contingency	10	100,000	--	--	--	
Total	100	1,000,000	150	?? to 25	??	

G. REFERENCES

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(DTF 2003). Diesel Technology Forum. "Cleaner Air, Better Performance: Strategies for Upgrading and Modernizing Diesel Engines." May 2003.

ATTACHMENTS

1. Results of Trucker Survey, April 2003
2. Truck Engine Profile, April 2003
3. Available Technologies for Trucks, July 24, 2003
4. Reflashing: Affected "Port Fleet" and ARB's Proposed Deadlines

ATTACHMENT 1
PORT OF OAKLAND
VISION 2000 AIR QUALITY MITIGATION PROGRAM
RESULTS OF TRUCKER SURVEY, APRIL 2003

In April 2003, CCS Planning and Engineering, Inc. conducted a survey of trucks entering marine terminals at the Port of Oakland. The surveys were completed by handing survey forms to truckers entering six of the Port's seven active terminals during several times of the day. The truckers were asked to complete the surveys while in the terminal, and to return the surveys as they exited the terminals. A total of 134 completed surveys were returned, although not all questions were answered on each survey. While the number of surveys returned is a small percentage of the total volume of trucks that entered the terminals during the survey period, they provide a useful cross-section of the trucks serving the Port.

Truck Ages and Types

1980 to 1989	19%
1990 to 1999	71%
2000 to 2004	6%
Don't Know	4%
	96%

Cummins	46%
Caterpillar	29%
Detroit Diesel	21%
Subtotal	96%
Other	4%
Total	100%

Dual exhaust stacks	19%
Vertical exhaust stacks	95%

Ownership

Drivers own	68%
Drivers lease	6%
Trucking companies own	19%
	93%

Daily Trips To Port

3 or more times to Port today	38%
2 times/day	28%
1 time/day	25%
	91%

Truck Trips To or From Port in Last Month

All	48%
More than 1/2	29%
Less than 1/2	9%
	86%

Location of Fuel Purchases

Oakland	38%
Other City in California	50%
Outside California	4%
	92%

ATTACHMENT 2
PORT OF OAKLAND
VISION 2000 AIR QUALITY MITIGATION PROGRAM
TRUCK ENGINE PROFILE, APRIL 2003

Year	Cummins	Caterpllr	Detroit	Other	TOTAL #	TOTAL %
1980	0	0	0	0		
1981	2	0	0	0		
1982	1	1	0	0		
1983	0	0	0	0		
1984	0	0	0	0		
1985	8	1	0	0		
1986	0	0	0	0		
1987	3	0	0	0		
1988	4	0	0	1		
1989	3	1	0	0		
Subtotal	21	3	0	1	**25**	**19%**
1990	3	3	0	0		
1991	3	1	1	0		
1992	3	0	1	0		
1993	3	3	6	2		
1994	3	4	4	0		
1995	8	10	3	1		
1996	4	3	5	1		
1997	3	1	2	0		
1998	3	0	5	0		
1999	3	3	0	0		
Subtotal	36	28	27	4	**95**	**71%**
2000	0	0	0	0		
2001	0	3	0	2		
2002	0	2	0	0		
2003	0	1	0	0		
2004	0	1	0	0		
Subtotal	0	7	0	1	**8**	**6%**
Don't Know	4	1	1	0	**6**	**4%**
TOTAL #	**61**	**39**	**28**	**6**	**134**	**100%**
TOTAL %	**46%**	**29%**	**21%**	**4%**	**100%**	**100%**

Notes:
1) Cummins, Caterpillar, and Detroit Diesel together accounted for 96% of the truck engines.
2) Cummins accounted for almost 50% of engines. Of all trucks, 16% were Cummins 1994-1998.
3) Almost three-quarters of the trucks are of model years in the 1990s.
4) A cluster of engines (45% of total) are of years 1993, 1994, 1995, and 1996.
5) Compiled from survey by CCS Planning and Engineering, Inc. at the Port of Oakland in April 2003.

ATTACHMENT 3
PORT OF OAKLAND
VISION 2000 AIR QUALITY MITIGATION PROGRAM
AVAILABLE TECHNOLOGIES FOR TRUCKS
July 24, 2003

TABLE 1: ALTERNATIVES SUITABLE FOR CARB #2 DIESEL OR ULTRA-LOW-SULFUR DIESEL

Alternative	Emission Reduction Method	PM Red. (%)	NOx Red. (%)	Engine Applicability	Installation Time	Comments
Retrofits:						
Donaldson: DCM and Spiracle	Install DOC and close crankcase system	25	--	Many types, including Caterpillar, Cummins, Detroit Diesel, etc.: 1991-2002	1-3 hours	No fuel penalty. Filter cartridge to be replaced at every lube oil change or 500 hours.
ECS: AZ Purifier and Purimuffler	Install DOC	20 (EPA)	--	Many types w/o existing aftertreatment device: 2003 and older	0.5-3 hours	Granted EO by ARB; no ARB verification to date. Estimated PM reduction is from US EPA verification.
Engelhard: CCX/CMX	Install DOC	20 (EPA)	--	Many types w/o existing aftertreatment device: 2002 and older	2-3 hours	Granted EO by ARB; no ARB verification to date. Estimated PM reduction is from US EPA verification.
Cleaire: Flash & Match	Install DOC, reflash engine software, and replace fuel injectors	25	25	Cummins M11 e-controlled: 1993 through 1998	6-8 hours	No fuel penalty. Independent of Consent Decrees.
Reflash Engine	Reprogram engine software with low-NOx rebuild calibration	--	25	Electronically-controlled Caterpillar, Cummins, Detroit Diesel, Mack, Renault, International, Volvo: Generally 1993-1998	0.5-1 hour	--
Repower Truck (New engine)	Replace old engine with new engine	*MM??*	*MM??*	Potentially all types: generally pre-1991	1-2 days	Fuel improvement.
Replace Truck (Newer truck)	Replace old truck with newer truck	*MM??*	*MM??*	Potentially all types: generally pre-1991	variable	Fuel improvement.
Refuel with ULSD	Switch to diesel with maximum 15ppm sulfur	4	7	All	none	--

TABLE 2: ALTERNATIAVES THAT REQUIRE ULTRA-LOW-SULFUR DIESEL

Alternative	Emission Reduction Method	PM Red. (%)	NOx Red. (%)	Engine Applicability	Installation Time	Comments
Retrofits:						
Engelhard: DPX	Install DPF	85+	--	Many types: 1994-2002	??	
Johnson Matthey: CRT	Install DPF	85+	--	Many types: 1994-2002	??	
Cleaire: Flash & Catch	Install DPF, reflash engine software, replace fuel injectors	85+	25	Specific Cummins M11: 1994 through 1998	??	
Cleaire: Longview	Install DPF and install lean-NOx catalyst	85+	25-35	Cummins M11 and Navistar DT466: 1994 thru 1997	??	

Key:
ARB = Air Resources Board, California Environmental Protection Agency
Consent Decree = Consent Decree between certain engine manufacturers, the United States, and other parties
DOC = diesel oxidation catalyst
DPF = diesel particulate filter
EO = Executive Order granted by the ARB providing exemption from State anti-tampering laws
NOx = nitrogen oxides
PM = particulate matter
ppm = parts per million
ULSD = ultra-low-sulfur diesel (15 ppm sulfur)

Port of Oakland, page 2 of 2

ATTACHMENT 4

PORT OF OAKLAND
VISION 2000 AIR QUALITY MITIGATION PROGRAM

LOW-NOx ENGINE RECALIBRATIONS
("REFLASHING")

Table 1: Affected "Port Fleet"

Manufacturer*	Model Years*	% of "Port Fleet"**
Caterpillar	1993 - 1998	16
Cummins	1993 - 1998	18
Detroit Diesel	1994 - 1998	14
Mack	1994 - 1998	**
Renault	1993 - 1998	**
International***	1998	**
Volvo	1994 - 1998	**
		48% total

*Source of manufacturers and model years: US Environmental Protection Agency's website.
**Source of percentages: Data collected by CCS Planning and Engineering, Inc. as part of the Trucker Survey at the Port of Oakland, April 2003. Percentages for Mack, Renault, International, and Volvo together comprise less than 4 percent of "Port fleet."
***Formerly Navistar.

Table 2: ARB's Proposed Deadlines

Model Years	Must be Installed By
1993 - 4	April 30, 2004
1995 - 6	August 31, 2004
1997 - 8	December 31, 2004

*Source: California Environmental Protection Agency, Air Resources Board (ARB). "Notice - Heavy-Duty Diesel Engine Software Upgrade Workshop." May 30, 2003.

SECAT UPDATE
Port of Oakland Notes from Meeting with David Young, SACOG
December 9, 2003

BACKGROUND

The SECAT Program[1] was created in 2000 to reduce NOx emissions from heavy-duty trucks and buses in the Sacramento Air Basin. The SACOG Board of Directors approved general guidelines in September 2000, and created an Air Quality Policy Group and Technical Advisory Committee (TAC) at the same time. The Policy Group and TAC then developed specific program guidelines. Funding was originally to total $70M; this total has been affected by the State budget crisis. Barring additional funds, SECAT is nearing completion. SACOG manages the funding for the program; the SMAQMD manages most of the day-to-day operations.[2]

GEOGRAPHIC SCOPE

SECAT applies to the 6-county Sacramento Federal Ozone Nonattainment Area and includes 5 air quality management districts.[3] One of the air districts (Yolo-Solano AQMD) shares a boundary with the Bay Area AQMD. This geographic scope greatly influences the institutional framework of the program.

PROGRAM RESULTS

- Program has entered into more than 500 contracts with truckers.
- Program has approved changes to 1257 vehicles.
- Most of the contracts are for a single vehicle.
- The program typically pays $25,000 to $30,000/truck. This equates to 75 to 80% of the total cost for repowers and modernization).

FUNDING

State Funding. Assemblymember Darrell Steinberg introduced AB2511 in early 2000 to establish SECAT; AB2511 was adopted later that year.[4] A total of $70M was concurrently allocated by then Governor Davis from the Traffic Congestion Relief Act of 2000 (TCRA), which directs the California Transportation Commission to establish allocation guidelines.[5] However, former Governor Davis froze TCRA funds in fall 2003, which effectively freezes the last $34.5M installment to SECAT. (SECAT has expended about $31.5M.)

Local Funding. In May 2000, SACOG committed $20M of CMAQ funds to SECAT.

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[1] SECAT is an acronym for the Sacramento Emergency Clean Air and Transportation Program.
[2] The Sacramento Area Council of Governments (SACOG) is the designated MPO for its 6 member counties and is thus the agency responsible for producing transportation plans and programs that conform to the adopted SIP. MTC is the corresponding MPO in the Bay Area.
[3] The Sacramento FNA is classified as "severe" for ozone and as such must achieve national air quality standards by the end of 2005 or face federal sanctions.
[4] See Chapter 9.5, Section 44399.52 of Part 5, Division 26 of the California Health and Safety Code..
[5] Guidelines issued by CTC and Caltrans allow Caltrans to allocate funds to lead agencies, such as SACOG, when the allocation requested is consistent with a CTC-approved application

Expenditures. All but $1.5M of the $70M total is dedicated to trucker incentives. The $1.5M were awarded by SACOG to Environ for setting up the program, designing and installing the Emissions Calculator, program marketing, assistance with administration, and other as-needed services. All but about $300,000 of the $1.5M has been expended. All of SACOG's staff time and other administrative costs are paid by SACOG, not SECAT. Similarly, all of SMAQMD's staff time and other administrative costs are paid by SMAQMD, not SECAT. SMAQMD also maintains a contract with TIAX for technical services.

AGENCY ROLES AND MEMBERSHIP

SACOG. SACOG is the lead agency for SECAT. SACOG's Executive Director serves as the overall program director and as a member of the Executive Committee and Air Quality Policy Group (see below). SACOG has final approval of the invoices and provides some of the emissions tracking.

Air Quality Districts. Each district reviews the projects proposed in its district. The Air Pollution Control Officer (APCO) of each district is a member of the Air Quality Policy Group, and the APCOs of the Sacramento and Yolo-Solano districts are members of the Executive Committee.

SMAQMD. This air district is the lead agency for the day-to-day operations of the program. The SMAQMD also co-signs the agreements with the truck owners, truck and engine dealerships, and salvage yards.

Executive Committee. This is a small committee of senior-level staff that takes responsibility for the success of the program. The Committee provides program direction, and identifies issues for the Policy Group to address. The Committee meets as needed, and its members are:

SACOG's Executive Director
SMAQMD's APCO
Yolo/Solano AQMD's APCO

Air Quality Policy Group. This group was established by the SACOG Board to develop the program's eligibility rules, evaluation criteria, and reporting requirements for funded projects, and then to provide implementation oversight. The group initially met monthly, but now meets only as needed. The members include the funding agencies, and the agencies involved in air quality and in approving the SIP and transportation funding. The members are:

SACOG's Executive Director (Chairman)
The five air districts' APCOs
Federal Highway Administration representative
US EPA representative
Caltrans representative
CARB representative

Technical Advisory Committee (TAC). The TAC serves as a subcommittee of the Policy Group and makes recommendations to the Policy Group for review and approval. The TAC was established to propose guidelines and criteria for funding projects, develop the application forms, review projects submitted, and, during program implementation, provide proposals for improvements to the guidelines and criteria. Members include staff of:

The five AQMDs
Federal Highway Administration

US EPA
Caltrans
CARB -- Mobile Source Division
CARB -- Planning Division
SACOG
Specified Contractors to SACOG and SMAQMD
Clean Air Partnership

Fleet Manager Advisory Committee. This committee is also advisory to the Policy Group and consists of managers and operators of large fleets. This committee has been especially involved in outreach and marketing.

MANAGEMENT TEAM

The program management team is divided into three functions:
Funding Administration (provided by SACOG),
Outreach/Marketing (funded by SMAQMD), and
Emissions Accounting and Tracking (provided by SMAQMD).

STAFFING

- SACOG -- one person (not at FTE) for contract management, approving invoices
- SMAQMD -- 4 to 7 people (all FTE) for application review, in-the-field support, inspections

PROJECT SUBMITTAL AND APPROVAL PROCESS

Truck owners may submit applications directly to SECAT or through approved engine dealerships. SECAT has established master agreements with about 20 dealerships and trained them to assist with the paperwork. Applications are then submitted to SMAQMD staff, who then review the applications and inspect the trucks.

There is a tiered approach to project approval that allows fast-track processing for the majority of applications.

1. Fast-track Approval of Applications. An application may be approved immediately at a staff level if it meets specified criteria that are primarily based on cost-effectiveness. SMAQMD staff review the applications and then forward requests for approval via email to the three members of the Executive Committee. If the SMAQMD staff do not hear back from the Executive Committee members within a specified period of time, then SMAQMD staff may assume the applications are approved. This provides for rapid approvals in one or two days. More than 90% of the applications have met the fast-track approval criteria.

2. Additional Review of Applications. When an application exceeds the fast-track thresholds or is for a different technology, then it may be forwarded to the TAC, then the Policy Group, then the SACOG Board for approval. This has been done in a couple cases, such as when a transit district could not meet the cost-effectiveness thresholds because its vehicles do not travel many miles per year.

Once an application is approved, SACOG and SMAQMD enter into a contract with the applicant. The applicant completes the work and submits an invoice to SMAQMD. SMAQMD in turn verifies that the work has been completed satisfactorily (often with an inspection) and forwards the invoice to SACOG

with a recommendation for approval. Once SACOG has approved the invoice, it forwards the invoice to a designated individual for check-writing (this helps expedite this part of the process).

PROJECT CRITERIA

The cost-effectiveness thresholds for eligible projects are:

- The application is for less than $25,000 per ton of NOx reduced in the Nonattainment Area on a 1-year basis, and $6,00 per ton NOx reduced over the project's lifetime.

OR

- The application is for less than $50,000 per ton NOx reduced in the Nonattainment Area on a 1-year basis, and $12,000 less than per ton NOx reduced over the project's lifetime, and does not exceed the incremental cost of the project.

These thresholds were generally derived by (a) taking the number of tons per day of NOx to be reduced, then (b) determining the number of vehicles needed to do so, and then (c) dividing the number of trucks into the funding available.

TRUCK DEALERSHIPS

Truck dealerships play a critical role in the program. They are encouraged to handle the SECAT paperwork for their customers. SECAT checks may be written directly to the dealerships, which often helps the truckers receive their new trucks or engines earlier. SACOG and SMAQMD maintain master agreements with about 20 dealerships, and have trained them about the SECAT requirements.

SALVAGE YARDS

Under the Fleet Modernization Program, the old trucks are to be destroyed to ensure that they never return to the Sacramento Air Basin. SACOG and SMAQMD maintain contracts with approved salvage yards.

OUTREACH AND MARKETING

- Is conducted by JHME, a PR firm based in Sacramento. (As subcontractor under Environ's contract.)
- $400,000 were allocated for marketing and outreach.
- Continuous marketing has been necessary to maintain interest in SECAT.
- Materials developed include brochures, a video, radio ads, and user-friendly website.
- Giveaways have included SECAT mints, peanuts, and water bottles.
- Workshops have been held for truckers (early morning breakfasts).
- Truck decals were designed with the SECAT logo, but CHP objected to the logo's design.
- SACOG advises: be sure to include a deadline in the marketing message (e.g., "First phase of funds are available only until ____"). This motivates applicants and provides an opportunity to review the program periodically and adjust as necessary.

OTHER POINTS AND ADVICE

1. Be sure invoices are paid immediately. According to the truckers, a period of 30 days is too long, but 10 business days is reasonable.
2. Identify a single individual to write the checks.
3. SMAQMD inspects every truck for repower and modernization to insure that the old truck is roadworthy.

4. The contract with the trucker is for delivery of local miles. (The more miles driven, the more the investment is cost-effective.) Truckers don't receive more funding for modernization than repowering because the funding amount is based on miles delivered.
5. SECAT just started using GPS. Units run about $600 each.
6. The time limit on the contracts with truckers is 5 years. This is based on when emission reductions are most needed in the region.
7. Truckers may not change their vocation, i.e., use their trucks for another use. This is based on truckers' concerns about creating competition.
8. As soon as the fleet modernization program started, requests for repowers dropped off. Now applications for repowers are generally only for very specialized trucks.

MATERIALS PROVIDED TO PORT BY SECAT

SACOG Board of Directors' Action Item for Program Approval (9-14-00)
Fleet Operators' Frequently Asked Questions
Brochure for Truck Owners
Video
Application Form, including:
- Vehicle Information Form
- Engine Repower Quotation Form

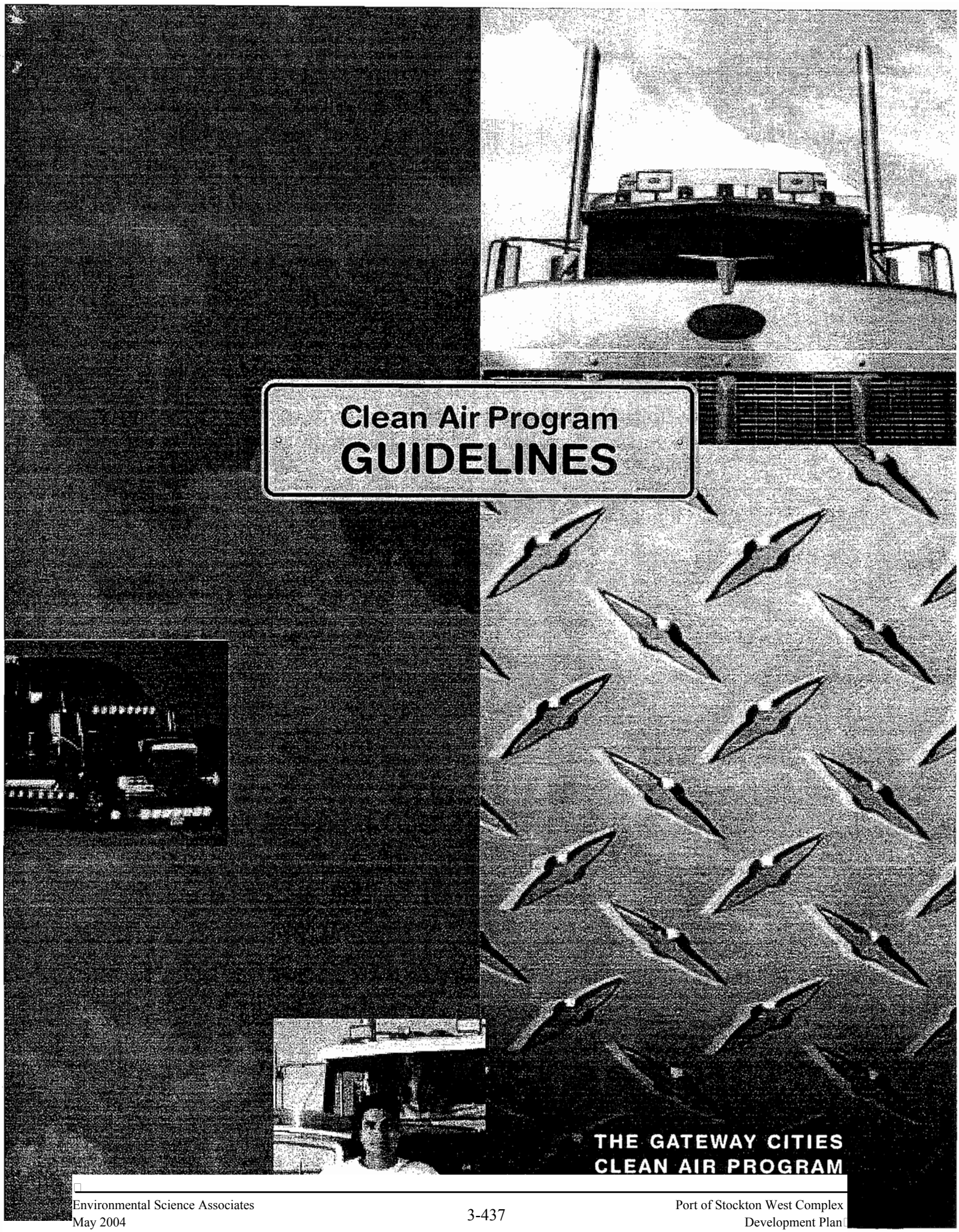
Sample Contract with Trucker, including:
- Vehicle Information Form
- Performance Requirements (e.g., mileage minimums)
- Insurance Requirements

Sample Master Agreement with Engine Distributorship for Fleet Modernization Program, including :
- Certificate of Engine Calibration -- Replacement Vehicle
- Certificate of BIT Inspection -- Old Vehicles
- Certificate of Engine Warranty -- Replacement Vehicle
- Certificate of PM Control Device Installation -- Replacement Vehicle
- Insurance Requirements

Agreement between SACOG and Environ (3/00) and Amendment #3 (12/00)
SECAT "By the Numbers" (mostly project timeline, which has been changed)
Sample Staff Emails for Fast-Track Project Approvals
SACOG's Log of Master Contracts with Truck Owners
See also SECAT website

ACRONYMS
APCO -- Air Pollution Control Officer
AQMD -- Air Quality Management District
BIT -- Biennial Inspection of Terminals (a CHP inspection)
CARB -- California Air Resources Board
CHP -- California Highway Patrol
CMAQ -- Congestion Mitigation and Air Quality fund
CTC -- California Transportation Commission
GPS -- global positioning system

FNA -- Federal Nonattainment Area (nonattainment with national air quality standards)
MPO -- Metropolitan Planning Organization
NOx -- nitrogen oxides
PM -- particulate matter
SACOG -- Sacramento Area Council of Governments
SECAT -- Sacramento Emergency Clean Air and Transportation (SECAT) Program
SIP -- State Implementation Plan (federally required plan)
SMAQMD -- Sacramento Metropolitan Air Quality Management District
US EPA -- US Environmental Protection Agency


Clean Air Program
GUIDELINES
THE GATEWAY CITIES
CLEAN AIR PROGRAM

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EXECUTIVE SUMMARY

The Gateway Cities Council of Governments (GCCOG) has teamed with the California Air Resources Board (ARB) and the Port of Long Beach (Port) to create the Gateway Cities Clean Air Pilot Program. The goal of the pilot program is to reduce emissions of oxides of nitrogen (NOx) and particulate matter (PM) from diesel-fueled vehicles and equipment that operate in the Port of Long Beach and the 27 cities that are members of the Gateway Cities Council of Governments. NOx is a precursor to ozone, a harmful air pollutant that increases the risks of breathing problems such as asthma and bronchitis. Diesel PM is the primary source of toxic air contaminants in the region's air. Accelerating the replacement of older diesel trucks and equipment will help the region meet Federal and State clean air goals and will help the more than two million people in the region breathe healthful air.

The heavy-duty vehicles and equipment that serve the Ports of Long Beach and Los Angeles are significant sources of diesel pollution in the South Coast Air Basin. The vehicles that provide cargo services for the Ports are among the oldest in the on-road vehicle fleet and, consequently, are among the highest emitting vehicles that operate on our region's highways. The off-road equipment used dockside also contributes to air pollution in the region. Since the Port is a focus of cargo activity, and cargo operations need heavy-duty engines, the Port and the GCCOG have also developed incentives to encourage the operators of these engines to lower their emissions.

The Gateway Cities Clean Air Pilot Program has funds to reduce diesel emissions. The three elements of the Pilot Program include replacement of off-road equipment, installation of PM traps on fleet vehicles, and diesel truck fleet modernization. ***The fleet modernization component of the program offsets the cost of replacing very old diesel vehicles with newer, lower-emission diesel vehicles.*** The ***Truck Fleet Modernization*** program is described in the attached guidelines and all the requirements for participation are included. In addition to the guidelines, attached is an application and all necessary forms and certifications.

The GCCOG is working with several truck dealers to help implement this program. These dealers have agreed to help truck operators fill out the applications and forms needed to participate in this incentive program. It is not necessary to go through a truck dealer, but it will be helpful because they are aware of all requirements and will help with the application process. Their contact information is attached in Appendix VIII.

II. TABLE OF CONTENTS

Page

I. EXECUTIVE SUMMARY 3

II. TABLE OF CONTENTS 4

III. ACKNOWLEDGEMENTS 6

IV. BACKGROUND 6

V. INTRODUCTION 7

VI. FLEET MODERNIZATION PROGRAM OUTLINE 7
- A. Minimum Qualifications to Participate 7
- B. Paperwork Required to Process Application 8
- C. Paperwork Required to Complete Reimbursement Process 8
- D. Salvage Yard Responsibilities 9
- E. Contractual Obligations of Applicant 9

VII. FLEET MODERNIZATION PROGRAM DETAILS 9
- A. Vehicle Dealership Role 9
- B. Replaced (Old) Vehicle Requirements 11
  - 1. Model Year of Replaced Vehicle Must Be 1983 and older 11
  - 2. Vehicle Must Pass a Safety (BIT) Inspection 11
- C. Replacement (Newer) Vehicle Requirements 11
  - 1. Engine Horsepower Requirements 11
  - 2. Emission Control Modifications 12
  - 3. Replacement Vehicle Weight Requirements 12
  - 4. Other Requirements 12
  - 5. Other Requirement Costs 13
  - 6. Engine Calibration Requirements for 1998 Model Year Engines 13
  - 7. New Engine Repower 13
- D. Vehicle Inspection 13
- E. Engine Dealership Role and Responsibilities 14
  - 1. Provide Certificate of Engine Calibration 14
  - 2. Provide Certificate of PM Oxidation Catalyst 14
  - 3. Conduct a Safety Inspection of Replaced Vehicle 14
  - 4. Provide Engine Warranty Certification 14
  - 5. Provide Certification of Mileage Counting Device 14
  - 6. Provide Work Invoices For All Work Completed 14
- F. Application Approval Process 14
- G. Reimbursement Requirements 15
- H. Performance Requirements 15
- I. Funding Availability and Cost-Effectiveness Guidelines 16
- J. Vehicle Salvage Yard 17
- K. Applicants' Roles and Responsibilities 17

TABLE OF CONTENTS-continued

VIII. List of Appendices

Appendix I	Fleet Modernization Application Form	19
Appendix II	Vehicle Information Form	23
Appendix III	Applicant Statement and Agreement	26
Appendix IV	Map of the South Coast Air Basin	27
Appendix V	IRS Form W-9: Request for Taxpayer Identification Number and Certification	28
Appendix VI	Replaced Vehicle Inspection Form	29
Appendix VII	List of Participating Dealers	31
Appendix VIII	Certificate of Vendor Acceptance of Replaced Vehicle for Salvage	32
Appendix IX	Certificate of Particulate Matter Control Device Installation	33
Appendix X	Certificate of Digital Odometer Installation	34
Appendix XI	Certificate of Engine Recalibration	35
Appendix XII	Certificate of Vehicle Destruction	37
Appendix XIII	Sample Invoice from Participant to GCCOG	38
Appendix XIV	Definition of Terms	39

III. Acknowledgements

The development of the Gateway Cities Clean Air Pilot Program would not have been possible without the gracious assistance and previous work of the Sacramento Area Council of Governments (SACOG) and the Sacramento Metropolitan Air Quality Management District (SMAQMD). Their pioneering effort, embodied in the Sacramento Emergency Clean Air and Transportation (SECAT) Program is the foundation upon which our program is built. In most instances, and with the permission and encouragement of the staff of SACOG and SMAQMD, we have used the very same guidelines. This is due to the quality of their efforts and the fact that the ARB has already approved their program as an acceptable pilot program for emission reductions.

Specifically, we would like to thank Tim Taylor, Tom Swenson, Sam Gregor, and Christian Damkier of the SMAQMD and Michael Jackson of TIAX LLC for their assistance in the development of these guidelines. These individuals have provided priceless guidance and advice in the development of the Gateway Cities pilot program, without which this effort would not have been possible.

In addition, we are grateful for the assistance and support of the Port of Long Beach and the ARB for providing funds for this Program.

IV. Background

The GCCOG is a joint powers authority comprised of 27 cities, representing over two million people in the southeast part of Los Angeles County. Most of the GCCOG is adjacent to the heavily traveled Interstate 710 and 605 corridors, which includes much of southern California's manufacturing and warehousing. There is a high concentration of low-income neighborhoods and communities of color in the GCCOG. This close proximity to major transportation corridors and industry led the Multiple Air Toxics Exposure Study (MATES II) in the South Coast Basin[1] to identify this area as having a higher exposure to air contaminants than the rest of Southern California.

[1] South Coast Air Quality Management District, November 1999.

The Port of Long Beach oversees the ships, trucks and equipment that operate in the Port area and is a significant source of oxides of nitrogen (NOx) and particulate matter emissions. NOx is a precursor to ground level ozone (smog). Over 85% of the region's NOx emissions come from mobile sources, including cars, trucks, planes, ships and off-road diesel equipment. Nearly 50% of South Coast Air Basin (SCAB) NOx emissions come from diesel engines.

Cargo activities at the Ports of Long Beach and Los Angeles are a major source of air pollutants in the GCCOG. The Port of Long Beach handled over 4.5 million containers during the 12-month period ending on March 1, 2002. Between the ships, the offloading equipment, the off-road cargo equipment, the trucks and trains that carry containers to and from the ports, and the industry that congregates near this hub of international commerce, the harbor area is widely recognized as suffering from some of the region's worst air quality.

The primary mode of moving international cargo is by container (measured by 20-foot equivalent units or 20-foot-long cargo container). To move these containers, over 6,500 trucks serve the harbor area. The I-710 Long Beach Freeway already carries upwards of 17,500 truck trips a day. Currently, the estimated number of diesel trucks in and out of the Ports of Long Beach and Los Angeles per day is 32,300. For the Gateway Cities, the situation is going to get much, much worse. By 2020, the number of trucks operating on the Long Beach Freeway is projected to grow to 42,000 a day, while the total number of trucks serving both Ports is projected to increase to 91,950 a day, nearly a 300% increase. 60% of those truck trips will move through the Gateway Cities.

The Gateway Cities Clean Air Pilot Program was created to provide incentives to help truckers reduce pollution from on-road heavy-duty vehicles. Funds have been awarded to the GCCOG from the ARB and the Port of Long Beach.

The Fleet Modernization program was pioneered by the SMAQMD and the SACOG to help the Sacramento region meet its air quality goals. The ARB recently approved fleet modernization as a pilot program. These guidelines are nearly identical to the SMAQMD's, but have been tailored to reflect the types of businesses and trucks that travel in the GCCOG region.

V. Introduction

The objective of the Fleet Modernization program is to reduce emissions by replacing 1983 and older on-road heavy-duty diesel vehicles (14,000 lbs. gross vehicle weight rating and greater) with 1994- and newer model year vehicles. On-road motor vehicles are defined as "self-propelled motor vehicles that are manufactured for or designed primarily for use on public roads." The newer engines in the replacement vehicles will be calibrated to the lowest NOx emissions level, will operate with a verified particulate matter (PM) control device such as a diesel oxidation catalyst (when available), and will feature a digital odometer to verify the actual miles driven within the South Coast air basin.

Program sponsors seek to replace as many 1983 and older trucks as possible given available funding. Grant amounts will vary depending on the amount of emission reductions obtained by replacing each truck. We encourage participation of the region's truck owner operators, truck fleet managers, truck dealerships, and other entities. Participating truck operators may request replacement of more than one vehicle.

All projects must reduce emissions from on-road motor vehicles in the South Coast Federal Ozone Non-attainment Area, also known as the South Coast Air Basin (Appendix IV). All applications must meet program requirements to qualify for incentives.

The following guidelines describe the minimum qualifications for a vehicle to enter the Fleet Modernization Program. It also details the responsibilities of the program's participants (vehicle owners, vehicle dealerships, and salvage yards). All participants are required to enter into an agreement with the GCCOG to ensure that all parties meet their responsibilities under this program.

GCCOG anticipates that vehicle dealerships will provide truck owners with application support. Training materials will be provided to each vehicle dealership to facilitate participation in the program. Training sessions will be held to ensure that dealerships are equipped to help truck owners succeed in the program. Any qualifying vehicle owner may participate in the program without going through a dealership; however, the vehicle owner then assumes the responsibilities of the dealership identified in these guidelines.

VI. Summary of FLEET MODERNIZATION PROGRAM REQUIREMENTS

The following provides an outline of the process, minimum qualifications, application requirements, and information required to evaluate an application for incentive funding. A more detailed description of the program can be found in Section VII: Fleet Modernization Program Details.

A. Minimum Qualifications to Replace a Vehicle

- ❑ 1. Replaced vehicle must be a 1983 or older Model Year. The engine must be MY 1990 or older.
- ❑ 2. The owner must have owned and operated the replaced vehicle for the previous two (2) years. If the applicant does not own or control the vehicle(s), the application must include a satisfactory, binding contract with the person(s) or organization(s) that do own or control the vehicle(s). The contract commits the owner/controller of the vehicle(s) to carry out the actions described in these guidelines.
- ❑ 3. The replaced vehicle must be in operating condition and be able to pass the California Highway Patrol's Biennial Inspection of Terminals (CHP BIT) inspection or the Vehicle Inspection (Appendix VI). If the applicant can provide documentation that the replaced vehicle has passed a CHP BIT inspection in the past 90 days, an inspection will not be required.

- ❑ 4. Within the last two years, 85% of the miles driven by the replaced vehicle must have been within the South Coast Air Basin (Appendix IV). Priority in awarding incentives may be given to vehicles that work predominantly in the Port area and in the Gateway Cities region.
- ❑ 5. Replaced vehicle is currently insured and registered as required by the State of California.

B. Paperwork Required to Process Application for Replacement Vehicle

The following items must be submitted the GCCOG to begin the application process:

- ❑ 1. Signed and completed application. This includes the Fleet Modernization Application Form (Appendix I), the Vehicle Information Form (Appendix II) and the Applicant Statement and Agreement (Appendix III).
- ❑ 2. Internal Revenue Service Form W-9 (Appendix V).
- ❑ 3. National Automobile Dealers Association (N.A.D.A.) adjusted loan value printout for the replacement vehicle. Valuation of a vehicle with a specialized body will be determined using a valuation guide such as Kelley Blue Book.
- ❑ 4. Provide proof of vocation (the business of the replaced truck, i.e. port container, recycled material or dirt hauling, etc.) for the replaced vehicle for the previous two years. Proof may include, but is not limited to, receipts, invoices, bills of lading, letters from current contractors, tax forms, etc.
- ❑ 5. Proof of mileage driven within the South Coast Air Basin for the last two years (or more if contracting for more mileage). Proof may include, but is not limited to fuel receipts, fuel tax forms, log books, etc. Mileage will be averaged (for example, if a truck drove 50,000 miles in 2000 and 60,000 miles in 2001, the average miles for the truck would be 55,000).
- ❑ 6. Copy of the title of the replaced vehicle.
- ❑ 7. Copy of the registration of the replaced vehicle.
- ❑ 8. Insurance company's "Letter of Experience" for the past 24 months that shows the replaced vehicle's VIN and length of coverage, including minimum coverage required by the State of California.
- ❑ 9. Photos of the replaced vehicle.
- ❑ 10. Proof that the replaced vehicle passed a CHP BIT inspection within the last 90 days or has undergone a Vehicle Inspection (Appendix VI).
- ❑ 11. If applicable, provide the value and age of the body to be installed on the replacement vehicle.
- ❑ 12. If a repower, the estimate of the cost of the new engine and installation must be attached to the application.

C. Paperwork Required to Complete Reimbursement Process

After GCCOG has approved the application, the following documentation must be submitted for timely reimbursement.

- ❑ 1. Provide "Certificate of Vendor Acceptance of Replaced Vehicle for Salvage" (Appendix IX).
- ❑ 2. Inspection of the new vehicle (CHP BIT and photos).
- ❑ 3. Provide copy of dealers report of sale and DMV title documentation showing Gateway Cities as:
  - 1st lien holder if no financing was provided; or
  - 2nd lien holder if financing was provided.
- ❑ 4. Provide documentation of engine warranty for the replacement vehicle.
- ❑ 5. Provide documentation of replacement vehicle financing.
- ❑ 6. Provide "Certificate Of Particulate Matter Control Device Installation" (Appendix X) on the replacement vehicle (when required).
- ❑ 7. Provide "Certificate of Digital Odometer Installation" (Appendix XI) on the replacement vehicle.
- ❑ 8. Certificate of Engine Recalibration (Appendix XII).
- ❑ 9. Provide invoices of all work completed by dealer on the replacement vehicle.
- ❑ 10. Provide a Certificate of Liability Insurance for the replacement vehicle.

- ❑ 11. Within 30 days of replacement vehicle ownership, provide the GCCOG with a copy of the insurance collision policy and registration for the replacement vehicle.

D. Salvage Yard Responsibilities

- ❑ 1. Salvage replaced vehicle within 60 days from vehicle turn-in.
- ❑ 2. Destroy engine block to ensure that block will not be used again.
- ❑ 3. Cut the frame rails of the vehicle to ensure that the vehicle will not be used again.
- ❑ 4. Take photographs of the hole in the engine block and the cut frame rails.
- ❑ 5. Provide pictures and "Certificate of Vehicle Destruction" (Appendix XIII) to the GCCOG within 10 (ten) business days of salvaging the vehicle.

E. Contractual Obligations of Applicant through Five (5) Year Agreement

- ❑ 1. The replacement vehicle shall be driven in the South Coast Air Basin for at least 5 years and shall not exceed an increase of 1.3 times the base mileage specified in the application.
- ❑ 2. Continue to work in contracted vocation(s) a minimum of 85% of the miles, as specified in the application. A change in vocation must be approved by the GCCOG.
- ❑ 3. Apply two GCCOG decals to the vehicle (the decals will promote the program by noting that the GCCOG assisted in making this a cleaner burning and more environmentally-friendly vehicle).
- ❑ 4. Provide quarterly statements of mileage accumulated within the "South Coast Air Basin" (Appendix IV) and mileage accumulated outside of the area. GCCOG will provide all forms and instructions.
- ❑ 5. Provide proof of minimum insurance requirements and registration once a year.
- ❑ 6. If there is a change of name, address, or phone number, notify GCCOG of the change.
- ❑ 7. If vehicle is involved in an accident, notify GCCOG within 10 working days and turn in applicable insurance and DMV paperwork.

VII. FLEET MODERNIZATION PROGRAM DETAILS

The following sections provide more detail on the fleet modernization program. All requirements must be met before reimbursement can be processed.

A. VEHICLE DEALERSHIP ROLE:

The Gateway Cities Fleet Modernization Program is patterned after the SECAT Program in Sacramento. We have adopted the Sacramento program approach, in part, to ensure consistency within the State and to make it easier for truck owner/operators and trucking firms to participate in this program. Local vehicle dealerships that have affiliates participating in the SECAT Program are encouraged to coordinate their efforts with their Sacramento colleagues.

Vehicle dealerships are encouraged to help in the application process as much as possible. It is recommended that each dealership have one or two people work as liaisons with the GCCOG to ensure that the correct information is given to all applicants. Reimbursement cannot be issued until all forms are submitted and approved by GCCOG. Dealerships are expected to:

- ❑ Provide basic information about the fleet modernization program. Training will be provided for dealership staff to act as liaisons with the GCCOG. All questions should be directed through the liaisons to ensure that the correct program information is provided.
- ❑ Inform applicants of rights and responsibilities as outlined in these guidelines.
- ❑ Help the applicant complete the application. It is important to make sure that all information is filled out correctly and that the applicant understands the meaning of the application.
- ❑ The vehicle dealership will ensure that the applicant completes all of the program requirements. GCCOG will provide all forms and certificates as appendices to this application. Once complete, the dealer will submit a complete application package to the GCCOG.

To ensure that an application package is complete, please make sure that all the following items are complete and included in the applicant's submission to the GCCOG:

1. Enclose a signed and complete application. This includes the Fleet Modernization Application Form (Appendix I), the Vehicle Information Form (Appendix II) and the Applicant Statement and Agreement (Appendix III).

2. To ensure that the replaced vehicle is roadworthy and has been in use for at least the last two years: conduct a "Vehicle Inspection" (Appendix VI) or submit documentation that the replaced vehicle has passed a CHP BIT inspection in the past 90 days.

3. Take and submit the required digital photographs of the replaced vehicle (See Section VII-D).

4. Provide N.A.D.A. adjusted loan value paperwork for the replacement vehicle. The incentive amount available for the purchase of the vehicle will be based upon three criteria: (a) cost-effectiveness of the project based upon the NOx emission benefit; (b) the value of the vehicle based upon the N.A.D.A. adjusted loan value; and, (c) less any costs associated with repairs noted during the vehicle inspection. Reimbursement will not be made at an amount that exceeds the N.A.D.A. adjusted loan value. The cost for kit (engine reflash (recalibration), catalyst installation, and a digital odometer plus installation shall be paid for first with the incentive funds. The incentive funds shall not cover any sales taxes. The remaining cost of the replacement vehicle is the financial responsibility of the applicant.

5. Invoices of all work performed on the replacement vehicle must be provided before reimbursement can be made. The invoices should include all engine, transmission, body and other work performed on the replacement vehicle from the time the dealer took ownership. Invoices must include the installation of all equipment required by this program:
   - ❑ Recalibration (reflash),
   - ❑ PM control device (when available),
   - ❑ Digital odometer (when available).

   In addition, the dealer must provide proof of sale of the replacement vehicle.

6. Provide documentation of a CHP BIT inspection on the replacement vehicle.

7. Photographs of the replacement vehicle must be taken, as specified in Section VII-D below. GCCOG reserves the right to audit the dealer's record of inspection.

8. The vehicle dealer must provide proof that the replaced vehicle is under contract to be delivered to a qualified salvage yard. The contract must state that the dealer will deliver the vehicle to the salvage yard within 30 days of receipt of the replaced truck. The contract must include the make, model, year, VIN, engine make, engine serial number, and the date the vehicle is expected to be delivered.

   Qualified salvage yards will be contracted by truck dealerships to properly salvage replaced vehicles. The salvage yard has 60 days after receipt of the replaced vehicle to properly dispose of the vehicle and provide a Certificate of Vehicle Destruction (Appendix XIII) to the truck dealership and the GCCOG. It is a vehicle dealer's responsibility to ensure that the salvage actually occurs, to obtain the completed Certificate of Vehicle Destruction, and to ensure that the Certificate of Vehicle Destruction has been filed with GCCOG. The cost of the salvage will not be covered by the GCCOG.

9. Ensure that GCCOG is listed on the insurance binder of the replacement vehicle. If the replacement vehicle is financed, then GCCOG should be listed as the 2nd lien holder. If the vehicle is not financed, then GCCOG should be listed as an "additional insured" party. Provide documentation of replacement vehicle insurance.

10. Provide documentation of replacement vehicle warranty and registration as required for the replacement vehicle

10. To ensure that all contract requirements are met, provide title information to the GCCOG within 60 days after the purchase of the replacement vehicle. If financing is not required, GCCOG shall be named as the first lien holder. If financing is required, GCCOG shall be named the second lien holder on the vehicle. The title information must provide proof of the GCCOG lien, the name of the owner, and name of the financing company (if applicable). GCCOG will be listed as a lien holder until the end of the five-year commitment.

11. Provide proof of replacement vehicle financing. The financing package will enable the Gateway Cities to determine the reimbursement costs that may be accrued in case the applicant defaults on the contracted performance requirements.

B. REPLACED (OLD) VEHICLE REQUIREMENTS: All replaced vehicles must meet the following conditions before reimbursement process can be completed.

1. **Model Year of Replaced Vehicle Must Be 1983 or older:** In order to qualify for the Fleet Modernization Program, the replaced vehicle's model year must be 1983 and older. The model year of **the engine** must not be newer than 1990.

2. **Vehicle Must Pass a Safety Inspection:** The replaced vehicle must undergo a safety inspection. A qualified Engine Distributor or Vehicle Dealership may require a CHP BIT inspection or conduct a Vehicle Inspection (Appendix VI). This is to ensure the vehicle was in running condition before entering the program.
   a. If the vehicle has passed a CHP BIT inspection within the previous 90 days, then neither a CHP BIT nor a Vehicle Inspection will be required at the time of the application. Documentation that the vehicle passed the CHP BIT inspection within 90 days of the application is required to bypass this requirement.
   b. If the vehicle does not pass the safety inspection, the owner must provide written verification that the vehicle has been running to the satisfaction of the GCCOG.. These vehicles will need to be inspected by the GCCOG (or its representative) before application approval will be made. All repairs associated with the safety inspection violation shall be deducted from the incentive amount.
   c. If the vehicle does not pass the safety inspection and is in need of repairs, the owner will be required to get two (2) estimates for the repairs. The GCCOG will use the higher of the two estimates. The GCCOG will not require the owner pay for the repairs on the replaced vehicle, but will deduct the cost of the repairs from the GCCOG contribution towards the purchase of the replacement vehicle. All repair estimates must be turned into the GCCOG before the project receives approval.

C. REPLACEMENT (NEW) VEHICLE REQUIREMENTS: All replacement vehicles must meet the following conditions before ownership is given to the applicant. The vehicle dealership must inspect the replacement vehicle (see vehicle inspection requirements in Section VII-D). All pictures should be turned in to the GCCOG before the vehicle is released to the applicant.

1. **Engine Horsepower Requirements:** The horsepower rating for the replacement (new) vehicle engine must be less than or equal to the original manufacturer rated horsepower (baseline horsepower) for the replaced (old) vehicle engine. This is necessary because engine horsepower is related to the emissions produced by heavy-duty diesel engines. Auditing of the newer vehicle's horsepower may occur throughout the length of the agreement. Applicants may use any one of the following methods to determine the horsepower acceptable for the newer vehicle engine:
   a. The replacement vehicle engine's horsepower shall be less than or equal to the baseline horsepower rating. However, should a less than or equivalent horsepower replacement vehicle not be available, an increase not to exceed 20 percent above the baseline horsepower shall be acceptable. For example, if the baseline horsepower is 400 HP, and there are no 400 HP replacement vehicles available, then the applicant may apply for a replacement vehicle engine with a horsepower not to exceed 480 HP.

b. If the replaced vehicle engine baseline horsepower has been legally increased with supportive documentation, then the baseline horsepower shall be the increased horsepower rating. If a less than or equivalent horsepower replacement vehicle is not available, an increase not to exceed 20 percent above the baseline horsepower shall be acceptable.

c. If the replaced vehicle engine baseline horsepower is not known, then at the applicant's expense, a dynamometer test shall be performed to establish the baseline horsepower and the formula below shall be used to establish the baseline horsepower. If a less than or equivalent horsepower replacement vehicle is not available, an increase not to exceed 20 percent above the baseline horsepower shall be acceptable.

Engine dynamometer horsepower = (Chassis dynamometer horsepower)/(0.85)

In limited situations, an exception to the 20% horsepower increase may be allowed by petition of the applicant. Each petition will require GCCOG approval. GCCOG WILL NOT COVER COSTS ASSOCIATED WITH THE DYNAMOMETER TESTING.

2. **Emission Control Modifications:** The emission controls on the replacement vehicle engine cannot be modified in any manner. Modifications to engine performance (including changes in horsepower), emission characteristics, engine emission components (not including repairs with like-original equipment manufacturer replacement parts), or any other modifications to the engine's emission control function or the digital odometer are not allowed.

3. **Replacement Vehicle Weight Requirements:** The following weight class requirements must be met in order for a newer vehicle to qualify for the Fleet Modernization Program:
   a. The replacement vehicle must be in the same weight class as the replaced vehicle (Class 4,5,6,7,8)
   b. If the replaced vehicle's GVWR is less than 33,000 lbs., then the replacement vehicle GVWR must also be less than 33,000 lbs.
   c. If the replaced vehicle's GVWR is greater than 33,000 lbs., then the newer vehicle GVWR must also be more than 33,000 lbs.

4. **Other Requirements:** The following additional requirements must be completed before the new vehicle is released to the applicant:
   a. Engine Calibration (Reflash): An engine reflash must be conducted by the engine manufacturer/distributor. The new vehicle engine must be reflashed to the lowest NOx emissions standard certified by ARB per the consent decree for heavy-duty vehicles. Documentation of the calibration must be turned into the GCCOG before the vehicle is released to the applicant. Calibration of the engine does not need to occur if the engine in the replacement vehicle is model year 1999 or newer.
   b. ARB Verified Particulate Matter Reduction Device: If an ARB verified particulate matter reduction device (e.g. a diesel oxidation catalyst) is available for the replacement vehicle, one must be installed. The engine distributor must provide verification of installation before the vehicle is released to the applicant.
   c. Digital Odometer: A digital odometer will be installed on all replacement vehicles. Verification of the installation must be turned into the GCCOG before the vehicle is released to the applicant.
      If a digital odometer is not available at the time the replacement vehicle is ready for delivery, the vehicle can be given to the applicant. The owner will have to return the vehicle to the dealer when a digital odometer is available for installation. Verification of the installation must be turned into the GCCOG following installation.
   d. Engine Warranty: An engine warranty must be issued for the replacement vehicle engine. The warranty must cover parts and labor for a minimum of 12 months or 100,000 miles for major engine components.
   e. Vehicle Salvage: The replaced vehicle must be contracted to be delivered to a qualified salvage yard for destruction.

5. **Other Requirement Costs:** Up to $5,000 ($6,000 for dual exhaust) of the incentive shall be allocated to cover the "other requirements" costs. If an ARB verified diesel oxidation catalyst is not available for the replacement engine vehicle, the "other requirements" cost shall not exceed $2,500.

6. **Engine Calibration Requirements for 1998 Model Year Engines:** Due to differences in emission maps installed on all 1998 model year engines, the engines pollute at a higher level than any other model year engine. For this reason, all 1998-model year engines must be calibrated to meet 1999 or newer standards. Confirmation of engine calibration is required from the engine manufacturer before reimbursement will be issued.

7. **New Engine Repower:** All replacement vehicles may qualify for funding to repower an existing engine with a 2001 or newer model year engine. The cost-effectiveness guidelines are given in the Funding Availability and Cost-Effectiveness Guidelines (See Section I).

   The application must show that a new engine repower is to occur and include an estimate of cost. The GCCOG must give approval before any work is started. If a 2001or newer model year engine is installed in the vehicle, engine calibration will not be necessary.

D. VEHICLE INSPECTION: In order to ensure emission reductions, vehicle information has to be recorded and verified for both the replaced and the replacement vehicle.

Digital photographs are required for all vehicle inspections. All photographs should be placed on 3.5" 1.44 MB floppy disks that are IBM formatted. All pictures should be in JPEG format with a resolution no lower than 640 X 480. All disks need to be labeled correctly. Clarity is important. Please verify clarity of pictures before turning them into the GCCOG. Reimbursement will not be processed until all photographs are received and verified by GCCOG. The following inspection procedures shall be used:

Replaced (Old) Vehicle

An inspection of the old vehicle must occur before an application is submitted. The inspection includes conducting a safety inspection and taking photos of the vehicle:

1. The safety inspection can be either a CHP BIT inspection or a Vehicle Inspection (see Appendix VI), completed by a qualified engine distributor or vehicle dealership. If the replaced vehicle has passed a CHP BIT inspection within the previous 90 days, the applicant can provide documentation of the inspection.

2. Photos of the vehicle must include the following views:
   (a) Right Side - hood down
   (b) Front - hood down
   (c) Left Side - hood down
   (d) VIN Tag - inside vehicle or on frame rail
   (e) Engine - left side
   (f) Engine - right side
   (g) Engine Serial Number - either tag or stamp on block
   (h) License plate
   (i) Rear

Replacement (New) Vehicle

1. CHP BIT Inspection must be completed and documentation submitted.

2. Photos of the vehicle must include the following views:
   (a) Right Side - hood down
   (b) Front - hood down
   (c) Left Side - hood down
   (d) VIN Tag - inside vehicle and on frame rail
   (e) Engine - left side
   (f) Engine - right side
   (g) Engine Serial Number and Engine Information – tag
   (h) License plate
   (i) Rear
   (j) Digital odometer Unit (in working condition)
   (k) Diesel Oxidation Catalyst (if available)
   (l) Odometer Reading
   (m) Additional modifications (if applicable)

E. Engine Dealership Role and Responsibilities: Engine dealerships will be given the responsibilities of ensuring that the following items are accurately completed on every replacement vehicle. Each qualifying dealership may, with the prior approval of the GCCOG, subcontract the work. However, the engine dealer will be responsible for any work completed at another shop.

1. **Provide certificate of engine calibration:** The engine must be calibrated (reflashed) to the lowest NOx emission level. The invoice must include proof that the engine dealer has reflashed pre-1999 engines to the low-NOx code. The GCCOG will need documentation that the engine reflash was completed.

2. **Provide certificate of installation of a diesel oxidation catalyst (DOC) (if available):** If an ARB verified DOC is not available at the time of purchase of the replacement truck, a DOC is not required. If the vehicle is outfitted with dual exhaust, a DOC shall be installed on both exhaust tailpipes.

3. **Conduct a safety inspection of the replaced vehicle.** A replaced vehicle must pass the CHP BIT safety inspection or an equivalent level inspection (Appendix VII). If the replaced vehicle has passed a CHP BIT inspection within the previous 90 days, the replaced vehicle will not be required to have another inspection. (Qualified Vehicle Dealerships may also conduct the inspection).

4. **Provide engine warranty certification.** A one-year/100,000 mile warranty covering major engine components shall be provided for the replacement engine. The vehicle will be disqualified if the engine does not qualify for an engine warranty. If an engine does not meet warranty criteria, the applicant must be notified immediately.

5. **Provide certification of digital odometer installation.** A digital odometer will count the mileage accumulated within and outside the South Coast Air Basin. If a digital odometer is not available at the time of purchase, the applicant must agree to return the truck for digital odometer installation when it does become available.

6. **Provide invoices of all work completed.** Send all invoices to the vehicle dealership. Each vehicle dealership or applicant will be required to submit the invoices for review.

F. Application Approval Process:
The applicant will be responsible for providing the following information before an application will be approved:

1. **Completed and signed application** and required forms.

2. **Proof of ownership and insurance** for the last two (2) years.

3. **Proof of vocation** (the business the applicant has been in). The applicant must provide proof that the vehicle has been used in South Coast Air Basin for the past two years. Additionally, the applicant must commit to stay in the same vocation for the next five years for a minimum of 85% of their accumulated mileage. Funding preference may be given to applicants that operate predominantly in the port and/or the GCCOG region.

4. **Proof of mileage** for the past two years. If applying for more miles than accumulated during the past two years, additional information will be required to justify the request. The applicant will be required to contract with the GCCOC for two mileage limits:
   (a) The first mileage limit is based on mileage the applicant is committing to the program. This limit may be based upon emission reductions rather than actual mileage the applicant plans to accumulate.

   (b) The second mileage limit is based on the mileage the old (replaced) vehicle accumulated during the past two years. The applicant may not drive the replacement vehicle more than 1.3 times the base year's amount. For example, if a truck runs 100,000 miles per year, the program would allow it to run 130,000 miles each year for the next five years.

(c) After the first year of participation in the Program, applicants may apply to the GCCOG for a waiver to increase mileage if the Port of Long Beach significantly increases its hours of operation. The waiver would allow applicants to increase mileage to 1.5 times the base year miles with the added provision that the vehicle operates 90% of the time in the same vocation. Waivers will be considered only if all other contractual obligations have been met.

5. **Completed and signed Internal Revenue Service Form W-9.** All program funds will have an IRS Form issued for the funded amount. It is recommended that all applicants seek professional advice in order to determine any financial liability they may incur as a result of participating in the program (Appendix V).

G. Reimbursement Requirements: Before a reimbursement check can be issued, the applicant must complete the following:

1. Invoice the program for the funds the applicant is seeking (Appendix XIV - GCCOG will help determine the amount of the incentive).

2. The GCCOG must receive a "Certification of Vendor Acceptance for Salvage" (Appendix IX) from the vehicle dealership stating that the vehicle will be taken to a qualified salvage yard within 30 days.

3. Provide a Certificate of Liability Insurance for the replacement vehicle. Within 30 days of replacement vehicle ownership, provide the GCCOG with a copy of the insurance collision policy and registration for the replacement vehicle. Coverage must cover the replacement value of the replacement vehicle and comply with all state requirements.

H. Performance Requirements: The applicant must agree to the terms specified in the application package, including:

1. **Stay in the Contracted Vocation(s)** for a minimum of five years and operate the replacement vehicle for a minimum of 85% of the annual mileage accumulated within the designated vocation(s).

2. **Drive no more than 1.3 times the baseline mileage** verified by GCCOG records. After one year of experience with the program, the applicant may apply for a waiver to baseline mileage requirements. See Section VII(F)(4)(c) regarding waivers.

3. **Provide quarterly mileage updates.** A digital odometer will be installed on the vehicle to record and verify mileage accumulated within the South Coast Air District. If a digital odometer is not available when the vehicle is purchased, the applicant will return the truck to have the device installed when a device is available. GCCOG will cover the cost of the digital odometer and its installation. Until a digital odometer has been installed, applicants shall report their existing odometer's mileage readings to the GCCOG on a quarterly basis. The GCCOG will provide mileage logbooks to record the readings, as well as postage paid envelopes for applicants to mail their quarterly mileage reports. Once a digital odometer is installed, quarterly submission of mileage accumulation from the digital odometer shall be required.

   All reporting materials will be provided by the GCCOG upon the completion of the purchase of the vehicle.

4. **Provide annual updates.** At the beginning of each new 12-month period, the applicant will provide proof of minimum insurance requirements and vehicle registration. In addition, the applicant must complete a brief form summarizing the vehicle's mileage for the past year. The GCCOG will provide the form and send reminders to the applicants.

5. **A change of name, address, phone number, or company changes** must be provided to the GCCOG. Notification should be made within two weeks of the change.

6. **If vehicle is involved in an accident,** the owner/operator shall notify GCCOG within ten working days. Provide applicable insurance and DMV records, including inspection reports and payment information.

I. Funding Availability and Cost-Effectiveness Guidelines

Two criteria will be used to determine the incentive amount. First, the N.A.D.A. Adjusted Loan Value will be the maximum value that the Program will pay for the vehicle. Second, cost-effectiveness thresholds will limit the total amount of funding available. Parts such as the engine calibration, oxidation catalyst, digital odometer and installation, and engine warranty costs will not be included in the base loan value portion of the incentive.

The following cost-effectiveness thresholds have been designed.

Funding Chart

Model Year Old Vehicle	Engine Replacement in newer vehicle?	Model Year New Vehicle Engine	Cost-Effectiveness $/ 1-yr. ton NOx
Pre – 1977	Original engine	1994 or newer[2]	$20,000
	Repowered with new engine	Latest available new engine[3]	$35,000
1977 – 1983	Original engine	1994 or newer[2]	$50,000
	Repowered with new engine	Latest available new engine[3]	$50,000

All funding amounts require approval of the GCCOG prior to any transaction.

If an old vehicle has a specialized body (10 wheel dump, transfer, mixer, etc.), the program will pay up to the figures in the following table for the purchase/replacement/retrofit of a similar make and model.

Vehicle Body Value

Age of replacement body	Percentage covered
0	72%
1	58%
2	43%
3	29%
4+ years	15%

The percentage paid is based upon the following figures:

(Age of the Replacement Vehicle) * (New Body Cost) * (20% Depreciation) * (72% -percentage of loan value paid) = Incentive Amount (below cost-effectiveness threshold)

[2] 1998 model year engines will not be allowed to participant in the program unless the engine emission performance is re-calibrated to meet or be less than the emission standards for a 1999 model year engine.

[3] Requires repower of original new vehicle engine with a latest model, new engine certified by the California Air Resources Board to 4.0 or 2.5 grams per horsepower-hour, or rebuild.

Other rules and requirements of the purchase/replacement/retrofit of a specialized body:

1. Taxes will not be reimbursed by the GCCOG.
2. Installation costs will not be reimbursed by the GCCOG.
3. Three (3) estimates of the value of the body are required with the application from three independent body companies.
4. The reimbursement amount of the body, replacement vehicle and kit will not be above the maximum amount allowed.
5. The reimbursement amount of the body will not exceed the actual costs of the body (a receipt of sale will be required before reimbursement will be issued).

Emission reductions shall be calculated pursuant to the SECAT (Sacramento area) fleet modernization program calculator, which can be found at www.4secat.com/where.html. GCCOG reserves the right to develop and use a new fleet calculator that is more specific to the South Coast Air Basin, in which case the newer calculator will be made available at a different web address.

J. Vehicle Salvage Yards

The replaced vehicle must be taken to a qualified vehicle salvage yard for destruction. Vehicle salvage yards will be required to enter into an agreement with the program to qualify for participation. Qualified vehicle salvage yards will be required to be licensed by the DMV as an auto-dismantler; have a current, valid Cal/EPA Hazardous Materials Generators Permit; and, be in compliance with all local, state and federal laws and regulations.

GCCOG funding will not be available for the salvage of any replaced vehicle. Replaced vehicle salvage value will be negotiated between the dealership and the salvage yard.

The salvage yard operator is required to:

a. Drill a hole in the engine block of the replaced engine
b. Cut the frame rails
c. Provide photographs of the destroyed vehicle to the GCCOG (It is not necessary to provide the dealer with photographs of the destroyed vehicle). The pictures should use the same digital photography format as the vehicle inspection pictures. The following picture views should be taken:
    1. Front of vehicle with hood down
    2. Right side of vehicle with hood down
    3. Left side of vehicle with hood down
    4. Serial number printed either on the tag inside in the cab or on the frame rail
    5. Engine side view
    6. Engine serial number either stamped on the block or on the tag
    7. Hole in the engine block either in-frame or out of frame
    8. Cut frame rails
d. Dismantle the old vehicle within 60 days of receipt. The destruction must be done in accordance with program guidelines.
e. The salvage yard will have 10 days from the date of the destruction of the old truck to deliver a Certificate of Dismantle to both the dealer and to the GCCOG.

K. Applicants' Roles and Responsibilities:

Each owner/operator or truck firm that elects to take advantage of the opportunity provided by the GCCOG's Clean Air Pilot Program must make an effort to ensure that the program is a success. The applicant must make sure that they understand their obligations and responsibilities of the Fleet Modernization Program. The obligations and responsibilities are listed here and in the Fleet Modernization Application Form (Appendix I).

All applicants must:

1. **Be familiar with the Truck Fleet Modernization Program Guidelines.** The applicant should visit a participating dealer (Appendix VIII) to obtain information about the program and determine their eligibility. In addition, you should work with an authorized truck dealer to determine the grant amount available for the truck you wish to replace. This information can also be obtained by contacting the Fleet Modernization program administrator.

2. **Provide documentation that you own the truck** you wish to replace, or have documentation that the owner of the truck wishes to be an applicant to the program.

3. **Make copies of all pertinent documents** that demonstrate that you have operated the old vehicle in the South Coast Air Basin for the last two years. This may include log books, fuel receipts, contracts, vehicle registration, proof of insurance, invoices and other pertinent documents.

   In addition, make copies of documents that will support your claims for the mileage the old vehicle has accumulated in the last two years. This may include mileage reports, fuel receipts, fuel tax forms, and other relevant materials. This information is needed to determine both program eligibility and the grant amount.

4. **Select a replacement truck** and, if necessary, obtain financing with the dealer or a third party.

5. **Accept the installation of a digital odometer** in the replacement truck. If a digital odometer is not available at the time of delivery of the replacement truck, then you must agree return the truck to the dealer for installation of the odometer when one becomes available.

6. The **replaced vehicle must be in compliance** with all required licenses, permits, and all other appropriate legal authorizations from all applicable federal, state, and local jurisdictions, including air quality regulations.

7. Accept the **installation of an ARB verified diesel oxidation catalyst on the replacement truck.** If ARB has not verified a diesel oxidation catalyst for the replacement vehicle at the time of its delivery, then this requirement shall not be enforced.

8. **Agree not to exceed the maximum number of contracted miles** within the region each year for the next five (5) years.

9. **Agree not to operate the replacement vehicle more than 1.3 times the contracted miles** in any given year.

10. Agree to continue to **work in the contracted vocation(s) for a minimum of 85% of the time** in any given year. Should you wish to change your vocation, the change must be approved by the GCCOG.

11. **Submit quarterly statements of mileage** accumulated within the South Coast Air Basin (see Appendix IV) and mileage accumulated outside of the area. GCCOG will provide all forms necessary.

12. If there is a **change of name, address, or phone number,** notify GCCOG of the change.

13. **If vehicle is involved in an accident,** the notify GCCOG within 10 working days and turn in applicable insurance and DMV paperwork.

14. **Apply two GCCOG decals** to the vehicle (these decals will promote the program by noting that the GCCOG assisted in making this a cleaner burning and more environmentally-friendly vehicle).

15. **Maintain the vehicle in good working order.** Do not tamper with the emission control equipment or the engine calibration software that controls the engine's emissions performance.

16. Supply the GCCOG with a **copy of the registration and insurance annually.**

17. Work with the dealer and your insurance company to **ensure that GCCOG is listed on your truck's insurance policy.**

Appendix I
Gateway Cities Clean Air Pilot Program
Fleet Modernization Application Form

Please send all application materials (as detailed below) to TIAX LLC (the Gateway Cities Diesel Emission Reduction Program's technical contractor). Address the application to Mr. Robb Barnitt, TIAX LLC, 2500 Michelson Drive, Suite 110, Irvine, California, 92612. This information will be used to evaluate the eligibility of the proposed heavy-duty low-emission vehicle application. Gateway Cities Program staff reserves the right to request additional information of any applicant and may deny an application if such requested information is not provided. Please type or print clearly using ink only. Incomplete and illegible applications will be returned to applicant or vendor. An incomplete application is an application that is missing information critical to the evaluation of the project. If the applicant does not respond within 30 days, the application will be withdrawn and the application process will have to be reinitiated by the applicant in order for the project to be re-considered. Preference may be given to applicants who predominantly operate within the Gateway Cities and port areas.

Application Date:_____

VET	Application #
(For office use only)	

General Instructions:

- Read all Gateway Cities Clean Air Pilot Program guidelines.
- Complete and sign the Internal Revenue Service Form W-9, Appendix V.
- Turn in application form and all necessary paperwork to the Gateway Cities at the address listed above.

Company		Address			
Contact		City		State	
Title		Zip		County	
E-Mail		Phone			
Motor Carrier Permit Number: CA		FAX			
Name of person who will sign the Incentive Agreement (if different from above)					
Title					

Please initial each section:

_____ The purchase of all low-emission technology is **NOT** required by any local, state, and/or federal rule, regulation, or memorandum of understanding.

_____ The definitions of qualifying projects are listed Section VI, Fleet Modernization Program Requirements. These definitions have been reviewed and this application is consistent with those definitions.

_____ The replacement vehicle shall be driven 85% of its miles in the South Coast Air Basin for at least 5 years, shall not exceed 1.3 times the base mileage, and shall operate 85% of the miles within the designated vocation(s).

_____ I have reviewed and agree to the Applicant Statement and Agreement terms.

_____ I understand that an Internal Revenue Service Form will be issued to me for incentive funds received under the Gateway Cities Clean Air Pilot Program. I understand that it is my responsibility to determine the tax liability associated with participating in the Program.

_____ I understand that a digital odometer with global positioning capabilities will be installed on the replacement vehicle. The digital odometer will be capable of automatically recording and transmitting to the GCCOG the total miles the replacement vehicle operates in each of California's non-attainment areas. I understand that the digital odometer will record the mileage accumulated within the South Coast Air Basin to ensure that a minimum of 85% of the miles are driven in this area.

Payment Request

If all program requirements are met and I am approved by the GCCOG, reimbursement will be issued on a per-vehicle basis (Initial only one)

_____ **(OPTION 1)** I request that payment be sent to the applicant above.

_____ **(OPTION 2)** I request that a two-party check is processed for this application co-naming with the vendor listed below with the payment sent to applicant.

_____ **(OPTION 3)** I request that a two-party payment be made for this application and I authorize that the two-party payment be sent to the vendor listed below.

Vehicle/Engine Vendor Information

Contact		Address			
Title		City		State	
Company		Zip			
E-Mail		Phone		FAX	

☐ **Check this box if a Gateway Cities approved vehicle vendor is assisting in the application process.**

Please check the box (or boxes) that apply and follow the directions before turning in an application.

❑ **Fleet Modernization (Truck Replacement) Instructions (Section 8 C)**

- Complete all sections of the Vehicle Information Form, Appendix II.
- In section 2 & 4, please fill in the Gross Vehicle Weight Rating (GVWR – loaded) and the Weight Class of the vehicle (class 4-8). Note that the replacement vehicle must be in the same weight class as the replaced vehicle. Also, if the replaced vehicle is less than 33,000 lbs. GVWR, then the replacement vehicle must also be less than 33,000 lbs. GVWR.
- In section 2, fill in the vocation that the replaced vehicle has been used in within the last 2 years. Proof of the vocation will be required. If more than one vocation, provide proof of all vocations that the replaced vehicle has been used in.
- In section 6, fill in all miles within the South Coast Air Basin and outside the South Coast Air Basin. Only mileage accumulated within the South Coast Air Basin will be used to determine the amount of incentive funds available.
- Fill in section 8(C) ¬ with the N.A.D.A. adjusted loan value of the replacement vehicle.
- Fill in section 8(C) – with the costs associated with the value of the body or other equipment associated with the vehicle (i.e. the value of the box on a 10-wheel dump vehicle). The value will be determined by looking at the original value of the body addition. Please fill in the age of the body equipment. Please provide three (3) estimates of the cost of a new body.
- Up to $5000 (if dual exhaust, up to $6,000) may be allocated towards the purchase of the kit, including an ARB verified diesel particulate matter control device.
- If an ARB verified diesel particulate matter control device is not available, up to $2,500 may be allocated to cover the costs of the kit.
- The kit includes the following:
  - Calibration (reflash) of the replacement engine to the lowest NOx emission levels,
  - Issuance of an engine warranty for a minimum of 1 year or 100,000 miles,
  - Installation of an ARB verified particulate matter control device,
  - Costs to salvage the replaced vehicle at a district approved salvage yard
  - Costs to install a GCCOG approved digital odometer.
- If the engine in the replacement vehicle is going to be replaced with a new lower-emission engine, fill out section 9 (the engine repower quotation form), and input the Total into ¬, section 8 (C).

In addition to the application, please turn in:

❑ The current copy of the N.A.D.A. adjusted loan value estimate for the replacement vehicle;
❑ Provide a copy of the title of the replaced vehicle;
❑ Provide proof of vocation(s) (examples include, but are not limited to, receipts, invoices, bills of lading, letters from current contractors, tax forms, etc.);
❑ Provide an insurance company's "Letter of Experience" for the past 24 months which shows the replaced vehicle VIN and length of coverage, including the minimum coverage required by the State of California;
❑ Proof of mileage for the previous two years within the South Coast Air Basin for the replaced vehicle, or if contracting for a higher mileage provide amount of miles.
❑ Photos of the replaced vehicle (as required and specified in the guidelines);
❑ Certificate Vehicle Inspection Form, Appendix VI. If applicable, provide the value and age of the body on the replacement vehicle as determined by the original company (this applies to dump vehicles, transfer vehicles, etc.)
❑ Provide an Internal Revenue Service Form W-9 (Appendix V).

❑ **Fleet Modernization (Truck Replacement) AND Replacement of an older engine with a newer lower emission engine (repower)**

- This applies to applicants who would like to purchase and install a new lower-emission engine into the replacement vehicle.
- Please complete the Fleet Modernization Truck Replacement section 8 **AND** the Replacement of an Older Engine with a Newer Lower Emission Engine, section 8.
- In section 5, please fill in the value of the NOx level of the new engine in the gray box. If you are unsure of the value, please contact the GCCOG.

❑ **Replacement of an older engine with a newer lower emission engine (repower)**

- Complete APPENDIX II, Vehicle Information Form and the Engine Repower Quotation Form. GCCOG will fill in the new engine serial number when applicable.
- In section 6, fill in the historic number of miles within and outside the South Coast Air Basin.
- On the Engine Repower Quotation Form section 8, fill in all applicable costs. Notice that some boxes are gray. The GCCOG will not fund these parts and will not pay taxes. For parts less than $100, please include them in Other Repairs. If the total for Other Repairs is greater than $500, please attach additional pages to specify the parts and prices. Any additional must be justified. This includes the purchase of a transmission, radiator, etc. The GCCOG reserves the right to ask for additional estimates for any application. The Program may pay for a jake brake if one was installed on the replaced engine.
- All replacement engines must be certified by the ARB. Should you need assistance, please contact the GCCOG for additional information.

❑ **New lower emission vehicle purchase (Section 8 A)**

- Complete APPENDIX II, the Vehicle Information Form. The fleet identification number and license plate number may be filled out after the approved purchase of the replacement vehicle has been completed.
- In section 8(A), fill in the cost of the low-emission vehicle and the cost of a comparable diesel vehicle.

❑ **Retrofit of an existing engine (Section 8 D)**

- This section applies to all technologies that are certified/verified by the ARB to reduce Oxides of Nitrogen (NOx) and Particulate Matter (PM) in on-road heavy-duty vehicles.
- Complete APPENDIX II, Vehicle Information Form. In section 5, provide the percentage of NOx reduction in the NOx level box as certified by ARB.

❑ **Incremental lower emission fuel cost (Section 8 B)**

- Complete APPENDIX II, Vehicle Information Form
- All lower emission fuels must be either certified or verified by the California Air Resources Board. Please contact the GCCOG for additional information.

❑ **Fueling infrastructure:**

Amount requested $ _____

For more information, visit our Website:
http://www.gatewaycog.org/home.html

GCCOG Contact
Program Manager: 562-663-6850
Programmanager@gwcog.gov

Please submit application to the:
Gateway Cities Council of Governments
Gateway Cities Clean Air Pilot Program
c/o TIAX, LLC
2500 Michelson Drive, Suite 110,
Irvine, CA 92612

Appendix II
Gateway Cities Clean Air Pilot Program
Vehicle Information Form

Please Type or Print Neatly in INK only

Section 1: Counties Vehicle Will Be Operated In (Check all that apply – refer to Appendix IV)

❑ Los Angeles ❑ Orange ❑ Riverside ❑ San Bernardino

Section 2: Replaced Vehicle Information

Make:	Model:	Model Year:	GVWR:	Wt. Class:
Vehicle Identification Number:	**Fleet Identification Number:**	**License Plate Number:**	**Vocation(s) (required):**	

To determine your Baseline Mileage, please provide the number of miles that you have driven the replaced vehicle in the **South Coast Air Basin** (SCAB) over the last two years: Miles in SCAB for last 12 months: _____ Miles in SCAB for 12 months previous to the last year: _____ Please provide the % of your total miles over the last 24 months that have been in the SCAB: _____% (must be at least 85%). Please attach documentation to support these mileages, as described in Section VI. B. 6.

Section 3: Primary Carrier Contact Information

Company Name:	Contact:	Phone:

Section 4: Replaced Vehicle's Engine Information

Make:	Model:	Year:	Serial Number:	HP:
❑ ❑ ❑ ❑ ❑				

Section 5: Replacement Vehicle Information

Make:	Model:	Model Year:	GVWR:	Wt. Class:
Vehicle Identification Number:	**License Plate Number:**	**Odometer Reading:**	**Single Exhaust:**	**Dual Exhaust:**
			❑	❑

Section 6: Replacement Vehicle's Engine Information (or Reconditioned Engine / Repowered Engine Information

Make:	Model:	Year:	Serial Number:	HP:	NOx Level:
Fuel Type:	❑ CNG ❑ Diesel ❑ LNG ❑ LPG ❑ Other:				g/bhp-hr

Section 7: Anticipated Annual Mileage for Replacement Vehicle
(See Appendix IV for map of South Coast Air Basin)

(Please estimate the miles your replacement truck will be operated on a seasonal basis, within and outside the South Coast Air Basin)

	Within the South Coast Air Basin		Outside of South Coast Air Basin		
	May – October	November – April	May – October	November – April	Total Operation
Miles					

Note: this will help determine the percentage of emissions that will occur during the peak smog season (May through October).

Section 8: Cost Information

(A) New Vehicle Application	
① LEV* cost	
② Non-LEV* cost	–
③ Difference (①-②)	=

* Low-emission vehicle

(B) Incremental Fuel Application	
① LEV fuel cost/gal	
② Ave. diesel cost/gal	–
③ Difference (①-②)	=

(C) Vehicle Replacement Application	
① N.A.D.A. adjusted loan value	
② Body Value (if applicable)	+
③ Cost of kit	+
④ Engine repower cost (if applicable) Q from section 8*	+
⑤ Replaced Vehicle Repair Costs**	–
⑥ ***Total (①+②+③+④-⑤)	=

* Use Engine Repower Quotation Form
** Costs as determined by Vehicle Inspection Form, Appendix VI.

(D) Engine Retrofit Application	
① Retrofit system cost	
② Unique parts cost*	+
③ Installation labor	+
④ Total (①+②+③)	=

* Over $100 on a per part basis

***Section 8 C calculates the amount of incentive funds that you may qualify for. The GCCOG program manager will evaluate the above information and complete a cost effectiveness calculation utilizing the SECAT fleet modernization calculator to determine actual incentive funds available. For more information regarding the SECAT fleet modernization calculator, visit www:4Secat.com/where.html.

Section 9: Engine Repower Quotation Form
(To Be Completed By Engine Installer of Your Choice)

Item	GWCOG	Applicant	Total
Existing Engine Rebuild Parts			①
Existing Engine Rebuild Labor			②
Rebuild Total (①+②)			③

Lower-Emission Engine			④

Core Up-Grade			
W/Jake Brake			
Transmission			
Radiator			
Flywheel			
Bell Housing			
Engine Mounts			
Fan Hub & Blade			
Odometer Repair			
Fluids, Filters, Belts & Misc. Hoses			
Jake Brake Tune-up			
Clutch			
Surface Flywheel			
Transmission input shaft			
U-Joints			
Pilot Bearing			
Misc. Core Enhancements			
Other Repairs (if over $500, please list separately)			
Total Parts Cost (Unique Parts Cost):	⑤	⑥	
Labor	⑦		
Tax		⑧	
Total Lower Emission Engine Cost (④ + ⑤ + ⑥ + ⑦ + ⑧)		Without Tax	⑨

Minimum Applicant Total = ③ + ⑥ + ⑧ = ⑩

(Applicant total depends upon qualified incentive amount as determined by GCCOG program manager)

GWCOG Program Total = ⑨ - ⑩ = ✪

Appendix III
Gateway Cities Clean Air Pilot Program
Fleet Modernization
Applicant Statement and Agreement

I certify to the best of my knowledge this application meets the minimum requirements as defined in the Guidelines for the Fleet Modernization Program and that all the information provided in this application is accurate.

I understand that priority may be given to applicants who operate predominantly in the Gateway Cities or Port areas and agree to accept the evaluation performed on my application as described in the Gateway Cities Clean Air Pilot Program Guidelines. I understand that all technologies must either be verified or certified by the California Air Resources Board (ARB) to reduce Oxides of Nitrogen (NOx). I understand that there are conditions placed upon receiving this incentive and agree to refund the incentive if at any time it is found that I do not meet those conditions.

I understand that this program has limited funds and that the Gateway Cities Clean Air Pilot Program shall be under no obligation to honor requests received following depletion of program funding. I acknowledge that receipt of this incentive prohibits application for any form of emission reduction credits including: Emission Reduction Credit (ERC), Mobile Emission Reduction Credit (MERC) and/or Certificate of Advanced Placement (CAP), for all time, from the South Coast Air Quality Management District or any other Air Quality Management or Air Pollution Control District.

I agree to maintain the replacement vehicle in accordance with all State and local laws. I also agree not to alter, change or otherwise tamper with the hardware or software that controls the engines emissions performance. If the integrity of the emission control devices are altered or disabled, I understand that I am responsible to refund the incentive in full.

In the event that the replacement vehicle(s) do not complete the minimum five (5) year term of this application I agree to reimburse to the Gateway Cities Clean Air Pilot Program the full amount of the original incentive. GCCOG may pro-rate any repayment request based on the length of time that the participant successfully achieved program requirements.

Persons applying on behalf of an entity must have legal authority to bind that entity.

Please Type or Print Clearly using INK only—Original Application Forms with an ORIGINAL SIGNATURE Must Be Submitted—Faxes Will Not Be Accepted

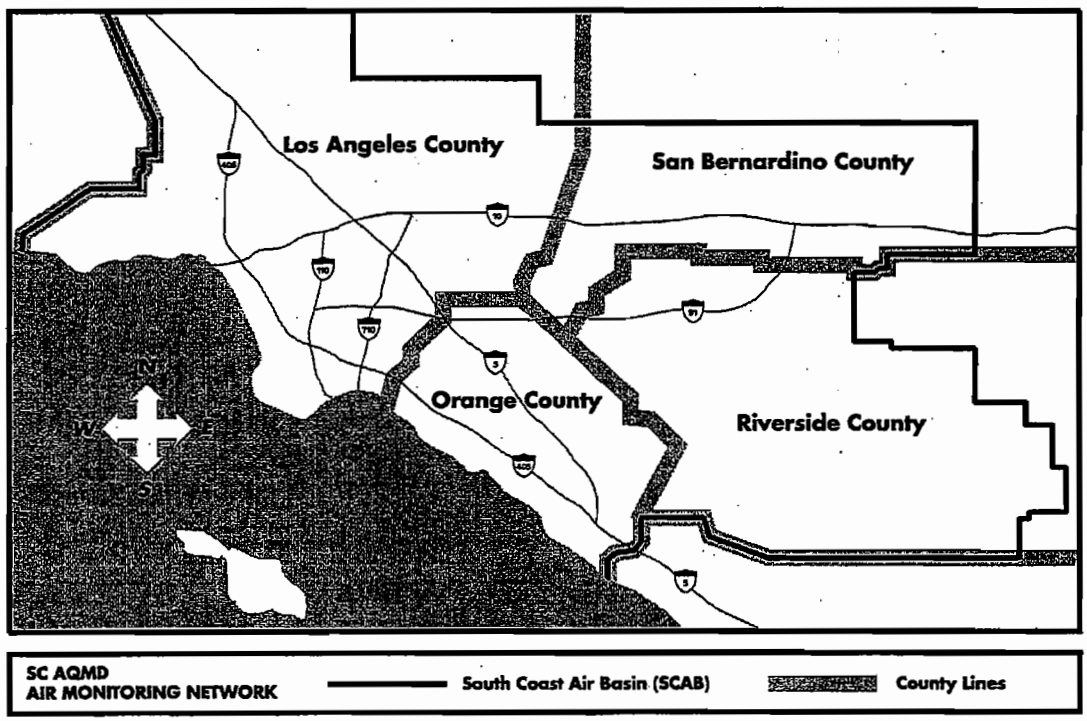
Authorized Signature _____ Date _____

Applicant Name _____ Title _____

Appendix IV
Gateway Cities Clean Air Pilot Program
Map of The South Coast Federal Ozone Non-Attainment Area (South Coast Air Basin)

Applicants in the Gateway Cities Clean Air Pilot Program's Truck Fleet Modernization Program must accept operational limits on where and how much they drive the replacement vehicle they receive as a result of participating in this program. Specifically, applicants must agree to drive 85% of their annual miles inside the South Coast Air Basin and within their designated vocation, not to exceed 1.3 times the base mileage. The map below shows the applicable boundaries.

A more accurate map is available upon request.



Appendix V
Gateway Cities Clean Air Pilot Program
Internal Revenue Service Form W-9

Form **W-9**
(Rev. January 2002)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

Give form to the requester. Do not send to the IRS.

Print or type
See Specific Instructions on page 2.

Name

Business name, if different from above

Check appropriate box: ☐ Individual/ Sole proprietor ☐ Corporation ☐ Partnership ☐ Other ▶ ☐ Exempt from backup withholding

Address (number, street, and apt. or suite no.)

Requester's name and address (optional)

City, state, and ZIP code

List account number(s) here (optional)

Part I **Taxpayer Identification Number (TIN)**

Enter your TIN in the appropriate box. For individuals, this is your social security number (SSN). **However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 2.** For other entities, it is your employer identification number (EIN). If you do not have a number, see **How to get a TIN** on page 2.

Social security number

or

Employer identification number

Note: *If the account is in more than one name, see the chart on page 2 for guidelines on whose number to enter.*

Part II **Certification**

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), **and**
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, **and**
3. I am a U.S. person (including a U.S. resident alien).

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the Certification, but you must provide your correct TIN. (See the instructions on page 2.)

Sign Here **Signature of U.S. person ▶** **Date ▶**

Purpose of Form

A person who is required to file an information return with the IRS must get your correct taxpayer identification number (TIN) to report, for example, income paid to you, real estate transactions, mortgage interest you paid, acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA.

Use Form W-9 only if you are a U.S. person (including a resident alien), to give your correct TIN to the person requesting it (the requester) and, when applicable, to:

1. Certify the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee.

If you are a foreign person, use the appropriate Form W-8. See Pub. 515, Withholding of Tax on Nonresident Aliens and Foreign Entities.

Note: *If a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.*

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 30% of such payments after December 31, 2001 (29% after December 31, 2003). This is called "backup withholding." Payments that may be subject to backup withholding include interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will **not** be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester, or
2. You do not certify your TIN when required (see the Part II instructions on page 2 for details), or
3. The IRS tells the requester that you furnished an incorrect TIN; or
4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or
5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See the instructions on page 2 and the separate **Instructions for the Requester of Form W-9.**

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of $50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a $500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs. If the requester discloses or uses TINs in violation of Federal law, the requester may be subject to civil and criminal penalties.

Cat. No. 10231X Form **W-9** (Rev. 1-2002)

Appendix VI
Gateway Cities Clean Air Pilot Program
Replaced Vehicle Inspection Form

All trucks must be inspected. This inspection is to ensure that all are roadworthy. The following items must be inspected and their condition noted on the following Vehicle Inspection form. This form must be submitted by the dealer to the GCCOG along with all other required documents. No application will be considered if it is not accompanied with a complete Vehicle Inspection form.

License Plate Number	Vehicle Identification Number
Fleet Unit Number / Miles / Mileage/Hub	Street Address / P.O. Box
Motor Carrier (if other than owner)	City / State / ZIP

For replacement vehicle, please fill in total costs onto APPENDIX II, Vehicle Information Form, Section 8 (C) 5 (Vehicle repair costs)

Company: _____

Address: _____

City: _____ State: _____ Zip: _____

Authorized Name: _____

Phone: _____

Authorized Signature: _____

Date: _____

Dealer/Distributor Statement: I certify under penalty of perjury that the information provided here is accurate and the vehicle is roadworthy and in running condition. I further certify that I understand that this Certificate of Vehicle Inspection is incorporated in the Gateway Cities Master Agreement.

Date of Inspection: _____ Inspectors Name and Signature: _____

GCCOG Replaced Vehicle Inspection Form Page 2

Brakes and Tires	Comments and Cost to Repair
❑ Brake Lining, Drums & Adjustment	
❑ Air Hoses & Lines Condition	
❑ Air Loss Test (applied & Unapplied)	
❑ Rim Condition, I.e. Cracks, Lugs Loose	
❑ Inflation Per Mfg Recommendations	
❑ Parking Brake	
Suspension & Chassis	
❑ Check Steering Free Lash, Mounts	
❑ Steering Arms, Drag Links, Tie Rod Ends	
❑ Fifth Wheel Condition, Mounts, Adj.	
❑ Drive Shafts, U-joints, Compensators	
❑ Wheel Seal Leaks, Bearing Hub Levels	
❑ Spring, Shackles, U-bolts, Torque Arms	
Safety Equipment	
❑ Windshield Wipers, Window Cracks	
❑ Lights, Reflectors, Mud Flaps	
❑ Warning Devices: Air, Oil, Temperature	
Engine	
❑ Check Cab Jack System	
❑ Radiator & Water Hoses – Condition	
❑ Belts, Compressor Fan, Water Pump	
❑ Air Lines, Leaks - Condition	
❑ Exhaust System, Leaks	
❑ Engine Mounts, Oil & Fuel Leaks	
❑ Clutch Adjustment & Free Play	
❑ Oil Level, Filter Condition	
❑ Service Battery Box Cover	

Appendix VII
Gateway Cities Clean Air Pilot Program
Participating Dealers

Below is a list of dealers that have elected to participate in the Gateway Cities Clean Air Pilot Program as of the publication of these guidelines. For a more up to date list of participating dealers, please contact the project administrator or visit the project website at http://www.gatewaycog.org/home.html

Hugo Rene Del Cid
Arrow Truck Sales
10175 Cherry Avneue, Fontana
(800) 791-9635
rdelcid@arrowtruck.com

Bruce Brancato
Arrow Truck Sales
3480 Shepherd Street, Whittier
(800) 827-7699
bbrancato@arrowtruck.com

Ricardo Rodriguez Long
Los Angeles Freightliner
18900 S. Susana Road, Long Beach
(310) 223-1640

Mike Vozzella
Los Angeles Freightliner
2429 S. Peck Road, Whittier
(562) 695-0511
mvozzella@laflr.com

Manuel Neira and Zulma Trujillo
Rush Truck Center
8830 E. Slauson Avenue, Pico Rivera
(562) 949-5451
cinquegranij@rush-enterprises.com
Alex Garcia

SelecTrucks of Los Angeles, LLC (Freightliner)
13750 Valley Blvd., Fontana
(800) 543-7621 x5009
agarcia@laflr.com

Ron Breaden, Sr.
TEC of California
14800 Firestone Boulevard,
La Mirada
(800) 593-1010

Douglas Baldwin
WesTrux International
15555 Valley View Avenue
Santa Fe Springs
(562) 404-1020

Appendix VIII
Gateway Cities Clean Air Pilot Program
Certificate of Vendor Acceptance of Old Vehicle for Salvage

Owner: _____ Date: _____

Owner Address: _____

City: _____ State: _____ Zip: _____

Phone: _____

Old Vehicle Information

Make:	Odometer Reading Miles:
Model:	
VIN:	
Year:	

Old Engine Information

Make:	Year:
Model Number:	Serial Number:
Horsepower:	HP:

Date Vehicle was Accepted by a District-Approved Scrappage Yard: _____

Dealer/Distributor Statement: I certify under penalty of perjury that ownership of the vehicle described above was transferred to me. I understand that I have 30 days to transfer vehicle to an authorized salvage company for salvage, as provided in the Gateway Cities program guidelines and Master Agreement.

Company: _____

Address: _____

Authorized Name: _____

Authorized Signature: _____ Date: _____

Appendix IX
Gateway Cities Clean Air Pilot Program
Certificate of Particulate Matter Control Device Installation
Replacement Vehicle

Owner: _____ Installation Date: _____

Owner Address: _____

City: _____ State: _____ Zip: _____

Phone: _____

Replacement Vehicle Information

Make:	Odometer Reading Miles:
Model:	
VIN:	
Year:	

Oxidation Catalyst Information

Company:	
Model Make:	Model Number:
Serial Number:	Serial Number*:

* If more than one catalyst is installed because the replacement vehicle has dual exhaust

Dealer/Distributor Statement: I certify under penalty of perjury that the oxidation catalyst installation made here incorporates a part by part match to make the above listed engine conform to oxidation catalyst installation and engine regulations. I further certify that this engine, as modified by the installation of the oxidation catalyst, conforms to required regulations pertaining to gaseous emissions and smoke certified by the California Air Resources Board. I further certify that I understand that this Certificate of Particulate Matter Control Device Installation – Replacement Vehicle is incorporated into the Gateway Cities Master Agreement.

Company: _____

Address: _____

Authorized Name: _____

Authorized Signature: _____ Date: _____

Appendix X
Gateway Cities Clean Air Pilot Program
Certificate of Digital Odometer Installation
Replacement Vehicle

Owner: _____ Installation Date: _____

Owner Address: _____

City: _____ State: _____ Zip: _____

Phone: _____

Replacement Vehicle Information

Make:	Odometer Reading Miles:
Model:	
VIN:	
Year:	

District Approved Digital Odometer

Company:	Make:
Model:	Serial Number:
Device Location on Truck:	

Please Initial:_____ Photos have been taken according to the Gateway Cities program guidelines

Dealer/Distributor Statement: I certify under penalty of perjury that the digital odometer has been installed in accordance with all manufacturer guidelines and Gateway Cities Program guidelines. All anti-tampering devices available have been included in the installation. Also, all photographs required under the Fleet Modernization Program Guidelines are attached to this Certificate of Digital Odometer Installation – Replacement Vehicle. In addition, all parts are in working condition at the time of truck release. I further certify that I understand that this Certificate of Digital Odometer Installation – Replacement Truck is incorporated into the Gateway Cities Master Agreement.

Company: _____

Address: _____

Authorized Name: _____

Authorized Signature: _____ Date: _____

Appendix XI
Gateway Cities Clean Air Pilot Program
Certificate of Engine Recalibration
Replacement Vehicle

Participant: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____

Replacement Vehicle Information

Make:	Odometer Reading Miles:
Model:	
VIN:	
Year:	

Replacement Engine Information

Engine Make:	Model Number:	
Serial Number:	Horsepower:	HP:

Modification Date: _____

Changes made to engine:

_____

_____

_____

_____

List parts from the repair order used in the modification of the engine.

Parts List:

Qty:	Part #	Description

Dealer/Distributor Statement: I certify under penalty of perjury that the engine calibration made herein incorporates a part by part match to make the above listed engine conform to the lowest NOx emission level available for this model engine currently available from the engine manufacturer. I further certify that this engine, as modified, conforms to required regulations pertaining to gaseous emissions and smoke certified by the California Air Resources Board. I further certify that I understand that this Certificate of Engine Calibration – Replacement Vehicle is incorporated into the Gateway Cities Master Agreement.

Company: _____

Address: _____

City: _____ State: _____ Zip: _____

Authorized Name: _____ Phone: _____

Authorized Signature: _____ Date: _____

Appendix XII
Gateway Cities Clean Air Pilot Program
Certificate of Vehicle Destruction
Replaced (Old) Vehicle

Owner: _____ Date: _____

Owner Address: _____

City: _____ State: _____ Zip: _____

Phone: _____

Old Vehicle Information

Make:	Odometer Reading Miles:
Model:	
VIN:	
Year:	

Old Engine Information

Make:	Year:
Model Number:	Serial Number:
Horsepower:	HP:

Date Vehicle was Accepted: _____ Date Vehicle was Destroyed: _____

Please Initial:_____ Photos have been taken according to the GCCOG program guidelines

Salvage Yard Statement: I certify under penalty of perjury that within 60 days from the date I received the old vehicle, the engine block was cracked and the vehicle frame rails cut. Photos of the destroyed vehicle that are required under the Fleet Modernization Program Guidelines are attached to this Certificate of Vehicle Destruction – Old Vehicle. I further certify that I understand that this Certificate of Vehicle Destruction – Old Vehicle is incorporated into the GCCOG Master Agreement.

Company: _____

Address: _____

Authorized Name: _____

Authorized Signature: _____ Date: _____

Appendix XIII
Gateway Cities Clean Air Pilot Program
Sample Invoice from Participant to GCCOG

Company Name/Owner (depending on Tax ID or SSN): _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____

September 13, 2002

Please remit payment of **$Funding Amount (Funding)** on the purchase of low emission vehicle(s) and engine(s) in participation of the Gateway Cities Clean Air Program.

❑ Please make the check a two-party check out to "Company Name / Owner" and "Shop Used (Application)".

Thank you,

_____

Signed: Signed By (Application), Signed by title (application)

❑ Tax ID # ❑ Fed. # ❑ SSN

Agreement Number: _____

Replacement Truck Information: _____

Make and Model: _____ Year: _____

VIN# _____

New Engine Make and Model: _____ Year: _____

Reimbursement Amount: $ _____

Appendix XIV
Gateway Cities Clean Air Pilot Program
Definition of Terms

ARB	California Air Resources Board.
Baseline Horsepower	The manufactures rated horsepower for the replaced vehicle engine. In the absence of a manufactures rated horsepower for the replace vehicle engine, a dynamometer test may be performed at the applicant's expense to determine the base line horsepower rating.
BIT	Biennial Inspection of Terminals
CHP	California Highway Patrol
Digital Odometer	An odometer provided to the applicant by the GCCOG that automatically records the total miles a replacement truck is driven in each of California's air quality non-attainment areas and has the capability of transmitting the data to GCCOG. A digital odometer must be installed by the truck dealer in each replacement truck. If the odometer is not available at the time of purchase of the replacement truck, the applicant must return the truck to the dealer for installation of the digital odometer when it becomes available.
GCCOG	Gateway Cities Council of Governments
Qualified Salvage Yard	A vehicle salvage yard that is under contract to the GCCOG to destroy replaced vehicles. To qualify, a salvage yard must have all of the appropriate licenses with the DMV and must be certified to handle hazardous materials.
PM Control Device	Exhaust aftertreatment device used to clean up diesel soot or particulate matter. PM control devices must be verified for use in the replacement vehicle by the ARB.
Reflash	Reprogramming the engine control module to achieve lower NOx emissions.
Replaced Vehicle	1983 or older vehicle turned in to the program to be scrapped and replaced. Vehicle and engine will be destroyed at qualified salvage yard.
Replacement Vehicle	1994 or newer vehicle that will be purchased with assistance from the Gateway Cities Clean Air Program.
Vocation	The business and application for which the applicant uses his/her truck, - e.g., port container, recycled material or dirt hauling, etc.). Essentially, vocation must be the same for the replacement (newer) truck as it was for the replaced (old) truck, over the 5-year life of the project.

The Clean Air Program is managed by
The Gateway Cities Council of Governments
of Southeast Los Angeles County
in cooperation with the Port of Long Beach,
the California Air Resources Board and
the United States Environmental Protection Agency.

The Clean Air Program Information Line (800) 800-4414

GATEWAY CITIES
COUNCIL OF GOVERNMENTS

ATTACHMENT 4
TO EXHIBIT A

RECEIVED
JAN 2 0 2004
PORT OF STOCKTON

J. Phyllis Fox, Ph.D, PE, DEE
Environmental Management
2530 Etna Street
Berkeley, CA 94704
510-843-1126
510-845-0983 (fax)
Fox@AeroAquaTerra.Com

Dr. Fox has over 30 years of experience in the field of environmental engineering, including air quality management, water quality and water supply investigations, hazardous waste investigations, environmental permitting, nuisance investigations, environmental impact reports, CEQA/NEPA documentation, risk assessments, and litigation support.

EDUCATION

Ph.D. Environmental/Civil Engineering, University of California, Berkeley, 1980.
M.S. Environmental/Civil Engineering, University of California, Berkeley, 1975.
B.S. Physics (with high honors), University of Florida, Gainesville, 1971.

Post-Graduate:
S-Plus Data Analysis, MathSoft, 6/94.
Air Pollutant Emission Calculations, UC Berkeley Extension, 6-7/94
Assessment, Control and Remediation of LNAPL Contaminated Sites, API and USEPA, 9/94
Pesticides in the TIE Process, SETAC, 6/96
Sulfate Minerals: Geochemistry, Crystallography, and Environmental Significance, Mineralogical Society of America/Geochemical Society, 11/00.
Design of Gas Turbine Combined Cycle and Cogeneration Systems, Thermoflow, 12/00
Air-Cooled Steam Condensers and Dry- and Hybrid-Cooling Towers, Power-Gen, 12/01
Combustion Turbine Power Augmentation with Inlet Cooling and Wet Compression, Power-Gen, 12/01
CEQA Update, UC Berkeley Extension, 3/02
The Health Effects of Chemicals, Drugs, and Pollutants, UC Berkeley Extension, 4-5/02
Noise Exposure Assessment: Sampling Strategy and Data Acquisition, AIHA PDC 205, 6/02
Noise Exposure Measurement Instruments and Techniques, PDC 302, 6/02
Noise Control Engineering, AIHA PDC 432, 6/02
Optimizing Generation and Air Emissions, Power-Gen, 12/02
Utility Industry Issues, Power-Gen, 12/02
Multipollutant Emission Control, Coal-Gen, 8/03

REGISTRATION

Class I Registered Environmental Assessor, California (REA-00704)
Class II Registered Environmental Assessor, California (REA-20040)
Qualified Environmental Professional, Institute of Professional Environmental Practice (QEP #02-010007)
Registered Professional Engineer: Arizona, California, Florida, Georgia, Washington

Diplomate Environmental Engineer, American Academy of Environmental Engineers, Certified in Air Pollution Control (DEE #01-20014)

PROFESSIONAL HISTORY

Environmental Management, Principal, 1981-present
Lawrence Berkeley Laboratory, Principal Investigator, 1977-1981
University of California, Berkeley, Program Manager, 1976-1977
Bechtel, Inc., Engineer, 1971-1976, 1964-1966

PROFESSIONAL AFFILIATIONS

Society of Environmental Toxicology and Chemistry
Association for the Environmental Health of Soils
American Society of Civil Engineers
American Industrial Hygiene Association
Air and Waste Management Association
American Chemical Society
Phi Beta Kappa
Sigma Pi Sigma

Who's Who Environmental Registry, PH Publishing, Fort Collins, CO, 1992.
Who's Who in the World, Marquis Who's Who, Inc., Chicago, IL, 11th Ed., p. 371, 1993-present.
Who's Who of American Women, Marquis Who's Who, Inc., Chicago, IL, 13th Ed., p. 264, 1984-present.
Who's Who in Science and Engineering, Marquis Who's Who, Inc., New Providence, NJ, 5th Ed., p. 414, 1999-present.
Guide to Specialists on Toxic Substances, World Environment Center, New York, NY, p. 80, 1980.
National Research Council Committee on Irrigation-Induced Water Quality Problems (Selenium), Subcommittee on Quality Control/Quality Assurance (1985-1990).
National Research Council Committee on Surface Mining and Reclamation, Subcommittee on Oil Shale (1978-80)

REPRESENTATIVE EXPERIENCE

Performed environmental investigations, as outlined below, for a wide range of industrial and commercial facilities including refineries, reformulated fuels projects, petroleum distribution terminals, conventional and thermally enhanced oil production, underground storage tanks,

pipelines, gasoline stations, landfills, railyards, hazardous waste treatment facilities, power plants, transmission lines, airports, hydrogen plants, petroleum coke calcining plants, asphalt plants, cement plants, incinerators, flares, manufacturing facilities (semiconductors, electronic assembly, aerospace components, printed circuit boards, amusement park rides), lanthanide processing plants, ammonia plants, urea plants, food processing plants, grain processing facilities, paint formulation plants, wastewater treatment plants, marine terminals, ports, gas processing plants, steel mills, battery manufacturing plants, pesticide manufacturing and repackaging facilities, pulp and paper mills, redevelopment projects (e.g., Mission Bay, Southern Pacific Railyards, Moscone Center expansion, San Diego Padres Ballpark), residential developments, commercial office parks, campuses, shopping centers, server farms, and a wide range of mines including sand and gravel, hard rock, limestone, nacholite, coal, molybdenum, gold, zinc, and oil shale.

EXPERT WITNESS/LITIGATION SUPPORT

- Assist environmental organizations to review draft PSD permit for a 600-MW coal-fired power plant in West Virginia. Prepared comments on permit enforceability, coal washing, and BACT for SO_2 and PM10.
- Assist citizens group and labor union challenge issuance of conditional use permit issued for at 317,000 ft^2 discount store in Honolulu without any environmental review. In support of a motion for preliminary injunction, prepared 7-page declaration addressing public health impacts of diesel exhaust from vehicles serving the Project. In preparation for trial, prepared 20-page preliminary expert report summarizing results of diesel exhaust and noise measurements at two big box retail stores in Honolulu, estimated diesel PM10 concentrations for Project using ISCST, prepared a cancer health risk assessment based on these analyses, and evaluated noise impacts. Case in progress.
- Assist environmental organizations to challenge the DOE Finding of No Significant Impact (FONSI) for the Baja California Power and Sempra Energy Resources Cross-Border Transmissions Lines in the U.S. and four associated power plants located in Mexico (DOE EA-1391). Prepared 20-page declaration in support of motion for summary judgment addressing emissions, including CO_2 and NH_3, offsets, BACT, cumulative air quality impacts, alternative cooling systems, and water use and water quality impacts. Plaintiff's motion for summary judgment granted in part. U.S. District Court, Southern District decision concluded that the Environmental Assessment and FONSI violated NEPA and the APA due to their inadequate analysis of the potential controversy surrounding the project, water impacts, impacts from NH_3 and CO_2, alternatives, and cumulative impacts. Border Power Plant Working Group v. Department

of Energy and Bureau of Land Management, Case No. 02-CV-513-IEG (POR) (May 2, 2003).

- Assist Sacramento school in review of draft air permit issued for diesel generator located across from playfield. Prepared comments on emission estimates, enforceability, BACT, and health impacts of diesel exhaust.
- Assist unions in appeal of Title V permit issued by BAAQMD to carbon plant that manufactured coke. Reviewed District files and prepared technical comments on Title V permit. Reviewed responses to comments and assisted counsel draft appeal to BAAQMD hearing board, opening brief, motion to strike, and rebuttal brief. Case settled.
- Assisted California Central Coast city obtain controls on a proposed new city that straddles the Ventura-Los Angeles County boundary. Reviewed several environmental impact reports, prepared an air quality analyses, a diesel exhaust health risk assessment, and detailed review comments.
- Assisted Central California city to obtain controls on large alluvial sand quarry and asphalt plant proposing a modernization. Prepared comments on Negative Declaration on air quality, public health, noise, and traffic. Evaluated process flow diagrams and engineering reports to determine whether proposed changes increased plant capacity or substantially modified plant operations. Prepared comments on application for categorical exemption from CEQA. Presented testimony to County Board of Supervisors. Developed controls to mitigate impacts. Assisted counsel draft Petition for Writ. Case settled June 2002. Substantial improvements in plant operations were obtained including cap on throughput, dust control measures, asphalt plant loadout enclosure, and restrictions on truck routes.
- Assisted oil companies on the California Central Coast in defending class action citizens lawsuit alleging health effects due to emissions from gas processing plant and leaking underground storage tanks. Reviewed regulatory and other files and advised counsel on merits of case. Case settled November 2001.
- Assist oil company on the California Central Coast in defending property damage claims arising out of a historic oil spill. Reviewed site investigation reports, pump tests, leachability studies, and health risk assessments, participated in design of additional site characterization studies to assess health impacts, and advised counsel on merits of case. Prepare health risk assessment.
- Assisted unions in appeal of Initial Study/Negative Declaration ("IS/ND") for an MTBE phaseout project at a Bay Area refinery. Reviewed IS/ND and supporting agency permitting files and prepared technical comments on air quality, groundwater, and public health impacts. Reviewed responses to comments and final IS/ND and ATC permits and assisted counsel to draft petitions and briefs appealing decision to Air District Hearing Board. Presented sworn direct and rebuttal testimony with cross examination on groundwater

impacts of ethanol spills on hydrocarbon contamination at refinery. Hearing Board ruled 5 to 0 in favor of appellants, remanding ATC to district to prepare an EIR.

- Assist Florida cities in challenging the use of diesel and proposed BACT determinations in prevention of significant deterioration (PSD) permits issued to two 510-MW simple cycle peaking electric generating facilities and one 1,080-MW simple cycle/combined cycle facility. Reviewed permit applications, draft permits, and FDEP engineering evaluations, assisted counsel in drafting petitions and responding to discovery. Participated in settlement discussions.
- Assisted large California city in federal lawsuit alleging peaker power plant is violating its federal permit. Reviewed permit file and applicant's engineering and cost feasibility study to reduce emissions through retrofit controls. Advised counsel on feasible and cost-effective NOx, SOx, and PM10 controls for several 1960s diesel-fired Pratt and Whitney peaker turbines.
- Assist coalition of Georgia environmental groups in evaluating BACT determinations and permit conditions in PSD permits issued to several large natural gas-fired simple cycle and combined-cycle power plants. Prepare technical comments on draft PSD permits on BACT, enforceability of limits, and toxic emissions. Review responses to comments, advise counsel on merits of cases, participate in settlement discussions, present oral and written testimony in adjudicatory hearings, and provide technical assistance as required. Cases settled.
- Assist citizen's group in Massachusetts review, comment on, and participate in permitting of pollution control retrofits of coal-fired power plant.
- Assist construction unions in review of air quality permitting actions before the Indiana Department of Environmental Management ("IDEM") for several natural gas-fired simple cycle peakers and combined cycle power plants.
- Assist building trades in review of air quality permitting actions for 1500-MW coal-fired Thoroughbred power plant before the Kentucky Department for Environmental Protection. Retained as expert on BACT, MACT, emissions, permit enforceability, and public health issues in appeal of final PSD permit by plaintiffs in Sierra Club et al. v. Natural Resources & Environmental Protection Cabinet, Division of Air Quality and Thorough Generating Company et al. Deposed for 5 days. Presented direct testimony on BACT and MACT. Case in progress.
- Assist coalition of towns and environmental groups in challenging air permits issued to 523 MW dual fuel (natural gas and distillate) combined-cycle power plant in Connecticut. Prepared technical comments on draft permits and 60 pages of written testimony addressing emission estimates, startup/shutdown issues, BACT/LAER analyses, and toxic air emissions. Presented testimony in adjudicatory administrative hearings before the Connecticut Department of Environmental Protection in June 2001 and December 2001.

- Assist various coalitions of unions, citizens groups, cities, public agencies, and developers in licensing and permitting of over 20 large combined cycle, simple cycle, and peaker power plants in California, Arizona, Oklahoma, Oregon, and elsewhere. Prepare analyses of and comments on applications for certification, preliminary and final staff assessments, and permits issued by local agencies. Present written and oral testimony before California Energy Commission and Arizona Power Plant and Transmission Line Siting Committee on hazards of ammonia use and transportation, health effects of air emissions, contaminated property issues, BACT/LAER issues related to SCR and SCONOx, criteria and toxic pollutant emission estimates, MACT analyses, air quality modeling, water supply and water quality issues, and methods to reduce water use, including dry cooling, parallel dry-wet cooling, hybrid cooling, and zero liquid discharge systems.
- Assist unions, cities, and neighborhood associations in challenging an EIR issued for the proposed expansion of the Oakland Airport. Reviewed two draft EIRs and prepared a health risk assessment and extensive technical comments on air quality and public health impacts. The California Court of Appeals, First Appellate District, ruled in favor of appellants and plaintiffs, concluding that the EIR "2) erred in using outdated information in assessing the emission of toxic air contaminants (TACs) from jet aircraft; 3) failed to support its decision not to evaluate the health risks associated with the emission of TACs with meaningful analysis," thus accepting my technical arguments and requiring the Port to prepare a new EIR. See *Berkeley Keep Jets Over the Bay Committee, City of San Leandro, and City of Alameda et al. v. Board of Port Commissioners* (August 30, 2001) 111 Cal.Rptr.2d 598.
- Assisted lessor of former gas station with leaking underground storage tanks and TCE contamination from adjacent property. Lessor held option to purchase, which was forfeited based on misrepresentation by remediation contractor as to nature and extent of contamination. Remediation contractor purchased property. Reviewed regulatory agency files and advised counsel on merits of case. Case not filed.
- Advised counsel on merits of several pending actions, including a Proposition 65 case involving groundwater contamination at an explosives manufacturing firm and two former gas stations with leaking underground storage tanks.
- Assisted defendant foundry in Oakland in a lawsuit brought by neighbors alleging property contamination, nuisance, trespass, smoke, and health effects from foundry operation. Inspected and sampled plaintiff's property. Advised counsel on merits of case. Case settled.
- Assisted business owner facing eminent domain eviction. Prepared technical comments on a negative declaration for soil contamination and public health risks from air emissions from a proposed redevelopment project in San Francisco in support of a CEQA lawsuit. Case settled.
- Assisted neighborhood association representing residents living downwind of a Berkeley asphalt plant in separate nuisance and CEQA lawsuits. Prepared technical comments on air

quality, odor, and noise impacts, presented testimony at commission and council meetings, participated in community workshops, and participated in settlement discussions. Cases settled. Asphalt plant was upgraded to include air emission and noise controls, including vapor collection system at truck loading station, enclosures for noisy equipment, and improved housekeeping.

- Assisted a Fortune 500 residential home builder in claims alleging health effects from faulty installation of gas appliances. Conducted indoor air quality study, advised counsel on merits of case, and participated in discussions with plaintiffs. Case settled.
- Assisted property owners in Silicon Valley in lawsuit to recover remediation costs from insurer for large TCE plume originating from a manufacturing facility. Conducted investigations to demonstrate sudden and accidental release of TCE, including groundwater modeling, development of method to date spill, preparation of chemical inventory, investigation of historical waste disposal practices and standards, and on-site sewer and storm drainage inspections and sampling. Prepared declaration in opposition to motion for summary judgment. Case settled.
- Assisted residents in east Oakland downwind of a former battery plant in class action lawsuit alleging property contamination from lead emissions. Conducted historical research and dry deposition modeling that substantiated claim. Participated in mediation at JAMS. Case settled.
- Assisted property owners in West Oakland who purchased a former gas station that had leaking underground storage tanks and groundwater contamination. Reviewed agency files and advised counsel on merits of case. Prepared declaration in opposition to summary judgment. Prepared cost estimate to remediate site. Participated in settlement discussions. Case settled.
- Consultant to counsel representing plaintiffs in two Clean Water Act lawsuits involving selenium discharges into San Francisco Bay from refineries. Reviewed files and advised counsel on merits of case. Prepared interrogatory and discovery questions, assisted in deposing opposing experts, and reviewed and interpreted treatability and other technical studies. Judge ruled in favor of plaintiffs.
- Assisted an oil company in a complaint filed by a resident of a small beach community alleging that discharges of tank farm rinse water into the sanitary sewer system caused hydrogen sulfide gas to infiltrate residence, sending occupants to hospital. Inspected accident site, interviewed parties to the event, and reviewed extensive agency files related to incident. Used chemical analysis, field simulations, mass balance calculations, sewer hydraulic simulations with SWMM44, atmospheric dispersion modeling with SCREEN3, odor analyses, and risk assessment calculations to demonstrate that the incident was caused by a faulty drain trap and inadequate slope of sewer lateral on resident's property. Prepared a detailed technical report summarizing these studies. Case settled.

- Assisted large West Coast city in suit alleging that leaking underground storage tanks on city property had damaged the waterproofing on downgradient building, causing leaks in an underground parking structure. Reviewed subsurface hydrogeologic investigations and evaluated studies conducted by others documenting leakage from underground diesel and gasoline tanks. Inspected, tested, and evaluated waterproofing on subsurface parking structure. Waterproofing was substandard. Case settled.
- Assisted residents downwind of gravel mine and asphalt plant in Siskiyou County, California, in suit to obtain CEQA review of air permitting action. Prepared two declarations analyzing air quality and public health impacts. Judge ruled in favor of plaintiffs, closing mine and asphalt plant.
- Assisted defendant oil company on the California Central Coast in class action lawsuit alleging property damage and health effects from subsurface petroleum contamination. Reviewed documents, prepared risk calculations, and advised counsel on merits of case. Participated in settlement discussions. Case settled.
- Assisted defendant oil company in class action lawsuit alleging health impacts from remediation of petroleum contaminated site on California Central Coast. Reviewed documents, designed and conducted monitoring program, and participated in settlement discussions. Case settled.
- Consultant to attorneys evaluating a potential challenge of USFWS actions under CVPIA section 3406(b)(2). Reviewed agency files and collected and analyzed hydrology, water quality, and fishery data. Advised counsel on merits of case. Case not filed.
- Assisted residents downwind of a Carson refinery in class action lawsuit involving soil and groundwater contamination, nuisance, property damage, and health effects from air emissions. Reviewed files and provided advise on contaminated soil and groundwater, toxic emissions, and health risks. Prepared declaration on refinery fugitive emissions. Prepared deposition questions and reviewed deposition transcripts on air quality, soil contamination, odors, and health impacts. Case settled.
- Assisted residents downwind of a Contra Costa refinery who were affected by an accidental release of naphtha. Characterized spilled naphtha, estimated emissions, and modeled ambient concentrations of hydrocarbons and sulfur compounds. Deposed. Presented testimony in binding arbitration at JAMS. Judge found in favor of plaintiffs.
- Assisted residents downwind of Contra Costa County refinery in class action lawsuit alleging property damage, nuisance, and health effects from several large accidents as well as routine operations. Reviewed files and prepared analyses of environmental impacts. Prepared declarations, deposed, and presented testimony before jury in one trial and judge in second. Case pending.

- Assisted business owner claiming damages from dust, noise, and vibration during a sewer construction project in San Francisco. Reviewed agency files and PM10 monitoring data and advised counsel on merits of case. Case settled.
- Assisted residents downwind of Contra Costa County refinery in class action lawsuit alleging property damage, nuisance, and health effects. Prepared declaration in opposition to summary judgment, deposed, and presented expert testimony on accidental releases, odor, and nuisance before jury. Case thrown out by judge, but reversed on appeal and to be retried.
- Presented testimony in small claims court on behalf of residents claiming health effects from hydrogen sulfide from flaring emissions triggered by a power outage at a Contra Costa County refinery. Analyzed meteorological and air quality data and evaluated potential health risks of exposure to low concentrations of hydrogen sulfide. Judge awarded damages to plaintiffs.
- Assisted construction unions in challenging PSD permit for an Indiana steel mill. Prepared technical comments on draft PSD permit, drafted 70-page appeal of agency permit action to the Environmental Appeals Board challenging permit based on faulty BACT analysis for electric arc furnace and reheat furnace and faulty permit conditions, among others, and drafted briefs responding to four parties. EPA Region V and the EPA General Counsel intervened as amici, supporting petitioners. EAB ruled in favor of petitioners, remanding permit to IDEM on three key issues, including BACT for the reheat furnace and lead emissions from the EAF. Drafted motion to reconsider three issues. Prepared 69 pages of technical comments on revised draft PSD permit. Drafted second EAB appeal addressing lead emissions from the EAF and BACT for reheat furnace based on European experience with SCR/SNCR. Case settled. Permit was substantially improved. See *In re: Steel Dynamics, Inc.*, PSD Appeal Nos. 99-4 & 99-5 (EAB June 22, 2000).
- Assisted defendant urea manufacturer in Alaska in negotiations with USEPA to seek relief from penalties for alleged violations of the Clean Air Act. Reviewed and evaluated regulatory files and monitoring data, prepared technical analysis demonstrating that permit limits were not violated, and participated in negotiations with EPA to dismiss action. Fines were substantially reduced and case closed.
- Assisted construction unions in challenging PSD permitting action for an Indiana grain mill. Prepared technical comments on draft PSD permit and assisted counsel draft appeal of agency permit action to the Environmental Appeals Board challenging permit based on faulty BACT analyses for heaters and boilers and faulty permit conditions, among others. Case settled.
- As part of a consent decree settling a CEQA lawsuit, assisted neighbors of a large west coast port in negotiations with port authority to secure mitigation for air quality impacts. Prepared technical comments on mobile source air quality impacts and mitigation and negotiated a $9

million CEQA mitigation package. Currently representing neighbors on technical advisory committee established by port to implement the air quality mitigation program.

- Assisted construction unions in challenging permitting action for a California hazardous waste incinerator. Prepared technical comments on draft permit, assisted counsel prepare appeal of EPA permit to the Environmental Appeals Board. Participated in settlement discussions on technical issues with applicant and EPA Region 9. Case settled.
- Assisted environmental group in challenging DTSC Negative Declaration on a hazardous waste treatment facility. Prepared technical comments on risk of upset, water, and health risks. Writ of mandamus issued.
- Assisted several neighborhood associations and cities impacted by quarries, asphalt plants, and cement plants in Alameda, Shasta, Sonoma, and Mendocino counties in obtaining mitigations for dust, air quality, public health, traffic, and noise impacts from facility operations and proposed expansions.
- For over 100 industrial facilities, commercial/campus, and redevelopment projects, developed the record in preparation for CEQA and NEPA lawsuits. Prepared technical comments on hazardous materials, solid wastes, public utilities, noise, worker safety, air quality, public health, water resources, water quality, traffic, and risk of upset sections of EIRs, EISs, initial studies, and negative declarations. Assisted counsel in drafting petitions and briefs and prepared declarations.
- For several large commercial development projects and airports, assisted applicant and counsel prepare defensible CEQA documents, respond to comments, and identify and evaluate "all feasible" mitigation to avoid CEQA challenges. This work included developing mitigation programs to reduce traffic-related air quality impacts based on energy conservation programs, solar, low-emission vehicles, alternative fuels, exhaust treatments, and transportation management associations.

SITE INVESTIGATION/REMEDIATION/CLOSURE

- Technical manager and principal engineer for characterization, remediation, and closure of waste management units at former Colorado oil shale plant. Constituents of concern included BTEX, As, 1,1,1-TCA, and TPH. Completed groundwater monitoring programs, site assessments, work plans, and closure plans for seven process water holding ponds, a refinery sewer system, and processed shale disposal area. Managed design and construction of groundwater treatment system and removal actions and obtained clean closure.
- Principal engineer for characterization, remediation, and closure of process water ponds at a former lanthanide processing plant in Colorado. Designed and implemented groundwater monitoring program and site assessments and prepared closure plan.

- Advised the city of Sacramento on redevelopment of two former railyards. Reviewed work plans, site investigations, risk assessment, RAPS, RI/FSs, and CEQA documents. Participated in the development of mitigation strategies to protect construction and utility workers and the public during remediation, redevelopment, and use of the site, including buffer zones, subslab venting, rail berm containment structure, and an environmental oversight plan.
- Provided technical support for the investigation of a former sanitary landfill that was redeveloped as single family homes. Reviewed and/or prepared portions of numerous documents, including health risk assessments, preliminary endangerment assessments, site investigation reports, work plans, and RI/FSs. Historical research to identify historic waste disposal practices to prepare a preliminary endangerment assessment. Acquired, reviewed, and analyzed the files of 18 federal, state, and local agencies, three sets of construction field notes, analyzed 21 aerial photographs and interviewed 14 individuals associated with operation of former landfill. Assisted counsel in defending lawsuit brought by residents alleging health impacts and diminution of property value due to residual contamination. Prepared summary reports.
- Technical oversight of characterization and remediation of a nitrate plume at an explosives manufacturing facility in Lincoln, CA. Provided interface between owners and consultants. Reviewed site assessments, work plans, closure plans, and RI/FSs.
- Consultant to owner of large western molybdenum mine proposed for NPL listing. Participated in negotiations to scope out consent order and develop scope of work. Participated in studies to determine premining groundwater background to evaluate applicability of water quality standards. Served on technical committees to develop alternatives to mitigate impacts and close the facility, including resloping and grading, various thickness and types of covers, and reclamation. This work included developing and evaluating methods to control surface runoff and erosion, mitigate impacts of acid rock drainage on surface and ground waters, and stabilize nine waste rock piles containing 328 million tons of pyrite-rich, mixed volcanic waste rock (andesites, rhyolite, tuff). Evaluated stability of waste rock piles. Represented client in hearings and meetings with state and federal oversight agencies.

REGULATORY PERMITTING/NEGOTIATIONS

- Prepared Authority to Construct Permit for remediation of a large petroleum-contaminated site on the Central Coast. Negotiated conditions with agencies and secured permits.
- Prepared Authority to Construct Permit for remediation of a former oil field on the Central Coast. Participated in negotiations with agencies and secured permits.
- Prepared and/or reviewed hundreds of environmental permits, including NPDES, UIC, Stormwater, Authority to Construct, Prevention of Significant Deterioration, New Source Review, and RCRA, among others.

- Participated in the development of the CARB document, *Guidance for Power Plant Siting and Best Available Control Technology*, including attending public workshops and filing technical comments.
- Performed data analyses in support of adoption of emergency power restoration standards by the Public Utilities Commission for "major" power outages, where major is an outage that simultaneously affects 10% of the customer base.
- Drafted portions of the Good Neighbor Ordinance to grant Contra Costa County greater authority over safety of local industry, particularly chemical plants and refineries.
- Participated in drafting BAAQMD Regulation 8, Rule 28, Pressure Relief Devices, including participation in public workshops, review of staff reports, draft rules and other technical materials, preparation of technical comments on staff proposals, research on availability and costs of methods to control PRV releases, and negotiations with staff.
- Participated in amending BAAQMD Regulation 8, Rule 18, Valves and Connectors, including participation in public workshops, review of staff reports, proposed rules and other supporting technical material, preparation of technical comments on staff proposals, research on availability and cost of low-leak technology, and negotiations with staff.
- Participated in amending BAAQMD Regulation 8, Rule 25, Pumps and Compressors, including participation in public workshops, review of staff reports, proposed rules, and other supporting technical material, preparation of technical comments on staff proposals, research on availability and costs of low-leak and seal-less technology, and negotiations with staff.
- Participated in amending BAAQMD Regulation 8, Rule 5, Storage of Organic Liquids, including participation in public workshops, review of staff reports, proposed rules, and other supporting technical material, preparation of technical comments on staff proposals, research on availability and costs of controlling tank emissions, and presentation of testimony before the Board.
- Participated in amending BAAQMD Regulation 8, Rule 18, Valves and Connectors at Petroleum Refinery Complexes, including participation in public workshops, review of staff reports, proposed rules and other supporting technical material, preparation of technical comments on staff proposals, research on availability and costs of low-leak technology, and presentation of testimony before the Board.
- Participated in amending BAAQMD Regulation 8, Rule 22, Valves and Flanges at Chemical Plants, etc, including participation in public workshops, review of staff reports, proposed rules, and other supporting technical material, preparation of technical comments on staff proposals, research on availability and costs of low-leak technology, and presentation of testimony before the Board.
- Participated in amending BAAQMD Regulation 8, Rule 25, Pump and Compressor Seals, including participation in public workshops, review of staff reports, proposed rules, and other

supporting technical material, preparation of technical comments on staff proposals, research on availability of low-leak technology, and presentation of testimony before the Board.

- Participated in the development of the BAAQMD Regulation 2, Rule 5, Toxics, including participation in public workshops, review of staff proposals, and preparation of technical comments.
- Participated in the development of SCAQMD Rule 1402, Control of Toxic Air Contaminants from Existing Sources, and proposed amendments to Rule 1401, New Source Review of Toxic Air Contaminants, in 1993, including review of staff proposals and preparation of technical comments on same.
- Participated in the development of the Sunnyvale Ordinance to Regulate the Storage, Use and Handling of Toxic Gas, which was designed to provide engineering controls for gases that are not otherwise regulated by the Uniform Fire Code.
- Participated in the drafting of the Statewide Water Quality Control Plans for Inland Surface Waters and Enclosed Bays and Estuaries, including participation in workshops, review of draft plans, preparation of technical comments on draft plans, and presentation of testimony before the SWRCB.
- Participated in developing Se permit effluent limitations for the five Bay Area refineries, including review of staff proposals, statistical analyses of Se effluent data, review of literature on aquatic toxicity of Se, preparation of technical comments on several staff proposals, and presentation of testimony before the Bay Area RWQCB.
- Represented the California Department of Water Resources in the 1991 Bay-Delta Hearings before the State Water Resources Control Board, presenting sworn expert testimony with cross examination and rebuttal on a striped bass model developed by the California Department of Fish and Game.
- Represented the State Water Contractors in the 1987 Bay-Delta Hearings before the State Water Resources Control Board, presenting sworn expert testimony with cross examination and rebuttal on natural flows, historical salinity trends in San Francisco Bay, Delta outflow, and hydrodynamics of the South Bay.
- Represented interveners in the licensing of over 20 natural-gas-fired power plants and one coal gasification plant at the California Energy Commission and elsewhere. Reviewed and prepared technical comments on applications for certification, preliminary staff assessments, final staff assessments, preliminary determinations of compliance, final determinations of compliance, and prevention of significant deterioration permits in the areas of air quality, water supply, water quality, biology, public health, worker safety, transportation, site contamination, cooling systems, and hazardous materials. Presented written and oral testimony in evidentiary hearings with cross examination and rebuttal. Participated in technical workshops.

- Represented several parties in the proposed merger of San Diego Gas & Electric and Southern California Edison. Prepared independent technical analyses on health risks, air quality, and water quality. Presented written and oral testimony before the Public Utilities Commission administrative law judge with cross examination and rebuttal.
- Represented a PRP in negotiations with local health and other agencies to establish impact of subsurface contamination on overlying residential properties. Reviewed health studies prepared by agency consultants and worked with agencies and their consultants to evaluate health risks.

WATER QUALITY/RESOURCES

- Directed and participated in research on environmental impacts of energy development in the Colorado River Basin, including contamination of surface and subsurface waters and modeling of flow and chemical transport through fractured aquifers.
- Played a major role in Northern California water resource planning studies since the early 1970s. Prepared portions of the Basin Plans for the Sacramento, San Joaquin, and Delta basins including sections on water supply, water quality, beneficial uses, waste load allocation, and agricultural drainage. Developed water quality models for the Sacramento and San Joaquin Rivers.
- Conducted hundreds of studies over the past 30 years on Delta water supplies and the impacts of exports from the Delta on water quality and biological resources of the Central Valley, Sacramento-San Joaquin Delta, and San Francisco Bay. Typical examples include:
    1. Evaluate historical trends in salinity, temperature, and flow in San Francisco Bay and upstream rivers to determine impacts of water exports on the estuary;
    2. Evaluate the role of exports and natural factors on the food web by exploring the relationship between salinity and primary productivity in San Francisco Bay, upstream rivers, and ocean;
    3. Evaluate the effects of exports, other in-Delta, and upstream factors on the abundance of salmon and striped bass;
    4. Review and critique agency fishery models that link water exports with the abundance of striped bass and salmon;
    5. Develop a model based on GLMs to estimate the relative impact of exports, water facility operating variables, tidal phase, salinity, temperature, and other variables on the survival of salmon smolts as they migrate through the Delta;
    6. Reconstruct the natural hydrology of the Central Valley using water balances, vegetation mapping, reservoir operation models to simulate flood basins, precipitation records, tree ring research, and historical research;

7. Evaluate the relationship between biological indicators of estuary health and down-estuary position of a salinity surrogate (X2);
8. Use real-time fisheries monitoring data to quantify impact of exports on fish migration;
9. Refine/develop statistical theory of autocorrelation and use to assess strength of relationships between biological and flow variables;
10. Collect, compile, and analyze water quality and toxicity data for surface waters in the Central Valley to assess the role of water quality in fishery declines;
11. Assess mitigation measures, including habitat restoration and changes in water project operation, to minimize fishery impacts;
12. Evaluate the impact of unscreened agricultural water diversions on abundance of larval fish;
13. Prepare and present testimony on the impacts of water resources development on Bay hydrodynamics, salinity, and temperature in water rights hearings;
14. Evaluate the impact of boat wakes on shallow water habitat, including interpretation of historical aerial photographs;
15. Evaluate the hydrodynamic and water quality impacts of converting Delta islands into reservoirs;
16. Use a hydrodynamic model to simulate the distribution of larval fish in a tidally influenced estuary;
17. Identify and evaluate non-export factors that may have contributed to fishery declines, including predation, shifts in oceanic conditions, aquatic toxicity from pesticides and mining wastes, salinity intrusion from channel dredging, loss of riparian and marsh habitat, sedimentation from upstream land alternations, and changes in dissolved oxygen, flow, and temperature below dams.

- Developed, directed, and participated in a broad-based research program on environmental issues and control technology for energy industries including petroleum, oil shale, coal mining, and coal slurry transport. Research included evaluation of air and water pollution, development of novel, low-cost technology to treat and dispose of wastes, and development and application of geohydrologic models to evaluate subsurface contamination from in-situ retorting. The program consisted of government and industry contracts and employed 45 technical and administrative personnel.
- Coordinated an industry task force established to investigate the occurrence, causes, and solutions for corrosion/erosion and mechanical/engineering failures in the waterside systems

(e.g., condensers, steam generation equipment) of power plants. Corrosion/erosion failures caused by water and steam contamination that were investigated included waterside corrosion caused by poor microbiological treatment of cooling water, steam-side corrosion caused by ammonia-oxygen attack of copper alloys, stress-corrosion cracking of copper alloys in the air cooling sections of condensers, tube sheet leaks, oxygen in-leakage through condensers, volatilization of silica in boilers and carry over and deposition on turbine blades, and iron corrosion on boiler tube walls. Mechanical/engineering failures investigated included: steam impingement attack on the steam side of condenser tubes, tube-to-tube-sheet joint leakage, flow-induced vibration, structural design problems, and mechanical failures due to stresses induced by shutdown, startup and cycling duty, among others. Worked with electric utility plant owners/operators, condenser and boiler vendors, and architect/engineers to collect data to document the occurrence of and causes for these problems, prepared reports summarizing the investigations, and presented the results and participated on a committee of industry experts tasked with identifying solutions to prevent condenser failures.

- Evaluated the cost effectiveness and technical feasibility of using dry cooling and parallel dry-wet cooling to reduce water demands of several large natural-gas fired power plants in California and Arizona.
- Designed and prepared cost estimates for several dry cooling systems (e.g., fin fan heat exchangers) used in chemical plants and refineries.
- Designed, evaluated, and costed several zero liquid discharge systems for power plants.
- Evaluated the impact of agricultural and mining practices on surface water quality of Central Valley steams. Represented municipal water agencies on several federal and state advisory committees tasked with gathering and assessing relevant technical information, developing work plans, and providing oversight of technical work to investigate toxicity issues in the watershed.

AIR QUALITY/PUBLIC HEALTH

- Prepared or reviewed the air quality and public health sections of hundreds of EIRs and EISs on a wide range of industrial, commercial and residential projects.
- Prepared or reviewed hundreds of NSR and PSD permits for a wide range of industrial facilities.
- Designed, implemented, and directed a 2-year-long community air quality monitoring program to assure that residents downwind of a petroleum-contaminated site were not impacted during remediation of petroleum-contaminated soils. The program included real-time monitoring of particulates, diesel exhaust, and BTEX and time integrated monitoring for over 100 chemicals.
- Designed, implemented, and directed a 5-year long source, industrial hygiene, and ambient monitoring program to characterize air emissions, employee exposure, and downwind

environmental impacts of a first-generation shale oil plant. The program included stack monitoring of heaters, boilers, incinerators, sulfur recovery units, rock crushers, API separator vents, and wastewater pond fugitives for arsenic, cadmium, chlorine, chromium, mercury, 15 organic indicators (e.g., quinoline, pyrrole, benzo(a)pyrene, thiophene, benzene), sulfur gases, hydrogen cyanide, and ammonia. In many cases, new methods had to be developed or existing methods modified to accommodate the complex matrices of shale plant gases.

- Conducted investigations on the impact of diesel exhaust from truck traffic from a wide range of facilities including mines, large retail centers, light industrial uses, and sports facilities. Conducted traffic surveys, continuously monitored diesel exhaust using an aethalometer, and prepared health risk assessments using resulting data.
- Conducted indoor air quality investigations to assess exposure to natural gas leaks, pesticides, molds and fungi, soil gas from subsurface contamination, and outgasing of carpets, drapes, furniture and construction materials. Prepared health risk assessments using collected data.
- Prepared health risk assessments, emission inventories, air quality analyses, and assisted in the permitting of over 70 1 to 2 MW emergency diesel generators.
- Prepare over 100 health risk assessments, endangerment assessments, and other health-based studies for a wide range of industrial facilities.
- Developed methods to monitor trace elements in gas streams, including a continuous real-time monitor based on the Zeeman atomic absorption spectrometer, to continuously measure mercury and other elements.
- Performed nuisance investigations (odor, noise, dust, smoke, indoor air quality, soil contamination) for businesses, industrial facilities, and residences located proximate to and downwind of pollution sources.

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EXHIBIT B

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October 27, 2003

VIA FACSIMILE & U.S. MAIL

Paul Maniccia
Army Corps of Engineers
Sacramento District
1325 J Street
Sacramento, CA 95814-2922

Re: Public Notice Nos. 200300038 and 200300314 – Port of Stockton's West Complex Development

Dear Mr. Maniccia:

We represent the Friends of Riviera Cliffs ("Friends"), a group of citizens living directly across the Stockton Deep Water Channel from Rough and Ready Island, the site of the Port of Stockton's proposed West Complex development ("Project"). On behalf of Friends, we submit these comments in response to the above-referenced Public Notices of the Port of Stockton's request for two section 404 permits for dredging of the area between Rough and Ready Island and the Stockton Deep Water Ship Channel to a new depth of 36 feet to accommodate larger ship traffic. Per our conversation on Thursday, October 23, these comments are timely because the published comment deadline was October 26, a Sunday.

As detailed below, the dredging for which these permits are requested is an integral part of the much larger West Complex Project, which involves the use of all existing berths at the Complex, redeveloping the entire existing industrial/commercial area, and new industrial/commercial development on existing vacant land within the complex, including agricultural land. Accordingly, the National Environmental Policy Act ("NEPA") and the Corps' own regulations require that, before considering whether to grant the requested permits, the Corps must analyze the environmental impacts of that entire Project, including related upland development.

In addition, we encourage the Corps to participate as a responsible agency in the Port's ongoing environmental review of the Project pursuant to the California Environmental Quality Act ("CEQA"). *See* Cal. Pub. Resources Code §§ 21069, 21153. The Corps participation in this process is

particularly important because of the central role that the section 404 permits requested by the Port—if granted—will play in allowing the Project as a whole to move forward and because the Port seems intent on segmenting the dredging and various other components of the Project in an apparent attempt to avoid any environmental review of the Project as a whole until after critical activities have already been approved and carried out. Indeed, as detailed below, the Port has already taken a number of actions that are integral components of the Project without first reviewing the environmental impacts of the Project as a whole.

You indicated in telephone conversations with us that the Corps does not presently intend to reopen the public process for the section 404 permit applications before making a determination on whether to prepare an environmental impact statement ("EIS") and whether to issue the permits. However, before the Corps issues its permits, it must consult with the National Marine Fisheries Service and Fish and Wildlife Service. In addition, the Port of Stockton must obtain water quality certifications from the State Water Quality Control Board, which may not be lawfully issued until the Port has certified an environmental impact report ("EIR") for the entire West Complex Development in compliance with CEQA. Until these processes are complete, the public cannot adequately evaluate the environmental impacts of the Project, including the impacts of the section 404 permits. We therefore urge the Corps to reopen the public comment period once federal agencies have issued biological opinions and the Port completes its EIR for the West Complex Development.

For similar reasons, Friends also requests that the Corps hold a public hearing on the permit applications before deciding whether an EIS is warranted for the Project. Only in this way can the public be ensured an adequate opportunity to present its concerns to the Corps before it makes this critical decision.

I. THE CORPS MUST CONSIDER THE ENVIRONMENTAL IMPACTS OF THE PROJECT AS A WHOLE.

Friends is concerned that the applications for section 404 permits to discharge dredged material do not provide a full view of the Project that the proposed dredging will facilitate. The proposed dredging is only one component of a much larger project, which the Port is currently reviewing under CEQA. The Port's Notice of Preparation ("NOP") of a DEIR stated that it anticipates proposing a "medium intensity" development plan to use all existing berths, redevelop the entire existing industrial/commercial area and develop of all existing vacant land into industrial/ commercial uses, with no land set aside for mitigation. Port of Stockton, *Notice of Preparation of the Draft Environmental Impact Report for the Port of Stockton West Complex Development Plan* 10-11 (March 8, 2002) (attached hereto as Exhibit ("Ex.") 1). This alternative would result in the development of the entire project site, 1,459 acres, some of which is now agricultural land. *Id.*

Even though the development of the West Complex is one large project, the Port has proceeded as though it is engaging in a number of separate and unrelated actions. For example, the Port adopted a mitigated negative declaration in September 2001 to dredge 65,000 cubic yards of material from Berths J, K, and I at the West Complex, bringing the area to a depth of 30 feet. Port of Stockton,

Amended Draft Initial Study/Mitigated Negative Declaration for Dredging Berths I, J, and K (June 2001) (excerpts attached hereto as Ex. 2). This stretch of the Channel is within the area the Port now seeks to dredge to a depth of 36 feet. While the Port sought to minimize this activity as "maintenance dredging," it acknowledged that the dredging was simply the first phase of the Port's development of the West Complex. *See id.* at 1-3 to 1-4. Nevertheless, the Port proceeded with a mitigated negative declaration as though this "maintenance dredging" was unrelated to the rest of the West Complex development. Similarly, the Port has proceeded with negotiations to lease warehouse space within the West Complex on the assumption that the Port development plan will go forward. *See* Reed Fujii, *Port of Stockton to Clean Up Land*, Stockton Record (July 23, 2003) (attached hereto as Ex. 3). The Port has also engaged in numerous infrastructure improvements in anticipation of obtaining dredging permits and proceeding with the West Complex development. *Id.*

Taking these kinds of premature actions before a project has undergone environmental review contravenes the core purpose of NEPA, which is to "ensure[] that federal agencies are informed of environmental consequences before making decisions and that the information is available to the public." *Citizens for Better Forestry v. U.S. Dept. of Agriculture*, 341 F.3d 961, 970-971 (9th Cir. 2003); *see* 40 C.F.R. § 1500.1(b) (2003). NEPA's "purpose cannot be fully served if consideration of the cumulative effects of successive, interdependent steps is delayed until the first step has already been taken." *Thomas v. Peterson,* 753 F.2d 754, 760 (9th Cir. 1985).

In a strikingly similar situation involving analogous provisions of CEQA, the California Court of Appeal recently set aside the Los Angeles Harbor Department's efforts to proceed in this manner. *Natural Resources Defense Council v. City of Los Angeles,* 103 Cal. App. 4th 268 (2002). In that case, the Court found the Harbor Department to have unlawfully segmented a project when it approved an agreement with a shipping company for the construction and expansion of a shipping terminal to take place in three phases, when only the first phase of the project had been subject to environmental review. *Id.* at 284. "When a specific project contemplates future expansion, the lead agency is required to review *all phases* of the project *before* it is undertaken. . . If postapproval environmental review were allowed, EIR's would likely become nothing more than *post hoc* rationalizations to support the action already taken." *Id.* (emphasis added).

The Port of Stockton has committed a more serious violation of the law even than the Los Angeles Harbor Department, because it has undertaken *no* environmental review of the Project as a whole prior to proceeding with the initial phases of development. The Port issued the Notice of Preparation of a DEIR for the Project a year and a half ago, but has repeatedly delayed public issuance of that document. Instead, the Port apparently seeks to delay issuance of the DEIR so that it may undertake activities in furtherance of the Project without informing the public of the environmental impacts of the Project as a whole.

NEPA, like CEQA, prohibits this approach. "Proposals or parts of proposals which are related to each other closely enough to be, in effect, a single course of action shall be evaluated in a single impact statement." 40 C.F.R. § 1502.4(a). Actions are connected if they are "interdependent parts of a larger action and depend on the larger action for their justification." *Id.* § 1508.25(a)(1)(iii).

Connected actions should be evaluated together in one EIS when they are "inextricably intertwined." *See Thomas,* 753 F.2d at 758-759; *see also Native Ecosystems Council v. Dombeck,* 304 F.3d 886, 894 (9th Cir. 2002) (actions that do not have "independent utility" should be analyzed in a single EIS). This is the case here, where the Port's development of the West Complex, including expansion of warehouse space and improved infrastructure, is only justified if the channel is dredged to a depth that allows more traffic from larger ships. Similarly, it would be futile to dredge the channel to accommodate increased ship traffic if the warehouse capacity could not meet the new demand.

As you know, Army Corps of Engineers' regulations provide detailed guidance on determining the scope of environmental review under NEPA. "The district engineer should establish the scope of the NEPA document (e.g., the EA or EIS) to address the impacts of the specific activity requiring the [Corps] permit and those portions of the entire project over which the district engineer has sufficient control and responsibility to warrant Federal review." 33 C.F.R. Part 325, Appendix B, ¶ 7(b)(1). To determine whether a broader scope is appropriate, the district engineer should consider the "extent of cumulative control and responsibility," including whether other Federal agencies are required to take an action on the project. *Id.* ¶ 7(b)(2)(iv). Appendix B to the Corps' NEPA regulations provide a relevant example for when such expanded scope is necessary:

> For those activities that require a [Corps] permit for a major portion of a shoreside facility, the scope of analysis should extend to upland portions of the facility. For example, a shipping terminal normally requires dredging, wharves, bulkheads, berthing areas and disposal of dredge material in order to function. Permits for such activities are normally considered sufficient Federal control and responsibility to warrant extending the scope of analysis to include the upland portions of the facility.

Id. ¶ 7(b)(3).

This example demonstrates that the Corps has already contemplated situations such as that presented by the Port of Stockton's West Complex development. For this Project, the Corps should be guided by its own regulations and evaluate the impacts not only of the dredging, but of the Project as a whole, including upland development.

For the foregoing reasons, Friends urges the Army Corps of Engineers to prepare an EIS analyzing the significant impacts of the entire West Complex development, evaluating alternatives to the Project, and proposing mitigation measures. In addition, Friends encourages the Corps to participate in the review processes of state agencies, including commenting on the DEIR when it is finally issued by the Port. *See* Cal. Pub. Resources Code §§ 21069, 21153.

II. THE PROJECT'S POTENTIALLY SIGNIFICANT IMPACTS MUST BE EXAMINED IN AN EIS BEFORE THE CORPS DECIDES WHETHER TO ISSUE THE 404 PERMITS.

Neither the Port nor the Corps has provided any detailed information regarding the overall scope of the Project or its environmental impacts. Neverthless, even based on the limited information that is currently available, the Project will plainly have several potentially significant environmental impacts.

A. The Project will Cause Potentially Significant Noise, Odor, Light Pollution, and other Impacts to Nearby Residents.

Docks 17, 18, 19 and 20 in the West Complex are directly across from Riviera Cliffs homes. Even though it has not yet released even the Draft EIR for the Project, the Port has already commenced using these docks for its shipping and loading operations. Accordingly, members of Friends are already intimately familiar with the significant impacts from these activities which take place only several hundred feet from their homes. Indeed, the Port has documented the numerous phone calls made by Friends' members to inform the Port of these nuisances. (*See* Ex. 4.) In particular, noise, vibrations, fumes and lights from nighttime operations at the West Complex make sleeping very difficult.

For instance, shipping operations at these docks include loading and unloading of ships, often in the middle of the night and into the early morning hours. The movement of equipment associated with such operations, including the "beeping" of equipment backing up, is loud and disruptive. Substantial noise and vibrations, often in the middle of the night, are also caused by generators that are used to power cargo ships constantly while a ship is in port, regardless of whether it is being loaded or unloaded. Noise studies commissioned by Friends document that the generators on board shipping vessels increase noise levels outside Friends members' homes to ten times their normal level to 57 decibels, about the same as a conversation one meter away. While ships are loading and unloading, the sound spikes up as high as 73 decibels, more than 25 times the ambient noise level. Accoustics and Vibration Group, *Port of Stockton Sound Tests: Rough & Ready Island*, (May 23, 2002) (attached hereto as Ex. 5).

The tugboats that are used to maneuver vessels in and out of the berths, sometimes in the middle of the night, also interfere with Friends members' enjoyment of their property. Not only do they create substantial noise and vibration, they emit diesel exhaust, which creates noxious fumes that are carried by prevailing winds directly toward the Riviera Cliffs residences.

Large trucks frequently line up at docks waiting to load or unload in numbers of ten or more, often idling for several hours. These trucks also contribute to noise and also emit obnoxious and hazardous diesel exhaust.

Finally, bright lights on warehouses and atop 200 foot tall poles are directed from the shore toward the Channel and Friends members' homes whenever a ship is loading or unloading at

docks 17, 18, 19 or 20, and sometimes to light nighttime dredging operations. These lights flood Friends members' homes and make sleeping at night even more difficult.

If the Corps issues the requested 404 permits, the shipping and loading at these docks (and elsewhere on the West Complex) are likely to significantly increase, with a concomitant increase in the significance of noise, light, and odor impacts set forth above. With proper evaluation and planning, many of these impacts might be at least partially mitigated. For instance, the hours of operation could be limited so that the most noise- and light-intensive operations occur during the daytime. Similarly, the noise and exhaust generated by diesel equipment could be reduced by requiring use of electric motors for dockside operations. In fact, we understand that these techniques were agreed to by the Los Angeles Harbor Department after remand in the *Natural Resources Defense Council* case discussed above.

Accordingly, Friends requests that before the Corps considers issuing the requested section 404 permits, it first prepare an EIS – or at the very least await certification of the Port's promised EIR – so that these impacts can be addressed and appropriate mitigation measures developed.

B. The Project will Cause Potentially Significant Impacts to Water Quality.

The expansion of shipping operations at the West Complex hinges on dredging in the San Joaquin River between Rough and Ready Island and the Stockton Deep Water Ship Channel. The ship channel is listed on California's 2002 list of water quality limited segments pursuant to Clean Water Act section 303(d). The channel contains high levels of Dioxin, Furan compounds, pathogens, and PCBs. Stirring up contaminated sediments will only exacerbate the Channel's already degraded condition. The Stockton Deep Water Ship Channel also has a very low dissolved oxygen content. The proposed dredging would increase the volume of the San Joaquin River adjacent to the Stockton ship channel. The increased retention time in the ship channel may contribute to the depletion of oxygen.

Before it considers whether to issue the requested section 404 permits, the Corps should examine these water quality impacts from dredging, along with the cumulative impacts of past and potential future dredging in the ship channel.

C. The Project will Cause Potentially Significant Impacts to Wildlife.

The Public Notices state that the following endangered species may occupy the area to be dredged: delta smelt, Sacramento splittail, Central Valley steelhead, winter-run chinook salmon, and Central Valley spring-run chinook salmon. Therefore, prior to issuing the section 404 permits, the Corps must obtain biological opinions regarding these species from the Fish & Wildlife Service and the National Marine Fisheries Service pursuant to section 7 of the Endangered Species Act. The biological opinions will provide information about the Project's impacts on those fish species. Accordingly, Friends requests that the Corps reopen the public comment period once these documents are available. However, we note issues of general concern at this time.

Most of the endangered fishes affected by this Project are covered by a recovery plan that details specific actions necessary to prevent extinction of these species. U.S. Fish & Wildlife Service, Sacramento-San Joaquin Delta Native Fishes Recovery Plan (1995) ("Recovery Plan") (excerpts attached hereto as Ex. 6). The recovery plan states that, "[d]redging is a source of habitat destruction, mobilization of contaminated sediments, and general disturbance to native Delta fish." Recovery Plan at 156. Fish die-offs in the Stockton Deep Water Channel are routine due to its already low dissolved oxygen content, which will only be exacerbated by the Port's dredging. *See* Audrey Cooper, *Board Seeks Oxygen Boost to Stop Delta Fish Die-Offs,* Stockton Record (July 8, 2003) (attached hereto as Ex. 7).

The Corp's environmental review should study all of the potential adverse affects of dredging on these species, and at the very least install mitigation measures to reduce the impact of the Project on endangered fish species. For example, if section 404 permits are issued, the Corps should set seasonal windows for dredging to minimize effects on critical life-stages of the fish. *See* Recovery Plan at 156.

D. The Disposal of Dredged Material from the Project Will Cause Potentially Significant Environmental Impacts.

Friends is concerned that there is insufficient capacity at the proposed disposal site for the dredged solids. According to the Public Notices, dredging between docks 14 and 20 will generate 326,000 cubic yards of dredged solids and dredging between dock 20 and Burns Cutoff will generate an additional 250,000 cubic yards. These volumes were calculated assuming that the depth of the dredge areas was 30 feet. However, we understand that the Army Corps' actual depth measurement of the Stockton ship channel on May 27, 2003 reported an average depth of 25.1 feet between docks 14 and 20, and 23.5 feet between dock 20 and the Burns Cutoff. Therefore, the Public Notices significantly underestimate the volume of dredged material from the Project.

Even using the numbers stated in the Public Notices, dredging for this project will generate 576,000 cubic yards of dredged solids. Both Public Notices state that the Roberts Island site, which is the proposed disposal site, can accommodate 270,000 cubic yards of solids at its primary disposal location, and 135,000 cubic yards of solids at its "overflow area." Altogether, then, the Roberts Island disposal site can accommodate only 405,000 cubic yards of solid material. The Port of Stockton does not report its plans for the 171,000 cubic yards of dredged material that the site cannot accommodate.

The Public Notices also report that the Port will conduct maintenance dredging resulting in a total of 125,000 additional cubic yards of dredged material to be deposited on Roberts Island every two years. It seems highly unlikely, even if settling and compaction occur after the initial deposit, that the Roberts Island site could accommodate this additional material. In light of these questions, Friends urges the Corps to require the Port to fully explain how it intends to dispose of dredged material, and to fully analyze the environmental impacts of that disposal prior to considering whether to issue the section 404 permits.

CONCLUSION

In light of interdependent nature of the dredging and other aspects of this Project, the Corps should analyze in its NEPA review of the dredging permit applications all aspects of the West Complex development, including the significant impacts described above. In addition, Friends urges the Corps to actively participate in the ongoing CEQA process for the Project. Finally, the Port of Stockton's behavior toward the public makes a public hearing necessary to fully meet NEPA's core purpose, which is to "ensure[] that federal agencies are informed of environmental consequences before making decisions and that the information is available to the public." *Citizens for Better Forestry*, 341 F.3d at 970-971.

Very truly yours,

SHUTE, MIHALY & WEINBERGER LLP

Robert "Perl" Perlmutter

Jenny K. Harbine

cc: Gordon Palmer, Port of Stockton
Alex Baillie, Regional Water Quality Control Board
Kerry Wicker, Department of Fish and Game
Jeff Stuart, National Marine Fisheries Service
Dan Buford, U.S. Fish and Wildlife Service
Bill Jennings, Delta Keeper
Ann Chargin, Friends of Riviera Cliffs
Sherry Shields, Friends of Riviera Cliffs

[P:\Riviera\Mat1\jkh001 (comments on 404).wpd]

ATTACHMENT 1
TO EXHIBIT B

RECEIVED
JAN 2 0 2004
PORT OF STOCKTON

Notice of Preparation of the
Draft Environmental Impact Report for the

PORT OF STOCKTON WEST COMPLEX DEVELOPMENT PLAN

Stockton, California

State Clearinghouse No.

Prepared for:

PORT OF STOCKTON
2201 W. Washington Street
P.O. Box 2089
Stockton, CA 95201

Prepared by:

ENVIRONMENTAL SCIENCE ASSOCIATES
8950 Cal Center Drive
Building 3, Suite 300
Sacramento, CA 95826

OVERVIEW OF PROJECT

PROJECT TITLE: ***Port of Stockton West Complex Development***

ENVIRONMENTAL IMPACT REPORT PROPOSED

Both specific and programmatic projects are anticipated as a result of the Port of Stockton West Complex (West Complex) Development Plan (Plan). A list of potential future projects will be included in the Plan, but if any of these are constructed, they will require additional planning and environmental review, as specified under CEQA. The environmental review of these future projects will tier from this EIR.

PUBLIC REVIEW PERIOD: ***March 8, 2002 – April 10, 2002***

The Port of Stockton (Port) is the lead agency for the preparation of an Environmental Impact Report (EIR) for the above referenced project located in the City of Stockton (Map 1) within central San Joaquin County. The document is being prepared in compliance with the California Environmental Quality Act (CEQA).

CEQA Section 15082 states that once a decision is made to prepare an EIR, the lead agency must prepare a Notice of Preparation (NOP) to inform all responsible agencies that an EIR will be prepared. The purpose of this NOP is to provide responsible agencies and interested persons with sufficient information describing the Proposed Project and the potential environmental effects to enable them to make meaningful response as to the scope and content of the information to be included in the EIR.

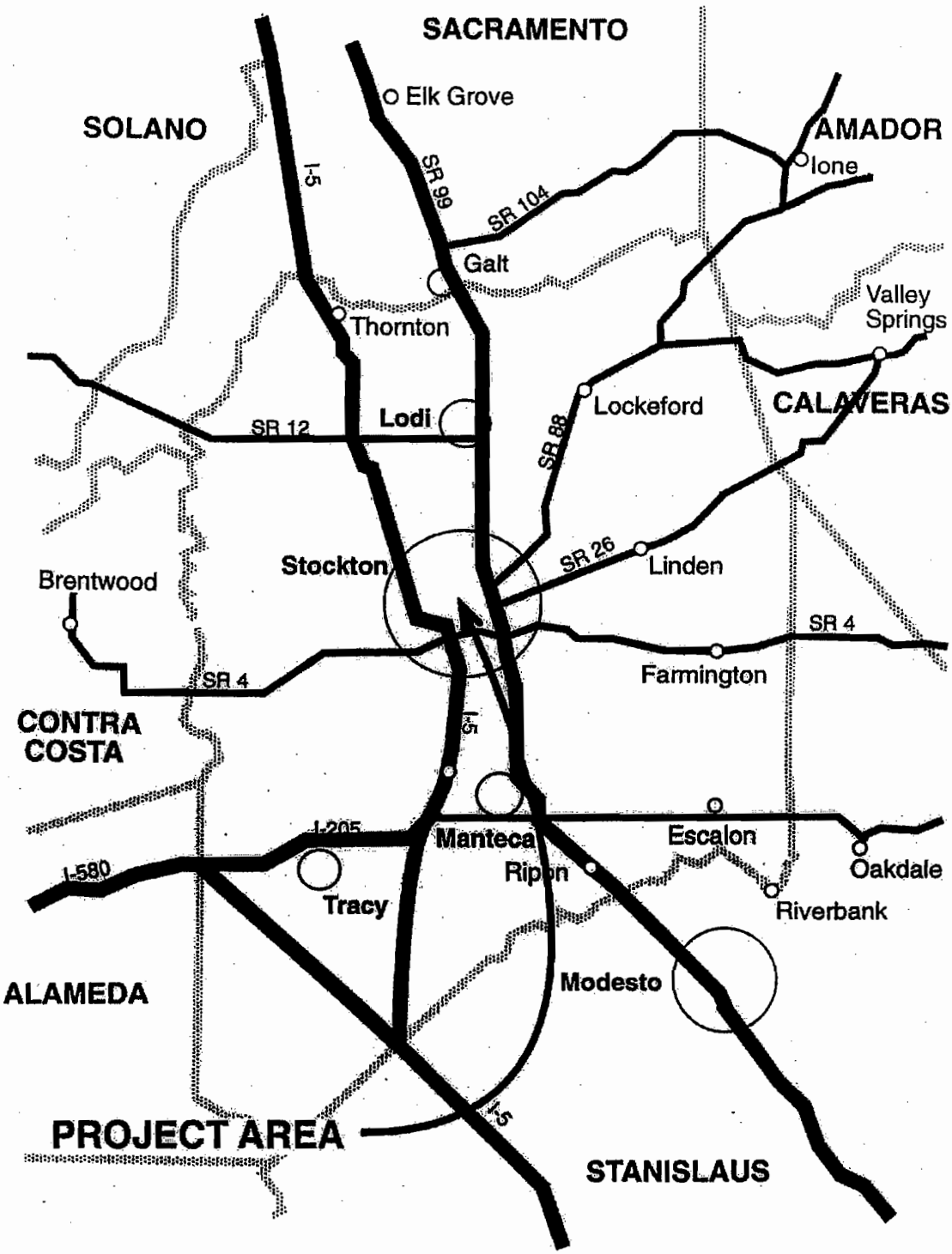
In addition to the 30-day comment period, on April 3, 2002 the Port will hold a public scoping session to provide information and to hear comments and suggestions regarding the scope and content of the EIR. There will be two sessions held on this date. The first will begin at 2:00 p.m. and the second will begin at 6:00 p.m. Both will be held at the Portside Room located at 2203 W. Washington Street, Stockton CA 95201.

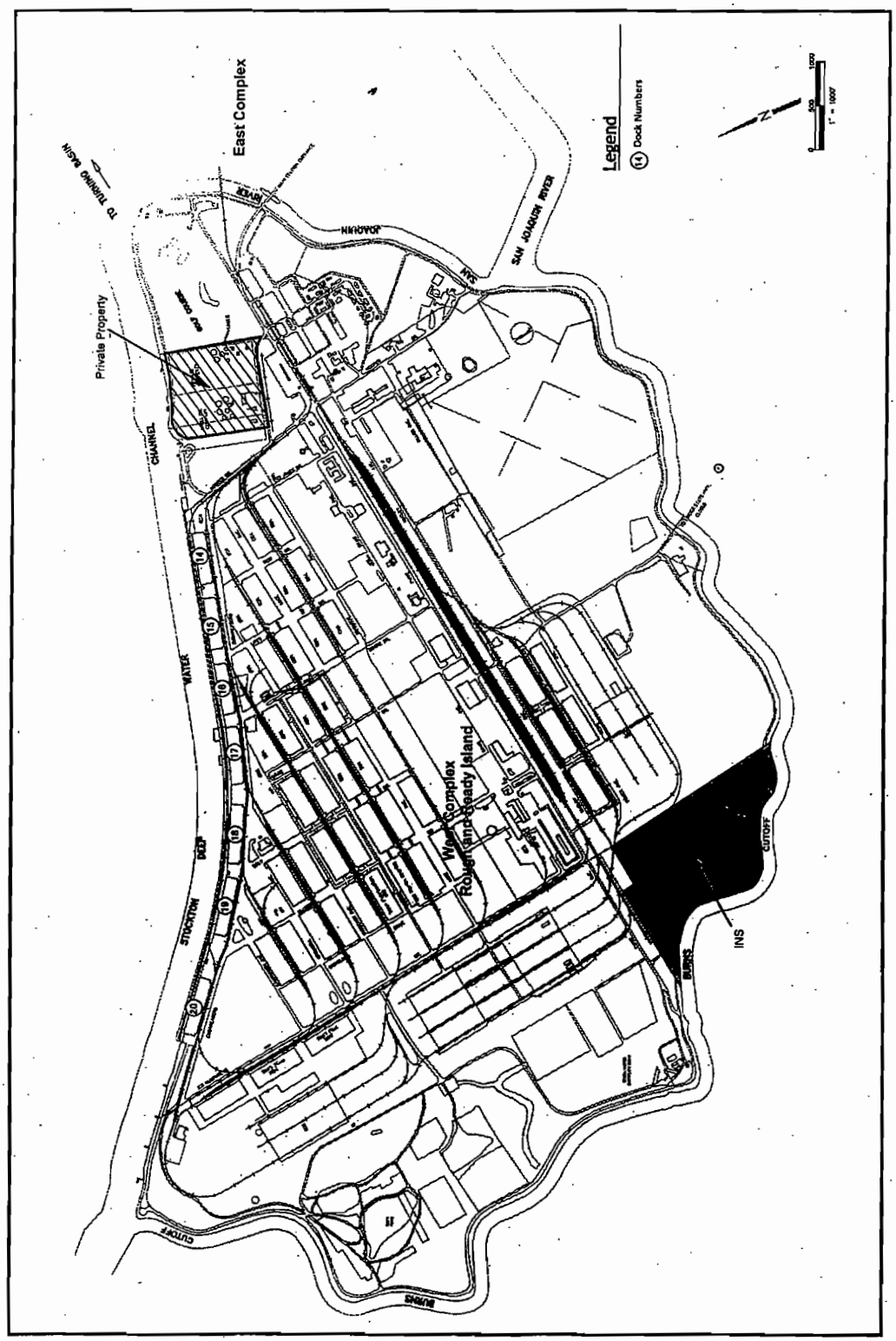
All documents mentioned herein or related to this project can be reviewed Monday through Friday between 8:00 a.m. and 5:00 p.m. at the Port's administrative building located at 2201 W. Washington Street, Stockton CA 95201. Staff will assist to provide any information requested. To make an appointment to view documents please contact Rita Koehnen at 209-946-0246.

DEADLINE FOR WRITTEN COMMENTS

To ensure that the full range of issues related to this proposed action are addressed and that all significant issues are identified, comments and suggestions are invited from all

MAP 1
VICINITY MAP





SOURCE: Dillon & Murphy, and Jones & Stokes, 2002

Port of Stockton West Complex / 201621 ■

Map 2
Detail
Rough and Ready Island

Development Plan will primarily be a financial tool, and will not propose land use, building intensity, or infrastructure changes other than those allowed by the City of Stockton General Plan. The southern half of the island is primarily vacant, underutilized land that is proposed for industrial and commercial activities. This area is in need of infrastructure improvements including, but not limited to, storm drainage, roadway reconstruction and widening for industrial traffic, fire protection, potable water and sewer service.

Three major distinctions in the project are associated with water, land use, and maritime activities. This document will examine the water activities at a project level of detail. These include, but are not limited to, dredging, placement of dredged materials, and shipping channel operations. This document will examine the maritime and land use actions at a program level of detail. It is anticipated that this document will adequately examine the maritime and land use actions and their potential impacts to a degree that will allow subsequent CEQA documentation to be tiered from this EIR.

The City of Stockton General Plan land use diagram currently designates the entire Project Area as Institutional. The City's Zoning Ordinance currently designates the entire Project Area as Public Lands (P-L). As part of the proposed project the land use diagram of the General Plan will be revised to show an industrial land use designation for the Project Area. In addition, the Project Area will be rezoned from a P-L zoning district to a Port (PT) zoning district. The PT zoning district is applied to areas of the City of Stockton that are operated by "port districts" as formed under the Harbors and Navigation Code (Section 6210 et seq.) for the operation of port facilities, including wharves, dockage, warehousing, and related port facilities. The PT zoning district also allows a full range of industrial and commercial activities. The PT zoning district is consistent with the industrial land use designation of the General Plan.

Preliminary Project Objectives

The following is a list of preliminary project objectives:

- To develop the industrial, commercial, and maritime use of the former military base under the authority of the Port to the maximum regional economic value.
- To amend the City's General Plan Map to designate the Project Area as Industrial and rezone the area to the City's "Port District" zoning designation.
- To establish a Development Project Area that will include the entire Port of Stockton West Complex.
- To provide useful information for regional planning of infrastructure and public services related to industrial, commercial, and maritime development.
- To coordinate processing of the environmental, land use, and maritime processes.

- To maintain the shipping channel at a depth sufficient to allow full economic use of the Project Area.

- To revitalize and redevelop the Project Area, eliminate blight, and develop specific land uses, which are anticipated to be associated with industrial, commercial, and maritime activities on site.

- To allow for the development of a land use map or diagram that includes a mixture of commercial and industrial uses at a program level of detail.

- To develop an environmental document that will be used as the basis of further CEQA analysis for many forthcoming projects related to the development of this area.

- To facilitate the design and construction of on-site physical improvements and update existing physical improvements needed to serve to the project site.

- To identify any necessary new infrastructure and improvements to existing infrastructure necessary to support the intended land uses.

Potential Impacts

The Port has reviewed the Proposed Project and has determined that the EIR should address the following issues:

- Land Use Consistency and Compatibility
- Transportation/Circulation
- Hydrology/Flooding/Water Quality
- Air Quality
- Noise
- Biological Resources
- Public Facilities and Services
- Cultural Resources
- Hazardous Materials and Human Health
- Aesthetics
- Population and Housing

The significant environmental effects that alternatives will seek to eliminate or reduce are:

- Transportation and circulation impacts
- Air quality
- Loss of agricultural land
- Biological impacts resulting from a loss of habitat

The EIR will also examine potential alternatives to the Proposed Project. The purpose of the alternatives analysis in an EIR is to describe a range of reasonable alternatives to the project that could feasibly attain the objectives of the project, and to evaluate the comparative merits of the alternatives (CEQA Guidelines, Section 15126[f]).

Section 15126.6 of the CEQA Guidelines requires consideration and discussion of alternatives that would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project.

PROJECT ALTERNATIVES

The document will examine four proposed alternatives. The defining element of each alternative is the intensity of development proposed. Under all scenarios, except for the Alternative 1 - No Project Alternative, the project proposes to include maritime, industrial, and commercial activities at varying levels.

Alternative 1 – No Project Alternative

This option would result in no action taken by the Port or the City of Stockton. The land transfer from the Navy would commence as anticipated, but the Port would not invest in any improvements or development of Rough and Ready Island. Any ensuing maritime, industrial, and/or commercial activities would be the result of the continued use of the facilities in their present conditions.

Alternative 2 – Low Intensity

This option is the low intensity development. Under this alternative, all of the existing berths would be used, all of the existing industrial/commercial area would be redeveloped, and all of the existing vacant land would be developed into industrial/commercial uses. Exceptions to this are areas that are set aside for remediation, mitigation, or continued operations under existing land uses.

Alternative 3 – Medium Intensity

This option is the medium intensity development. Under this alternative, all of the existing berths would be used, all of the existing industrial/commercial area would be redeveloped, and all of the existing vacant land would be redeveloped into industrial/commercial uses. Additionally, under this alternative only two access points (bridge replacement) to the West Complex would be developed.

Alternative 4 – High Intensity

This option is the high intensity development. Under this alternative, all of the existing berths would be used and additional berths would be created. All of the existing industrial/commercial area would be redeveloped, but at a higher density than that proposed by Alternative 3. All of the existing vacant land would be redeveloped into industrial/commercial uses, but at a higher density than that proposed by Alternative 3. Higher densities would be achieved by using taller structures and by clustering the buildings. Additionally, under this alternative two or more access points (bridge replacement and creation) to the West Complex would be developed.

The project description (Attachment 1) is representative of Alternative 3 and generalizes the Port's anticipated development plan.

ATTACHMENT 1

Project Phasing

Phasing

Specific project components (Table 1) will occur at various locations and at various times relative to each other. The phasing for the Marine Terminal Development has the Phase order of 0 through III. The phasing for the Commercial and Industrial Development has the Phase order of A through C. The phasing for the Rail System has the Phase order of I-A through III. Each of the phasing schemes is completely independent of the others.

Phase I

Phase I consists of initial water-related development, and the site will be developed in such a way that it is easily converted to container handling activities. This phase is slated for break-bulk activities. The initial site is shown as 50 acres of backland and 900 linear feet of wharf upgrade. The office functions required as part of the facility are planned to take place in an existing warehouse or transit shed and all utilities will be roughed in for future container activities.

Phase II

Phase II is the midpoint in the conversion to maritime activities. This phase replaces the Phase I break-bulk facility with a 50-acre container terminal, provides intermodal rail yard capabilities, and develops a new 50-acre break-bulk terminal and a new 65-acre auto processing facility. It is assumed that the new auto berth and the container berth will provide berthing facilities for the break-bulk facility.

Phase II Alternative

This alternative would provide: a combined break-bulk, rollon-rolloff (RoRo), and project cargo area; an area that is in use but under development; an area that will serve intermodal container transfer facility functions, either dock to rail or truck to rail; and general cargo, rail-to-dock. Both alternatives may be combined as driven by tenant needs.

Phase III

Phase III is the completion of the direct water-related facilities. This phase incorporates an additional 55 acres for container handling and intermodal rail yard. This phase also completes the area slated as general marine development, however, this area has an adjacent 245 acres slated for water-related support and offers critical expansion area for the future. A portion of the expansion will be used to develop corridors to the intermodal rail yards, and for related expansion of the two container terminals. It is assumed that both container terminals and their related intermodal rail yards will be operated by or for the same entity or two separate terminal operators. It should be noted that both container terminals require conversion of the wharves to accommodate 100-foot gage crane rails. Other uses in the expansion area may include: continued low price leasing of the existing buildings; development of a precast concrete factory with its own batch plant; and other uses.

Commercial and Industrial Park

Nearly 500 acres are available south of the central east-west McCloy Road/rail corridor for a three-phase development of a commercial and industrial park, from west to east. This phasing of development is independent of the maritime terminal phased development.

Phase A

This phase comprises 140 acres. The site contains five warehouse buildings that would be upgraded as an interim development by replacing the exterior cladding and roofs. Existing pipe utilities should be adequate to serve general occupancies such as light manufacturing and warehousing. The balance of this site will likely develop as office-industrial, and may be leased to a private developer for master development. In the event that the Immigrations and Naturalization Service facilities are developed to the immediate west, Phase A will serve as a buffer to adjacent campus developments to the east.

Beyond development of the existing buildings, new structures and denser populations will require expansion of potable water service to the three phases. This will include installation of a minimum 12-inch diameter water line to Phase A, and potential installation of pump stations. Fire fighting water will be pumped from the river. Sanitary sewer, storm drainage, telecommunications, power, and gas facilities would be dependent of the nature and density of development and tenant needs. Infrastructure improvements associated with this and other phases are discussed below.

In addition to the existing 600,000 square feet of buildings that may be rehabilitated, this phase is expected to include construction of tilt-up structures with offices in front, and high-bay light industrial functions in the larger rear area. Loading bays would likely be provided in the rear of the buildings. This type of development lends itself to a rectilinear grid of streets on "superblocks," with truck alleys separating the rears of the buildings. Tenants would probably use maritime, road, and rail services.

Phase B

This 243-acre phase would likely be developed as campus office buildings, typically three to five stories in height. As much as 2 million square feet of buildings and a daytime population of 20,000 could be supported. Structured parking is necessary to support this dense development. If a single-use tenant is not found, conventional staged development can occur, probably using curvilinear streets, berming, and heavy planting to enhance the site.

Phase C

This phase is not necessarily time-constrained by Phases A and B, and could be an expansion of a Phase-B-type development, or a single-use tenant campus. The buildings on the site, including 50-year-old housing, the damaged Officer's Club, the NCO Club,

the bowling alley, and pool, will be demolished. Utilities would be brought to the site as discussed below. Buildings would likely by up to 75 feet high.

Infrastructure Improvements

A variety of improvements to infrastructure on the island in support of the marine terminal and commercial/industrial park development will be completed. Infrastructure improvements are categorized into the following areas: access, internal road system, internal rail system and rail bridge, wharf, utilities, and existing structures.

Access

Access improvements have been divided into three categories based on time frame. Short-Term Access - At present, access to the island is barely adequate for current traffic volumes. Short-term access improvements will support current activities, Phase 0 of the Marine Terminal Development, and potentially Phase A of the commercial/industrial park development. Over the short term, Navy Drive will be the primary access to the island.

Mid-Term Access - Over the mid-term, access to the island would begin to be redirected from Navy Drive to Daggett Road, as this provides a more central access point to the island. Improvements would be carried out on both Navy Drive and Daggett Road. Navy Drive improvements are limited to alterations in the West Complex and are anticipated to consist of the following:

- Widen Navy Drive from two lanes to three lanes.
- Construct a raised median in areas not fronted by driveways.
- If Navy Drive remains the only access to the island, replace the Navy Drive bridge. The new bridge will be sized to support adequate lanes with a center divider. A movable bridge will be used for ship passage.
- Daggett Road improvements will consist of the following:
- Construct Daggett Road as a two-lane roadway with paved shoulders.
- Construct an at-grade crossing with gates and flashers at the Daggett Road/BNSF railroad crossing. Four lanes will be provided at the crossing.
- Improve the intersection of SR4 and Daggett Road by installing south-bound left- and right-turn lanes, an eastbound left-turn lane, and on SR4, a westbound right-turn lane.
- Replace the Daggett Road bridge with a new structure, potentially using either a fixed span bridge or a movable bridge.

Long-term Access - Over the long term, Daggett Road will become the primary access to the island. Improvements will include:

- Widen Navy Drive if it has not been done already.
- Widen Daggett Road with curbs, gutters, and drainage improvements.
- Replace the at-grade Daggett Road/BNSF railroad crossing with a grade-separated crossing.

Internal Road System

While much of the internal road system on Rough and Ready Island is adequate for current traffic volumes, improvements will be necessary to accommodate development on the island:

- Assuming that the principal access to Rough and Ready Island is Daggett Road, development of an east-west arterial through the center of the island is critical. McCloy Road is recommended as the best alternative, and could tie into Fyffe Avenue just north of the Navy Drive Bridge to avoid the need to cross the railroad tracks. A new four- to five-lane arterial would then be constructed to tie into Humphries Drive.
- Daggett Road would be improved from the bridge to McCloy Road.
- Collector roads would be constructed from Daggett Road and McCloy Road. Locations would be determined by the type and location of development.
- After development, the area north of the intermodal spine would be paved hardstand, and roads would be defined by striping.

Internal Rail and Rail Bridge

Improvements to the rail system on the island would occur in several phases to support the maritime and commercial/industrial developments.

- Phase II-A – Initial Intermodal Yard

These upgrades would serve the first stage of the 50 acre container facility (Phase II). An intermodal yard would be developed parallel to the existing rail storage yard, on top of the existing Fyffe Avenue. Several buildings north of Fyffe Avenue would also be removed as part of this development. Four or five tracks will require upgrade, six new turnouts will be installed for the intermodal yard, and eight turnouts installed for the storage yard. The new yard will be stub ended for this phase, and contain three pairs of tracks.

- Phase II-B – Automotive Loading Facility

The Phase II auto loading facility will be on the northwest corner of the island. A single track will lead to the facility, where it will fan out into 5 stub ended loading tracks. If this is constructed before the storage yard, at least one track the entire length of both yards will require upgrading. Storage/switching tracks near the facility may be necessary depending upon the level of use. Four new turnouts would be installed.

- Phase II-C – Container Facility

The Phase II container facility will be located just east of the auto loading facility. A single track will start off the auto facility lead and will fan out into 3 stub ended tracks. Three new turnouts would be installed.

- Phase III – Complete Intermodal Facility

These upgrades would service the Phase III intermodal facility. The tracks will be a mirror image of the work proposed in Phase II-A, building off of the three stub ends to create a double-ended facility. Six new turnouts will be installed.

Wharf

The wharf is in generally good condition. However, several areas of work would be necessary to upgrade the wharf such that it could service the new maritime facility. Dredging adjacent to the wharf has been partially addressed in a mitigated negative

declaration (Jones and Stokes, 2001). This document addressed approximately 1400 feet of linear dredging at berths 20, 19, and 18. Other actions in this EIR will include:

- Dredging for the remaining berths (14 through 17).
- Establishment of protocol for maintenance dredging at all berths.
- Establishment of protocol for upland placement of dredged materials.
- The fender system along the wharf will be replaced.
- A 100-foot rail-mounted crane would potentially be installed. Transit sheds near the wharf would have to be removed to accommodate this. If a rail-mounted crane is not used, a mobile harbor crane may be substituted.

Utilities

The utilities on the island, developed in the 1940s, are serviceable for their current use. However, any future development or development may require upgrades to meet new demands, as well as to meet modern codes and standards.

Domestic Potable Water

The island is currently served by a 12-inch water main. An additional water main will be installed to provide a looped system. In addition, a larger main may be necessary to accommodate tenant demands.

Fire Protection Water System

The fire protection water system is in need of inspection to determine suitability for ongoing use (e.g. condition, adherence to modern standards, etc.). It may be subject to upgrades depending upon its condition and anticipated future demands.

Stormwater

Stormwater systems will be replaced and/or upgraded as part of the development of the island. The current system does not conform to modern standards, and would not adequately service the new configuration of facilities under the development scenarios. Detention ponds, oil/grease traps, and water quality treatment facilities may be necessary as part of the renovation.

Sanitary Sewer

The sanitary sewer suffers from infiltration issues. An investigation and potentially major renovation will need to be performed.

Electrical System

Provide electrical distribution facilities for redeveloped or new developments.

Table 1. Activities in the proposed Development Plan

Marine Terminal Development	
Phase 0	• Continue current activities. • Extend Port activities onto island. • Install camels/fendering on wharf. • Upgrade rail-to-dock system (see Rail System Phase I-B).
Phase I	• Construct a 50-acre break-bulk facility.

	• Perform wharf upgrades.
Phase II	• Replace the break-bulk facility with a container terminal. Would include 900' wharf upgrade and installation of cranes. • Develop intermodal rail yard (see Rail System Phase II-A). • Construct new 55-acre break-bulk facility. • Construct 65-acre auto facility. Would include 900' wharf upgrade. • Construct expanded break-bulk, Ro-Ro, and project cargo facility to the east of the auto facility. • Construct a container expansion/intermodal transfer facility between container terminal and intermodal yard.
Phase II alternative	• Construct large break-bulk, Ro-Ro, and project cargo facility along wharf. • Develop intermodal rail yard.
Phase III	• Expand break-bulk, Ro-Ro, and project cargo operations to 138 acres • Expand container expansion/intermodal transfer facility to 45 acres. • Construct a new 55-acre container facility. Would include wharf upgrades and installation of cranes. • Leave 93-acre area for future Marine Terminal expansion.
Commercial and Industrial Park	
Phase A	• Perform building upgrades on existing buildings. • Construct tilt-up buildings. • Install new water main.
Phase B	• Develop campus-style office buildings, 3-5 stories in height. • Construct parking to service campus • Other alternatives are possible depending upon tenant needs.
Phase C	• Many alternatives are possible depending upon tenant needs. • Buildings would be up to 75' high. • Demolish old buildings. • Perform utility upgrades.
Infrastructure	
Access	• Bridge replacement. • Road improvements.
Internal Road System	• Road construction and improvements.
Rail System	
Phase I-A	• Already completed.
Phase I-B	• Already completed.
Phase II-A	• Demolish buildings north of Fyffe Avenue. • Install intermodal yard and upgrade/replace tracks. • Strengthen or replace San Joaquin Bridge.
Phase II-B	• Install/upgrade tracks to service auto loading facility.
Phase II-C	• Install/upgrade tracks to service container facility to the east of auto loading facility.
Phase III	• Complete intermodal yard begun in Phase II-A. • Install/upgrade tracks.
Wharf	• See Maritime Development phases.
Utilities	• Upgrade/replace sanitary sewer, electrical, and fire protection

	systems as necessary. • Install new stormwater drainage system as needed. • Install new water main (see Commercial and Industrial Park Phase A).
Buildings	• Demolish/renovate as necessary.

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PORT OF STOCKTON

PROPOSED AMENDED MITIGATED NEGATIVE DECLARATION

(Public Resources Code Section 21080(c) and
Cal. Code of Regulations Title 14, Sections 15070-15073)

Lead Agency: Port of Stockton
c/o Environmental Planning Program
PO Box 2089
Stockton, CA 95201-2089

Contact Person: Jay Jahangiri Phone: (209)946-0246
Title: Director of Environmental and Regulatory Affairs/Environmental Planning Program

Project Title: Maintenance Dredging of Docks K, J, and I, Port of Stockton, West Complex

Initial Study File No.: PS-IS-1 Discretionary Application(s) File No. (s) PS-DA-1

Project Applicant: PORT OF STOCKTON – WEST COMPLEX

Project Description/Location:
Maintenance dredging of docks K, J, and I. This project involves removal of accumulated dredge material along 1400 linear feet of dock area at the Port of Stockton West Complex (formerly known as the Rough and Ready Island). The Dredge material will be placed at an approved dredge placement site (DPS) at Roberts Island 1.

Date Review Period Ends: July 6, 2001 at 5:00 p.m.

Finding/Determination: The Port of Stockton Environmental Planning Program, has reviewed and considered the proposed project and has prepared and/or independently reviewed and analyzed, a Proposed Amended Mitigated Negative Declaration and related Initial Study based on comments received from an initial public review process. Based on the project's inherent mitigating features, mitigation measures, and related substantial supporting evidence presented in this amended Initial Study, it has been determined that the project will not have a significant effect on the environment. Therefore, approval of a Mitigated Negative Declaration is recommended for this project.

Public Review: A copy of this document and the related Initial Study may be reviewed/ obtained at the above-noted Lead Agency address. Any written comments on these documents must be received at the same address by the end of the review period. A public meeting to accept oral comments only regarding the proposed Mitigated Negative Declaration will be held by the Port of Stockton Chief Executive Planning Officer following the review period. Public notice of that meeting shall be posted on the public notice wall of the Port of Stockton Administration Building and in the official newspaper of the City of Stockton at least ten (10) calendar days prior to the meeting.

A. RICHARD ASCHIERIS, CHIEF EXECUTIVE PLANNING OFFICER
ENVIRONMENTAL PLANNING PROGRAM

By _____
J. GORDON PALMER, JR., DEPUTY CHIEF EXECUTIVE PLANNING OFFICER

June 5, 2001

Amended Draft Initial Study/Mitigated Negative Declaration
Dredging of Berths I, J, and K

SCH # 2000092090

Prepared for:

Port of Stockton
2201 W. Washington Street
Stockton, CA 95203
Contact: Jay Jahangiri

Prepared by:

Jones & Stokes
2600 V Street
Sacramento, CA 95818-1914
Contact: Brant Jorgenson

June 2001

Jones & Stokes. 2001. Amended Draft Initial Study/Mitigated Negative Declaration Dredging of Berths I, J, and K. June. (J&S 00509.) Sacramento, CA. Prepared for Port of Stockton, Stockton, CA.

Contents

Page

Chapter 1 Introduction and Project Description 1-1

Introduction 1-1
Project Location 1-2
Designated Land Uses and Zoning 1-2
Project Objectives 1-2
Previous Environmental Review 1-2
Project Background 1-3
Project Description 1-4
Dredging Method 1-5
Silt Curtains 1-6
Dredged Material Placement 1-6
Project Schedule 1-7
Pre-Dredge Sampling and Analysis 1-8
Necessary Regulatory Permits, Approvals, and Oversight 1-9
U.S. Army Corps of Engineers 1-9
National Marine Fisheries Service and Fish and Wildlife Service 1-9
California Department of Fish and Game 1-10
Central Valley Regional Water Quality Control Board—Region 5 1-10
Alternatives Considered to Dredging Methods and Placement Site 1-11

Chapter 2 February 2001 Dredged Material Sampling and Analysis 2-1

Sediment Sampling Overview 2-1
Sample Identification 2-2
Elutriate Preparation 2-3
Bulk Sediment Chemistry and Waste Extraction Test Analysis 2-4
Water Column and Solid Phase Toxicity 2-6
Bioassay Results 2-8
Roberts Island No. 1 Dredged Material Placement Site Characterization 2-10
Dredged Material Placement Site Soils 2-10

Dredged Material Placement Site
Groundwater 2-11

Chapter 3. Environmental Checklist 3-1

Environmental Checklist Form 3-1
Aesthetics 3-4
Agricultural Resource 3-6
Air Quality 3-8
Biological Resources 3-11
Pre–Field Investigation and Field Site Reconnaissance 3-12
Habitat Types 3-12
Special-Status Plant Species 3-13
Special-Status Wildlife Species 3-13
Special-Status Fish Species 3-14
Cultural Resources 3-20
Records Search 3-20
Native American Contacts 3-21
Site Visit 3-21
Geology and Soils 3-23
Hazards and Hazardous Materials 3-25
Hydrology and Water Quality 3-27
Total Maximum Daily Load for Dissolved Oxygen 3-28
Methodology 3-29
Aquatic Life Criteria and Basin Plan Objectives 3-31
Water Column and Solid Phase Toxicity 3-44
Bioaccumulation 3-44
Roberts Island No. 1 DPS 3-47
Land Use and Planning 3-50
Mineral Resources 3-51
Noise 3-52
Population and Housing 3-54
Public Services 3-55
Recreation 3-56
Transportation and Traffic 3-57
Utilities and Service Systems 3-59
Mandatory Findings of Significance 3-60

Chapter 4. Mitigation Monitoring Plan 4-1

Introduction 4-1

Chapter 5. References Cited 5-1

Printed References 5-1
Personal Communications 5-5

Chapter 1

Introduction and Project Description

Introduction

The Port of Stockton (Port) is proposing to dredge accumulated sediments from berths I, J, and K along a 1,400-linear-foot dock area at the Port's recently acquired Port of Stockton West Complex (West Complex, also known as Rough & Ready Island). Dredged material would be placed on nearby Roberts Island.

Although maintenance dredging projects may be categorically exempt from requirements of the California Environmental Quality Act (CEQA) under Section 15304, Class 4(g) (e.g., minor alteration to land), the Port has elected to prepare an Initial Study and Mitigated Negative Declaration (IS/MND) acting as the lead agency under CEQA.

This draft IS/MND discloses the environmental impacts associated with dredging accumulated sediments from berths I, J, and K. This initial study has been prepared pursuant to CEQA (Cal. Pub. Res. Code 210000 et seq.) and the State CEQA Guidelines (14 CCR 15000 et seq.). This draft IS/MND describes the proposed project, the potential environmental impacts of the proposed project, and the mitigation measures adopted to avoid or minimize environmental effects. It follows the State CEQA Guidelines Initial Study Checklist form and identifies anticipated environmental impacts by resource topic. A mitigation monitoring plan (MMP), identifying parties responsible for implementing mitigation measures and methods to monitor their success, has been prepared and is discussed in chapter 4.

This draft IS/MND is being circulated for a 30-day public and agency review period, as required by State CEQA Guidelines §15105(b). The Port will consider comments on the draft IS/MND, and if, after the review period, no substantial evidence is found that the project will have a significant effect on the environment, the Board of the Port Commission will adopt the MND and make a determination on whether or not to approve the project.

Project Location

The Port is located on the Stockton Deep Water Ship Channel (DWSC)/San Joaquin River, in the City of Stockton, San Joaquin County, California (figure1-1). The proposed dredging operation would be located along berths I, J, and K along a 1,400-linear-foot segment of the West Complex dock area at Rough & Ready Island inside the DWSC (figure 1-2).

Designated Land Uses and Zoning

The Port, in cooperation with the City of Stockton, has proposed to amend the City's General Plan Map for the West Complex at Rough & Ready Island from *Institutional* to *Industrial* and to rezone from *Public Lands* to *Port Districts* in response to the transfer of Rough & Ready Island to the Port from the Department of the Navy. San Joaquin County designates land uses on Roberts Island. The Roberts Island No. 1 dredged material placement site (DPS) and decant water overflow area is designated *Agriculture*.

Project Objectives

Given its ownership of the West Complex and associated maintenance responsibilities, the Port has an urgent need to dredge available dock space to stimulate maritime business at the West Complex. One objective of dredging is to provide adequate depth at available dock space so that vessels can navigate safely and berth without grounding. If accumulated sediments are not removed, only a limited number and size of vessels would be able to berth safely; this would jeopardize the economic viability of the West Complex facilities.

Implementing this project would create approximately 150 full-time, primary-wage-earner jobs related to export and import of rice and other commodities at the West Complex (Strauss-Weider and Center for Urban Policy Research 2000). Once the docks become operable, future export activities are expected to induce an additional 128 jobs throughout San Joaquin County and northern/central California (Strauss-Weider and Center for Urban Policy Research 2000).

Previous Environmental Review

A previous draft initial study/mitigated negative declaration (IS/MND) was prepared September 19, 2000, and circulated for public review and comment (SCH# 2000092090) (Port of Stockton 2000). Based on comments received through the public comment period, Port staff initiated special studies, including additional sampling and analysis, to further characterize dredged material and geologic/hydrogeologic conditions of the dredged-material placement site on

Roberts Island. It was also determined that it was necessary to prepare and circulate an amended IS/MND incorporating the findings of these special studies.

Throughout this document, reference is made to the previous environmental review and its incorporated supporting material. Where appropriate, findings and conclusions made in the previous IS/MND have been incorporated by reference.

Project Background

The Port has traditionally been involved in maritime operations, including commodity shipping and temporary storage at facilities east of Rough & Ready Island. These facilities (the East Complex) are separate from facilities on Rough & Ready Island, which was owned and operated by the U.S. Department of the Navy (the Navy) until recently. On July 3, 2000, the Navy transferred portions of Rough & Ready Island to the Port as part of the department's mandate under the Defense Authorization Act of 1996.

The remainder of Rough & Ready Island (West Complex) is leased to the Port, excluding a 65-acre portion that has been transferred to the Immigration and Naturalization Service (INS) and a small parcel owned by a private entity on the northeast end of the West Complex. The remainder of the island will be transferred to Port ownership pending final site investigation and cleanup of site contamination on the portion of the island leased by the Port. Ultimate cleanup approval for the presently leased portions of Rough & Ready Island will be granted by the Central Valley Regional Water Quality Control Board (RWQCB) and the California Department of Toxic Substances Control (DTSC) based on cleanup plans and efforts presented by the Navy.

The Port has operated at the East Complex since 1932. Commodities primarily related to San Joaquin Valley agriculture are imported, exported, or stored temporarily at these facilities. Port exports include grain, coal, sulfur, coke, scrap steel, steel coils, bagged rice, and steel pipe. Port imports include liquid and dry fertilizer, anhydrous ammonia, molasses, cement, machinery, steel beams, steel coils, sugar, and grain. The Port leases storage and dock space to various tenants that use the available facilities to transport these commodities.

East Complex berthing facilities are available for 10 ocean cargo ships. Approximately 2.7 million square feet of covered warehousing is available to support dockside activities. Table 1-1 lists the existing berthing facilities and the typical commodities they handle.

Table 1-1. East Complex Berthing Facilities and Commodities

Berth	Commodities and Related Facilities
Penny Newman Company	Dock with grain elevator handling bulk grains, feeds, and other related commodities
2	General and bulk cargo
3–9	Seven covered transit shed docks for handling general cargo. Belt conveyors are available for moving dry bulk cargoes. Berth 8 maintains facilities for handling liquid bulk cargoes.
10, 11	Container, bulk and general cargo docks. Berth 10 maintains 2 traveling multipurpose Bridge Cranes for moving containers, bulk cargoes, and general cargoes to on-site storage and/or rail and trucks. Pipeline facilities handle liquid bulk cargoes.
12, 13	Metropolitan Stevedore Dry Bulk Handling Facility: Fifty-four inch belt conveyor system handling dry bulk goods. Port of Stockton Dry Bulk Handling Facility, operated by Stevedoring Services of America: 36-inch belt conveyor system handling dry bulk commodities. Both systems handle bulk cargoes including coal, coke, sulfur, fertilizer, and other bulk commodities.

The West Complex maintains more than 1 mile of docks and wharves, with a formal total of 11 individual berths, for cargo-vessel berthing. Available warehouse space totals approximately 5.7 million square feet: 7 on-dock transit sheds averaging 90,000 square feet and 40 additional warehouses averaging 90,000 square feet. Current tenants include Cost Plus, the General Services Administration, Roof Rangers, SJ Shrine Club, Ramsey Express, Worldwide Express, MT Railcar, Cal Agrex, SQM North American, and Ross Island Sand & Gravel. In addition, a limited level of low draft maritime activities, including the export of rice, is being conducted to the extent permitted by the depth at the docks. Expansion of business in the West Complex relies on available dock space with sufficient berthing depth to accept shipping vessels.

Project Description

Physical Condition of Dredged Material

Dredging is proposed along berths I, J, and K along a total linear dockside distance of 1,400 feet (figure 1-2). Unless the design depth is achieved in a shorter distance, the width of dredging from dockside would be approximately

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President Hal Lurtsema

Port of Stockton to clean up land

By Reed Fujii
Record Staff Writer
Published Wednesday, July 23, 2003

Stockton port officials moved Monday to take over environmental cleanup chores on 500 acres of Rough and Ready Island with an eye to developing portions of the land within the next 12 to 18 months.

Taking on that responsibility is preferable to waiting an estimated 10 to 20 years or more for the Navy to remove or neutralize contamination on the former base, they said.

Besides, the Navy will retain ultimate responsibility for restoring the land, particularly if unexpected conditions such as live ammunition or radioactive materials are found, and the Port of Stockton will get nearly $23.5 million to cover the cleanup and cost of environmental insurance.

"It is an acceptable risk for the ability to complete that (land) transfer and create those family-wage jobs in this city," said Steven Herum, the port commission chairman.

He referred to port estimates that commercial and industrial development of the land should directly generate 1,000 jobs.

While the port now owns most of the 1,433-acre island, since federal ownership was ceded beginning in July 2000, the remaining 500 acres had contamination the Navy was legally bound to clean up before it could release the property.

::: Advertisement :::

The cleanup efforts focus on 16 landfill sites and five plumes of shallow groundwater contaminated by materials from those landfills or seven former underground tanks, said Gordon Palmer, deputy port director. The work includes further environmental surveys, capping the landfills, monitoring the

- Recreation
- Rentals
- Services

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removal of pollution hot spots.

Officials said the Navy funds will cover an estimated $18 million to $20 million in cleanup costs, up to $2 million for environmental insurance and the remainder for Stockton port expenses.

Port commissioners Monday approved an environmental-services cooperative agreement with the Navy, as well as a consent agreement with the California Department of Toxic Substances Control and Regional Water Quality Control Board. They also directed port executives to secure the insurance policy, draft a deed and seek needed approval from Gov. Gray Davis' office.

This early land-transfer agreement is unprecedented, said Richard Aschieris, the port director, noting that he and other port employees worked for two years to secure the Navy and state agreements.

"We are very pleased to have this before you now," he told the commission members.

Commissioner Ronald Coale applauded the results, saying, "It certainly is a feather in the port's cap."

Herum noted that port officials were already in negotiations to lease portions of the 500 acres and that development of at least some of the land could be 12 to 18 months away.

---

* To reach reporter Reed Fujii, phone 546-8253 or e-mail rfujii@recordnet.com

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Port of Stockton
INTER OFFICE MEMORANDUM

TO CHIEF WINGO 9/27/01
FROM SGT. ZIMMERMAN #1
SUBJECT NOISE COMPLAINT

DATE 09-26-01
TIME 2227

CHIEF WINGO: AT 2227 HRS. ON 09-26-01 MRS. SHERI SHIELDS OF 4224 RIVIERA DR. STOCKTON, CA. TELEPHONE N (209) 466-5273 REPORTED THAT SHE WAS HEARING FORKLIF NOISE AND FORKLIFT HORNS/BEEPING COMING FROM THE POR WEST AREA. MRS. SHIELDS STATED THAT HER BEDROOM IS ACRO FROM THE WAREHOUSE AREA. OFFICER R. LE CHUGA WAS DISPATCHE AND STATED THAT COST PLUS EMPLOYEES WERE DEPARTING FOR THE EVENING AND THAT HE HEARD NO NOISE.

REPLY REQUESTED – YES ☐ NO ☒

PAGE 1 OF 1

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Ishimoto, Yvonne

From: Tollini, Mark
Sent: Thursday, September 27, 2001 9:18 AM
To: Aschieris, Richard
Cc: Hieber, Lee; Kaspar, Jeff; Granger, Abbie; Parker, Tim
Subject: Complaint of noise from West Complex

Rick,
For your guidance, the Port Police received a telephone call from Ms. Sherry Shields at 22:27 hours on 9/26/01. Ms. Shields was complaining about forklift noise coming from the West Complex directly across from her residence. Officer Le Chuga was dispatched to the area and reported that employees of Cost Plus were departing from their lease area when he arrived on scene. Officer Le Chuga further reported that no forklift noise was audible at the time of his arrival. Sergeant Zimmerman issued a memo to Chief Wingo detailing the events.

Mark

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Interoffice Memo

Date: 12/16/2001

To: CHIEF WINGO / PORT POLICE

From: CONTROL ONE

Subject: CITIZEN COMPLAINT

ON 12-16-01 AT 2205, I [OFFICER MOUA] RECEIVED A CALL FROM MR. MATT JONES OF 4208 RIVIERA DR, PH# (209)464-3316. MR. JONES COMPLAINED THAT THE DREDGE WAS MAKING TOO MUCH NOISE AND ALL THE LIGHTS ON THE WAREHOUSES DIRECTLY ACROSS FROM HIS HOUSE WERE ON. HE ALSO DEMANDED THE PORT POLICE TO GO BY THE WAREHOUSES AND SHUT DOWN ALL THE LIGHTS. I ADVISED MR. JONES THAT I DON'T HAVE CONTROL OVER THE ONGOING DREDGING OPERATION, AND REGARDING THE LIGHTS, I WILL SEND AN OFFICER TO CHECK THEM OUT. I ALSO ADVISED MR. JONES THAT I WILL NOTE HIS COMPLAINT TO THE PORT, AND TO HAVE MR. JONES CALL THE PORT DURING BUSINESS HOURS BETWEEN 8AM TO 5PM FOR FURTHER COMMENTS. I SENT SGT. ZIMMERMAN TO CHECK THE SITUATIONS DOWN BY DREDGE #7. SGT. ZIMMERMAN ADVISED THAT EVERYTHING APPEARED NORMAL. DREDGE #7 WAS WORKING AND LIGHTS ON BUILDING 803 WERE TURNED ON FOR DREDGE #7.

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Interoffice Memo

Date: 12/19/2001

To: CHIEF R. WINGO

From: SGT. L. ZIMMERMAN NO. 1

Subject: LIGHTS ON COMPLAINT

ON 12-19-01 AT 2220 HRS. JAMES SHIELDS, 4224 RIVIERA DR., PH. (209) 466-5273, TELEPHONED AND COMPLAINED THAT THE LIGHTS ARE ON AT THE WAREHOUSE DIRECTLY ACROSS FROM HIS HOUSE. J. SHIELDS STATED THAT THE LIGHTS HAVE BEEN ON ALL WEEK. J. SHIELDS STATED THAT THE DREDGE HAS MOVED DOWN TO THE NEXT WAREHOUSE, THAT THE SHIP IS GONE AND THAT THERE IS NO REASON FOR THE LIGHTS TO BE ON.

AT 2222 HRS. OFFICER K. NICHOLAS WAS DISPATCHED TO CHECK ON THE LIGHTS.

AT 2230 HRS. OFFICER K. NICHOLAS REPORTED THAT THE INTERIOR AND EXTERIOR LIGHTS WERE ON AT BLDG. NO. 508. OFFICER K. NICHOLAS ALSO STATED THAT THE EXTERIOR LIGHTS WERE ON AT BLDG. NO. 803 AND THAT THE ROSS ISLAND DREDGE NO. 7 WAS WORKING IN BETWEEN BLDG. NOS. 704 AND 803.

AT 2248 HRS. OFFICER K. NICHOLAS TURNED OFF THE EXTERIOR AND INTERIOR LIGHTS TO BLDG. NO. 508.

MD 3/25/02 02-035

Interoffice Memo

Date: 3/24/2002

To: Chief Wingo

From: Officer Hutton

Subject: Noise Complaint

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On the above date at 0327hrs. I received a noise complaint from a resident on Riviera Dr. Mrs. Chargin called and complained that a generator was running on the ship and kept her awake all night. She went on to say that it was literally "shaking her bed." I told Mrs. Chargin that I would see what we could do. Mrs. Chargin also told me that she complained to the San Joaquin County Sheriff's Department.

I dispatched Officer May to make contact with the ship's crew at dock #20. Officer May advised the ship's crew had one generator running for their essential power of the lights, heater and refrigerators and could not be turned off.

At 0345hrs. I received a call from Deputy Bulmer who inquired if we were advised of the complaint and if there was anything that could be done. I told him that we were in progress of doing so at that time.

Complainant:

Mrs. Chargin

4136 Riviera Dr.

463-4709

02-036

Interorfice Memo

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JAN 20 2004

PORT OF STOCKTON

Date: 3/24/2002

To: Chief Wingo

From: Officer Moua

Subject: Lights and Noise Complaints

On this date at 2235 hrs., I received two calls from across the channel, directly from dock #20, regarding the lights and the noises of the vessel "Arrow Ace". I've advised both callers that the lights on the vessel were for safety reasons and the generator on the vessel was running to produce sufficient energy for the ship's need. I also told both callers to call back to the port during business hour (mon-fri / 0800-1500) if they want to speak to with a port official.

I sent Sgt. Zimmerman to check on the above situations. Sgt. Advised that the lights and generator of Arrow Ace were "ON", and that all the dock lights were "OFF".

1st Caller : Jim Shield

4224 Riviera Dr.

466-5273

2nd Caller : Mrs. Chargin

4136 Riviera Dr.

463-4707

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PORT OF STOCKTON
POLICE DEPARTMENT
INCIDENT REPORT

TYPE OF INCIDENT	LOCATION	REPORT NUMBER
LOUD NOISE	DOCK #20	02-034
REPORTING PARTY	ADDRESS	PHONE NUMBER
RICHARD HACKETT		
DATE/TIME OF INCIDENT	REPORTING OFFICER	DATE/TIME OF REPORT
03-23-02 / 1935 HRS.	R. Le CHUGA	3/23/2002

NARRATIVE

AT 1935 HRS. WHILE WORKING THE GATE I RECEIVED A PHONE CALL FROM A RICHARD HACKETT. MR. HACKETT SAID HE WAS CALLING IN TO COMPLAIN ABOUT THE NOISE COMING FROM THE SHIP ON DOCK #20.

AT 1937 HRS. I HAD OFFICER MOUA CHECK ON THE VESSEL "ARROW ACE" FOR LOUD NOISE. HE SAID THE SHIP WAS RUNNING ITS GENERATOR & IT WAS LOUD BUT NOT BAD.

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ATTACHMENT 5
TO EXHIBIT B

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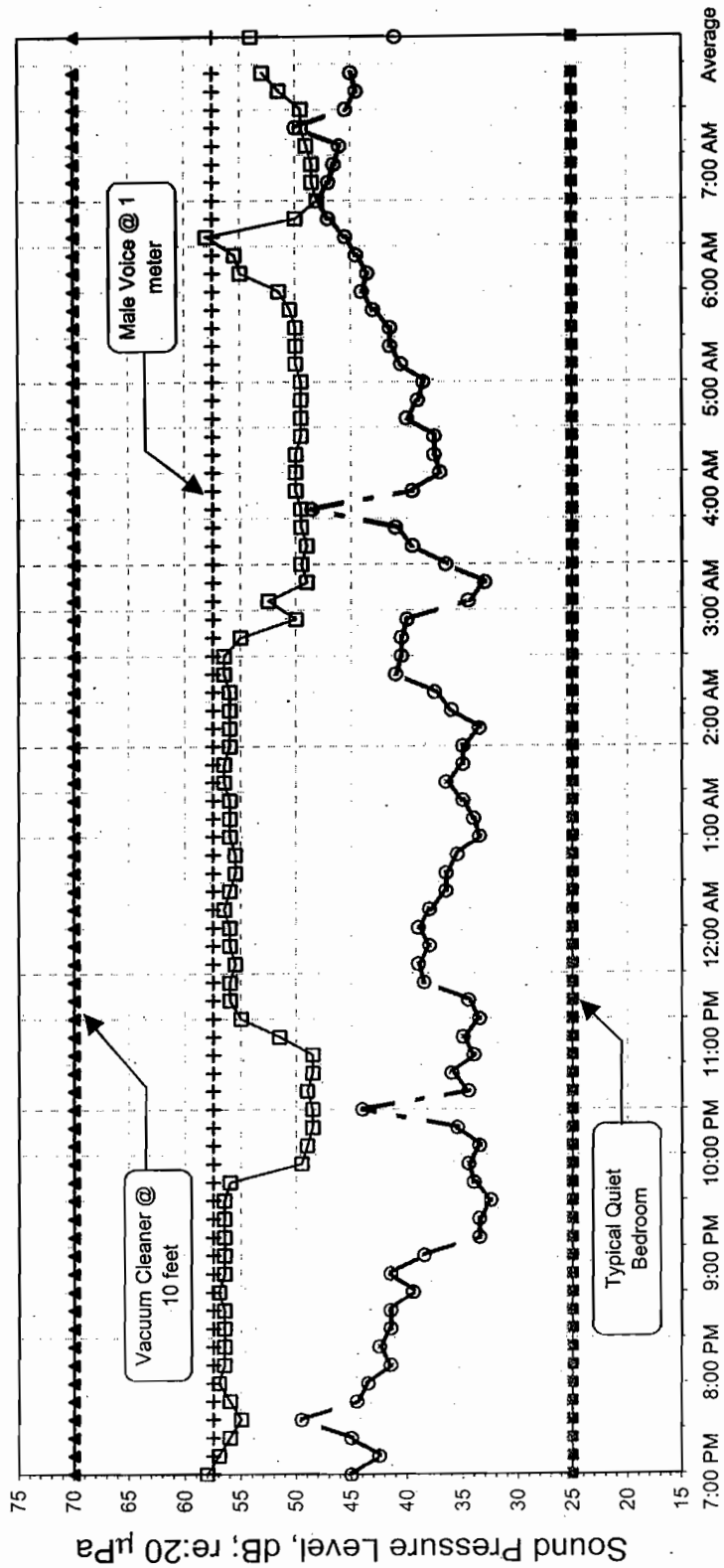
Port of Stockton Sound Tests; Rough & Ready Island
Backyard of Shields' Residence, Ships v Background



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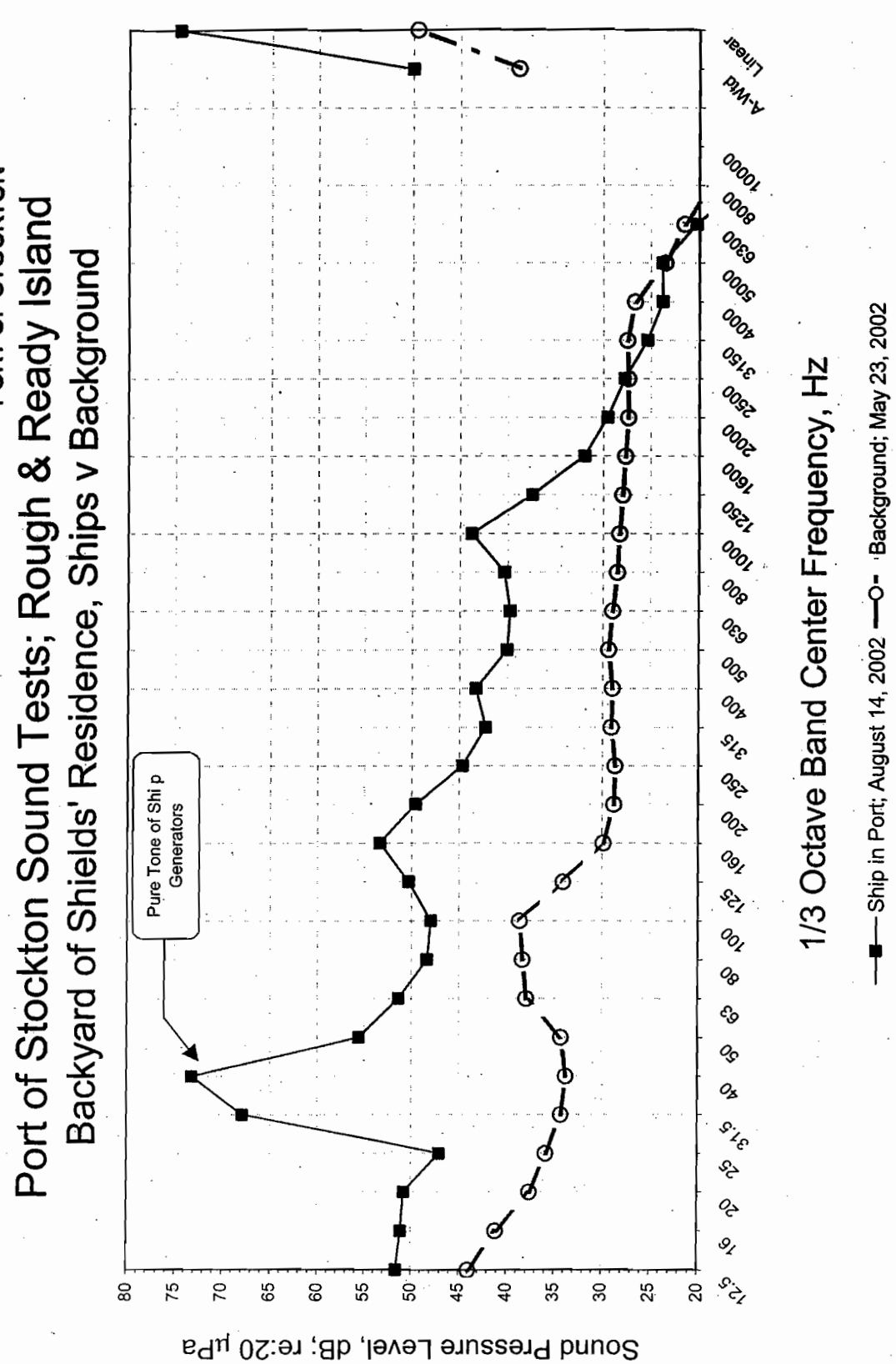

ATTACHMENT 6
TO EXHIBIT B

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RECOVERY PLAN

FOR

THE SACRAMENTO-SAN JOAQUIN DELTA NATIVE FISHES

U. S. Department of the Interior
Fish and Wildlife Service
Region 1, Portland, Oregon

Approved _____
Regional Director, U.S. Fish and Wildlife Service

Date Approved 11/26/96

TABLE OF CONTENTS

1. Introduction 1
Physical environment 6
Major factors affecting Delta fishes 8
Species accounts 11

2. Delta smelt 15
Introduction 15
Status and recovery potential 15
Description 15
Taxonomic relationships 15
Distribution 16
Habitat requirements 16
Life History 17
Abundance 19
Reasons for decline 19
Reasons for listing 23
Conservation measures 26
Recovery 29
Recovery objective 29
Recovery criteria 29

3. Longfin smelt 47
Introduction 47
Status and restoration potential 47
Description 47
Taxonomic relationships 47
Distribution 48
Habitat requirements 48
Life History 49
Abundance 51
Reasons for decline 52
Conservation measures 56
Restoration 56
Restoration objective 56
Restoration criteria 56

4. Sacramento splittail 67
Introduction 67
Status and restoration potential 67
Description 67
Taxonomic relationships 67

Distribution 67
Habitat requirements 69
Life History 69
Abundance 70
Reasons for decline 72
Conservation measures 75
Restoration 75
Restoration objective 75
Restoration criteria 75

5. Green sturgeon 83
Introduction 83
Status and restoration potential 83
Description 83
Taxonomic relationships 83
Distribution 84
Habitat requirements 84
Life History 84
Abundance 86
Reasons for decline 90
Conservation measures 94
Restoration 95
Restoration objective 95
Restoration criteria 95

6. Sacramento spring-run chinook salmon 96
Introduction 96
Status and restoration potential 96
Description 96
Taxonomic relationships 97
Distribution 97
Habitat requirements 98
Life History 99
Abundance 101
Reasons for decline 102
Conservation measures 106
Restoration 107
Restoration objective 107
Restoration criteria 107

7. Sacramento late fall-run chinook salmon 111
Introduction 111
Status and restoration potential 111

Description 111
Taxonomic relationships 111
Distribution 112
Habitat requirements 112
Life History 112
Abundance 113
Reasons for decline 113
Conservation measures 115
Restoration 116
Restoration objective 116
Restoration criteria 116

8. San Joaquin fall-run chinook salmon 118
Introduction 118
Status and restoration potential 118
Description 118
Taxonomic relationships 118
Distribution 119
Habitat requirements 119
Life History 119
Abundance 121
Reasons for decline 121
Conservation measures 124
Restoration 125
Restoration objective 125
Restoration criteria 125

9. Sacramento perch 130
Introduction 130
Status and restoration potential 130
Description 130
Taxonomic relationships 130
Distribution 131
Habitat requirements 131
Life History 131
Abundance 132
Reasons for decline 132
Conservation measures 133
Restoration 134
Restoration objective 134

10. Recovery actions 135
Introduction 135
Narrative outline 137

Implementation Schedule 163
Appendix A: Summary of Comments 172
Glossary 179
References 183

41121 Implement water conservation practices that make more water available (priority 2).

Private water rights holders could make more water available through implementation of water conservation practices. This additional water could be used to meet water quality standards.

41122 Time water districts' flood releases to benefit Delta fish (priority 2).

Flood releases in years having high precipitation should be timed to benefit native Delta fish. Coordination with the public water projects would be necessary for maximum benefit to the fish.

42 Periodically, review all unlisted species in this plan to determine need for listing (priority 3).

Periodically, the seven unlisted species in this recovery plan should be reviewed for the need for listing.

43 Improve implementation and enforcement of section 404 of Clean Water Act and section 10 of the Rivers and Harbors Act of 1898.

The Clean Water Act and the River and Harbors Act of 1898 provide protection for native Delta fish. Permit terms and conditions specify actions needed to minimize action effects and provide mitigation for adverse effects. Implementation and enforcement of these Acts will help to recover Delta fish.

431 Set dredging time windows to protect critical life-stages of fish.

Dredging is a source of habitat destruction, mobilization of contaminated sediments, and general disturbance to native Delta fish. Setting seasonal "windows" when dredging can occur that minimize effects on critical life-stages of Delta native fish would help in recovery.

4311 Restrict dredging activity within the Delta to the period between September 1 through November 31 (priority 3).

Critical life-stages of native Delta fish are transported to rearing areas and a "window" will protect these life-stages. Restricting dredging to the period September 1 through November 31 would protect spawning delta smelt, longfin smelt, and Sacramento splittail, and would give some protection to upmigrating and outmigrating salmon.

4312 Restrict dredging activity within Suisun Bay and Marsh to deepwater ship channel maintenance (priority 3).

Critical life-stages of native Delta fish spawn and rear in Suisun Bay and Suisun Marsh. Restricting dredging to deepwater ship channel maintenance in these areas will provide protection to these species.

432 Increase enforcement of U.S. Army Corps of Engineers permits (priority 3).

Current enforcement of permits is limited by inadequate staffing levels and funding. Increased funding targeted at enforcement would remedy this situation.

44 Develop alternative levee maintenance practices (priority 2).

Conventional levee maintenance using rip-rap, as currently practiced by local reclamation boards and U.S. Army Corps of Engineers, eliminates shallow-water and vegetated aquatic habitats. These losses simplify habitat structure, reduce productivity of fish habitat, curtail spawning and rearing habitat, and eliminate escape cover from predators. Alternative levee designs are needed to incorporate natural river berms setback from current levee alignments that allow growth of vegetated shallows along low gradient berm slopes.

5 Conduct monitoring and research to increase understanding of basic biology and management requirements.

Current understanding of the basic Delta native fish biology, ecology, and ecosystem management requirements to promote recovery is limited. Monitoring and research is needed to increase this understanding.

51 Monitor for location and numbers of fish throughout the Delta so that recovery objectives may be implemented and decisions made on success of implementation (priority 2).

Determination of the location and numbers of native Delta fish throughout the Delta during different life-stages is key to understanding their biological needs and what management actions should be implemented to promote recovery.

52 Develop screening criteria for adults, juveniles, and larvae (priority 2).

Screening criteria are currently known for very few fish species. These criteria are usually applicable to only adult and advanced juvenile fish. To benefit other fish species, individual species criteria need to be developed and criteria that screen life-stages should be determined. Most of these criteria are already known for salmon.

53 Conduct toxicological investigations to determine susceptibility of fish to various metals and pesticides (priority 3).

Toxicological investigations need to be conducted both in the field and laboratory to determine susceptibility of native Delta fish to toxic substances.

54 Study effects of introduced species (priority 3).

The effects of introduced species on native Delta fish are only partially understood. Studies should be implemented that increase this understanding and lead to decisions on management actions that decrease effects of introductions.

ATTACHMENT 7
TO EXHIBIT B

SAN JOAQUIN RIVER

Dissolved Oxygen Total Maximum Daily Load (SJR DO TMDL) Stakeholder Process

Board seeks oxygen boost to stop Delta fish die-offs

San Joaquin Record - 7/8/03
By Audrey Cooper, staff writer

Routine fish die-offs in the Stockton Deep Water Channel may stop soon under a new plan to boost oxygen levels in the waterway. The plan blames agencies from Stockton Municipal Utilities Department to the U.S. Army Corps of Engineers for the water conditions that frequently suffocate fish.

The plan, written by regulators at the Central Valley Regional Water Quality Control Board, calls for gradual changes to prevent the die-offs, said Les Grober, one of the plan's authors.

"The goal is to make things at least a little better soon so that we don't have conditions in February where" there is no oxygen in the water, Grober said.

The Deep Water Channel suffers from several factors that together cause low-oxygen levels. Nutrients such as fertilizers or treated sewage are discharged into the San Joaquin River. Those nutrients can cause algal blooms.

When the algae hits the deep ship channel, it sinks and decomposes. That decomposition uses up oxygen. Because so much of the San Joaquin River gets piped to cities and farms, there isn't enough water to flush out the channel.

When oxygen gets too low, as it did in February, rare steelhead and salmon float belly up. Shad, striped bass, sturgeon and other Delta fish are also at risk.

For the past few years, polluters and other agencies have argued about who primarily is to blame. Some say that the Port of Stockton and dredging by the U.S. Army Corps of Engineers are mostly responsible.

Others have said that pollution upstream is a major cause of the algae blooms. Still, others say that the river's low flows are to blame.

Under the new oxygen plan, regulators put equal blame on water users, polluters and the agencies responsible for dredging the channel.

Among the polluters, the Stockton sewage plant is specifically named as partially responsible for the low oxygen. That could mean even more costly restrictions on how and when the city can discharge its treated sewage into the river, Grober said.

Since 1999, a committee of polluters, water users and regulators have studied the oxygen problem. The group's most recent proposed solution called for more studies to better understand the oxygen problems and to use large aerators to blow oxygen into the water.

That was largely rejected by the Regional Water Quality Control Board, whose directors said some reductions in pollution were necessary.

"We tried to avoid the blame and confrontation of deciding who deserved the most responsibility for the problem," said Lowell Ploss, the most recent chairman of the polluters committee.

"Now it's going to become a debate over whether the science supports the" regulators' proposed limits," he said.

Bill Jennings, head of Stockton-based DeltaKeeper, said the oxygen plan is historic, because it officially recognizes a link between water quantity and quality.

"It begins to hold accountable those people who divert water out of the basin. This could affect hydro (dam) relicensing, petitions to divert water and water rights hearings," he said.

Alex Hildebrand, a Manteca farmer involved in the pollution-plan effort, has proposed a way to recirculate Delta water to increase flows. Such a plan would be cost-effective, he said. It also could put more water in the river during dry summer months. Right now, most water released for fish comes in the spring when oxygen is not a problem.

Oxygen sags typically occur in the late summer.

Website designed by Kevin Wolf and Associates
Webmaster: David Siedband

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EXHIBIT C

SUNDANCE SPORTS

Vanda Martin
"I Sell Homes"

Navigating the future

Port of Stockton's expansion would add to the

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JAN 20 2004
PORT OF STOCKTON

Published Thursday, January 15, 2004

An opportunity unique to the West Coast exists along the Stockton Deep Water Channel.

The Port of Stockton, which owns Rough and Ready Island, enters 2004 with ambitious, two-pronged expansion plans.

"We'll be doing two dynamic things at one time," says Richard Aschieris, port director. "Rehabilitating the old port and putting together a whole new port at Rough and Ready."

Converting the former Navy base opens up a mile of new docks, 42 miles of railroad tracks and 500 undeveloped acres for industrial/commercial use.

The port has outlined its plans in an environmental impact report that's still open to public comment. It makes clear that such expansion plans include some positives and negatives.

A bigger, busier port will be noisier, brighter and dirtier. The earth will vibrate. Dust and fumes will fill the air. Port officials make no secret of these impacts.

There are others. Roads will have to be improved and a bridge might have to be built. Potential agricultural land will be eliminated. Extensive dredging will be conducted.

Still, when the environmental impact report is complete and all the reactions have been compiled, port commissioners shouldn't hesitate to approve it.

There are vocal critics just across the water from the port's west end. Homeowners and other residents say they have been impacted by changes already under way.

When a freight ship arrives, it's loud, the lights are on -- sometimes very late at night -- and there's diesel fuel in the air. Loading and unloading equipment is intrusive.

Some of those living in the Riviera Cliffs neighborhood find themselves

Services
COLUMNISTS
Mike Fitzgerald
Francis Garland
Lori Gilbert
Eric Grunder
Jeff Hood
COMMUNITY
Community Info
Government Officials
Events
Stockton Cal
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RECORDNET
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allied against port expansion. They'd prefer the Rough and Ready docks remain dormant.

Actually, they'll benefit greatly from a completed port expansion.

Right now, the only dock space on the west end is directly across from waterfront homes. When dredging is complete, port officials will move most shipping activity to a point farthest away from those residences.

Until additional dredging opens up more docks, ships and all they represent will be an in-your-face proposition for 16 homeowners. They're not happy.

This kind of opportunity is too rare to pass up, offering tremendous economic potential for San Joaquin County.

You don't find warehousing, acres of vacant land and ship berths just waiting to be revived. "You can't build these in today's world," says Aschieris.

When fully built, the Port of Stockton and environs could employ between 15,000 and 20,000 workers. The area could be put to multiple uses: maritime, rail and industrial/commercial.

All of this is spelled out in the environmental impact report, which could receive final approval later this spring. A public hearing will follow the incorporation of oral and written comments into the report.

"We're trying to accomplish what we think is compatible and good for the community," says Aschieris, who has met with the groups in Riviera Cliffs, Atherton Cove and Brookside.

Port officials say they're trying to be good neighbors while taking an aggressive approach to the opportunities at hand. They've made offers to mitigate the negative impacts of port expansion. They're seeking public input and reaching out to the community.

The worst kind of stewardship would be to ignore the possibilities.

The port's officials never have hidden their agenda or handled their public trust irresponsibly.

Since 1933, when the first ship steamed up the channel with a load of lumber, the port has provided a foundation for Stockton's identity and acted as a cornerstone of the city's commercial success.

The west-end development plan will add to -- not subtract from -- the formula for making Stockton one of California's most vital 21st-century cities.

Pa. Teen Ch
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Newspaper in

EXHIBIT D

Public Notice

US Army Corps of Engineers

Sacramento District
1325 J Street
Sacramento, CA 95814-2922

RECEIVED
JAN 20 2004
PORT OF STOCKTON

Public Notice Number: 200300314
Date: September 26, 2003
Comments Due: October 26, 2003

In reply, please refer to the Public Notice Number

TO WHOM IT MAY CONCERN:

SUBJECT: Application for a Department of the Army permit under authority of Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act to dredge an area between the Port of Stockton's West Complex (dock 20-Burns Cutoff) and the Stockton Deep Water Channel, as shown in the attached drawings.

APPLICANT: Port of Stockton
Gordon Palmer
2201 West Washington Street
Stockton, California 95203

LOCATION: The proposed Dredging Port Of Stockton's West Complex project is located at Section 1, Township 1 North, Range 5 East, Stockton, San Joaquin, California.

PURPOSE: The applicant's stated purpose is to provide economic development at Port of Stockton's West Complex by dredging the area for commercial shipping use.

PROJECT DESCRIPTION:

Rough and Ready Island (also referred to as West complex) is in the final process of a transferring a lease from the U.S. Navy to the Port of Stockton (Port). The area was previously dredged to a depth of 30 feet below the mean low low water (MLLW) and maintained at this level. The Port has applied for a permit to dredge to a new depth of 36 feet to accommodate larger ship traffic.

The project would include dredging 250,000 cubic yards of sediment from the area west of Dock 20 to the confluence with Burns Cutoff at the West Complex area. The dredge area would be 1,800 feet long and 125 feet wide and extend from the face of Dock 20 outward to the intersection of the Deep Water Ship Channel to Burns Cutoff.

The applicant would use a hydraulic dredge to complete the process. The dredge uses a spinning cutter head to dislodge the material and an 18 inch diameter suction tube pumps the slurry mix. The slurry mix would consist of 85-90% water (600 acre feet or 195,510,859 gallons) and 10-15% solids (250,000 cubic yards). The slurry mix would be transported by pipeline to Roberts Island. The plastic pipeline would float 2 inches above the water surface when filled with water and air, and rest on the bottom of the River during the dredging operation. The pipeline would extend approximately 10,000 to 12,000 feet to Roberts Island. The dredging

contractor would determine the pipeline route but the applicants preferred pipeline route is to position it along the west bank of the Deep Water Ship Channel. The pipeline would be supported by buoys and placed outside the navigation channel. It would then traverse and cross the top of the levee at Roberts Island, where a road crossing would be constructed and the pipeline would continue to the disposal area.

The applicant has stated that the Roberts Island site has sufficient capacity to retain all dredged solids (250,000 cubic yards) but not all of the water. Roberts Island is an approved disposal management area and is comprised of two distinct tracts of land. The 40-acre tract is currently fallow and is used as a sedimentation disposal area. It can accommodate 270,000 cubic yards of solid material. The 80 acre site serves as an overflow area for decant water and it can accommodate 135,000 cubic yards of solid material. The applicant is proposing to return water not lost to evaporation and infiltration back to the Deep Water Ship Channel after approximately 14-28 days of onsite residence time. The site has been used as a dredged material disposal site since 1982.

The applicant has applied to include a maintenance dredging plan for a minimum of 5 years after the initial dredging effort is complete. The maintenance dredging would occur between June 1, and December 30. It is estimated that approximately 50,000 cubic yards of material would be dredged every two years. The dredged material would be deposited on Roberts island. The applicant anticipates having enough capacity to handle both sediment and water on the site.

AREA DESCRIPTION: The property consists of warehouses, sheds, mile long dock frontage, and 500 acres of open space. The Port would like to develop this area for maritime related uses over the next 20 years. The West complex area consists of 1,459 acres surrounded by Burns Cut Off to the south, east, and west. The Stockton Deep Water Ship Channel surrounds the Northern section of the property, where all the dredging would take place. The ship channel edges have very little aquatic vegetation because the areas rip-rapped or covered by docks and piers.

ADDITIONAL INFORMATION: The Port of Stockton has submitted a separate application to dredge an area immediately adjacent the site (see Dock 14-20 public notice 200300038).

The following endangered species may be present in the permit area: delta smelt (*Hypomesus transpacificus*), Sacramento splittail (*Pogonichthys*), Central Valley steelhead (*Oncorhynchus mykiss*), winter-run chinook salmon (*Oncorhynchus tschawytscha*), and Central Valley spring-run chinook salmon (*Oncorhynchus tschawytscha*). The Corps of Engineers will consult with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service pursuant to the Endangered Species Act (ESA) and essential fish habitat for Pacific Salmon pursuant to Section 305 (b)(2) of the Magnuson-Stevens Act.

No further cultural resources review is warranted because the permit area has been extensively modified by previous work.

The District Engineer has made this determination based on information provided by the applicant and on the Corps' preliminary investigation.

Interested parties are invited to submit written comments on or before **October 26, 2003**. Personal information in comment letters is subject to release to the public through the Freedom of Information Act. Any person may request, in writing, within the comment period specified in this notice that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing.

The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, consideration of property ownership, and in general, the needs and welfare of the people.

The Corps of Engineers is soliciting comments from the public; Federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

If additional information is required, please contact Port of Stockton Gordon Palmer, telephone 209-946-0246, or Mr. Paul Maniccia, at the letterhead address, telephone 916-557-6704.

Mark W. Connelly
Lieutenant Colonel,
Corps of Engineers
Acting District Engineer

Enclosures: Drawing(s)

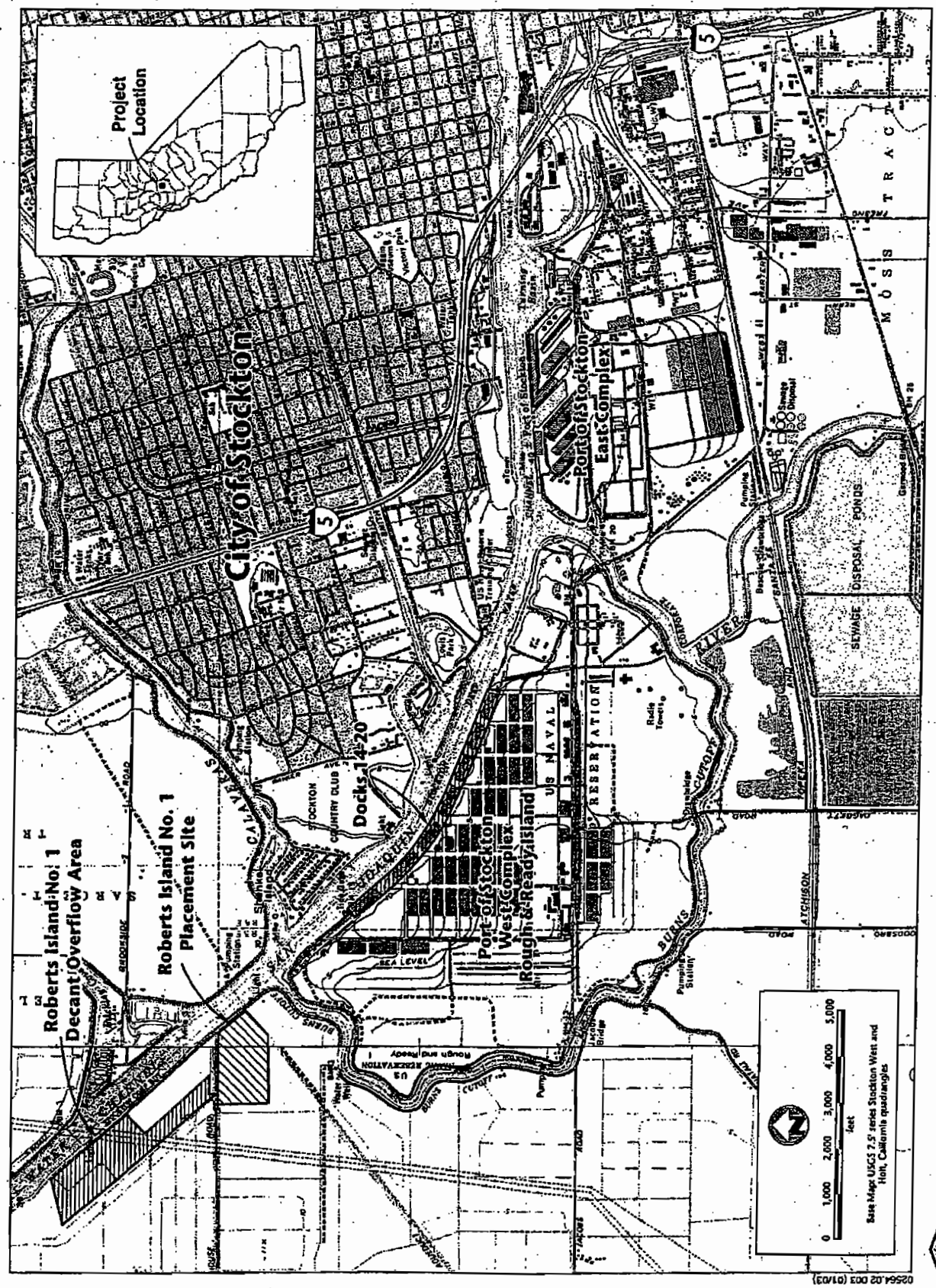
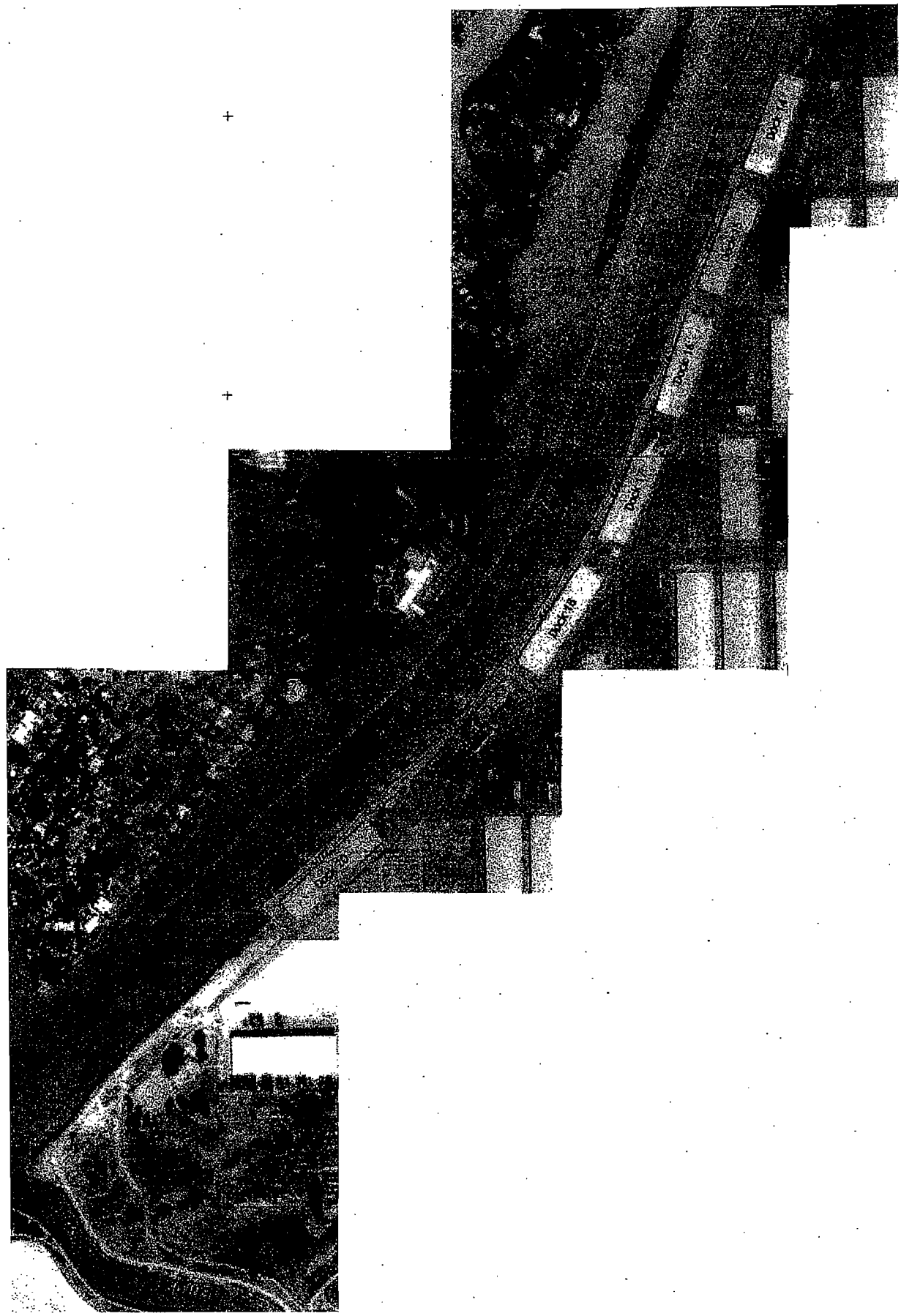
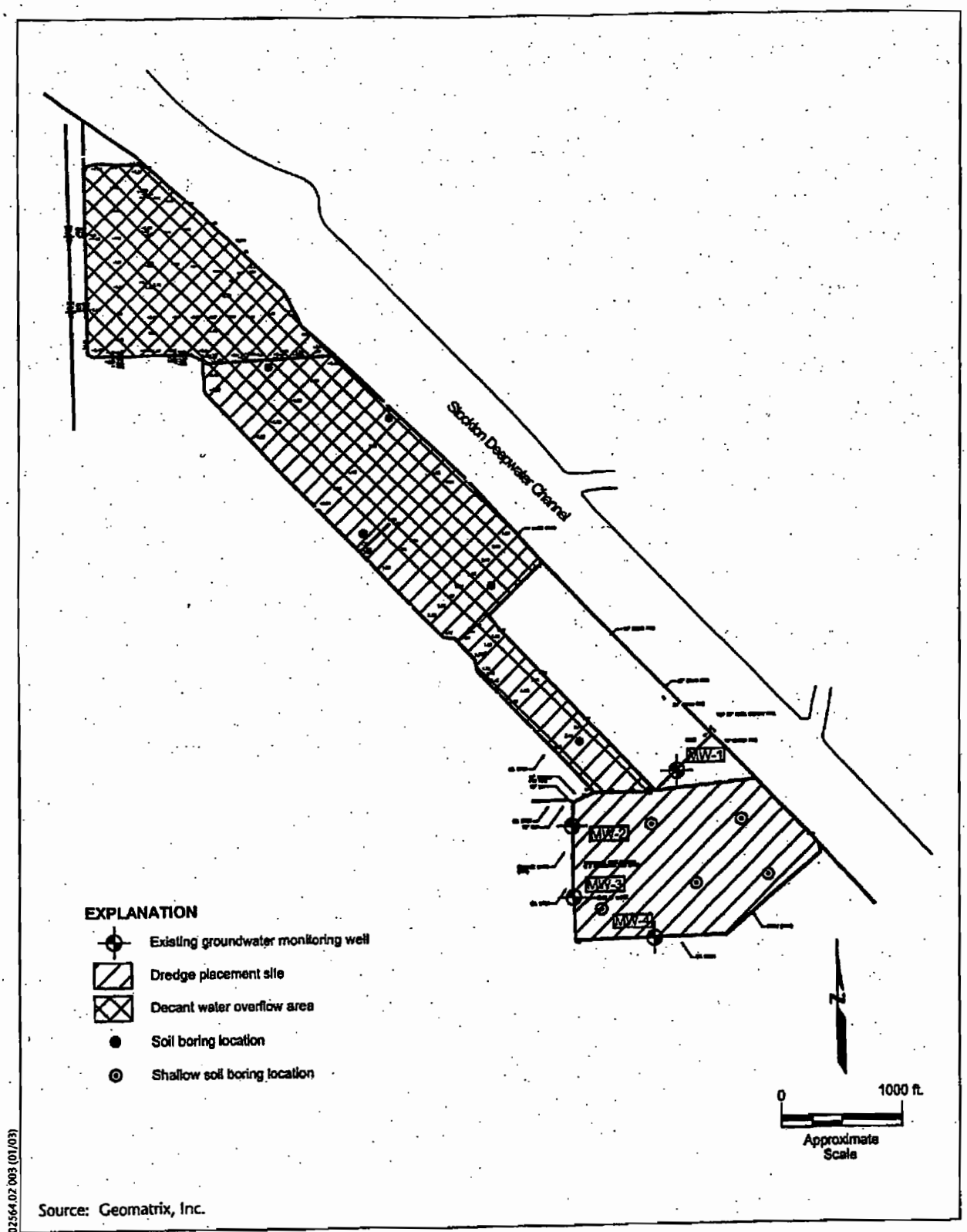


Figure 1
Project Location





Jones & Stokes

Figure 3
Dredged Material Placement Site

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5 J Street
amento, CA 95814-2922

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PORT OF STOCKTON

Public Notice Number: 200300038
Date: September 26, 2003
Comments Due: October 26, 2003

In reply, please refer to the Public Notice Number

TO WHOM IT MAY CONCERN:

SUBJECT: Application for a Department of the Army permit under authority of Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act to dredge an area between the Port of Stockton's West Complex (docks 14-20) and the Stockton Deep Water Channel, as shown in the attached drawings.

APPLICANT: Port of Stockton
Gordon Palmer
2201 W. Washington Street
Stockton, California 95203

LOCATION: The proposed Dredging Port Of Stockton's West Complex project is located at Section 1, Township 1 North, Range 5 East, Stockton, San Joaquin County California.

PURPOSE: The applicant's stated purpose is to provide economic development at Port of Stockton's West Complex by dredging the area for commercial shipping use.

PROJECT DESCRIPTION:

Rough and Ready Island (also referred to as West complex) is in the final process of transferring a lease from the U.S. Navy to the Port of Stockton (Port). Docks 14-20 were previously dredged to a depth of 30 feet below the mean low low water (MLLW) level. The Port has applied for a permit to dredge to a new depth of 36 feet to accommodate larger ship traffic.

The project includes dredging 326,000 cubic yards of sediment from docks 14-20 of the West complex area. The dredged area would be 6,230 feet long and 125 feet wide and extend from the face of each dock outward to the intersection of the Deep Water Ship Channel.

The applicant would use a hydraulic dredge to complete the process. The dredge uses a spinning cutter head to dislodge the material and an 18-inch diameter suction tube pumps the slurry mix. The slurry mix would consist of 85-90% water (800 acre feet or 260,681,145 gallons) and 10-15% solids (326,000 cubic yards). The slurry mix would be transported by pipeline to Roberts Island. The plastic pipeline would float 2 inches above the water surface when filled with water and air, and rest on the bottom of the River during the dredging

operation. The pipeline would extend approximately 10,000 to 12,000 feet to Roberts Island. The dredging contractor would determine the pipeline route but the applicants preferred pipeline route is to position it along the west bank of the Deep Water Ship Channel. The pipeline would be supported by buoys and placed outside the navigation channel. It would then traverse and cross the top of the levee at Roberts Island, where a road crossing would be constructed and the pipeline would continue to the disposal area.

The applicant has stated that the Roberts Island site has sufficient capacity to retain all dredged solids (326,000 cubic yards) but not all of the water. Roberts Island is an approved disposal management area and is comprised of two distinct tracts of land. The 40-acre tract is currently fallow and is used as a sedimentation disposal area. It can accommodate 270,000 cubic yards of solid material. The 80 acre site serves as an overflow area for decant water and it can accommodate 135,000 cubic yards of solid material. The applicant is proposing to return water not lost to evaporation and infiltration back to the Deep Water Ship Channel after approximately 14-28 days of onsite residence time. The site has been used as a dredged material disposal site since 1982.

The applicant has applied to include a maintenance dredging plan for a minimum of 5 years after the initial dredging effort is complete. The maintenance dredging would occur between June 1, and December 30. It is estimated that approximately 75,000 cubic yards of material would be dredged every two years. The dredged material would be deposited on Roberts island. The applicant anticipate having enough capacity to handle both sediment and water on the site.

AREA DESCRIPTION: The property consists of warehouses, sheds, mile long dock frontage, and 500 acres of open space. The Port would like to develop this area for maritime related uses over the next 20 years. The West complex area consists of 1,459 acres surrounded by Burns Cut Off to the south, east, and west. The Stockton Deep Water Ship Channel surrounds the Northern section of the property, where dredging under this application would take place. The ship channel edges have very little aquatic vegetation because the areas rip-rapped or covered by docks and piers.

ADDITIONAL INFORMATION: The Port of Stockton has submitted a separate application to dredge an area immediately adjacent the site (see Dock 20 to Burns Cut public notice 200300341).

The following endangered species may be present in the permit area: delta smelt (*Hypomesus transpacificus*), Sacramento splittail (*Pogonichthys*), Central Valley steelhead (*Oncorhynchus mykiss*), winter-run chinook salmon (*Oncorhynchus tschawytscha*), and Central Valley spring-run chinook salmon (*Oncorhynchus tschawytscha*). The Corps of Engineers will consult with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service pursuant to the Endangered Species Act (ESA) and essential fish habitat for Pacific Salmon pursuant to Section 305 (b)(2) of the Magnuson-Stevens Act.

No further cultural resources review is warranted because the permit area has been extensively modified by previous work.

The District Engineer has made this determination based on information provided by the applicant and on the Corps' preliminary investigation.

Interested parties are invited to submit written comments on or before **October 26, 2003**. Personal information in comment letters is subject to release to the public through the Freedom of Information Act. Any person may request, in writing, within the comment period specified in this notice that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing.

The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, consideration of property ownership, and in general, the needs and welfare of the people.

The Corps of Engineers is soliciting comments from the public; Federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

If additional information is required, please contact Stockton Port District Gordon Palmer, telephone 209-946-0246, or Mr. Paul Maniccia, at the letterhead address, telephone ~~916-557-5263~~. 916-557-6704

Mark W. Connelly
Lieutenant Colonel,
Corps of Engineers
Acting District Engineer

Enclosures: Drawing(s)

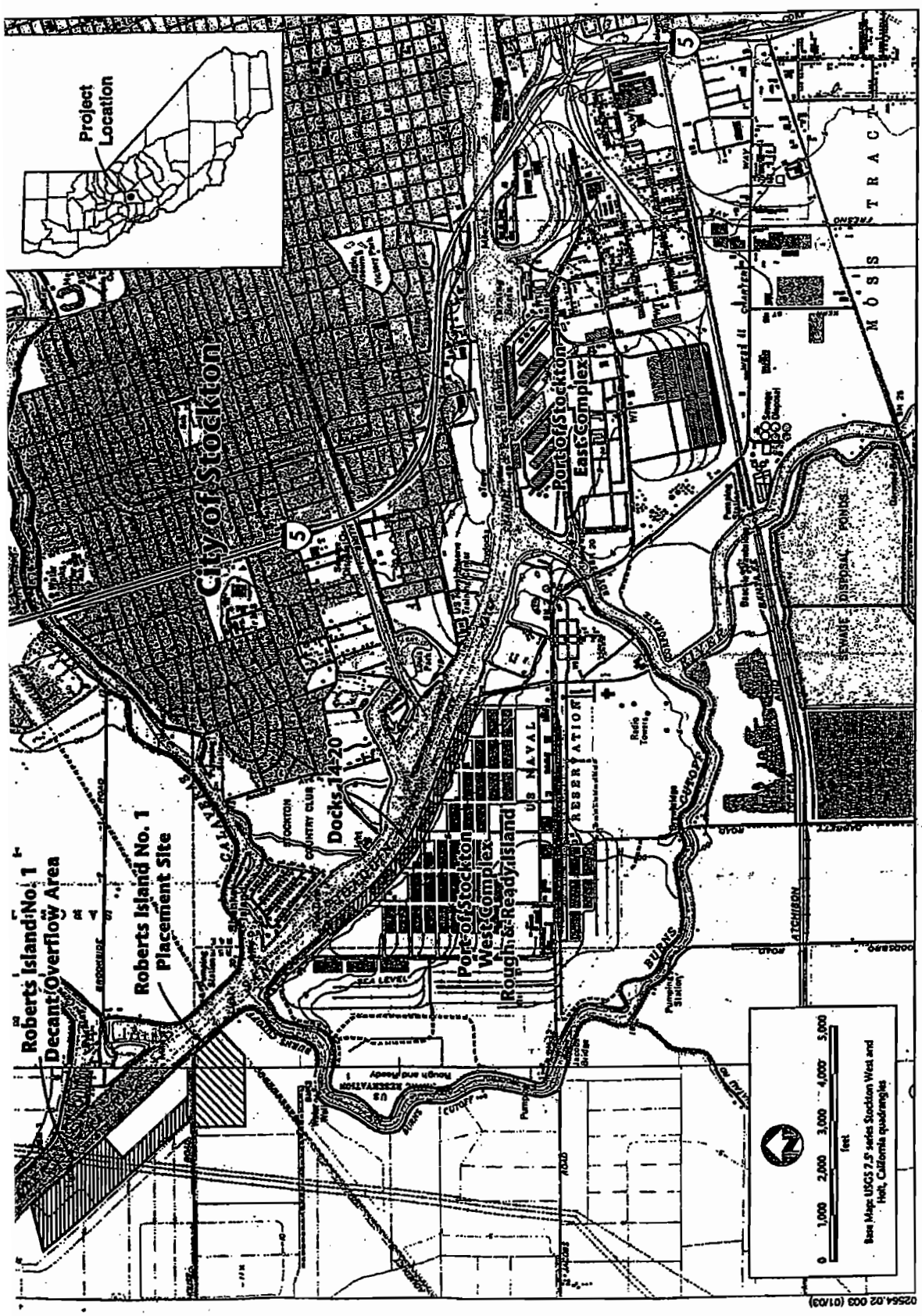


Figure 1
Project Location

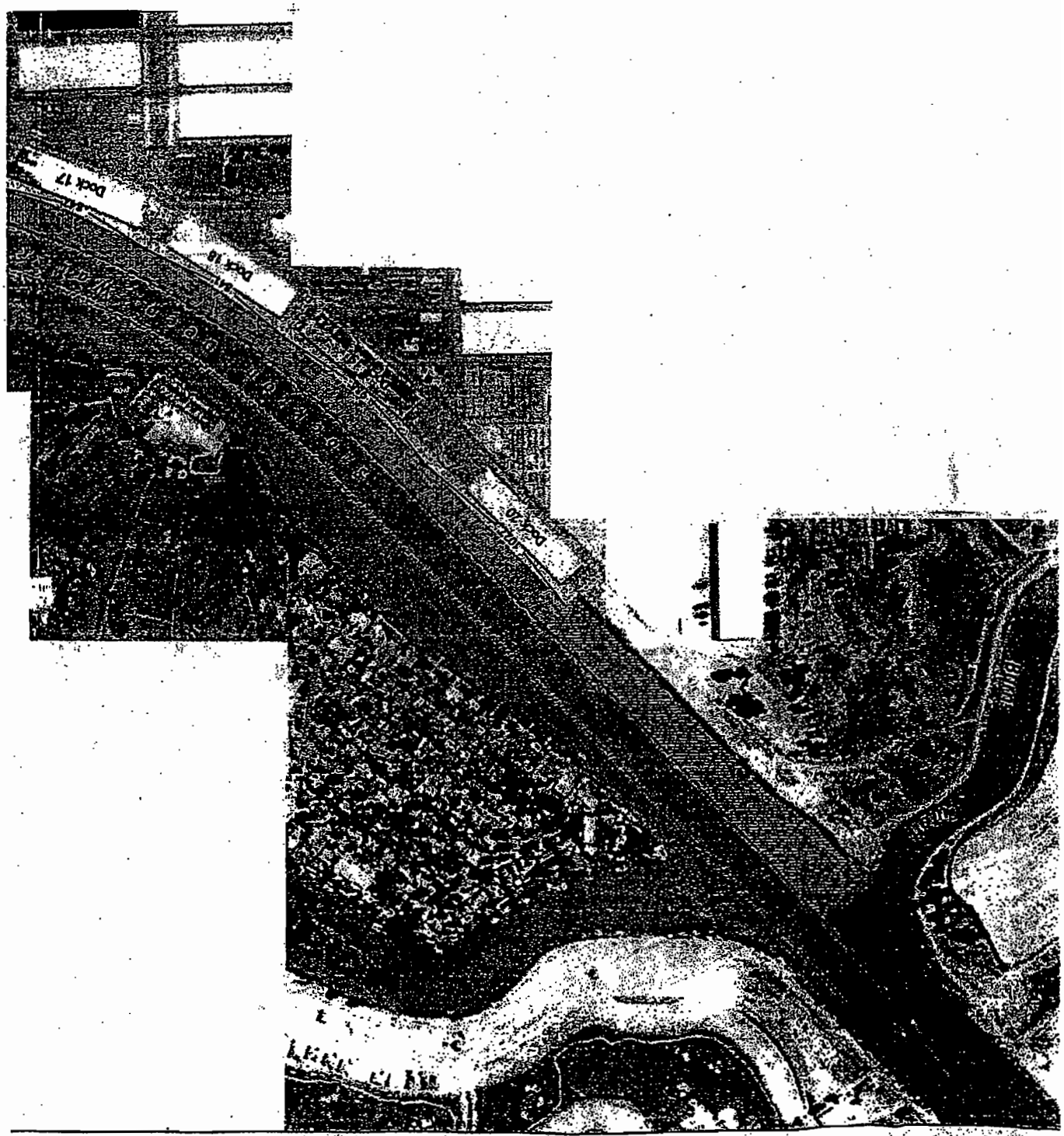

Dock 17
Dock 18
Dock 20

Figure 2
West Complex

Legend

35 Foot Depth Contour from Bathymetric Survey

Shipping Channel Boundary

Area to be Dredged

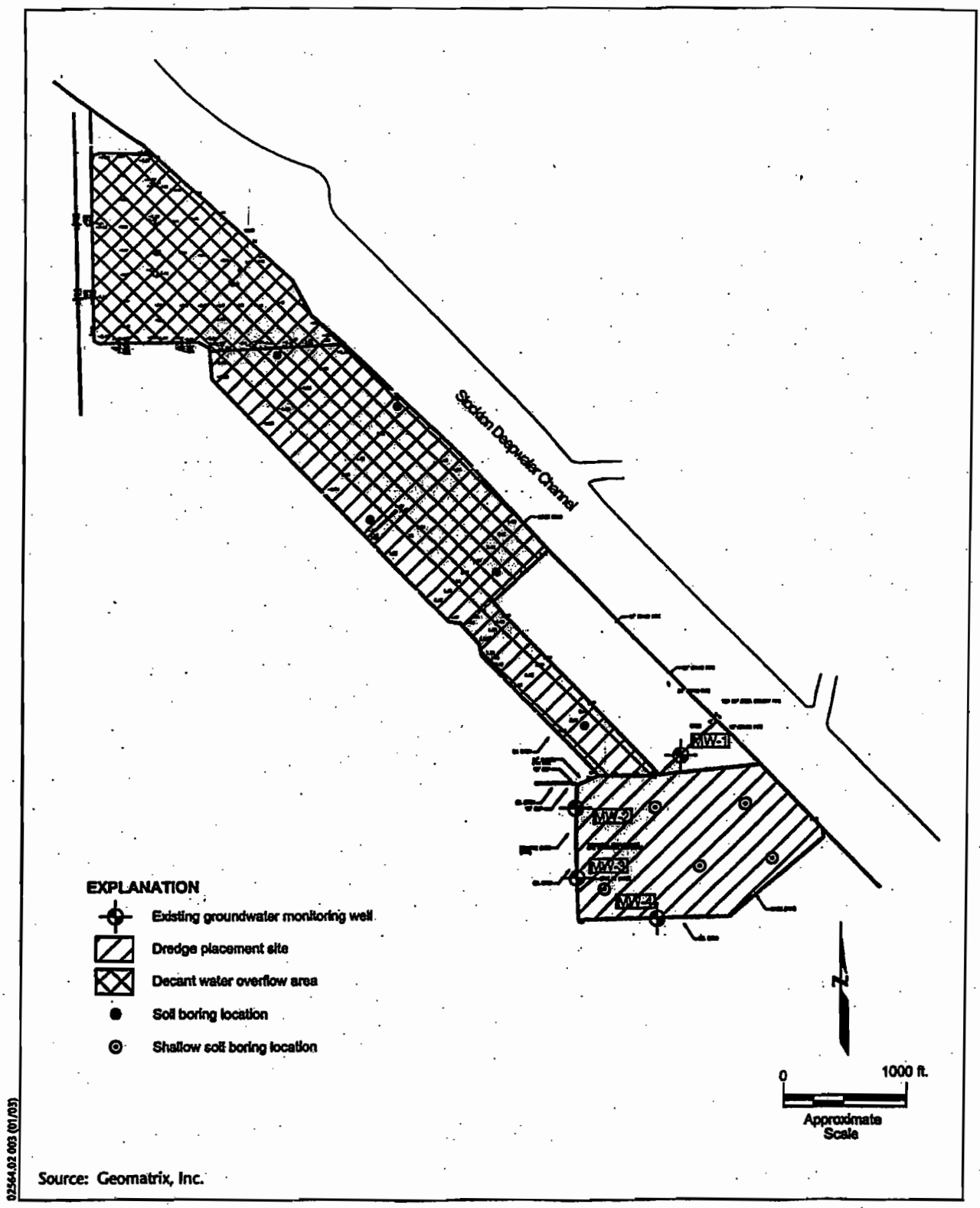
Air Photo Source: USGS DOQQ, 1993 (Terraserver)
Projection: UTM
Zone: 10
Datum: NAD83
Units: Feet US

N

200 0 200 400 600 Feet

Scale 1" = 500 Feet

Jones & Stokes



Jones & Stokes

Figure 3
Dredged Material Placement Site

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EXHIBIT E

550/9-74-004

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INFORMATION ON LEVELS OF ENVIRONMENTAL NOISE REQUISITE TO PROTECT PUBLIC HEALTH AND WELFARE WITH AN ADEQUATE MARGIN OF SAFETY

MARCH 1974

PREPARED BY
THE U.S. ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF NOISE ABATEMENT AND CONTROL

This document has been approved for general availability. It does not constitute a standard, specification, or regulation.

For sale by the Superintendent of Documents, U.S. Government Printing Office Washington, D.C. 20402 - Price $2.10

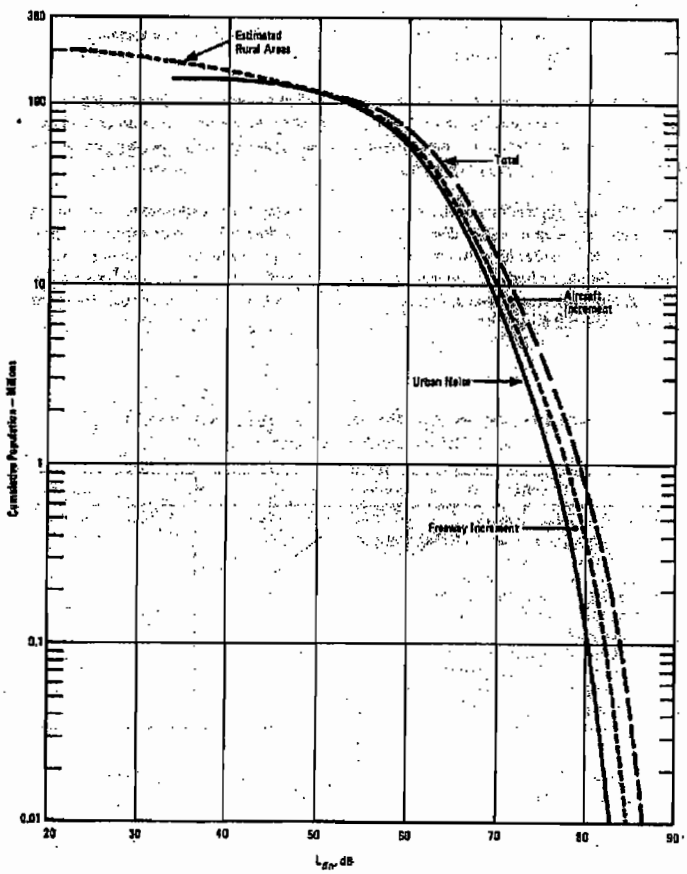
Table of Contents
NPC Online Library
NPC Law Library
NPC Noise News
NPC Home

FOREWORD

The Congress included among the requirements of the Noise Control Act of 1972 a directive that the Administrator of the Environmental Protection Agency "...develop and publish criteria with respect to noise..." and then "publish information on the levels of environmental noise the attainment and maintenance of which in defined areas under various conditions are requisite to protect the public health and welfare with an adequate margin of safety."

Not all of the scientific work that is required for basing such levels of environmental noise on precise objective factors has been completed. Some investigations are currently underway, and the need for others has been identified. These involve both special studies on various aspects of effects of noise on humans and the accumulation of additional epidemiological data. In some cases, a considerable period of time must elapse before the results will be meaningful, due to the long-term nature of the investigations involved. Nonetheless, there is information available from which extrapolations are possible and about which reasoned judgments can be made.

Given the foregoing, EPA has sought to provide information on the levels of noise requisite to protect public health and welfare with an adequate margin of safety. The information presented is based on analyses, extrapolations and evaluations of the present state of scientific knowledge. This approach is not unusual or different from that used for other environmental stressors and pollutants. As pointed out in "Air Quality Criteria"-Staff Report, Subcommittee on Air and Water Pollution, Committee on Public Works, U-S. Senate, July, 1968,



16

Table of Contents
NPC Online Library
NPC Law Library
NPC Noise News
NPC Home

Section 3

RATIONALE FOR IDENTIFICATION OF LEVELS OF ENVIRONMENTAL NOISE REQUISITE TO PROTECT PUBLIC HEALTH AND WELFARE

BASIS FOR IDENTIFYING LEVELS

For the identification of levels to protect against the direct, disease-producing effects of noise, protection against hearing loss is the guiding consideration. At this time, there is insufficient scientific evidence that non-auditory diseases are caused by noise levels lower than those that cause noise-induced hearing loss. In the event that future research renders this conclusion invalid, this document will be revised

accordingly (see Appendix E). in addition to direct disease-producing health effects, interference by noise with various human activities, such as speech-perception, sleep, and thought can lead to annoyance and indirect effects on well-being. All of these direct and indirect effects are considered here as effects on public health and welfare. It is important to note, however, the distinction between voluntary and involuntary exposures. Exposures to high levels of environmental noise are often produced or sought by the individual. For example, voluntary exposures to loud music are common. Consequently, the concept of total individual noise dose with regard to annoyance, must be applied only to involuntary exposure, although, of course, this argument does not apply to the effects of noise on hearing.

A further consideration is the physical setting in which the exposure takes place. Although there are no data to justify the assumption, it is judged here that, whereas a small amount of speech interference in most outdoor places is not detrimental to public health and welfare, the same is not true for most indoor environments. Based on this reasoning, adequate protection of the public against involuntary exposure to environmental noise requires special consideration of physical setting and the communication needs associated with each.

In the next subsection, the above rationale is applied to identify the maximum noise level consistent with an adequate margin of safety for the general classes of sound found most often in the environment. Certain special classes of sound, such as infrasound, ultrasound, and impulsive sounds are discussed in the final subsection.

Table of Contents
NPC Online Library
NPC Law Library
NPC Noise News
NPC Home

IDENTIFICATION OF MAXIMUM EXPOSURE LEVELS TO AVOID SIGNIFICANT ADVERSE EFFECTS

Hearing

Basic Considerations

The following considerations have been applied in identifying the environmental noise levels requisite to protect the hearing of the general population. For detailed derivation, justification and references, (see Appendix C).

1. The human ear, when damaged by noise, is typically affected at the 4000 Hz frequency first, and, therefore, this frequency can be considered the most noise-sensitive frequency. The averaged frequencies of 500 Hz, 1000 Hz and 2000 Hz have traditionally been employed in hearing conservation criteria because of their importance to the hearing of speech sounds. Since there is considerable evidence that frequencies above 2000 Hz are critical to the understanding of speech in lifelike situations, and since 4000 Hz is considered the most sensitive frequency, 4000 Hz has been selected as the most important frequency to be protected in this document.
2. Changes in hearing level of less than 5 dB are generally not considered noticeable or significant.
3. As individuals approach the high end of the distribution and their hearing levels are decreased,

they become less affected by noise exposure. In other words, there comes a point where one cannot be damaged by sounds, which one cannot hear.

4. The noise level chosen protects against hearing loss up to and including the 96th percentile of the population, ranked according to decreasing ability to hear at 4000 Hz. Since the percentiles beyond that point are also protected (see consideration number 3), virtually the entire population is protected against incurring more than a 5 dB noise-induced permanent threshold shift (NIPTS).

Explanation of Identified Level for Hearing Loss

Taking into account the assumptions and considerations mentioned above, the 8-hour exposure level, which protects virtually the entire population from greater than 5 dB NIPTS is 73 dB, (see Figure 3). Before this value of 73 dB for 8-hour exposures can be applied to the environmental situation, however, certain correction or conversion factors must be considered. These correction factors are:

Table of Contents
NPC Online Library
NPC Law Library
NPC Noise News
NPC Home

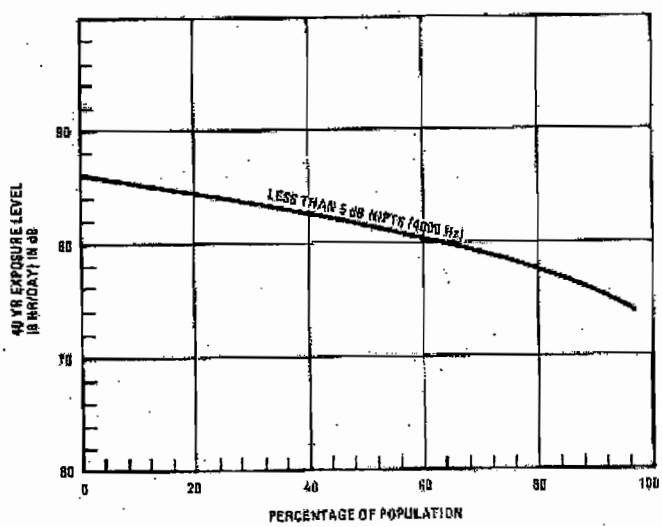


Figure 3. Percentage of Exposed Population That Will Incur No More Than 5 dB NIPTS Shown as a Function of Exposure Level. Population Ranked by Decreasing Ability to Hear at 4000 Hz. (See Appendix C for Rationale).

1. Intermittency: allows the exposure level to be 5 dB higher. This correction factor is required because most environmental noise is intermittent (not at a steady level, but below 65 dBA more than 10% of any one-hour period) and intermittent noise has been shown less damaging than continuous noise of the same L_{eq}. This correction should normally be applied except in situations that do not meet this criterion for intermittency.

2. Correction to yearly dose (250 to 365 days): requires reduction of the exposure level by 1.6 dB. All data used as the basis of Figure 3 come from occupational exposures which are only 250 days per year, whereas, this document must consider all 365 days in a year.

3. Correction to twenty-four hour day: the identified level of 73 dB is based on 8-hour daily exposures. Conversion to a 24-hour period using the equal-energy rule requires reduction of this level by 5 dB. This means that continuous sounds of a 24-hour duration must be 5 dB less intense than higher level sounds of only 8 hours duration, with the remaining 16 hours considered quiet.

Using the above corrections and conversions implies that the average 8-hour daily dose (based on a yearly average and assuming intermittent noise) should be no greater

Table of Contents
NPC Online Library
NPC Law Library
NPC Noise News
NPC Home

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than $L_{eq(8)} = 73+5-1.6 = 76.4$ dB. Extending the duration to 24 hours would yield a value of 71.4 dB. For continuous noise, this value would be 66.4 dB. However, since environmental noise is intermittent, this level is below that which is considered necessary to protect public health and welfare. In view of possible statistical errors in the basic data, it is considered reasonable, especially with respect to a margin of safety, to round down from 71.4 dB to 70 dB. Therefore, the level of intermittent noise identified here for purposes of protection against hearing loss is:

$$L_{eq(24)} = 70 \text{ dB}$$

(For explanation of the relationship between exposures of $L_{eq(8)} = 75$ dB and $L_{eq(24)} = 70$ dB, please see page 4.)

Adequate Margin of Safety

Section 5(a)(2), as stated previously, requires an adequate margin of safety. The level identified to protect against hearing loss, is based on three margins of safety considerations

1. The level protects at the frequency where the ear is most sensitive (4,000 Hz).

2. It protects virtually the whole population from exceeding 5 dB NIPTS.

3. It rounds off in the direction of hearing conservation (downward) to provide in part for uncertainties in analyzing the data.

Activity Interference/Annoyance

Basic Considerations

The levels of environmental noise which interfere with human activity (see Appendix D for detailed dicussion) depend upon the activity and its contextual frame of reference; I.e., they depend upon "defined areas under various conditions". The effect of activity interference is often described in terms of annoyance. However, various non-level related factors, such as attitude towards the noise source and local conditions, may influence an individual's reaction to activity interferences.

20

Table of Contents
NPC Online Library
NPC Law Library
NPC Noise News
NPC Home

The levels which interfere with listening to a desired sound, such as speech or music, can be defined in terms of the level of interfering sound required to mask the desired sound. Such levels have been quantified for speech communication by directly measuring the interference with speech intelligibility as a function of the level of the intruding sound, relative to the level of the speech sounds.

The levels interfering with human activities which do not involve active listening have not been as well quantified relative to the level of a desired sound. These relationships are more complicated because interference caused by an intruding sound depends upon the background level and the state of the human auditor; e.g., the degree of concentration when endeavoring to accomplish a mental task, or the depth of sleep, etc. Fortunately, there is a wealth of survey data on community reaction to environmental noise which, although subject to some shortcomings when taken alone, can be used to supplement activity interference data to identify noise levels requisite to protect public health and welfare. Thus, the levels identified here primarily reflect results of research on community reaction and speech masking.

Identified Levels for Interference

The level identified for the protection of speech communication is an L_{eq} of 45 dB within the home in order to provide for 100% intelligibility of speech sounds. Allowing for the 15 dB reduction in sound level between outdoors and indoors (which is an average amount of sound attenuation that assumes partly-open windows), this level becomes an outdoor L_{eq} of 60 dB for residential areas. For outdoor voice communication, the outdoor L_{eq} of 60 dB allows normal conversation at distances up to 2 meters with 95% sentence intelligibility.

Although speech-interference has been identified as the primary interference of noise with human activities and is one of the primary reasons for adverse community reactions to noise and long-term annoyance, the 10 dB nighttime weighting (and, hence, the term L_{dn}) is applied to give adequate weight to all of the other adverse effects on activity interference. For the same reason, a 5 dB margin of safety/ is applied to the identified outdoor level. Therefore, the outdoor L_{dn} identified for residential areas is 5 5 dB. (See Appendix E for relationship of L_{eq} to L_{dn}.)

The associated interior day-night sound level within a typical home which results from outdoors is 15 dB less, or 40 dB due to the attenuation of the structure. The expected indoor daytime level for a typical neighborhood which has an outdoor L_{dn} of 55 dB is approximately 40 dB, whereas the nighttime level is approximately 32 dB (see Figure A-7). This latter value is consistent with the limited available sleep

criteria [D-5]. Additionally,

21

Table of Contents
NPC Online Library
NPC Law Library
NPC Noise News
NPC Home

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these indoor levels of 40 dB during the day and approximately 32 dB at night are consistent with the background levels inside the home which have been recommended by acoustical consultants as acceptable for many years, (see Table D-10).

The effects associated with an outdoor day-night sound level of 55 dB are summarized in Table 3. The summary shows that satisfactory outdoor average sentence intelligibility may be expected for normal voice conversations over distances of up to 3.5 meters; that depending on attitude and other non-level related factors, the average expected community reaction is none, although 1% may complain and 17% indicate "highly annoyed" when responding to social survey questions; and that noise is the least important factor governing attitude towards the area.

Identification of a level which is 5 dB higher than the 55 dB identified above would significantly increase the severity of the average community reaction, as well as the expected percentage of complaints and annoyance. Conversely, identification of a level 5 dB lower than the 55 dB identified above would reduce the indoor levels resulting from outdoor noise well below the typical background indoors (see Table 3) and probably make little change in annoyance since at levels below the identified level, individual attitude and life style, as well as local conditions, seem to be more important factors in controlling the resulting magnitude of annoyance or community reaction than is the absolute magnitude of the level of the intruding noise.

Accordingly, L_{dn} of 45 dB indoors and of 55 dB outdoors in residential areas are identified as the maximum levels below which no effects on public health and welfare occur due to interference with speech or other activity. These levels would also protect the vast majority of the population under most conditions against annoyance, in the absence of intrusive noises with particularly aversive content.

Adequate Margin of Safety

The outdoor environmental noise level identified in Table 3 provides a 5 dB margin of safety with respect to protecting speech communication. This is considered desirable for the indoor situation to provide for homes with less than average noise reduction or for persons speaking with less than average voice level. A higher margin of safety would be ineffective most of the time due to normal indoor activity background levels.

The 5 dB margin of safety is particularly desirable to protect the population against long-term annoyance with a higher probability than would be provided by the levels protecting indoor and outdoor speech communication capability alone. The 5 dB margin clearly shifts community response as well as subjective annoyance rating into the next lower

22

Table of Contents
NPC Online Library
NPC Law Library
NPC Noise News
NPC Home

Table 3

SUMMARY OF HUMAN EFFECTS IN TERMS OF SPEECH COMMUNICATION, COMMUNITY REACTIONS, ANNOYANCE AND ATTITUDE TOWARD AREA ASSOCIATED WITH AN OUTDOOR DAY/NIGHT SOUND LEVEL OF 55 dB re 20 MICROPASCALS

TYPE OF EFFECT	MAGNITUDE OF EFFECT
Speech - Indoors	100% sentence intelligibility (average) with a 5 dB margin of safety
Speech - Outdoors	100% sentence intelligibility (average) at 0.35 meters
	99% sentence intelligibility (average) at 1.0 meters
	95% sentence intelligibility (average) at 3.5 meters
Average Community Reaction	None evident; 7 dB below level of significant "complaints and threats of legal action" and at least 16 dB below "vigorous action" (attitudes and other non-level related factors may affect this result)
Complaints	1% dependent on attitude and other non-level related factors
Annoyance	1% dependent on attitude and other non-level related factors
Attitudes Towards Area	Noise essentially the least important of various factors

(Derived from Appendix D)

23

Table of Contents
NPC Online Library
NPC Law Library
NPC Noise News
NPC Home

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response category than would be observed for the maximum level identified with respect to speech communication alone. According to present data, this margin of safety protects the vast majority of the population against long-term annoyance by noise. It would reduce environmental noise to a level where it is least important among environmental factors that influence the population's attitude toward the environment. To define an environment that eliminates any potential annoyance by noise occasionally to some part of the population appears not possible at the present state of knowledge.

EXHIBIT F

The Record
Founded in 1895

Public Pulse

Saturday, January 3, 2004

Roger W. Coover, president and publisher
James E. Gold, editor in chief
Mike Klocke, managing editor
Kevin L. Parrish, opinion-page editor

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PORT OF STOCKTON

Leave the port where it belongs

We're not against the development of Rough and Ready Island. Using buildings for warehouses, manufacturing and high-tech companies is very welcome.

These types of companies would create more year-round jobs per square foot and be most of the jobs mentioned in the reports.

Our concerns are only the intended changes on the waterfront (500 feet from our homes) to 24-hour, seven-day-a-week commercial shipping.

These ships:

- Leave their engines and/or generators running 24/7.
- Create no jobs on the ship. Pilots would be on the ship no matter where it docked.
- Create a tremendous amount of noise that can make you leap from your bed in the middle of the night.
- Create vibrations that shake shelves and beds at least a half-mile away.
- Cause pollution from engine smoke that turns the blue skies gray.
- Generate pollution from lights. We no longer have night-time at our home.
- Create pollution with water that constantly pours out of them into the Delta.

Along with shipping, we understand the Port of Stockton intends to put trains on the dock. The effects of this haven't been studied and would be devastating to homes.

It would look like the existing port, which has operated for 70 years and is a blighted junkyard.

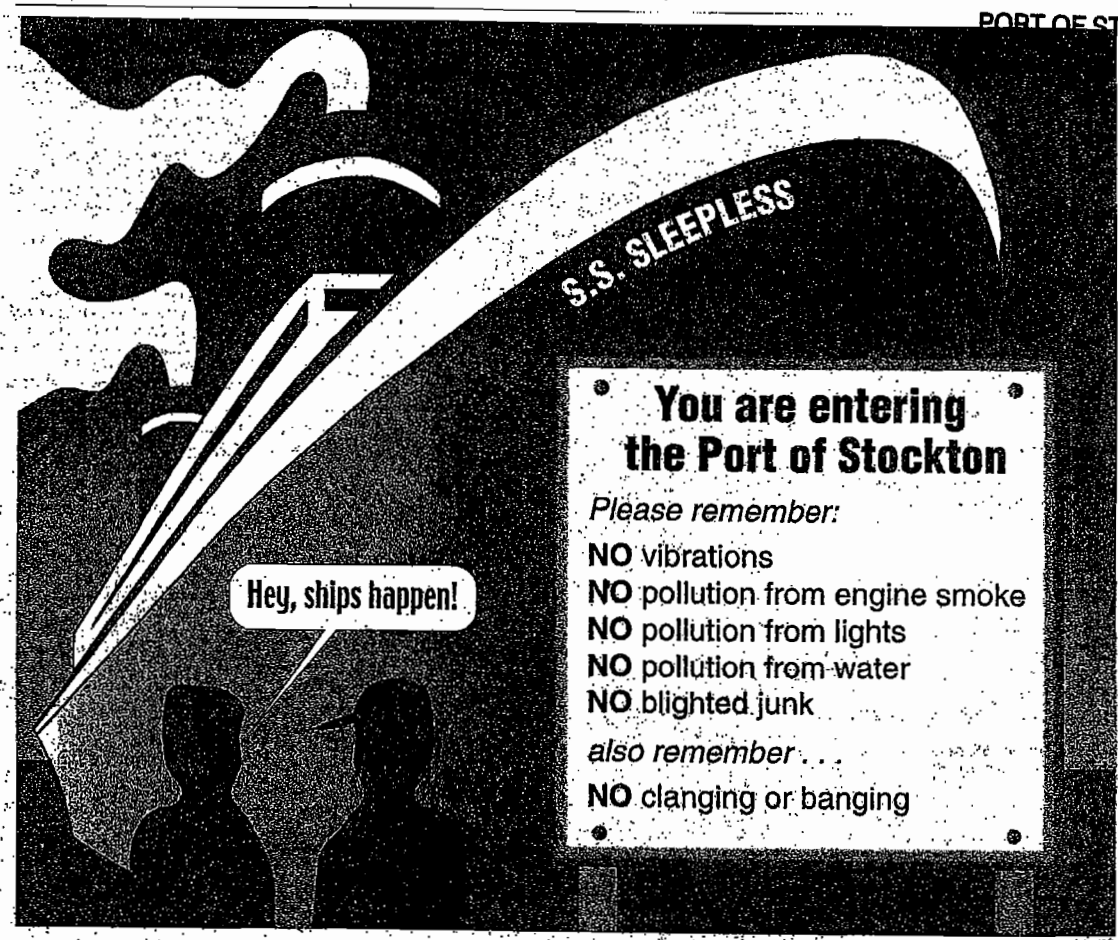
We're told we don't matter. The homeowners of Boggs Tract, Atherton Island/Cove, Riviera Cliffs and Brookside should count.

Boggs Tract homes are just as valuable to the owners as mine is to me. It's easier for me to move than it would be for them.

Taxation without representation has nothing to do with how the port operates. It means Richard Pombo, Barbara Matthews, Michael Machado, Gary Podesto, Victor Mow, Stockton police and the county sheriff's department refuse to help us. We're being denied our civil rights.

These officials claim they have no jurisdiction, but their faces and names are all over the port's brochures. Articles in the paper always state how much they're doing for the port.

A better alternative to the port's plan would be to leave it where it's been for 70 years and remodel it to fit new shipping. They could use the east end of Rough and Ready Island from the golf course to Louis Park.



Record Illustration by RICK HUDOCK

Instead of blighting the waterfront at Rough and Ready Island, use it for warehouses, manufacturing and high-tech companies that might build campus-type facilities that would enhance the area and make everyone proud.

Appraisers have told us our property values will be devastated. The impact also will be relayed to homes off the water, each area and home affected differently.

San Joaquin County Supervisor Steve Gutierrez has stated that it's "unacceptable" that neighborhoods have to put up with heavy truck traffic rolling past their homes.

Stockton's General Plan doesn't allow these incompatible uses. The mission statement is all about quality of life.

We're not against the development of Rough and Ready Island, but believe it can be done without destroying homeowners' lives.

Richard Hackett
Stockton

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TAVG STUDY

Letter P25b

The Acoustics & Vibration Group
5700 Broadway Sacramento, CA 95820-1852
916-457-1444 FAX: 916-457-1475
Consultants in Acoustics, Vibration & Noise Control

January 19, 2004

RECEIVED
JAN 21 2004
PORT OF STOCKTON

Ray Weiss
Environmental Science Associates
8950 Cal Center Drive, Suite 300
Sacramento, CA 95826

SUBJECT: Review of Noise Impact Analysis Portions of Port of Stockton West Complex Development Plan Draft Environmental Impact Report and Recommended Changes

Dear Mr. Weiss,

This letter report, written on behalf of Friends of Riviera Cliffs, documents the results of a review of the noise impact sections of the subject Draft EIR [1]*. The noise impact sections are inadequate and incomplete because they provide no means of determining the noise impact. The DEIR notes that two local noise standards exist. First is the City of Stockton Noise Element [2] from the General Plan and the second is the City's Noise Regulation [3]. The Noise Element contains limits for both transportation and non-transportation sound sources. The Noise Regulation addresses sound from non-transportation sound sources. Since the noise generated by operations in the Project Area at the berths are mostly non-transportation in nature, the limits of the Noise Regulation and the General Plan Performance Standard are far more apropos than the day-night average, L_{dn}, limits applied to transportation sound sources as given in the Noise Element. Data is not available to evaluate the true noise impact of the project because the DEIR provides no hourly background sound levels or sound levels generated by project activities. Thus, the noise impact can not be ascertained. P25b-1

Even though the Noise Regulation provides no quantitative noise limits, Policy 10 of the Noise Element recommends adopting limits consistent with the Performance Standard and guidelines of the State Office of Noise Control. The Performance Standard uses the hourly average, L_{eq}, sound level and the maximum, L_{MAX}, sound level to set noise limits. The State's Model Noise Ordinance was developed by the Office of Noise Control. This Model Noise Ordinance breaks sound limits into five categories, based on the duration of the sound over any given hour. These limits have an advantage over L_{eq} sound levels in that they are less susceptible to individual events such as the passage of one pleasure boat. Both the Performance Standard of the General Plan and the Model Noise Ordinance apply a 5 dB penalty for noise comprised primarily of speech and music or which contains a pure tone. Sound generated by the ship/berth operations typically contain a pure tone, so the penalty would apply. The noise section of the DEIR ignores all local limits based on non-transportation sound sources, the General Plan Performance Standard, and the General Plan's goal of protecting citizens from excess sound. P25b-2

For brevity, the following comments are addressed in a combination of outline form and brief paragraphs, using section 4.5 Noise from Environmental Analysis, section 5.4.4 NOISE from Environmental Analysis - Project Specific Components - Dredging and Placement Operations Project, section

* - *Number in brackets refers to references listed at the end of this letter report.*

6.3.5 NOISE from Environmental Analysis - Project Specific Components - McCloy Avenue, Daggett Road, Appendix F Noise Study and Appendix G Vibration Analysis of the Draft EIR as a guideline for topics.

I. 4.5.1 SETTING

A. ***BACKGROUND INFORMATION ON NOISE***

1. The A-Weighted filter is commonly used for most noise regulations as pointed out in the DEIR. However, though commonly in use, the origin of the weighting is important. The A-Weighting curve was generated from tests of many subjects when the source was at 50 dB. A reference tone of 50 dB at 1000 Hz was played into the right ear of a subject and then octave band pure tones were played into the left ear of the test subject. The test subjects were asked to adjust the volume in the left ear until equally "loud" as what they heard in the right ear. From tests of many subjects, the A-Weighting was generated. When the sound at 1000 Hz was increased to 70 dB, the resulting equal loudness curve was given the name B-Weighting. At this input level, the ear is more sensitive to low frequency than when played at 50 dB. For example, at 31.5 Hz, the A-Weighting curve subtracts out 39.4 dB while the B-Weighting curve only subtracts 17.1 dB. For the third test, the source was increased to 90 dB. The resulting equal loudness curve was designated C-Weighting. At 31.5 Hz, this weighting only subtracts out 3 dB, 28.5 dB less than the A-Weighting filter and 14.1 dB less than the B-Weighting filter. This shows that how people hear is far more complex than may be given by a simple reliance on the A-weighting sound level. This is particularly true of low frequency sound. P25b-3
2. Figure 4.5-1, contains errors that distort the perception of sound and the loudness. For example, this figure shows that heavy trucks passing a site at 50 feet produce about 90 dB(A). However, under the *Regulations* section, it says that both Federal and State regulations limit the sound to 80 dB(A). This figure also suggests that a noisy urban area would result in an 80 dB(A) sound level. A distance from the prominent sound sources is not given and the sound level appears unrealistic except for very short durations. This is the average level measured 50 feet from a busy freeway with traffic moving at faster than 65 MPH, but is unlikely to be measured in the city unless measured at the curb of a very busy road for short durations. This figure also suggests that complaints are likely only when sound is at 80 dB. This is inappropriate as shown by the levels allowed in the Performance Standards of the Noise Element of the General Plan [2] of the City of Stockton. This is a misrepresentation of how people perceive sound. It also contradicts information given in one of the following sections, "Effects of Noise on People". P25b-4

B. **Noise Exposure and Community Noise**

1. Two main types of sound sources have to be addressed as noted by the State's division of sound sources. One type is transportation sound sources and the other is non-transportation sound sources. The importance of the two types of sources are reflected in the State's Title 24 requirements and Model Noise Ordinance [4]. The City of Stockton also has similar division of sound requirements as reflected in the two sections of the General Plan [2] and the Noise Regulation [3]. The Model Noise P25b-5

Ordinance and the General Plan's Performance Standard both use the "instantaneous" sound level, the maximum, L_{MAX}, sound level, as one of the important limits for sound. Thus, defining community noise as one averaged over some long interval such as a day is not appropriate for the types of sources influencing the residences next to the docks. P25b-5 (Cont.)

2. The statistical descriptors of sound impact for non-transportation sound sources described on page 4.5-3 is given as a fact rather than an opinion. The State's Model Noise Ordinance uses other values that are described later in this review. Those adopted by the State have been found to be more appropriate for non-transportation sound sources because of the strong influence of transient events on the average, L_{eq}, sound level and the L_{dn} and CNEL sound descriptors. P25b-6

C. **Effects of Noise on People**

1. One of the other main influences of sound is to create stress. Sound is the major source used to create and study stress because it is easy to achieve and is repeatable. This is reflected in the complaints that have arisen due to the loading and unloading operations that have occurred on the docks across from the Riviera Cliffs development. Thus, some evaluation of the stress factor created by the project should be included. P25b-7
2. The description of how sound and changes in sound amplitude are perceived is only partially correct. The description of how untrained people in non-laboratory conditions respond to sound is incorrect except for possibly some specific conditions. The tests for which these results were obtained were based on pure tones and broad band sound. That is, for general road traffic without heavy trucks, motorcycles or other sources that generate decidedly different sound tones, the original studies' prediction may be correct. However, when new sources are introduced, even very small changes can be detected and may cause a strong response. An example of this situation is the public response to a change in flight paths from Sacramento International (then Metro) Airport in August 1987. An immediate outcry arose from the public from areas as far as 15 miles from the airport. As a result, the County of Sacramento formed a 27 person task force to evaluate what had happened and an acoustical consulting company from the Los Angeles area was hired to measure the change in sound levels [5]. Measurements were made at thirteen sites ranging from the end of the roadway to 12 miles from the south end of the runways. The results at the positions more than 6 miles from the airport showed changes in the CNEL of typically less than 1 dB. Thus, the ability of people to detect differences is not necessarily a function of the change in the daily exposure as represented by the L_{dn} or CNEL levels. The tonal content is very important in the response. Aircraft flyovers generate a different set of tones and have a different duration than road traffic, particularly for homes where the backyard is not strongly influenced by road traffic. P25b-8
3. A discussion of how people respond to new sources has not been provided nor even a discussion of how those living across from docking berths 19 and 20 responded to the new use undertaken without proper CEQA analysis. Complaints of noise from nearby residents are indicators of community response to noise. A discussion of the levels where speech interference, sleep disruption, annoyance and stress are the outcome of exposure to sound would allow an evaluation of the sound that is generated by the proposed project and its affect on people. P25b-9

D. **Noise Attenuation**

1. The attenuation discussion does not mention the influence of sources on board ship or on the docks near the water. Sound reduction across water often differs from that over other terrain because of the temperature affects above the water. These temperature changes cause a "channeling" of the sound that results in less attenuation with distance than expected over acoustically hard surfaces. Since the main sound sources used to evaluate the noise impact of normal operations are located at the water, the lower attenuation associated with sound propagation should be addressed. P25b-10

E. ***NOISE REGULATIONS, PLANS, AND POLICIES***

1. The discussion of local regulations is inaccurate and misleading. The main issue ignored in the DEIR is the difference between transportation and non-transportation sound sources. Since a majority of the existing residential area will be impacted by non-transportation sound sources, noise limits governing the project must be based on those that address these types of sources. P25b-11
2. Goal 1 of the General Plan clearly states that it is to "Protect the citizens of the Stockton Planning Area from the harmful and annoying effects of exposure to excessive noise." This goal makes no distinction between existing and proposed noise-sensitive areas such as residential developments. Thus, protecting citizens in existing residential development from new, harmful and annoying noise is the City's goal. P25b-12
3. Page 4.5-6 of DEIR incorrectly states that "General Plan Policies 1 through 5 restrict residential development near existing noise sources". Specifically, Policy 2 states that, "The compatibility of proposed projects with existing and future noise levels due to traffic on public roadways, railroad line operations and aircraft in flight shall be evaluated by comparison to Figure 1". Figure 1 gives the land use compatibility for community noise environments. There is no mention that this applies to only residential development. As required by CEQA, *any* project that will have an influence on existing or proposed future noise sensitive land uses would have to be in compliance with the requirements of the land use compatibility chart. This would include commercial or industrial projects. P25b-13
4. The DEIR neglects to mention that Policy 10 says that it is the intent of the General Plan that a community noise control ordinance be prepared that is consistent with the Performance Standards of the Noise Element of the General Plan and guidelines from the State Office of Noise Control. P25b-14
5. Policy 1 of the Noise Element of the General Plan sets noise limits given in Table I below for *new* residential development. The DEIR states that even though Policy 2, which deals with transportation sound sources, does not apply to the proposed project, it would apply the limits to this project. First it should be noted that Policy 2 says it applies to all projects where there are transportation sound sources and not to just new residential development. However, what is most important is that the Project's main sources of sound are non-transportation sound sources. Because of the comments in Policy 10, the operations at the Project Area should have to meet those requirements for non-transportation sound sources as given in the Performance Standard of the General Plan. To be consistent with the General Plan Performance Standard in Policy 10, the site would have to meet the noise limits. Table I shows the sound limits given in the Performance Standard. P25b-15

TABLE I. Exterior Noise Level Standards for Locally-Regulated Noise Sources for City of Stockton for New Residential Property Affected by Non-Transportation Sound Sources.

Noise Level Descriptor	Exterior Sound Level Limits, dB(A)			
	Without Penalty☞		With Penalty☞	
	Daytime 7 a.m. to 10 p.m.	Nighttime 10 p.m. to 7 a.m.	Daytime 7 a.m. to 10 p.m.	Nighttime 10 p.m. to 7 a.m.
Hourly Leq, dB(A)	55	45	50	40
Maximum Level, dB(A)	75	65	70	60

☞ - Penalty applies when sound is composed primarily of speech or music, contains pure tones or results from impacts or impulsive sources.

6. The General Plan Performance Standard [2] looks at the sound produced during shorter times by sources not related to transportation equipment. The one exception is that sound produced by transportation equipment while on private property may be regulated by the limits in Table I. P25b-16

   a. This standard limits the amplitude and duration of sound produced over any given 1-hour period, not necessarily whole clock numbers. That is, it could apply from 10:35 p.m. to 11:35 p.m. if that was when the source was operating.
   b. Sound limits are based on the type of source, the time of day of occurrence and the tonal content of sound.
   c. The standard applies a 5 dB penalty to the limits set when the sound is comprised mainly of speech or music or if it contains pure tones or impulsive sounds. This penalty would be applied to these operations because of the pure tone found for equipment running when loading and unloading ships, as shown in Appendix G of the DEIR. A pure tone is what you hear when you blow across the mouth of a soda pop bottle that is mostly empty.
   d. How to handle situations where the background sound levels equals or exceeds the noise limits is not given. The background sound level is defined as the sound that is measured when the source of interest is absent.

7. Since Policy 10 states that guidelines of the State Office of Noise Control are to be used in formulating a new or expanded noise control ordinance, the State's Model Noise Ordinance must be examined, also.

   a. This Model Noise Ordinance addresses non-transportation sound sources and has been used by many jurisdictions in formulating noise limits for the types of sources that will be found at the Project Area. P25b-17
   b. It focuses on sound at the receiving property, not at the source property line because there can be no impact if there is not a noise receptor.
   c. The sound limits are based on the time of day of occurrence, tonal content of the sound and the duration of the event.
   d. Sound is to be measured over any one-hour period. The limit is based on the duration of the sound.
   e. If the sound lasts at least 30 minutes in an hour, the most stringent limit applies.

f. A 5 dB penalty is applied for sound that contains pure tones, speech or music or impact sounds. As noted, the equipment used on the ships contains a pure tone and would receive the 5 dB penalty.

g. When the background sound equals or exceeds the limit, the limits are adjusted in 5 dB increments until they encompass the background sound.

h. Table II presents the noise limits from the Model Noise Ordinance based on suburban single-family residential and multi-family

TABLE II. Noise Limits from the State's Model Noise Ordinance for Suburban Residential Land Uses for Non-Transportation Sound Sources. P25b-17 (Cont.)

		Exterior Sound Level Limits, dB(A)◊			
		Suburban, Single-Family		Suburban, Multi-Family	
Category	Cumulative Number of Minutes in any 1-hour period	Day, 7am-10pm	Night, 10pm-7am	Daytime	Nighttime
1	30 (L_{50})	55	45	55	50
2	15 (L_{25})	60	50	60	50
3	5 ($L_{8.3}$)	65	55	65	55
4	1 ($L_{1.7}$)	70	60	70	60
5	0 (L_{MAX})	75	65	75	65
◊-Penalty applied to pure tones, speech & impact sounds		-5	-5	-5	-5

8. The DEIR mentions that Policies 6 and 7 sets property lines sound limits of 75 and 80 dB(A), respectively for commercial and industrial property. They do not state how this applies or what happens when there is residential property adjacent to such property and where the intent of the General Plan would be to set lower limits and where the City's Noise Regulation would not likely allow such high levels. The intent of noise ordinances is to establish sound limits at the receiving property not the source property since an impact can not occur unless there is a sound receptor. P25b-18

9. The City of Stockton does have a Noise Regulation as noted in the DEIR. That the City intended it to be enforced is proven by the detail in the ordinance which is a duplicate of the requirements of Section 5 of the State's Model Noise Ordinance [4]. This ordinance requires an assessment of the volume or amplitude of the sound being generated, the nature of the sound, the background sound, the proximity to sleeping areas, the time of day and duration of the sound among other considerations. Thus, it is incumbent upon the DEIR to set realistic noise limits for the mainly non-transportation sound sources that are and will continue to influence the acoustic environment at homes near the Project Area. A revised DEIR should adopt either the requirements of the City's Performance Standards from the Noise Element or the limits of the State's Model Noise Ordinance. The latter requirements offer many advantages. For example, they employ a unit of measurement that is far less susceptible to individual events not related to the source of interest and provide a means of dealing with the background sound levels. P25b-19

F. *SENSITIVE RECEPTORS AND EXISTING NOISE ENVIRONMENT*

1. Existing Noise Environment

a. The existing sound sources impacting the residential and recreational areas across from the main docking berths are improperly and incorrectly identified. P25b-20

b. Until the Port of Stockton started using these facilities without completing the required environmental documentation, the island was owned by the Navy and was used strictly for storage of ships with almost no activity except that related to radar and communication activities by the Navy. P25b-21

c. Thus, the existing sound sources included local boat traffic, local road traffic, distant road traffic, landscaping activities and general human activities. P25b-22

d. Only a few large ships move through the Stockton Deep Water Ship Channel to the berths at the east end, beyond any residential land. P25b-23

2. Baseline Noise Conditions

a. Pages 4.5-8 states that long term sound measurements were used to establish baseline conditions in areas that would possibly be impacted by activity at the docking berths. Data was acquired in 10-minute intervals at least at one of the sites and an assumption was made that this same interval was used for all such positions, though no information is provided in the DEIR or Appendix F. P25b-24

b. Although the main sound sources of the proposed project are non-transportation sources, data is not provided in a form that allows comparison with either the Performance Standards of the Noise Element of the General Plan, the limits of the State's Model Noise Ordinance [4] or the general requirements of the City's Noise Regulation [3]. Only the average over 24-hours plus the highest hourly L_{eq} sound level is given. None of the data in the five tables can be used to determine existing conditions as required by CEQA. Without this data, no evaluation of the noise impact can be determined for non-transportation sound sources. P25b-25

c. Short term measurements were made in residential areas that could be impacted by increased road traffic, particularly heavy trucks. Of course, transportation sound sources are judged based on the daily sound average, which would require 24-hour measurements as a minimum. Thus, where the sound sources of interest are non-transportation in character and regulated by the hourly conditions, long duration measurements were made. However, where the main sound sources are transportation related and the limits are based on daily average, only short term measurements were made, requiring that the daily level be predicted from computer models. P25b-26

d. The City of Stockton's Noise Element of the General Plan [2] does not state where the 60 dB(A) L_{dn} sound limit for residential property applies. Typically, however, it is applied to the backyard of homes. The short term tests in the DEIR were done 50 feet from the roadway, and this is not likely to represent the sound that a person would hear in the backyard of the home. Therefore, the tests overestimated baseline noise levels. P25b-27

e. Table 4.5-2 shows the results of short term sound tests of transportation sound sources in four residential areas. The truck percentages are not broken down into medium and heavy vehicles as required to accurately predict the sound from these P25b-28

vehicles. Information in Appendix F suggests that all trucks were heavy and none were medium trucks. This would appear to be an unusual situation since there are typically delivery trucks accessing the area. P25b-28 (Cont.)

f. The predicted hourly L_{eq} sound levels derived from the traffic counts is not shown in the main sections of the DEIR, so an evaluation of the accuracy of the model to predict the L_{dn} sound level at any of the test positions is not possible. The predicted results are presented in Appendix F but the reference distances are not given. The volumes in Table 4.5-2 do not appear to correlate with the volumes given in the appendix. P25b-29

g. The Acoustics and Vibration Group, TAVG, has completed several sound tests at residences along Riviera Drive across from docking berths 19 and 20 [6]. The referenced report provides documentation of the sound levels in the evening and night with activity as occurred before the Port of Stockton began using the docking berths and since that time. This data shows the true background sound levels and the influence of activity at the West Complex, docking berths 19 and 20. P25b-30

h. This data also shows the tonal content of the sound sources associated with activity at the docking berths, including the pure tone that was found at the same frequency shown in Appendix G of the DEIR. This pure tone would result in a 5 dB penalty for the City's Performance Standard limits, the requirements of the State's Model Noise Ordinance and how the sound would be judged per the City's Noise Regulation. P25b-31

3. **Baseline Vibration Conditions**

a. *Airborne Sound-Induced Vibrations*

(1) Sound levels generated by ship and shore activity while loading or unloading ships were shown on pages 4.5-11 and -12 of the DEIR to be sufficiently high to possibly excite vibration in housing structures. This is correct and agrees with the data presented in Reference 6. P25b-32

(2) The use of The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) [7] guidelines is appropriate for judging whether sound will generate vibration in lightweight structures. The results agree with the subjective observations made at the home at 4100 Riviera Drive while a ship was at docking berth 19. The rattling of the windows was easily detected and no source other than berth 19 activities could be identified. The sound levels at 31.5 Hz fell into the area where such vibration of the structure would be expected as shown in Reference 6. P25b-33

II. 4.5.2 IMPACTS AND MITIGATION MEASURES

A. ***SIGNIFICANCE CRITERIA***

1. The significance criteria proposed are inadequate at best and completely erroneous at worst. The DEIR lists the CEQA Guidelines that can be used to develop significant criteria. The DEIR proposed four criteria for deciding that an impact is significant: P25b-34

a. Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
b. Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
c. Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project; or
d. Expose persons to or generate excessive ground-borne vibration. P25b-34

2. The DEIR ignores all noise limits for non-transportation sound sources from the discussion of significance, addressing only the property line industrial and commercial limits. This does not meet the requirements of CEQA. The major sound sources and the main source used by the DEIR analysis team to evaluate L_{dn} sound level impacts were data taken while a ship was at a berthing dock. These are non-transportation sound sources that must be judged based on hourly sound level limits given either in the City' s Performance Standard [2] or the State's Model Noise Ordinance [4] or in comparison with the requirements of the City's Noise Regulation. P25b-35
3. For the limits given in the Performance Standard and in the Model Noise Ordinance, significance occurs when the limits are exceeded. For the City's Noise Regulation, any change could be considered significant, particularly if the tonal content changes. P25b-36
4. Contrary to the statements given on page 4.5-12, Policy 8 is not the only General Plan noise provision that applies to criteria II.A.1.a and II.A.1.b. as noted above. The DEIR states that even though Policy 2 does not apply to this project because there are no new residential developments, it would use the land use compatibly chart to assess significance. However, as noted earlier, Policy 2 does not mention new residents, and actually applies to all projects with non-transportation sound sources. Thus, the use of Policy 2 standards to judge this Project is required by the General Plan. P25b-37
5. The L_{dn} sound levels proposed in the DEIR for neighborhood parks and golf parks are far too high for noise sensitive areas. P25b-38
6. The proposed 3, 5 and 10 dB(A) changes in what is assumed to be the L_{dn} sound level are not acceptable. As pointed out earlier, the tonal content of the new sound and duration of the sound may make any change in sound easily distinguishable and cause undue stress and annoyance. Since the main sound sources are non-transportation sources, they must meet the noise limits applicable to such sources. Any sound that exceeds the limits should not be considered acceptable. Even to evaluate the sound generated by the project in terms of the L_{dn} sound levels, a complete justification of the significance values used must be given. The proposed values do the most harm to those that have a quiet environment. Since sound has been found to be the best source of creating stress for research purposes, raising the sound exposure of those who live in relative quiet to that of those who are already stressed by sound would appear to be a short-sighted goal. P25b-39
7. The DEIR incorrectly assumes that the only temporary or periodic increases in sound that will occur derive from construction activities. Since the docking berths are not occupied continuously nor even operated continuously when filled, the noise during these temporary conditions must meet the limits of the three noise policies specified above. Tests by TAVG [6] clearly show that even with a ship in dock, the sound would suddenly stop for some time, only to start up again. This is a periodic and temporary source, that is repeated several times, but in a random manner. P25b-40

8. Construction activity will be another "temporary" sound source that will impact noise sensitive receptors. The proposed construction hours of 6:00 a.m. to 9:00 p.m. should not be considered acceptable. The Performance Statement and the Model Noise Ordinance and even the L_{dn} sound level descriptor, impose a penalty for activity that occurs between 10:00 p.m. and 7:00 a.m. The CNEL imposes an additional penalty for sound measured from 7:00 p.m. to 10:00 a.m. These are the hours when people are more sensitive to sound due to home activities including speech communication and sleep. The standard construction hours suggested by Model Noise Ordinance and used by many jurisdictions are 7:00 a.m. to 6:00 or 7:00 p.m. on weekdays and Saturday, and between 9:00 a.m. and 6:00 p.m. on Sundays. Any construction outside of these hours should be considered significant. Construction noise should not be allowed to exceed the limits of Performance Standard at any residence for daytime conditions. P25b-41 (Cont.)
9. The authors of the DEIR have agreed to use both groundborne vibrations and airborne sound-induced vibrations to evaluate the proposed project. Specifically, they have agreed to use ASHRAE [7] criteria for airborne sound-induced vibrations. However, the values given on page 4.5-14 of the DEIR are incorrect. The proposed levels are supposed to be linear sound pressure levels rather than the A-Weighted sound levels given on this page. The ASHRAE results are based on the tonal content in octave bands or one-third octave bands versus sound pressure levels. The area of a graph where sound-induced vibrations is a concern only extends from 16 Hz to 63 Hz when testing in octave bands and has no equivalent A-Weighted sound level. The values shown in this section must be corrected. As with limits of any noise standard, any low frequency sound falling into the region identified by ASHRAE could result in audible sound being generated within the home. A change in the sound level in the relevant frequencies is not needed, just having sound in those frequencies designated by ASHRAE. Reference 6 notes that sound already can be heard due to rattling windows when ships are being loaded or unloaded at berth 19. This report also shows a significant increase, far more than 3 dB, in the low frequencies covered by ASHRAE's guidelines. Using a 3 dB(A) change in level for significance is not appropriate since ASHRAE is concerned only with the linear numbers. P25b-42

B. ***METHODOLOGY***

1. **Project - Related Noise Increases**

   a. The DEIR provides general details on the methods for assessing the impact of additional vehicle trips along selected truck routes. Problems exist as noted earlier in that no information is provided to show that the noise model accurately predicted the measured values. Since the FHWA Noise Prediction Model [8], even when modified to include the CalTrans noise emission levels [9], still assumes that freely flowing traffic exists, the accuracy of the prediction could be less than acceptable. Because of signals and stop signs, freely flowing traffic is not likely to exist. As noted earlier, contradictions appear in the traffic volume and a direct comparison of predicted and measured values also is not assured because of an inconsistent set of distances. P25b-43
   b. Because of what is noted as significant increases in the heavy truck volume in Section 4.3, Transportation and Circulation, using a requirement that peak hour volumes double is not likely an appropriate threshold. Heavy truck noise includes P25b-44

significant low frequency sound also, that may need to be judged using the ASHRAE criteria. The DEIR does not provide any information regarding the tonal content for existing or future conditions. P25b-44 (Cont.)

c. Page 4-5-15 of the DEIR states that noise levels will be similar to those from the existing berths located at the West Complex. However, these berths are being operated without going through the proper planning and CEQA documentation. Thus, they cannot be considered as part of the existing baseline. These operations can be used to understand why complaints have arisen and to assess what sound levels will be generated by such activity. P25b-45

d. The DEIR states that sound measurements were made "from a boat located 50 to100 yards from certain north shore residential receptors during ship loading and unloading operations. This information was then used develop a model that characterized noise from shipping operations and background traffic noise from I-5." No information is given about where these measurements were made, when they were made, the influence of the boat and test position and the results. As a result, evaluating the adequacy of the noise measurements is not possible. Reference 6 provides detailed information about sound level measurements made seven times in two to three backyard locations for homes along Riviera Drive, across from berths 19 and 20. Data of this type was not found in any DEIR appendix. P25b-46

e. Another problem in general is the use of more than one distance unit. Distance measurements in feet are common, but there are several times where yards are used, in what appears to be an attempt to confuse or obfuscate the distances when trying to understand all the material. A common set of units should be employed to limit confusion. P25b-47

C. *PROPOSED PROJECT*

1. Construction Related Activity Impacts and Mitigation

a. Predicting sound from construction activity is very difficult because of the difficulty of knowing what is to take place and where equipment is to be installed. The DEIR acknowledges that the impacts are potentially significant. The proposed mitigation measures are unacceptable as noted earlier. That is, the proposed construction hours far exceed the normally allowed hours where so many residences are adjacent to the project. The Model Noise Ordinance only allows construction from 7:00 a.m. to 7:00 p.m. with the potential for not allowing construction on weekends or holidays. This is a more reasonable construction period. The City and County of Sacramento allow construction only from 7:00 a.m. to 6:00 p.m. Monday through Saturday and only 9:00 a.m. to 6:00 p.m. on Sunday. This could be a reasonable alternative. Any construction outside these hours should be considered significant because of the impact on sleep, speech interference, annoyance, stress and the inability of home owners to enjoy the use of their property. P25b-48

b. For construction impacts to be less than significant, the sound level must meet the requirements of the Performance Standard of the Noise Element at all residential property. This will require using higher grade mufflers on all internal combustion engines than typically furnished by the manufacturer, shrouding and shielding of engines and tools and judicious staging of equipment. P25b-49

2. **Operation of the Proposed Project Impacts and Mitigation**

a. The DEIR on page 4.5-10 states that sound data was collected from a boat in the DWSC to form a base line to predict sound levels from berth/ship operation activities. This data was not provided in any form within the report, making it impossible to evaluate the efficacy of any of the results and the conclusions. Since the sources are non-transportation sound sources, hourly data must be provide as was done in Reference 6 so that a comparison with the apropos noise limits can be made. P25b-50

b. The authors have chosen to take the daily predicted berth activity levels and to dilute them by deriving the annual average. This is not a correct procedure to use even if the source were a transportation sound source. The true noise impact will derive from ship/berth activity that generates noise at the residential areas that disrupts their activities including sleep, communication and pleasurable use of their backyard. That is, the single events will determine the noise impact, not a diluted average over a year. This is also one reason that the General Plan repeatedly states that new residential developments must use the Performance Standard noise limits for non-transportation sound sources. P25b-51

c. The proposed mitigation measures are completely inadequate. Even the DEIR's dilution of the sound level by averaging over a year could not reduce the noise impacts to less than significant. The impacts are even more significant when the sound data is compared with the limits of the noise ordinance as required by the General Plan and CEQA. The port must provide detailed mitigation measures to reduce the noise impact to the limits given either in the Performance Standard of the General Plan, the State Model Noise Ordinance or using the City's Noise Regulation. P25b-52

d. Sound attenuation is possible for the ships while at a berth near any residential property. Critical grade mufflers could be added to the main sound sources temporarily while the ship is docked. Shielding can be provided for the engines on a temporary basis that would not degrade the function of the engine while in use at the berths. The DEIR should have considered these available measures to reduce noise and vibration impacts. P25b-53

3. **Project Generated Road Traffic Impacts and Mitigation**

a. As noted earlier, the DEIR provides no comparison between measured and predicted sound levels, thus denying any reviewer the chance to establish the accuracy and correctness of the model. Thus, it must be taken on faith that the model is correct. The FHWA model is only good to ±1.5 dB. Thus, reporting predictions of L_{dn} sound levels that have not been shown to even correctly predict measured values to the nearest 0.1 dB is without meaning. All results should be rounded off to the nearest 1.0 dB to more correctly show the potential for predicting the future L_{dn} sound levels. P25b-54

b. The impacts are found to be significant and unavoidable, yet the DEIR requires that the homeowner pay to upgrade the interior of the house to meet the L_{dn} sound level limit of 45 dB on the inside. This places the burden created by the project on the home owner rather than the source of the sound. The impact of the excess P25b-55

sound on sleep, speech or educational activities is not given. This study is needed to truly judge the significance of the impact. The analysis does not show whether the backyards of homes would be useable and what speech interference, annoyance and stress would be created by excess sound. P25b-55 (Cont.)

c. The impact to Marshall Middle school is not given with respect to the requirements of the American National Standards Institute, ANSI 12.60 [10]. High sound levels within classrooms have been found to be detrimental to the learning process, particularly for students where English is their second language. The ANSI standard provides very strict requirements for acceptable interior sound levels within all core learning spaces. P25b-56

4. **Project Generated Low-Frequency Noise Impact and Mitigation**

a. The DEIR incorrectly identifies the sound pressure levels where problems will exist because of low frequency sound as defined by ASHRAE [7]. The ASHRAE criteria for low frequency sound induced vibration and generation of secondary sound is based on linear sound pressure levels at one-third octave band frequencies of 12.5 Hz to 80 Hz. They could be A-weighted but this would be non-standard and the acceptable amplitude would have to be given for each of the frequencies in the range 12.5 to 80 Hz. Significance is determined strictly by whether the sound falls in the area of the graph shown in Figure 1 of this report. This figure was taken from Reference 6. This figure shows that sound levels measured in the backyard of a home along Riviera Drive fall into the ASHRAE region where sound-induced vibration would be expected. A typical background sound pressure level curve is shown for comparison. This figure also show the pure tone that would cause a 5 dB(A) penalty to be established for the noise limits of the Performance Standard of the General Plan. The impact is significant. P25b-57

b. The proposed mitigation measures are not adequate to insure that a reasonable sound reduction is achieved. Detailed mitigation measures must be presented to show how this source of noise and vibration will be attenuated adequately to not cause adverse reactions for the residents living near each of the berths at the West Complex. P25b-58

III. 5.4.5 NOISE

A. *EXISTING NOISE LEVELS*

1. The sound generated by dredging is another non-transportation sound source. Background sound levels have not been provided in a format that allows evaluation of background sound levels relative the applicable noise ordinances. P25b-59
2. The DEIR provides the sound level measured at 50 feet from the dredge while dredging. The interval of the test, the variation in the sound levels over time and the tonal content of the sound or sounds are not given. All of this information is required to compare the data with background sound levels and to understand how the sound will be perceived. P25b-60
3. Data is not provided regarding the sound generated when the dredged material is off-loaded and moved to the dredged-material placement site (DPS). The DEIR states that the DPS is near mixed residential and commercial uses and parks and open spaces. P25b-61

Assessing the impact of these sound sources is not possible because there is no data available to allow an independent review. P25b-62

B. *IMPACTS AND MITIGATION MEASURES*

1. **Dredging Operation Impacts and Mitigation**

a. As with the remainder of the analysis, the DEIR has used the daily average sound levels and the guidelines from the Federal Transit Administration [11] to evaluate the noise impacts. As noted, this is not the appropriate method of evaluating the noise. As observed in the name of the agency responsible for the guideline, Federal Transit, this manual is intended for use with transportation sound sources, specifically, light rail sources. Dredging rigs that cover only a mile annually (DEIR, page 5.23), can not be considered a transportation sound source. This is a non-transportation sound source that must be evaluated based on limits of the noise ordinance. The Performance Standard of the General Plan, the State's Model Noise Ordinance and the City of Stockton's Noise Regulation must be used to evaluate the noise impact of dredging. P25b-63

b. Noise impacts for dredging were evaluated using the significance thresholds given for construction activity in Section 4.5. We found these significance thresholds to be unacceptable even for construction activity and to strongly deviate from the recommendations from the State's Office of Noise Control and Model Noise Ordinance. The hours of dredging should conform to the hours shown in the Model Noise Ordinance. P25b-64

c. Sound generated by dredging must comply with the limits of the noise ordinances given in the Performance Standard of the General Plan, the State's Model Noise Ordinance and the City of Stockton's Noise Regulation no matter what hours the dredging is done. P25b-65

d. Additional sound attenuation (i.e., mitigation) is possible because the main sound sources are internal combustion engines. Critical grade mufflers and better shielding can be provided to reduce the noise radiated from the most prominent sources with minimal investment. P25b-66

e. The impact of off-loading the dredged-material at the placement site is not given. Some type of material transport mechanism is required remove the dredged materials from the barge to the storage site. Electrical or internal combustion engines or a combination of the two prime movers will be required to power the material transport. Sound will be generated as byproduct of this activity. The quantity of sound generated, the impact and the mitigation have not been provided in the report. P25b-67

There is more than sufficient evidence in these comments to show that the DEIR is not complete and not accurate. The lack of any data regarding the sound generated by the non-transportation sound sources renders impossible any independent analysis of the DEIR's environmental noise analysis. The analysis must use the correct local regulations to evaluate the noise impacts. The sound will be generated primarily by non-transportation sources. Therefore, limits of the recommended noise policies must be used. The lack of any analysis of the alternative of not having maritime development along residential developments does not meet CEQA requirements or the Port's need for information about P25b-68

alternatives to make an informed choice. Because the noise impacts according to the DEIR are acoustically significant, even when evaluated incorrectly, an acceptable alternative must be considered. P25b-68

Please call if you have any questions regarding the results or the comments and conclusions.

Respectfully submitted,

Steve Pettyjohn, Principal
Certified: Institute of Noise Control Engineers-1981

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2. Anon., "Section 7, Noise", from ***City of Stockton General Plan; Volume I: Policies/Implementation***, adopted January 22, 1990, as amended through November 3, 1998.

3. City of Stockton, Stockton Municipal Code, Chapter 5-Public Welfare, Morals and Policy, Part XVIII-Noise Regulations.

4. Anon., ***Model Community Noise Control Ordinance***, prepared by Office of Noise Control, California Department of Health, Berkeley, Ca, April 1977.

5. M.P. Buck, D.W; Bishop, "Noise Measurements in the Vicinity of the Sacramento Metro Airport; Volume 1: Technical Report", for County of Sacramento, Department of Airports , Sacramento, by Acoustical Analysis Associates, Inc., Canoga Park, CA, AAAI Project No. 89028, Report 1051, January 1990.

6. B.R. Smith and S. Pettyjohn, "Noise Impact Study of Shipping Activity at The Port of Stockton West Complex on Residents of Riviera Cliffs" for John M Latini, Attorney at Law, Sacramento by The Acoustics and Vibration Group, Sacramento, Project No. R02136, April 24, 2002 to November 5, 2002.

7. Anon, "Chapter 47: Sound and Vibration Control", from ***2003 ASHRAE Handbook: Heating, Ventilating and Air-Conditioning Applications***, Inch-Pound Edition, American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., Atlanta, Georgia, 2003, Computer Edition.

8. T.M. Barry & J.A. Readgan, ***FHWA Highway Traffic Noise Prediction Model***, FHWA-Rd-77-108, Federal Highway Administration, Office of Research, Office of Environmental Policy, December 1978.

9. R.W. Hendriks, ***California Vehicle Noise Emission Levels***, FHWA/CA/TL-87/03, Office of Transportation Laboratory, California, Department of Transportation, Sacramento, California, 95819, January 1987.

10. American National Standard, ***Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools***, ANSI S12.60, 2002.

11. C. Hanson, ***Transit Noise and Vibration Impact Assessment: Final Report***, for Office of Planning, Federal Transit Administration, U.S. Department of Transportation, Washington, DC, by Harris Miller Miller & Hanson Inc., Burlington, MA, DOT-T-95-16, April 1995.

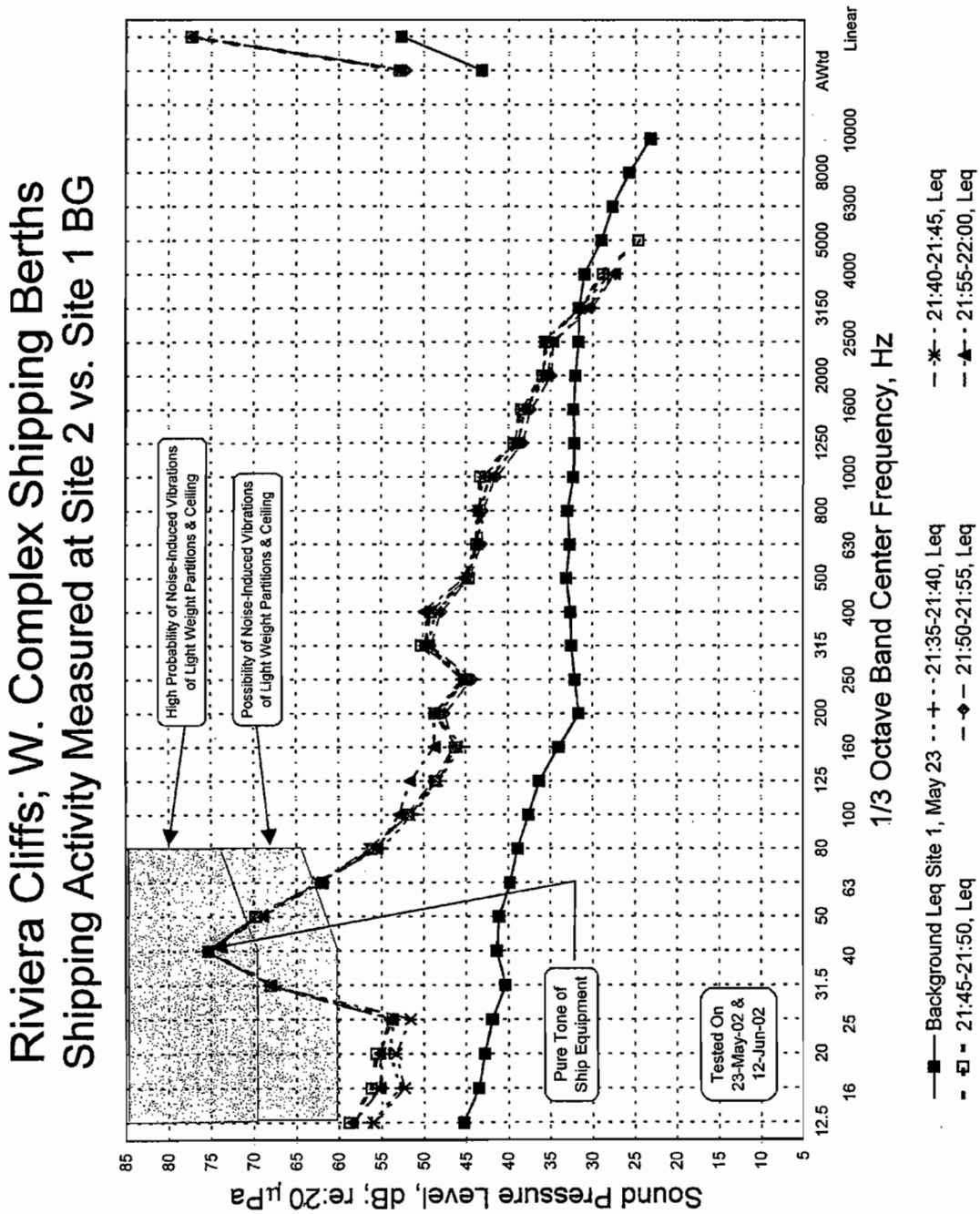

Figure 1. Sound Measured at 4100 Riviera with Ship at Berth #19 Compared to Background Sound at 4100 Riviera.

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SECTION 7, NOISE

Noise pollution is recognized as a significant source of environmental degradation. In an effort to improve the quality of life in urban areas, California planning law requires every general plan to address local noise issues (Government Code Section 65302 (f)). This section of the Stockton General Plan Policy Document identifies the community's noise goals and establishes its policies to reduce noise pollution. A time-specific implementation program and schedule is proposed to direct the City's efforts.

NOISE GOALS AND POLICIES

Goal 1

Protect the citizens of the Stockton Planning Area from the harmful and annoying effects of exposure to excessive noise.

Goal 2

Protect the economic base of the Stockton Planning Area by preventing incompatible land uses from encroaching upon areas with existing noise-producing uses.

Policies:

1. New residential development shall not be allowed where the ambient noise level due to locally-regulated noise sources (i.e. all noise sources other than roadway, railroad and aircraft noise) will exceed the noise level standards as set forth below.

TABLE 1
Exterior Noise Level Standards
for Locally-Regulated Noise Sources

Noise Level Descriptor	Daytime (7 am to 10 pm)	Nighttime (10 pm to 7 am)
Hourly L_{eq}, dBA	55	45
Maximum level, dBA	75	65

Each of the noise level standards specified above shall be reduced by five dBA for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises.

2. The compatibility of proposed projects with existing and future noise levels due to traffic on public roadways, railroad line operations and aircraft in flight shall be evaluated by comparison to Figure 1.

Letter P25b (Continued)

3. New development of residential land uses will not be permitted in areas exposed to existing or projected exterior noise levels exceeding 60 dB L_{dn}/CNEL or the standards of Table 1 unless the project design includes effective mitigation measures to reduce noise to the following levels:

   a. For noise due to traffic on public roadways, railroad line operations and aircraft in flight: 60 dB L_{dn}/CNEL or less in outdoor activity areas, and 45 dB L_{dn}/CNEL or less in indoor areas. Where it is not possible to reduce exterior noise to 60 dB L_{dn}/CNEL or less by incorporating a practical application of the best available noise-reduction technology, an exterior noise level of up to 65 dB L_{dn}/CNEL will be allowed. Under no circumstances will interior noise levels be permitted to exceed 45 dB L_{dn}/CNEL with the windows and doors closed.

   b. For noise from sources other than roadways, railroads and aircraft, comply with the performance standards contained in Table 1.

4. Before approving proposed development of new residential land uses in areas exposed to existing or projected exterior noise levels exceeding 60 dB L_{dn}/CNEL, an acoustical analysis shall be required. The acoustical analysis shall be required in the environmental review process so that noise mitigation may be included in the project design. The acoustical analysis shall:

   a. Be the responsibility of the applicant.

   b. Be prepared by a qualified person experienced in the fields of environmental noise assessment and architectural acoustics.

   c. Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions.

   d. Estimate existing and projected (20 years) noise levels in terms of L_{dn}/CNEL and/or the standards of Table 1, and compare those levels to the adopted policies of the Noise Element.

   e. Recommend appropriate mitigation to achieve compatibility with the adopted policies and standards of the Noise Element. Where the noise source in question consists of intermittent single events, the acoustical analysis must address the effects of maximum noise levels in sleeping rooms in terms of possible sleep disturbance.

f. Estimate noise exposure after the prescribed mitigation measures have been implemented. If the project does not comply with the adopted standards and policies of the Noise Element, the analysis must provide acoustical information for a statement of overriding considerations for the project.

g. Describe a post-project assessment program which could be used to evaluate the effectiveness of the proposed mitigation measures.

5. Develop and employ procedures to ensure that requirements imposed pursuant to the findings of an acoustical analysis are implemented as part of the project review and building permit processes.

6. Noise produced by commercial uses shall not exceed 75 dB L_{dn}/CNEL at the nearest property line.

7. Noise produced by industrial uses shall not exceed 80 dB L_{dn}/CNEL at the nearest property line.

8. Exceptions to the noise standards for commercial and industrial uses may be granted only if a recorded noise easement is conveyed by the affected property owners.

9. Enforce the State Noise Insulation Standards (California Administrative Code, Title 24) and Chapter 35 of the Uniform Building Code (UBC).

10. Prepare a community noise control ordinance consistent with the performance standards of the noise Element and the guidelines of the State Office of Noise Control.

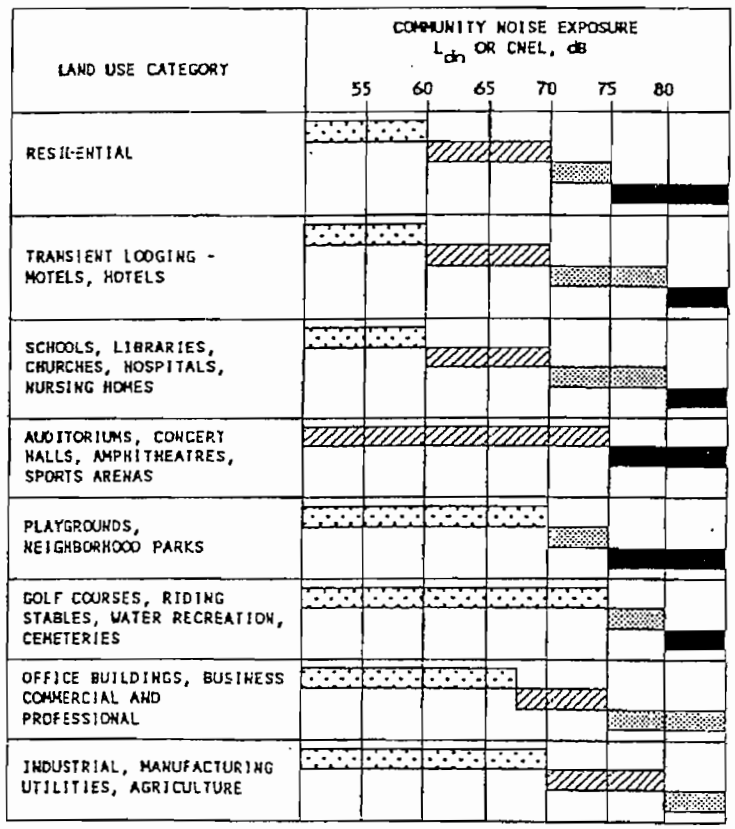
11. Actively support enforcement of California Vehicle Code sections relating to adequate vehicle mufflers and modified exhaust systems.

12. New equipment and vehicles purchased by the City of Stockton shall comply with noise level performance standards consistent with the best available noise reduction technology.

Letter P25b (Continued)

FIGURE 1

LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENTS



INTERPRETATION

NORMALLY ACCEPTABLE

Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

CONDITIONALLY ACCEPTABLE

New construction of development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

NORMALLY UNACCEPTABLE

New construction or development should generally be discourged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and the needed noise insulation features included in the design.

CLEARLY UNACCEPTABLE

New construction or development should generally not be undertaken.

III-51

IMPLEMENTATION PROGRAMS - NOISE

1. Modify the City's development review procedures to incorporate the noise standards of the General Plan.

2. Prepare and adopt a noise control ordinance.

III-52

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City of Stockton - SMC

Chapter 5 – PUBLIC WELFARE, MORALS AND POLICY

Part XVIII – NOISE REGULATIONS

SEC. 5-700. FINDINGS:

The Council of the City of Stockton hereby finds and declares that:

a. Inadequately controlled noise presents a growing danger to the health and welfare of the residents of the City of Stockton;

b. The making and creating of disturbing, excessive, or offensive noises within the jurisdictional limits of the City of Stockton is a condition which has persisted, and the level and frequency of occurrences of such noise continues to increase as the City grows and as the availability and use of motor vehicle and sound equipment and power tools increase;

c. The making, creation or continuance of such excessive noises which are prolonged or unusual in their place, time, and use, affect and are a detriment to the public peace, health, comfort, convenience, safety and welfare of the residents of the City of Stockton;

d. Every person is entitled to an environment in which the noise is not detrimental to his or her life, health or enjoyment of property; and

e. The necessity, and the public interest for the provisions and prohibitions hereinafter contained and enacted is declared to be a matter of legislative determination and public policy and it is further declared that the provisions and prohibitions hereinafter contained are enacted and in pursuance of and for the purpose of securing and promoting the public health, comfort, convenience, safety, welfare, prosperity, peace and quiet of the City of Stockton and its inhabitants.

(Ordinance 3457-C.S. — Effective Apr. 30, 1981)

SEC. 5-701. DEFINITIONS:

1. Average Sound Level: A sound level typical of the sound levels at a certain place during a given period of time, averaged by the general rule of combination for sound levels, said general rule being set forth in the American National Standard Specifications for Sound Level Meters, S1.4-1971. Average sound level is also called equivalent continuous sound level.
2. Clearly Audible: Can be heard by any person of average or normal hearing capability.
3. Construction Equipment: Any tools, machinery or equipment used in connection with construction operations, regardless of whether such construction site be located on highway or off highway.
4. Decibel (dB): A unit of measure of sound (noise) level.
5. Emergency Work: Work made necessary to restore property to a safe condition following a

public calamity, or work required to protect persons or property from imminent exposure to danger or damage, or work by public or private utilities when restoring utility service.

6. Motor Vehicles: Any and all self-propelled vehicles as defined in the California Vehicle Code, specifically including but not limited to "minibikes" and "go-carts."
7. Noise Level: The same as "sound level." The terms may be used interchangeably herein.
8. Sound Level: In decibels, that quantity measured with a sound level meter as defined herein, by use of the "A" frequency, weighting and "fast" time averaging unless some other time averaging is specified.
9. Sound Level Meter: An instrument of the measurement of sound including a microphone, amplifier, an attenuater, networks for at least the standardized "A" frequency weighting, and an indicating instrument having at least the standardized dynamic characteristic "fast," as specified in the American National Standards Institute Specifications for Sound Level Meters, S1.4-1971.

(Ordinance 3457-C.S. — Effective Apr. 30, 1981)

SEC. 5-702. PUBLIC NUISANCE NOISE:

The following special noise restrictions are hereby established without regard to their sound level impact and may be enforced without the prerequisite of a sound level measurement.

A. General Noise Regulations:

1. Notwithstanding any other provisions of this Chapter, and in addition thereto, it shall be unlawful for any person to willfully make or continue or permit or cause to be made or continued, any loud, unnecessary, or unusual noise which unreasonably disturbs the peace and quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area.
2. The standards which shall be considered in determining whether a violation of the provisions of this Section exists shall include, but not be limited to, the following:

a. The volume of the noise;

b. The intensity of the noise;

c. Whether the nature of the noise is usual or unusual;

d. Whether the origin of the noise is natural or unnatural;

e. The volume and intensity of the background noise, if any;

f. The proximity of the noise to residential sleeping facilities;

g. The nature and zoning of the area within which the noise emanates;

h. The density of the inhabitation of the area within which the noise emanates;

I. The time of the day or night the noise occurs;

j. The duration of the noise;

k. Whether the noise is produced by a commercial or non-commercial activity.

3. This Section shall be inapplicable to Emergency Work.

B. Disturbing, Excessive or Offensive Noise: The following activities are declared to cause disturbing, excessive or offensive noise in violation of this Section, but said enumeration shall not be deemed exclusive:

1. It shall be unlawful for any person to sound a horn or other signaling device on any vehicle except as an emergency or danger warning signal.

a. This provision shall be inapplicable to the sounding of any horn, bell, whistle, siren or other audible warning device which is operated in compliance with Section 7604 of the California Public Utilities Code, or other state or federal laws governing railroad operations.

b. The sounding of burglar alarms shall not constitute a violation of this Section except after twenty (20) minutes of continuous activation. Further, on or after one (1) year from the effective date of this Part, no owner of a motor vehicle, dwelling or commercial property shall have in operation an audible burglar alarm therein unless such burglar alarm shall be capable of terminating its operation within twenty (20) minutes of its being activated.

2. It shall be unlawful to operate any radio, phonograph, loud speaker, sound amplifier, or similar device upon the public streets, rights-of-way or parks for the purpose of attracting the attention of the public in any manner without a permit issued by the Chief of Police.

3. It shall be unlawful for any person to use any drum or musical instrument clearly audible for a distance in excess of fifty (50) feet, upon public streets, rights-of-way or parks without a permit issued by the Chief of Police.

This provision shall apply to parades for which a permit has been issued by the Chief of Police pursuant to Section 10-012.5.

4. (a) It shall be unlawful to operate any radio, television set, musical instrument, phonograph, stereo or audio system, whether or not said noise source is inside a building or motor vehicle, so as to cause an unreasonable annoyance to others located or living nearby, or so as to disturb the peace and quiet of any neighborhood, unless an exception is granted by the Chief of Police for a specific event. It is hereby found and declared as a matter of legislative policy that the operation of the aforesaid equipment or instruments on the public streets and rights-of-way adjacent to public parks during the hours from 10:00 p.m. to 7:00 a.m., in such a manner as to be clearly audible for a distance in excess of twenty-five (25) feet constitutes prima facie evidence of a violation of this Section. This Section shall be inapplicable to radio systems operated by FCC licensees in the regular course of business.

(b) Any permit issued under this Section shall be in addition to the outdoor festival license requirements of Sections 5-300 through 5-316, or the block party permit required by Sections 5-610 through 5-618.

5. It shall be unlawful to operate any radio, stereo, tape player or other audio equipment on public streets and rights-of-way at a volume or sound level which endangers the safety of any person using the public streets and rights-of-way. It is hereby found and declared, as a matter of legislative policy, that

any such audio equipment, either in or on a motor vehicle or a bicycle, which is clearly audible at fifty (50) feet distance, endangers the public safety and welfare by interference with the normal human capability for hearing nearby traffic movement and warning signals. Violation of this Section shall be an infraction. This Section shall be inapplicable to radio systems operated by FCC licensees in the regular course of business.

6. It shall be unlawful for any passenger to operate any radio, phonograph or tape player or similar device on a public transit bus in such manner that it is clearly audible to any other person in the bus.

7. It shall be unlawful to operate or to permit the noncommercial operation of any mechanically powered saw, drill, sander, grinder, lawn or garden tool, or similar device, in residential areas during the hours from 9:00 p.m. to 8:00 a.m. so as to cause a noise disturbance across a residential real property boundary.

(Ordinance 3457-C.S. — Effective Apr. 30, 1981) (Source: Sec. 5-702 B(6) & (7) Ordinance 3479-C.S. — Effective July 2, 1981)

SEC. 5-703. ANIMAL NOISE:

1. Notwithstanding any other provision of this Code, it shall be unlawful for any person to keep or maintain, or to permit the keeping or maintenance upon any premises owned, occupied or controlled by him, any animal or animals which by any frequent or long continued noise shall disturb or cause discomfort to any reasonable person of normal sensitiveness residing in the vicinity.
2. The noise of any such animal or animals that disturbs two (2) or more residents who are in general agreement as to the times and duration of the noise, and who reside in separate residences (including apartments and condominiums) located on property adjacent at any point to the property on which the subject animal or animals are kept or maintained, or within three hundred feet (300') thereof, shall be prima facie evidence of a violation of this Section, which shall be a misdemeanor.
3. Exception: This Section shall not apply to a legally operated kennel or cattery.

(Ordinance 3457-C.S. — Effective Apr. 30, 1981)

SEC. 5-704. VIOLATIONS:

1. Any person violating any of the provisions of this Chapter shall be deemed guilty of a misdemeanor, unless otherwise specified, and upon conviction thereof shall be subject to a fine not exceeding five hundred dollars ($500.00), or imprisonment for a period not exceeding six (6) months, or by both such fine and imprisonment. Each violation shall constitute a separate offense and shall be punishable as such.
2. As an additional remedy, the operation or maintenance of any device, instrument or machinery as set forth in Section 5-702(B), supra, in violation of any provision of this Part, which operation or maintenance causes discomfort or annoyance to reasonable persons of normal sensitiveness or which endangers the comfort, health or peace of residents in the area, shall be deemed and is hereby declared to be a public nuisance and may be subject to abatement summarily by a restraining order or injunction issued by a court of competent jurisdiction.

(Ordinance 3457-C.S. — Effective Apr. 30, 1981)

SEC. 5-705. SEVERABILITY:

If any provision, clause, sentence, or paragraph of this Part or the application thereof to any person or circumstances, shall be held invalid, such invalidity shall not affect the other provisions or applications of the provisions of this Part which can be given effect without the invalid provisions or application and, to this end, the provisions of this Part are hereby declared to be severable.

(Ordinance 3457-C.S. — Effective Apr. 30, 1981)

SMC Table of Contents

City of Stockton Home Page

City of Stockton

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MODEL

COMMUNITY NOISE CONTROL

ORDINANCE

PREPARED BY

OFFICE OF NOISE CONTROL
CALIFORNIA DEPARTMENT OF HEALTH
2151 BERKELEY WAY
BERKELEY, CALIFORNIA 94704

APRIL 1977

Letter P25b (Continued)

Letter P25b (Continued)

PREFACE

This model ordinance was developed in accordance with Section 46062 of the Health and Safety Code, which requires the Office of Noise Control to assist local agencies in the development of model ordinances to control and abate noise, and further requires that such ordinances be developed in consultation with the Attorney General and with representatives of local agencies, including the County Supervisors Association of California and the League of California Cities.

In response to these requirements, the Office of Noise Control contracted with Paul S. Veneklasen and Associates, Acoustical Consultants, to prepare a basic model ordinance for use in the development process. This was completed in March 1975. Since then the basic document has been revised several times and has been reviewed by various agencies and organizations including:

Attorney General
League of California Cities
County Supervisors Association of California
California Environmental Health Association
California Directors of Environmental Health
U.S. Environmental Protection Agency, Office of Noise Abatement and Control
California Manufacturers Association
Air Conditioning and Refrigeration Institute
Standard Oil Company of California
Shell Oil Company
Pacific Gas and Electric Company
Fluor Corporation
Paul S. Veneklasen and Associates
Wilson, Ihrig and Associates
Wyle Laboratories, Incorporated
Bolt, Beranek and Newman, Incorporated

The Office of Noise Control deeply appreciates the assistance given by the agencies and organizations listed above and also that given by numerous individuals who made indispensable contributions to development of the finished model.

A Noise Ordinance Enforcement Workbook is under development with completion scheduled for Fall, 1977. The workbook will directly support the Model Noise Ordinance and will contain information on measurement and enforcement techniques.

Letter P25b (Continued)

CALIFORNIA
OFFICE OF NOISE CONTROL

MODEL COMMUNITY NOISE ORDINANCE

ORDINANCE NO. _____

AN ORDINANCE OF THE CITY (*COUNTY*) OF _____ ADDING CHAPTER _____ TO TITLE _____ OF THE MUNICIPAL CODE (*COUNTY CODIFIED ORDINANCE*) RELATING TO THE CONTROL OF NOISE AND VIBRATION.

A. The City Council (*Board of Supervisors*) of the City (*County*) of _____ does ordain as follows:

ARTICLE 1

Chapter_____ is added to the _____ Municipal Code (*County Codified Ordinance*) to read as follows:

SECTION 1. DECLARATION OF POLICY
SECTION 2. DEFINITIONS
SECTION 3. AUTHORITY AND DUTIES OF THE NOISE CONTROL OFFICE(R)
SECTION 4. DEPARTMENTAL COOPERATION
SECTION 5. GENERAL NOISE REGULATION
SECTION 6. NOISE MEASUREMENT PROCEDURE
SECTION 7. EXTERIOR NOISE LIMITS
SECTION 8. INTERIOR NOISE LIMITS
SECTION 9. PROHIBITED ACTS
SECTION 10. MOTOR VEHICLE NOISE LIMITS
SECTION 11. SPECIAL PROVISIONS (EXEMPTIONS)
SECTION 12. VARIANCES
SECTION 13. ENFORCEMENT

APPENDICES

Letter P25b (Continued)

SECTION 1

DECLARATION OF POLICY

In order to control unnecessary, excessive and annoying noise and vibration in the City (*County*) of _____, it is hereby declared to be the policy of the City (*County*) to prohibit such noise and vibration generated from or by all sources as specified in this chapter. It shall be the policy of the City (*County*) to maintain quiet in those areas which exhibit low noise levels and to implement programs aimed at reducing noise in those areas within the City (*County*) where noise levels are above acceptable values.

It is determined that certain noise levels and vibrations are detrimental to the public health, welfare and safety, and are contrary to public interest. Therefore, the City Council (*Board of Supervisors*) does ordain and declare that creating, maintaining, causing or allowing to be created, caused or maintained, any noise or vibration in a manner prohibited by or not in conformity with the provisions of this chapter, is a public nuisance and shall be punishable as such.

SECTION 5

GENERAL NOISE REGULATIONS

Notwithstanding any other provision of this chapter, and in addition thereto, it shall be unlawful for any person to willfully or negligently make or continue, or cause to be made or continued, any loud, unnecessary, or unusual noise which disturbs the peace and quiet of any neighborhood or which causes any discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area.

The factors which shall be considered in determining whether a violation of the provisions of this section exists shall include, but not be limited to, the following:

5.1 The sound level of the objectionable noise.

5.2 The sound level of the ambient noise.

5.3 The proximity of the noise to residential sleeping facilities.

5.4 The nature and zoning of the area within which the noise emanates.

5.5 The number of persons affected by the noise source.

5.6 The time of day or night the noise occurs.

5.7 The duration of the noise and its tonal, informational or musical content.

5.8 Whether the noise is continuous, recurrent, or intermittent.

5.9 Whether the noise is produced by a commercial or non-commercial activity.

Letter P25b (Continued)

SECTION 7

EXTERIOR NOISE LIMITS

ENFORCEMENT PHILOSOPHY: The provisions of this section seek to address noise intrusions over and above the noise normally associated with a given location (intrusions over the ambient level). Obviously, the ambient noise varies throughout the community, depending upon proximity to highways, population density, land use, etc. Therefore, we set different standards for various segments of the community which are supposed to reflect the existing day and nighttime ambient noise levels.

The ambient noise level is defined in terms of statistical parameters which describe the total noise occurring over any hourly time period.

A noise intrusion is then judged by comparing the aforementioned noise statistics with the noise source on, vs. these statistics with the noise source off (the ambient). Violations of the ordinance provisions may then be cited in terms of particular levels exceeded or in terms of the length of time the intrusive noise exceeded these standards. Compliance with the noise emission standards as listed herein shall constitute elimination of a noise disturbance.

7.1 MAXIMUM PERMISSIBLE SOUND LEVELS BY RECEIVING LAND USE:

(A) The noise standards for the various categories of land use identified by the Noise Control Office(r) as presented in Table 7-1 shall, unless otherwise specifically indicated, apply to all such property within a designated zone.

(B) No person shall operate or cause to be operated, any source of sound at any location within the incorporated (*unincorporated*) City (*County*) or allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person, which causes the noise level when measured on any other property, either incorporated or unincorporated, to exceed:

Letter P25b (Continued)

(1) The noise standard for that land use as specified in Table 7-1 for a cumulative period of more than thirty minutes in any hour; or

(2) the noise standard plus 5 dB for a cumulative period of more than fifteen minutes in any hour; or

(3) the noise standard plus 10 dB for a cumulative period of more than five minutes in any hour; or

(4) the noise standard plus 15 dB for a cumulative period of more than one minute in any hour; or

(5) the noise standard plus 20 dB or the maximum measured ambient level, for any period of time.

(C) If the measured ambient level differs from that permissible within any of the first four noise limit categories above, the allowable noise exposure standard shall be adjusted in 5 dB increments in each category as appropriate to encompass or reflect said ambient noise level.

In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under this category shall be increased to reflect the maximum ambient noise level.

(D) If the measurement location is on a boundary between two different zones, the noise level limit applicable to the lower noise zone plus 5 dB, shall apply.

(E) If possible, the ambient noise shall be measured at the same location along the property line utilized in 7.1 (B), with the alleged offending noise source inoperative. If for any reason the alleged offending noise source cannot be shut down, the ambient noise must be estimated by performing a measurement in the same general area of the source but at a sufficient distance such that the noise from the source is at least 10 dB below the ambient in order that only the ambient level be measured. If the difference between the ambient and the noise source is 5 to 10 dB, then the level of the ambient itself can be reasonably determined by subtracting a one decibel correction to account for the contribution of the source.

Letter P25b (Continued)

DISCUSSION: *It should be understood that the standards specified in Section 7.1, Table 7-1, represent levels not to be exceeded more than 30 minutes out of each hour (50% of the sample time or L_{50} levels), and that the subsequent time duration adjustments given in 7.1 (B) yield respectively; the L_{25} level (25% of the time or 15 minutes out of 60), the $L_{8.3}$ level (8.3% of the time or 5 minutes out of 60), the $L_{1.7}$ level (1.7% of the time or 1 minute out of 60), and the L_0 level (0% of the time). While manual techniques using only a sound level meter and a stop watch are available for accurate determination of these values, this type of analysis is best accomplished by means of a more sophisticated noise data analysis system involving either a graphic level recorder or a digital community noise analyzer. It should be noted, however, that in the majority of reported complaints, violation of the standards specified in 7.1 may readily be assessed, using only a sound level meter. In all cases where the intrusive noise level is at all continuous, one needs to measure the noise level and then determine how many minutes per hour it is produced. The noise sourve may then be shown to violate only one of the standards (L_{50}, L_{25}, $L_{8.3}$, $L_{1.7}$, or L_0) of Section 7.1. The need for the more sophisticated equipment comes when the noise source is not continuous but produces varying noise levels over the hour.*

7.2 CORRECTION FOR CHARACTER OF SOUND:

In the event the alleged offensive noise, as judged by the Noise Control Officer, contains a steady, audible tone such as a whine, screech, or hum, or is a repetitive noise such as hammering or riveting, or contains music or speech conveying informational content, the standard limits set forth in Table 7-1 shall be reduced by 5 dB.

DISCUSSION: *The use of corrections for tonal content can create measurement problems. In most enforcement situations, the presence or absence of a pure tone can be determined with the ear. The first part of the definition for "pure tone" is written to accomodate this fact. In cases where it is more doubtful, the remaining part of the definition can be used to precisely define a pure tone. However, this latter definition requires the use of a 1/3 Octave Band Analyzer.*

Letter P25b (Continued)

ANSI S12.60-2002

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AMERICAN NATIONAL STANDARD

ACOUSTICAL PERFORMANCE CRITERIA, DESIGN REQUIREMENTS, AND GUIDELINES FOR SCHOOLS

ANSI S12.60-2002

Accredited Standards Committee S12, Noise

Standards Secretariat
Acoustical Society of America
35 Pinelawn Road, Suite 114E
Melville, NY 11747-3177

Letter P25b (Continued)

Letter P25b (Continued)

ANSI S12.60-2002

AMERICAN NATIONAL STANDARD

Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools

Secretariat
Acoustical Society of America

Approved 26 June 2002
American National Standards Institute, Inc.

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Abstract

This Standard provides acoustical performance criteria, design requirements, and design guidelines for new school classrooms and other learning spaces. The standard may be applied when practicable to the major renovation of existing classrooms. These criteria, requirements, and guidelines are keyed to the acoustical qualities needed to achieve a high degree of speech intelligibility in learning spaces. Design guidelines in informative annexes are intended to aid in conforming to the performance and design requirements, but do not guarantee conformance. Test procedures are provided in an annex when conformance to this standard is to be verified.

Contents

		Page
Foreword		iii
0	Introduction	1
1	Scope, purpose and applications	1
2	Normative references	2
3	Definitions	3
4	Acoustical performance criteria and noise isolation design requirements and guidelines	5
Annexes		
A	Rationale for acoustical performance criteria	10
B	Design guidelines for noise control for building services, utilities, and instructional equipment	14
C	Design guidelines for controlling reverberation in classrooms and other learning spaces	17
D	Design guidelines for noise isolation	23
E	"Good architectural practices" and procedures to verify conformance to this standard	27
F	Potential conflicts between the acoustical requirements of this standard and indoor air quality (IAQ) and multiple chemical sensitivity (MCS)	34
G	Cautionary remarks on using supplemental descriptors for evaluating noise in classrooms and other learning spaces	35
Tables		
1	Maximum A-weighted steady background noise levels and maximum reverberation times in unoccupied, furnished learning spaces	5
2	Minimum STC ratings required for single or composite wall, floor-ceiling, and roof-ceiling assemblies that separate an enclosed core learning space from an adjacent space	7
3	Minimum STC ratings recommended for single or composite wall, floor-ceiling and roof-ceiling assemblies separating an ancillary space from an adjacent space	8
C.1	Minimum surface area of acoustical treatment for different sound absorption coefficients, ceiling heights, and reverberation times	20
D.1	Approximate difference between the minimum STC rating required for building envelope components and the required outdoor-to-indoor noise level reduction	25
D.2	Correction data for estimating the STC rating of a two-element composite building assembly	26

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PORT OF STOCKTON

NOISE IMPACT STUDY OF SHIPPING ACTIVITY AT THE PORT OF STOCKTON WEST COMPLEX ON RESIDENTS OF RIVIERA CLIFFS

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January 19, 2004

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TABLE OF CONTENTS

1.0 SUMMARY 1

2.0 ACOUSTIC STANDARDS 2
2.1 Noise Element Standards 2
2.2 Noise Ordinance Standards 4
2.3 State Model Noise Ordinance 4

3.0 PROJECT AND SITE DESCRIPTION 5

4.0 TEST EQUIPMENT AND PROCEDURES 6

5.0 SOUND SOURCES 7
5.1 Existing 7
5.2 Existing Plus Project 7

6.0 EXTERIOR ACOUSTIC ENVIRONMENT 7
6.1 Existing 7
6.2 Existing Plus Project 10

7.0 IMPACTS 16

8.0 REFERENCES 16

Letter P25b (Continued)

LIST OF TABLES

TABLE I. Applicable Maximum Allowable L_{dn} Sound Levels for Transportation Sources Excerpted from the City of Stockton Noise Element. 3
TABLE II. Maximum Allowable Exterior Sound Limits for Locally-Regulated Noise Sources as Given in Table 1 of Noise Section of City of Stockton ***General Plan***. 4
TABLE III. Noise Limits from the State's Model Noise Ordinance for Suburban Residential Land Uses for Non-Transportation Sound Sources. 5
TABLE IV. Sound Levels Measured on 23-May-02 at Two Positions Along Riviera Drive With No Ships in Port, West Complex, Port of Stockton. 8
TABLE V. Sound Levels Measured on 12-Sep-02 at Two Positions Along Riviera Drive With No Ships in Port at West Complex, Port of Stockton. 9
TABLE VI. Sound Levels Measured on 24-Apr-02 at Two Positions Along Riviera Drive With a Ship in Port at Berth 20, West Complex, Port of Stockton. 11
TABLE VII. Sound Levels Measured on 12-Jun-02 at Three Positions Along Riviera Drive With a Ship in Port at Berth 19, West Complex, Port of Stockton. 12
TABLE VIII. Sound Levels Measured on 27-Aug-02 at Two Positions Along Riviera Drive With a Ship in Port at Berth 20, West Complex, Port of Stockton. 14
TABLE IX. Sound Levels Measured on 5-Nov-02 at One Positions Along Riviera Drive With a Ship in Port at Berth 19, West Complex, Port of Stockton. 16

LIST OF FIGURES

Figure 1. Results of Continuous Background Sound Measurements Made on May 23 at Site #1, 4224 Riviera Drive. 18
Figure 2. Variation in Background Sound Measured in 10-minute Intervals at Position #2 on May 23, 2002. 19
Figure 3. Background Sound Variations Measured in 15-Minute Intervals at Position #1 from September 12, 2002. 20
Figure 4. Results of Background Sound Measurements Made on September 12 at Site #3, 4136 Riviera Drive. . . . 21
Figure 5. Variations in Sound Measured on April 24 at Position #1 With a Ship at the West Complex, Berth 20. . . 22
Figure 6. Results of Background Sound Test Compared to Sound Measured at Site #1 with a Ship in Berth 20. . . . 23
Figure 7. Sound Variations Measured on April 24 at Position #2 With a Ship at the West Complex, Berth 20. 24
Figure 8. Variations in Sound Measured on June 12 at Position #1b With a Ship at the West Complex, Berth 19. . . 25
Figure 9. Sound Variations Measured on June 12 at Position #2 With a Ship at the West Complex, Berth 19. 26
Figure 10. Tonal Content of Sound Measured at Site #2 with a Ship in Berth 19 Compared to Background at Site #1. 27
Figure 11. Results of Continuous Sound Measurements on June 12 at Position #3 With a Ship in Berth 19. 28
Figure 12. Variations in Sound Measured on August 27at Position #1 With a Ship at the West Complex, Berth 20. . 29
Figure 13. Sound Variations Measured on August 27 at Position #2 With a Ship at the West Complex, Berth 20. . . . 30
Figure 14. Results of Continuous Sound Measurements Made on November 5 at Position #2 With a Ship in Berth 19. 31
Figure 15. Tonal Content of Sound Measured at Position #1 with Ships in Berths 19 and 20 Compared to Background. 32

1.0 SUMMARY

Documented in this report are the noise impacts of maritime activity at the Port of Stockton's West Complex on residential areas along Riviera Drive. The West Complex was formerly known as Rough and Ready Island and was owned by the Navy, Department of Defense. The site was used for storing some Navy ships and as a communication and radar facility. The Navy decided to abandon the site, transferring the site to the Port of Stockton Authority. They began maritime activities at what was renamed the West Complex without completing a proper and credible environmental impact analyses as required by the California Environmental Quality Act, CEQA. This report documents the acoustic impact of these activities and compares it with the conditions prior to the maritime activity at the West Complex and with the appropriate noise regulations.

The main sound sources impacting the residences along Riviera Drive prior to the Port's expansion of activities were local road traffic, pleasure boat passage, dogs barking, aircraft over flights and general human activity. When the maritime operations began at the West Complex, particularly at berths 19 and 20, the major sound source became the equipment and activities associated with the ship and dock facilities as the ship was loading or unloading cargo. When the berths are empty or the sources are quiescent, the main sound sources return to those present before the introduction of the new sources. This report evaluates only new activity that is believed to have taken place at Berths 19 and 20 as requested by the Friends of Riviera Cliffs. Measurements were made at three locations between 4100 Riviera Drive and 4224 Riviera Drive. The West Complex is an island that lies south, southwest and west of the homes along Riviera Drive. Berths 19 and 20 are the two closest berths to this residential area that lies to the north and east , across the Deep Water Ship Canal, DWSC. The backyards of the homes of concern all back up to the DWSC and all have a dock in this body of water.

The sources of sound added by the maritime activity at the West Complex are all non-transportation sound sources. The City of Stockton's Noise Element of the ***General Plan*** [1]* states that non-transportation sound sources are to be addressed differently from transportation sound sources. Transportation sources are defined by the Noise Element as including road traffic, train movements and aircraft while in flight. These sources are evaluated using the day-night average, L_{dn}, sound level descriptor. All other sources are non-transportation sound sources. These are the type of sources in use at West Complex, berths 19 and 20. For new residential areas, the City has a Performance Standard that sets limits based on the hourly average, L_{eq}, sound level and the maximum, L_{MAX}, sound level measured during any 1-hour period of a day. The Noise Element does not address how to deal with existing homes directly. However, the intent of the ***General Plan*** is clear from the goals and policies. That is, the main goal of the noise element is to protect citizens from the harmful and annoying effects of exposure to excessive noise. Thus, the goal is to protect existing residences as well as new residential developments. Policy 10 of the Noise Element also recommends that a community noise control ordinance be prepared that is consistent with the limits of the Performance Standard of the Noise Element and the guidelines of the state Office of Noise Control. The latter agency published a Model Noise Ordinance [2] that also addresses sound from non-transportation sound sources. The noise limits recommended by this guideline are based on how long the sound lasts during any 1-hour period. The longer the duration, the lower is the limit. For example if sound lasts for at least 30-minutes in an hour, the L_{50} sound level, the daytime limit is 55 dB(A). A 5 dB(A) penalty is applied to sources that

* - *Number(s) in brackets refer to references listed at the end of this report.*

include a pure tone such as was found for equipment used in and around the ships. For nighttime activities, those occurring between 10:00 p.m. and 7:00 a.m., the limit is lowered an additional 10 dB(A). Thus, the nighttime L_{50} sound level limit would be 40 dB(A). For sound that lasts 15 minutes in an hour, the limits are 50 dB(A) without the penalty and 45 dB(A) with the penalty.

Background sound levels varied from 35 dB(A) to 50 dB(A) during the tests. For a 12 hour test, the L_{50} sound level was 40 dB(A) at 4224 Riviera Drive and 43 dB(A) at 4100 Riviera Drive. When a ship was loading or unloading at berth 20, the L_{50} sound levels increased to 53 to 56 dB(A). That is the sound change was quite large. The L_{eq} sound level saw slightly less sound level increases. The nighttime L_{eq} sound levels exceeded the limits of the Performance Standard of the ***General Plan*** when the maritime activities were occurring. The L_{50} sound level limits of the State's Model Noise Ordinance were exceeded also. The impact of the new maritime operations at the West Complex are significant and are not in conformance with the City's Noise Regulation, the Performance Standards or the limits of the Model Noise Ordinance.

2.0 ACOUSTIC STANDARDS

Noise sensitive projects fall under the jurisdiction of three sets of acoustical criteria as published by the City of Stockton. Two of these criteria are given in the City's noise section of the General Plan [1] and one set of criterion is given by the City's Noise Regulation [3].

2.1 Noise Element Standards

The Noise Element addresses both transportation and non-transportation sound sources. Transportation sound sources are defined by Policy 2 as traffic on public roadways, railroad line operations and aircraft in flight. Non-transportation sources are those that do not fit into these three categories. The metric or measure of the sound exposure used for transportation sound sources is the day-night average, L_{dn}, sound level. For non-transportation sound sources, the hourly average, L_{eq}, sound level and the L_{MAX} sound level are used. The following subsections describe the requirements for each of these source types, transportation and non-transportation. For both source types, the first goal of the noise element is to protect the citizens of the Stockton Planning Area from the harmful and annoying effects of exposure to excessive noise. Goal 2 is to protect the economic base of the Stockton Planning Area by preventing incompatible land uses from encroaching upon areas with existing noise-producing uses.

a. <u>Transportation Sources</u>

The noise impact of transportation sound sources is evaluated using the L_{dn} sound level. An acoustical study is needed when noise-sensitive land uses will be subjected to day-night average sound levels, L_{dn}, greater than 60 dB because of one or more transportation sources.

The day-night noise descriptor averages measured or predicted sound levels over 24-hours after applying a 10 dB penalty to nighttime sounds. Hourly average sound levels, L_{eq}, are measured or predicted for each hour of the day or for each hour during which a sound source is present. A 10 dB penalty is added to each hourly average sound level measured or predicted from 10:00 p.m. to 7:00 a.m. The penalty is applied because people trying to sleep during these hours are more sensitive to external sounds. It is possible to exclude or include only certain sources. For example, the sounds of

aircraft flying over the site are included only during those hours when they occur. If no events happen during the nighttime, no penalty would be applied. When some sources are excluded from the analysis, it is called the Background L_{dn} sound level.

Table I summarizes limits of the Noise Element for sound generated by transportation sources. These limits typically apply to road, rail and aircraft traffic impacting a site and also apply to traffic generated by the project that impact on other noise sensitive receptors such as single-family homes near the site. The Noise Element sets both exterior and interior L_{dn} sound level limits. The State mandates the interior L_{dn} sound limit for all multi-tenant and transient living quarters and the City has extended the limit to all homes.

TABLE I. Applicable Maximum Allowable L_{dn} Sound Levels for Transportation Sources Excerpted from the City of Stockton Noise Element.

Part I: Transportation Noise Sources

Noise Sensitive Land Use (Use Types)	Outdoor Activity Areas✤, L_{dn} dB	Interior Spaces L_{dn} dB
Residential	65	45

✤ Where the location of outdoor activity areas is unknown or is not applicable, the noise standard shall be applied at the property line of the receiving land use....

b. Non-Transportation Sound Sources

A second criterion in the Noise section of the ***General Plan*** addresses the sound from non-transportation sources. Sound limits for these sources are based on the time of day and the type of source. A 5 dB(A) penalty is applied to sources that include speech or music as a primary source, pure tones or recurring impulsive sounds. The hourly average, L_{eq}, sound levels and the maximum, L_{MAX}, sound level are used as the metrics of sound exposure. The noise limits apply to any one-hour measurement period without regard to the starting time, except that limits are lower from 10:00 p.m. to 7:00 a.m. A problem posed by the Performance Standard is that they make no provision on how to handle situations when the background sound level exceeds the limits. The background sound level is defined as the sound measured when all sources are operating but the source of interest. The Noise Element specifically states that the Performance Standards shown in Table II are to be applied to new residential construction. However, Policy 10 recommends the preparation of a community noise control ordinance that is consistent with the Performance Standard and the guidelines of the State Office of Noise Control. The Model Noise Ordinance is a product of the State Office of Noise Control and is explained in the next section. Because of Policy 10 and Goal 1, the limits shown in Table II were applied to the sound generated by the activity at berths 19 and 20 and the West Complex. That is, Cargo ships do not fall into the transportation sources cited by the Noise Element. Sound generated by stationary ships, equipment, and activities in the port are non-transportation sources.

TABLE II. Maximum Allowable Exterior Sound Limits for Locally-Regulated Noise Sources as Given in Table 1 of Noise Section of City of Stockton ***General Plan***.

Noise Level Descriptor	Exterior Sound Level Limits, dB(A), Daytime 7 a.m. to 10 p.m.	Nighttime 10 p.m. to 7 a.m.
L_{eq}, hourly	55	45
L_{MAX}, Maximum, during any Hour	75	65
Penalty for tones, speech, music☜	-5	-5

☜ - Add to limit when sound comprises these.

2.2 Noise Ordinance Standards

The City of Stockton also has a Noise Regulation that applies to all non-transportation sound sources, including activity at the West Complex. The City of Stockton Noise Regulations [3] state "...it shall be unlawful for any person to willfully make or continue or permit or cause to be made or continued, any loud, unnecessary, or unusual noise which unreasonably disturbs the peace and quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area." The standards are based upon the volume, intensity and duration of the sound, the location of the noise, the nature or tonal content of the sound, the proximity of the source to sleeping areas and the background noise levels. This noise regulation is almost a duplicate of that given in Section 5 of the Model Noise Ordinance. This section was meant to deal with situations where sound was unacceptable even though it might be in compliance with the recommended sound levels. That is, it is a more stringent requirement because more than just the amplitude of the sound is taken in account. However, because the regulations do not provide quantitative sound limits, deciding what is and what is not acceptable is more difficult. Since this noise regulation is based on the Model Noise Ordinance, it would be appropriate to employ the limits given in that document, Section 7. These are reproduced in the following section. The alternative would be to employ the limits given in the Performance Standard of the ***General Plan***. These are the limits shown in Table I and they are more restrictive than those from the Model Noise Ordinance.

2.3 State Model Noise Ordinance

The State of California Model Noise Ordinance addresses non-transportation sound sources and has been used by many jurisdictions in formulating noise limits for these types of sources. The sound limits are based on the time of day of occurrence, tonal content of the sound and the duration of the event. Sound is to be measured over any one-hour period. If the sound lasts at least 30 minutes in an hour, the most stringent limit applies. A 5 dB penalty is applied for sound that contains pure tones, speech or music or impact sounds. For rural areas, lower limits are set because background sound levels are lower. Background sound is defined as the sound you would measure when the source of interest is absent. In this project, the source of interest is equipment operating in and around the docking berths while ships are loaded and unloaded. Thus, the sound measured when the berth or berths are vacant is the background sound. The engines used to run the loading and unloading process would be penalized 5 dB because they generate a pure tone. A pure tone is what you hear when you blow across the mouth of a soda pop bottle half filled with a liquid. Table III presents the noise limits from the

Model Noise Ordinance. The limits could be modified for the background sound level. If the background sound level in any category exceeded the limit, the limit would be increased in 5 dB increments to encompass the background sound level. The exception is for the L_{MAX} sound level. When the background L_{MAX} sound level exceeds the limit, the background sound level becomes the new limit.

TABLE III. Noise Limits from the State's Model Noise Ordinance for Suburban Residential Land Uses for Non-Transportation Sound Sources.

	Interval for Judging Source	Exterior Sound Level Limits, dB(A)◊			
		Suburban, Single-Family		Suburban, Multi-Family	
Category	Cumulative Number of Minutes in any 1-hour period	Day, 7am-10pm	Night, 10pm-7am	Daytime	Nighttime
1	30 (L_{50})	55	45	55	50
2	15 (L_{25})	60	50	60	50
3	5 ($L_{8.3}$)	65	55	65	55
4	1 ($L_{1.7}$)	70	60	70	60
5	0 (L_{MAX})	75	65	75	65
◊-Penalty applied to pure tones, speech & impact sounds		-5	-5	-5	-5

3.0 PROJECT AND SITE DESCRIPTION

The West Complex is an island recently transferred to the Port of Stockton by the Navy. The island was formerly known as Rough and Ready Island and was used by the Navy as a communications and radar facility and to occasionally store moth-balled ships. This means that the berths were essentially idle with few noise generating sources. The uses of the remainder of the island by the Navy also generated little or no noise. Today, the island is used by the Port as a shipping hub. Numerous ships enter, load, and leave the facility on an intermittent basis. The ships often stay for a few days at a time, with loading activities occurring during the day and nighttime hours. It is unknown exactly how many or how often ships are utilizing berths 18, 19, and 20 as schedules have not been provided by the Port. Besides providing a path for large shipping vessels, the Deep Water Shipping Channel is also used for recreational boating activities. The Port of Stockton is currently preparing a complete environmental impact report to cover the development or redevelopment of the West Complex. A question exists whether the proper documentation was completed to evaluate the noise impacts of the maritime operations at berth 19 and 20, prior to commencing with their use. These berths are across the Deep Water Shipping Canal from existing residential developments and a golf course. The residential area of concern is called Riviera Cliffs.

Riviera Cliffs is a residential community in the west portion of Stockton. A group of homes in this community lie adjacent to the Deep Water Ship Channel, part of the delta waterway system that connects the Stockton area to the Pacific Ocean. The west property line of the backyards for these homes is the edge of the Deep Water Channel. Across the waterway lies the West Complex of the Port of Stockton, also known as Rough & Ready Island. Shipping berths 18, 19, and 20 of the West Complex are closest to the homes that were included in this study. The project site and surrounding property is at the same or similar elevation, with the exception of the recessed water level in the Deep Water Channel. This project was undertaken at the request of the Friends of Riviera Cliffs.

4.0 TEST EQUIPMENT AND PROCEDURES

Standard sound measuring equipment was used during the tests. Field sound measurements were made using two CEL 593 (s/n 2/0881414 and s/n 3/0201692) Sound Analyzers, one CEL 480 (s/n 1/129858) Sound Level Meter, one Larson-Davis LD700 (s/n 1455), and one Larson-Davis LD720 (s/n 294) Sound Level Meter. The three CEL meters and the LD700 sound meter (s/n 1455) employ ½ inch random incidence condenser microphones. A CEL Type 284/2 calibrator was used to calibrate these meters and the microphones to 114 dB at 1000 Hz before beginning measurements. These meters conform to the requirements of a Type I meter per American National Standards Institute [4]. The LD720, s/n 294, is a Type II meter per the ANSI standard. A 3/8 inch piezoelectric microphone was installed on this meter and was calibrated to 114 dB(A) at 1000 Hz at the start of the test with a Larson Davis CA150 calibrator. A windscreen covered each microphone during all sound measurements. These meters can measure statistical sound levels such as the L_{10}, the sound level exceeded 10 percent of the time, the L_{50}, the sound level exceeded 50 percent of the time, the L_{90}, the sound level exceeded 90 percent of the time and the average sound level, L_{eq}. Sound level meters also capture the maximum sound level, L_{MAX}. The CEL 593 meters were used to collect representative sound level tones in one-third octave bands.

Field sound measurements were made on April 24, May 23, June 12, August 24, August 27, September 12, and November 5, 2002 in the backyards of three of the homes along Riviera Drive. Each test carried over to the morning of the following day. Sound levels typically were measured from around 7:00 p.m. until 8:00 a.m. the following morning. Measurements were made at the sites both with and without ships in Berths 19 and 20. Average sound levels, L_{eq}, were measured to use as a basis for comparison with the limits of the Performance Standard of the ***General Plan*** of the City of Stockton. Other statistical descriptors of the sound, labeled L_x, and the maximum sound level, L_{MAX}, were measured also. Here, L_x represents values such as the L_{50} or L_{25}. These sound descriptors give additional information about how sound varied over the test period. That is, it can tell you whether it was a source that was near the site for only a short time or a source that continued over substantial time. These other sound descriptors are used by the State's Model Noise Control Ordinance also.

Measurements were made at three positions with microphones mounted on tripods 5.5 to 6 feet above ground level. For all positions, sound levels were measured during consecutive five minute to fifteen minute intervals to identify sources and variations in sound with time. Continuous measurements were made at all three positions over the course of the seven tests. Short interval tests were also done to obtain one-third octave band frequency measurements. A summary description of each test position follows:

a. Position #1: Backyard of Shield's residence at 4224 Riviera Drive, approximately 20 feet west of the west face of the home.
b. Position #2: Backyard of Hackett's residence at 4100 Riviera Drive, on the north side of the yard.
c. Position #3: Backyard of Chargin's residence at 4136 Riviera Drive, approximately 8 feet west of the west face and 15 feet south of the south face of the home.

5.0 SOUND SOURCES

5.1 Existing

The existing acoustic environment is defined here as that which existed before of the transfer of Rough & Ready Island from the Navy to the Port of Stockton. Any change in the use of the facility would have required an environmental impact report, particularly to address noise impacts.

Sound sources influencing the homes along Riviera Drive include local road traffic, dogs barking, landscaping activities, recreational boat movements in the DWSC, aircraft overflights. Riviera Drive is a small roadway that only serves the local residential area and has very low traffic volume and speeds. Sound generated by recreational boaters on the Deep Water Channel influence the project site, but a continuous flow of boat traffic does not exist. Other secondary sources include residential air conditioning units, landscape maintenance equipment, dogs barking, birds chirping, and local human activity. The Deep Water Channel is a portion of the Delta that is used both by commercial ships and recreational boaters. The boat traffic volume is unknown and it is difficult to estimate. From observations made at the project site, the volume of boats depends highly on the time of day, day of the week, and weather conditions. For instance, boat traffic is highest on summer holiday weekends and relatively low in the middle of the week in the winter. Boat traffic is also very low at night, since recreational boating is considered a daytime activity.

5.2 Existing Plus Project

The beginning of maritime operations at the West Complex, particularly berths 19 and 20, has altered the main sound sources. The sources are the same as before this project, when ships are not docked at berths 19 and 20. When commercial ships are docked at berths 19 and 20 at the West Complex, the shipping activity becomes the dominant sound source. Commercial shipping is typically independent of time of day or day of week conditions. A ship can enter the Deep Water Channel and berth any time of day or night. The ship typically stays for two or three days, depending on how long it takes to load the vessel with cargo. Berths 19 and 20 are closest to the residents of Riviera Cliffs. Sound from the ships and corresponding support equipment dominates the acoustical environment when these berths are occupied. The sound from shipping activity is produced by continuously running generators on board the ship, ship mounted cranes, opening and closing of cargo bay doors, and from ancillary vehicles used to transport cargo to the ship.

6.0 EXTERIOR ACOUSTIC ENVIRONMENT

6.1 Existing

Field sound measurements were used to evaluate the existing acoustic environment. Averages of the 5-minute test samples were computed for each hour or part of an hour. Strictly background sound measurements were made on two occasions. The first background tests was done on May 23, 2002, a few days before the Memorial Day three day holiday. This is typically the beginning of the recreational boating season, and the number of boats on the water was higher than would occur between Labor Day weekend and Memorial Day. A second set of background measurements were made on September 19, 2002. Averages of the short interval sound levels and other statistical descriptors are given in Table IV for the May tests and in Table V for the September tests.

TABLE IV. Sound Levels Measured on 23-May-02 at Two Positions Along Riviera Drive With No Ships in Port, West Complex, Port of Stockton.

Position	Time	Measured Sound Level, dB(A)						
		L_{eq}	L_{MAX}	$L_{1.7}$	$L_{8.3}$	L_{25}	L_{50}	L_{90}
#1 4224 Riviera	6:50-7:00 p.m.	53	61	59	57	55	52	45
	7:00-8:00 p.m.	53	73	60	55	50	45	40
	8:00-9:00 p.m.	56	78	64	54	45	41	38
	9:00-10:00 p.m.	43	67	53	43	37	34	32
	10:00-11:00 p.m.	40	63	47	44	40	35	33
	11:00 p.m.-12:00 a.m.	38	52	44	40	38	36	34
	12:00-1:00 a.m.	45	62	56	45	38	36	34
	1:00-2:00 a.m.	35	50	38	37	35	34	33
	2:00-3:00 a.m.	41	60	46	42	41	39	35
	3:00-4:00 a.m.	45	60	53	48	44	37	34
	4:00-5:00 a.m.	41	65	45	43	40	38	36
	5:00-6:00 a.m.	42	57	47	45	43	41	39
	6:00-7:00 a.m.	47	58	53	50	48	46	42
	7:00-8:00 a.m.	48	61	58	51	47	46	43
#1	*Total Time*	*48*	*78*	*59*	*50*	*44*	*40*	*34*
#2 4100Riviera	7:45-8:00 p.m.	53	65	—	58	53	47	44
	8:00-9:00 p.m.	58	79	—	57	46	43	41
	9:00-10:00 p.m.	50	75	—	46	43	40	38
	10:00-11:00 p.m.	44	60	—	47	42	40	38
	11:00-12:00 p.m.	42	52	—	43	42	41	40
	12:00-1:00 a.m.	48	63	—	51	45	43	41
	1:00-2:00 a.m.	43	47	—	44	43	42	41
	2:00-3:00 a.m.	45	63	—	46	45	44	42
	3:00-4:00 a.m.	48	64	—	52	48	45	43
	4:00-5:00 a.m.	44	66	—	45	43	42	41
	5:00-6:00 a.m.	43	52	—	47	44	42	41
	6:00-7:00 a.m.	49	67	—	51	49	47	45
	7:00-8:00 a.m.	49	64	—	54	49	46	45
	8:00-8:15 a.m.	48	59	—	49	47	45	43
#2	*Total Time*	*50*	*79*	—	*49*	*46*	*43*	*40*

Figure 1 shows graphically how the sound varied during each 10-minute interval at Position #1, the backyard of 4224 Riviera Drive. As noted, many recreational boats were on the water and people appeared to be trying out boats that may have not been run for some time. The L_{eq} sound level is

strongly influenced by these single events even though they may last less 25 percent of the sample interval as seen in this figure. The L_{50} sound level is far less susceptible to these individual events and better shows whether the sound lasted sufficiently long that it would cause speech interference. Data in Table IV and Figure 1 show that the L_{50} sound level after 9:00 p.m. dropped to around 35 dB(A). The L_{eq} sound levels were slightly higher due to individual events. Including all times and sources, the L_{50} sound level was only 40 dB(A).

Slightly higher sound levels are shown in Table IV for Position #2 at 4100 Riviera Drive. Figure 2 shows that this site saw far fewer of the individual events, but that they occur. From 9:00 p.m. to 5:30 a.m., the L_{50} sound level was about 42 dB(A). Over the total test, the L_{50} sound level was 43 dB(A). The levels at both locations are less than the lowest nighttime limit of the Model Noise Ordinance.

TABLE V. Sound Levels Measured on 12-Sep-02 at Two Positions Along Riviera Drive With No Ships in Port at West Complex, Port of Stockton.

		Measured Sound Level, dB(A)						
Position	Time	L_{eq}	L_{MAX}	$L_{1.7}$	$L_{8.3}$	L_{25}	L_{50}	L_{90}
#1 4224 Riviera	7:30-8:00 p.m.	49	65	61	53	47	41	36
	8:00-9:00 p.m.	43	63	54	45	40	36	34
	9:00-10:00 p.m.	41	61	47	40	37	35	34
	10:00-11:00 p.m.	43	62	51	46	40	38	35
	11:00 p.m. - 12:00 a.m.	41	57	47	42	40	39	37
	12:00-1:00 a.m.	41	63	51	40	38	37	36
	1:00-2:00 a.m.	39	55	47	43	39	37	36
	2:00-3:00 a.m.	39	57	43	40	39	37	36
	3:00-4:00 a.m.	44	65	52	46	43	41	39
	4:00-5:00 a.m.	46	66	54	47	43	41	39
	5:00-6:00 a.m.	44	58	49	46	45	44	43
	6:00-7:00 a.m.	46	62	50	47	45	44	43
	7:00-8:00 a.m.	51	64	62	54	49	48	47
#1	*Total Time*	*48*	*78*	*59*	*50*	*44*	*40*	*45*

Position	Time	Measured Sound Level, dB(A)						
		L_{eq}	L_{MAX}	$L_{1.7}$	$L_{8.3}$	L_{25}	L_{50}	L_{90}
	8:15-9:00 p.m.	44	62	—	45	41	39	37
	9:00-10:00 p.m.	41	61	—	43	39	38	37
	10:00-11:00 p.m.	42	61	—	45	41	39	37
	11:00 p.m. - 12:00 a.m.	43	58	—	46	45	42	38
	12:00-1:00 a.m.	41	65	—	42	39	38	37
#3	1:00-2:00 a.m.	40	57	—	43	40	38	37
4136Riviera	2:00-3:00 a.m.	40	58	—	40	39	39	38
	3:00-4:00 a.m.	43	63	—	45	43	41	40
	4:00-5:00 a.m.	45	66	—	45	42	41	40
	5:00-6:00 a.m.	43	62	—	46	43	42	41
	6:00-7:00 a.m.	44	66	—	45	44	43	43
	7:00-8:00 a.m.	50	67	—	54	48	45	44
	8:00-8:10 a.m.	46	53	—	47	46	45	44
#3	*Total Time*	*44*	*67*	—	*46*	*43*	*40*	*38*

Table V shows slightly higher L_{50} sound levels for Position #1 than seen during the May Tests. However, far fewer single events occurred, though the overall L_{eq} sound level did not change. The L_{50} sound level measured across the complete test interval was the same as measured in May also. Thus, these tests should be representative of what would be expected in the backyard of the home at 4224 Riviera Drive. Figure 3 shows how the various sound statistics varied during each 15-minute interval at the residence. The L_{50} sound was relatively constant from 7:30 p.m. until 4:30 a.m. then started going from 36 to 39 dB(A) to about 44 to 46 dB(A) after 7:00 a.m.

Sound levels were not measured at Position #3 during the May test. This position was added because of complaints received regarding the sound exposure during operations at berths 19 and 20. The variation in the sound measured at this position is displayed Figure 4. The sound was very constant at this position, increasing slight at 3:00 a.m. and then again at 5:15 a.m. The L_{50} sound level was 40 dB(A) at this position for the total time while the L_{eq} sound level was 44 dB(A). Since these two test positions are separated by about 300 feet, the difference suggests that some of the noise measured at Position #1 may have been due to sources at that property or adjacent property, such as dogs barking.

6.2 Existing Plus Project

Opening berths 19 and 20 to maritime activities influenced the acoustic environment at the homes along Riviera Drive. The influence is greatest for the homes that back up to the Deep Water Shipping Canal. The Port of Stockton has control of the activities at these berths. Measurements were made during hours similar to when the background tests were done and shown in Tables IV and V to learn the influence of the new non-transportation sound sources on the residences at Riviera Cliffs. All tests were done while a ship was in either berth 19 or 20 or both. Table VI presents the results from Positions #1 and #2 tested on April 24, 2002 while a ship was in berth 20.

TABLE VI. Sound Levels Measured on 24-Apr-02 at Two Positions Along Riviera Drive With a Ship in Port at Berth 20, West Complex, Port of Stockton.

Position	Time	Measured Sound Level, dB(A)						
		L_{eq}	L_{MAX}	$L_{1.7}$	$L_{8.3}$	L_{25}	L_{50}	L_{90}
#1 4224 Riviera	7:00 - 8:00 p.m.	57	71	59	58	57	56	55
	8:00 - 9:00 p.m.	57	64	59	58	57	57	55
	9:00-10:00 p.m.	56	61	59	58	57	55	52
	10:00-11:00 p.m.	49	56	51	50	49	49	48
	11:00 p.m. - 12:00 a.m.	55	63	58	57	56	55	52
	12:00-1:00 a.m.	56	64	59	57	56	56	54
	1:00-2:00 a.m.	56	65	59	58	57	56	54
	2:00-3:00 a.m.	56	63	58	57	56	55	50
	3:00-4:00 a.m.	50	64	54	52	51	50	49
	4:00-5:00 a.m.	50	60	53	51	50	50	49
	5:00-6:00 a.m.	50	58	52	51	51	50	49
	6:00-7:00 a.m.	55	64	59	58	56	52	48
	7:00-8:00 a.m.	52	71	56	54	51	50	49
#1	*Total Time*	*55*	*71*	*59*	*55*	*54*	*53*	*50*
#2 4100 Riviera	7:45-8:00 p.m.	58	74	—	60	59	58	56
	8:00-9:00 p.m.	58	67	—	60	59	58	56
	9:00-10:00 p.m.	57	66	—	60	58	56	52
	10:00-11:00 p.m.	50	62	—	52	50	49	48
	11:00 p.m. - 12:00 a.m.	57	62	—	58	57	56	53
	12:00-1:00 a.m.	57	63	—	59	58	57	55
	1:00-2:00 a.m.	58	63	—	59	58	57	56
	2:00-3:00 a.m.	57	63	—	59	58	56	52
	3:00-4:00 a.m.	51	65	—	53	52	51	49
	4:00-5:00 a.m.	51	60	—	53	51	50	49
	5:00-6:00 a.m.	52	65	—	54	52	51	50
	6:00-7:00 a.m.	51	68	—	53	51	50	49
	7:00-8:00 a.m.	53	73	—	54	52	50	49
	8:00-8:30 a.m.	56	67	—	59	57	55	50
#2	*Total Time*	*56*	*74*	—	*59*	*57*	*54*	*49*

Table VI shows that the sound levels at Position #1 are significantly greater than the background sound levels. The overall L_{50} sound level increased by 13 dB(A) over the background sound levels. This is a significant change in the sound. A tone was detected in the sound generated by the equipment at the ship. Tonal measurements were not made during this first test. Figure 5 shows how the sound

descriptors varied during the test interval of 7:00 p.m. to 8:00 a.m. Far fewer large changes are seen in the sound levels. That is, they are more constant, even the L_{MAX} sound level. The large change in sound level when the ship left or when the generator was off is very evident in this figure. A comparison of the background sound levels with the levels measured while a ship was at berth 20 is given in Figure 6. The large increase is even more evident in this figure.

Similar results are presented in Figure 7 and Table VI for tests done at Position #2. The same 7 to 9 dB(A) change in the L_{50} sound level is shown in this figure when the ship departed. Only about 10 minutes is required to reduce the sound back down to a lower level, once the maritime activities ended.

Additional testing was completed on June 12, 2002 while a ship was in berth 19. The same procedures were used, but an additional test position was employed about halfway between Positions #1 and #2. Table VII summarizes the results from these tests, showing the hourly sound levels.

TABLE VII. Sound Levels Measured on 12-Jun-02 at Three Positions Along Riviera Drive With a Ship in Port at Berth 19, West Complex, Port of Stockton.

		Measured Sound Level, dB(A)						
Position	Time	L_{eq}	L_{MAX}	$L_{1.7}$	$L_{8.3}$	L_{25}	L_{50}	L_{90}
#1b 4224 Riviera	11:00 p.m. - 12:00 a.m.	46	63	—	50	46	43	42
	12:00-1:00 a.m.	45	67	—	50	44	43	42
	1:00-2:00 a.m.	44	57	—	49	44	42	41
	2:00-3:00 a.m.	41	57	—	44	41	40	39
	3:00-4:00 a.m.	47	66	—	52	46	39	38
	4:00-5:00 a.m.	43	64	—	45	42	40	39
	5:00-6:00 a.m.	45	61	—	48	45	43	41
	6:00-7:00 a.m.	52	62	—	56	54	47	43
	7:00-8:00 a.m.	53	79	—	58	52	43	41
	8:00-8:30 a.m.	49	60	—	51	48	47	43
#1b	*Total Time*	*48*	*79*	—	*51*	*45*	*43*	*40*

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Position	Time	Measured Sound Level, dB(A) L_{eq}	L_{MAX}	$L_{1.7}$	$L_{8.3}$	L_{25}	L_{50}	L_{90}
#2 4100 Riviera	9:00-10:00 p.m.	56	80	—	55	53	52	51
	10:00-11:00 p.m.	53	66	—	54	53	52	51
	11:00 p.m. - 12:00 a.m.	52	63	—	54	52	52	51
	12:00-1:00 a.m.	51	70	—	52	51	51	50
	1:00-2:00 a.m.	51	61	—	52	51	51	50
	2:00-3:00 a.m.	50	64	—	52	51	50	49
	3:00-4:00 a.m.	52	72	—	54	52	49	48
	4:00-5:00 a.m.	50	67	—	50	50	49	48
	5:00-6:00 a.m.	50	57	—	51	50	50	49
	6:00-7:00 a.m.	53	62	—	57	54	52	50
	7:00-8:00 a.m.	57	77	—	62	58	52	50
	8:00-8:20 a.m.	52	63	—	56	54	48	44
#2	*Total Time*	*53*	*80*	—	*54*	*52*	*50*	*49*
#3 4136 Riviera	8:50-9:00 p.m	50	54	—	51	51	50	49
	9:00-10:00 p.m	50	58	—	52	50	50	49
	10:00-11:00 p.m	50	60	—	52	51	50	48
	11:00 p.m. - 12:00 a.m.	50	60	—	53	51	49	48
	12:00-1:00 a.m.	49	62	—	51	49	48	47
	1:00-2:00 a.m.	49	63	—	51	49	48	47
	2:00-3:00 a.m.	47	61	—	49	47	46	45
	3:00-4:00 a.m.	49	64	—	54	50	45	43
	4:00-5:00 a.m.	46	62	—	49	46	45	43
	5:00-6:00 a.m.	46	67	—	48	47	46	45
	6:00-7:00 a.m.	48	60	—	51	49	48	46
	7:00-8:00 a.m.	59	83	—	64	57	50	47
	8:00-8:40 a.m.	50	65	—	54	50	48	42
#3	*Total Time*	*51*	*83*	—	*52*	*49*	*48*	*44*

Figure 8 displays the sound measured at Position #1 while a ship was at berth 19. The sound was constant and does not show the variation seen when the ship was at berth 20. The L_{50} sound levels were higher than measured in May, about three weeks before these tests. Figure 9 shows the sound levels measured at Position #2. The sound remained far more constant than when testing the background sound levels. The sound produced by ship loading and unloading was very constant. However, the sound was still very distinct. A comparison of the sound tones measured at Position #2 on June 12th with background tests done at Position #1 on May 23rd is presented in Figure 10. The difference in the amplitude of the tones at 31.5 Hz is dramatic. The sound pressure level was sufficiently high that some rattling could be expected in light weight structures such as windows. This rattling was observed

during these tests when standing the home at 4100 Riviera Drive. Figure 11 gives the sound levels measured at Position #3 at 4136 Riviera Drive while the ship was in berth 19. The tone from the ship was very evident during these tests at this position and was the source of complaints from the home owner.

Table VIII summarizes the results of sound measurements made on August 27, 2002 while a ship was loading or unloading at berth 20. Measurements were only made at Positions #1 and #3 during these tests.

TABLE VIII. Sound Levels Measured on 27-Aug-02 at Two Positions Along Riviera Drive With a Ship in Port at Berth 20, West Complex, Port of Stockton.

		Measured Sound Level, dB(A)						
Position	Time	L_{eq}	L_{MAX}	$L_{1.7}$	$L_{8.3}$	L_{25}	L_{50}	L_{90}
#1 4224 Riviera	7:30-8:00 p.m.	60	73	68	63	60	58	56
	8:00-9:00 p.m.	57	69	63	58	57	57	56
	9:00-10:00 p.m.	57	62	58	57	57	56	56
	10:00-11:00 p.m.	56	68	60	57	56	56	55
	11:00 p.m. - 12:00 a.m.	57	61	58	58	57	57	56
	12:00-1:00 a.m.	57	70	58	58	57	57	56
	1:00-2:00 a.m.	57	62	58	57	57	57	56
	2:00-3:00 a.m.	57	69	60	57	57	56	55
	3:00-4:00 a.m.	56	58	57	56	56	56	55
	4:00-5:00 a.m.	55	57	56	56	56	55	55
	5:00-6:00 a.m.	56	57	56	56	56	55	55
	6:00-7:00 a.m.	57	60	58	57	57	56	55
	7:00-8:00 a.m.	56	62	58	57	56	56	55
#1	*Total Time*	*57*	*73*	*60*	*58*	*57*	*56*	*55*

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Position	Time	Measured Sound Level, dB(A)						
		L_{eq}	L_{MAX}	$L_{1.7}$	$L_{8.3}$	L_{25}	L_{50}	L_{90}
#3 4136 Riviera	8:15-9:00 p.m.	56	71	—	57	56	56	55
	9:00-10:00 p.m.	56	60	—	57	56	56	54
	10:00-11:00 p.m.	56	71	—	57	56	55	54
	11:00 p.m. -12:00 a.m.	56	60	—	58	57	56	55
	12:00-1:00 a.m.	57	64	—	58	57	57	56
	1:00-2:00 a.m.	57	61	—	58	58	57	56
	2:00-3:00 a.m.	58	71	—	59	58	57	56
	3:00-4:00 a.m.	56	66	—	57	56	56	54
	4:00-5:00 a.m.	55	59	—	57	56	55	54
	5:00-6:00 a.m.	56	58	—	57	57	56	55
	6:00-7:00 a.m.	56	58	—	57	56	56	55
	7:00-8:00 a.m.	56	66	—	57	57	56	55
	8:00-9:00 a.m.	60	75	—	61	60	59	58
#3	*Total Time*	*57*	*75*	—	*58*	*57*	*56*	*55*

The results in Table VIII confirm that sound level exposures are much higher when ships are at berth 20 of the West Complex. This table and Figures 12 and 13 show constant sound levels, eliminating the influence of all other sources to which the Riviera Cliffs home owners would otherwise be subjected.

The final sound test was done only at Position #2 at 4100 Riviera Drive. Table IX shows the hourly summary of the sound measured at this position.

Figure 14 shows how the sound changed during the test after the ship departed from berth 19 across from the test site, Position #2. Over a 30-minute interval, the sound levels dropped about 11 to 15 dB. This is a dramatic and significant change as seen in this figure.

A comparison of the tones measured at Position #1 is displayed in Figure 15 for all test days except one. This shows the tones measured with and without ships in either berth 19 or 10. The sound pressure level at 31.5 Hz is sufficient to cause lightweight structures to rattle according to criteria from The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) [5].

TABLE IX. Sound Levels Measured on 5-Nov-02 at One Positions Along Riviera Drive With a Ship in Port at Berth 19, West Complex, Port of Stockton.

Position	Time	Measured Sound Level, dB(A)						
		L_{eq}	L_{MAX}	$L_{1.7}$	$L_{8.3}$	L_{25}	L_{50}	L_{90}
#2 4100 Riviera	9:00-10:00 p.m.	54	59	—	55	54	54	53
	10:00-11:00 p.m.	55	67	—	58	56	54	53
	11:00 p.m. - 12:00 a.m.	55	64	—	57	55	54	52
	12:00-1:00 a.m.	55	62	—	56	55	54	53
	1:00-2:00 a.m.	51	65	—	57	48	43	40
	2:00-3:00 a.m.	43	59	—	45	43	42	40
	3:00-4:00 a.m.	43	56	—	46	43	42	41
	4:00-5:00 a.m.	44	59	—	46	45	43	42
	5:00-6:00 a.m.	46	68	—	49	44	43	42
	6:00-7:00 a.m.	47	61	—	49	47	46	44
	7:00-8:00 a.m.	50	63	—	53	50	48	46
	8:00-8:15 a.m.	53	67	—	56	53	49	47
#2	*Total Time*	*51*	*68*	—	*55*	*53*	*47*	*41*

7.0 IMPACTS

The exterior noise impact due to maritime operations at the West Complex are significant. The resulting sound levels exceed the noise limits of all applicable noise standards, including the City's Noise Regulation. Sound pressure level are sufficiently high to cause secondary sound to be generated within homes because of vibration of lightweight exterior materials such as windows. Sound reduction is possible.

8.0 REFERENCES

1. Anon., "Section 7, Noise", from ***City of Stockton General Plan; Volume I: Policies/Implementation***, adopted January 22, 1990, as amended through November 3, 1998.

2. Anon., ***Model Community Noise Control Ordinance***, prepared by Office of Noise Control, California Department of Health, Berkeley, Ca, April 1977.

3. City of Stockton, Stockton Municipal Code, Chapter 5-Public Welfare, Morals and Policy, Part XVIII-Noise Regulations.

4. American National Standards Institute, ANSI, ***Standard Specification For Sound Level Meters, S1.4-1983 (Precision)***

5. Anon, "Chapter 47: Sound and Vibration Control", from ***2003 ASHRAE Handbook: Heating, Ventilating and Air-Conditioning Applications***, Inch-Pound Edition, American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., Atlanta, Georgia, 2003, Computer Edition.

R02136: SMW; POS Shipping; Noise Impact on Riviera Cliffs Residents, January 19, 2004

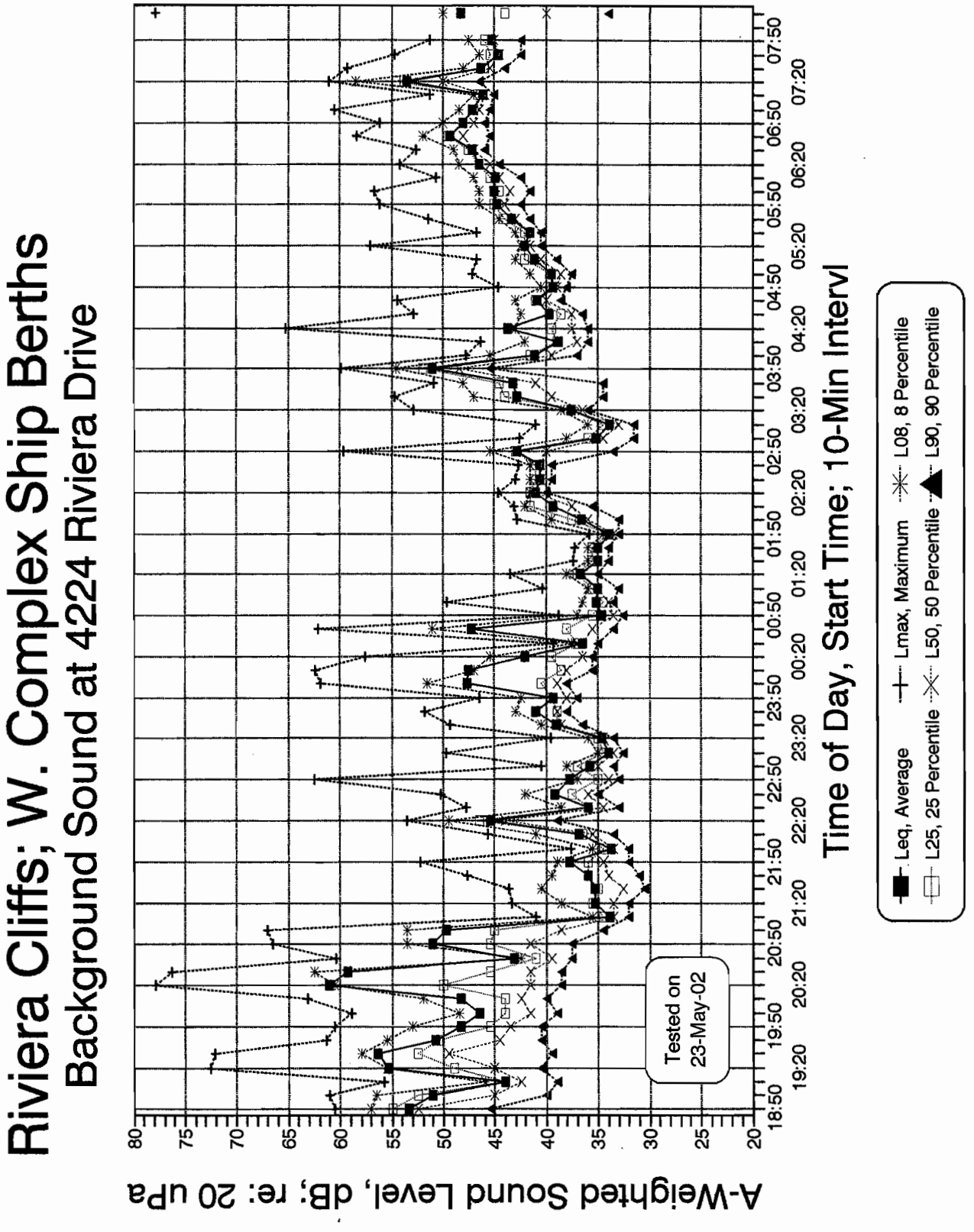

Figure 1. Results of Continuous Background Sound Measurements Made on May 23 at Site #1, 4224 Riviera Drive.

R02136: SMW; POS Shipping; Noise Impact on Riviera Cliffs Residents, January 19, 2004

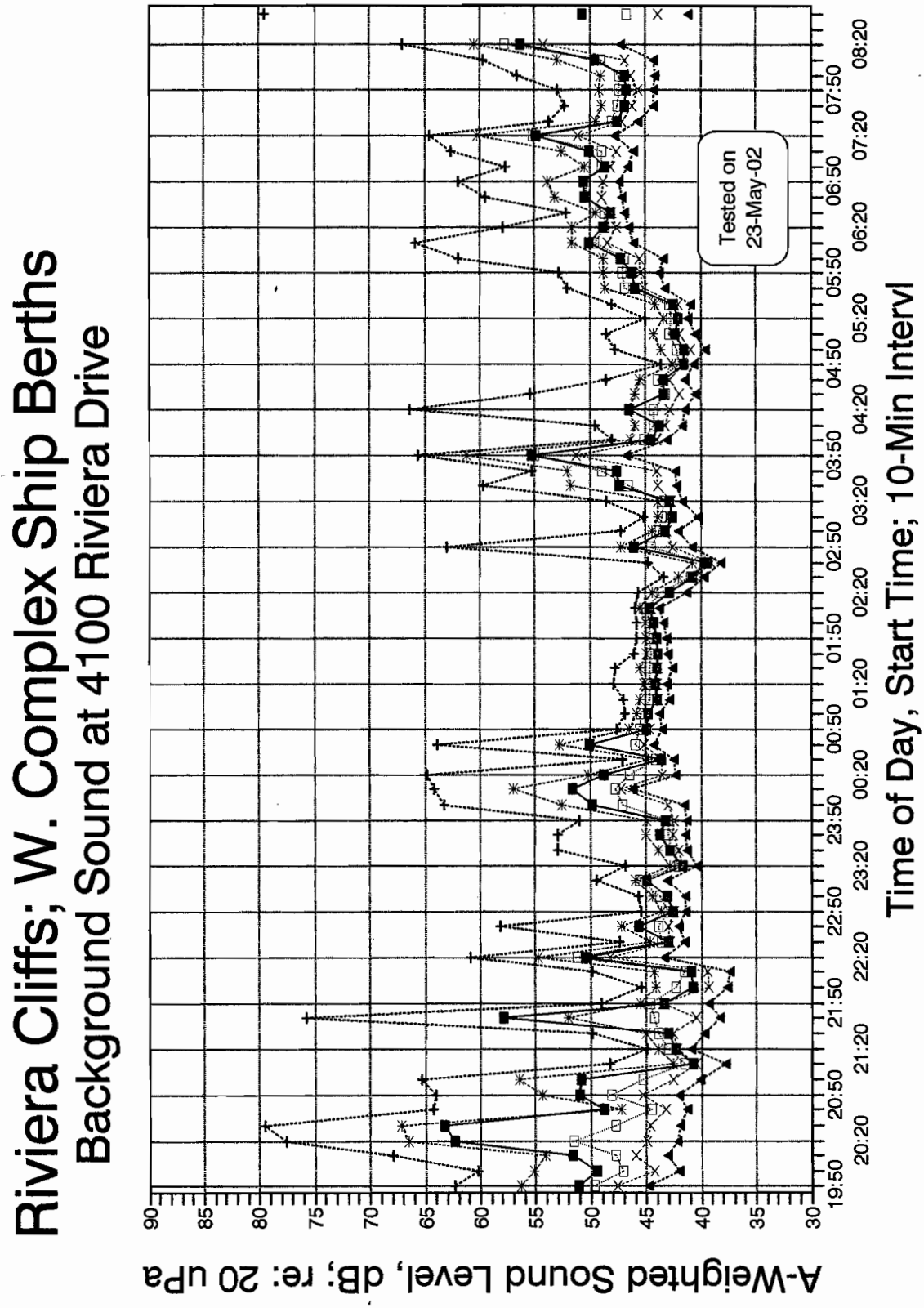

Figure 2. Variation in Background Sound Measured in 10-minute Intervals at Position #2 on May 23, 2002.

R02136: SMW; POS Shipping; Noise Impact on Riviera Cliffs Residents, January 19, 2004

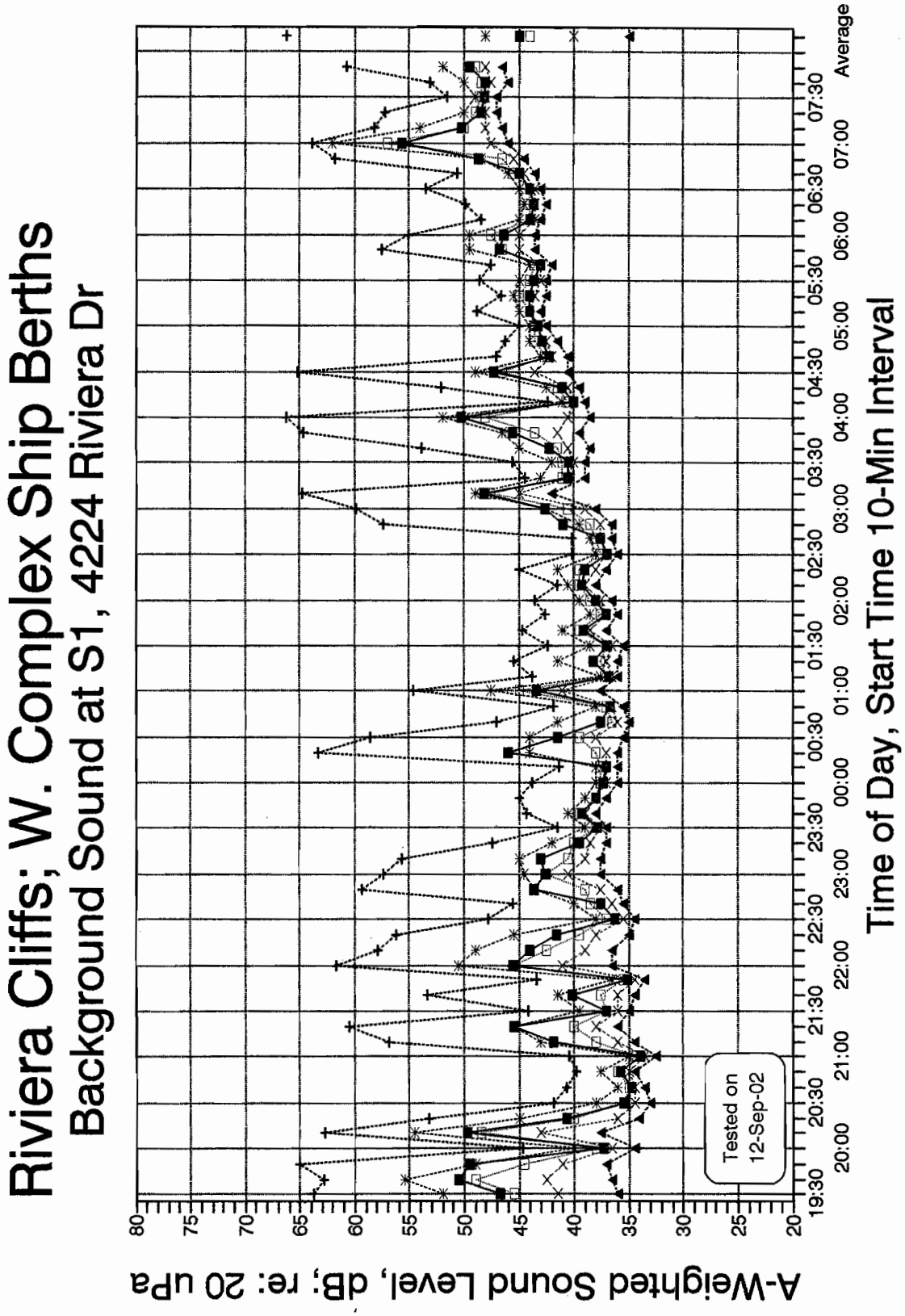

Figure 3. Background Sound Variations Measured in 15-Minute Intervals at Position #1 from September 12, 2002.

R02136: SMW; POS Shipping; Noise Impact on Riviera Cliffs Residents, January 19, 2004

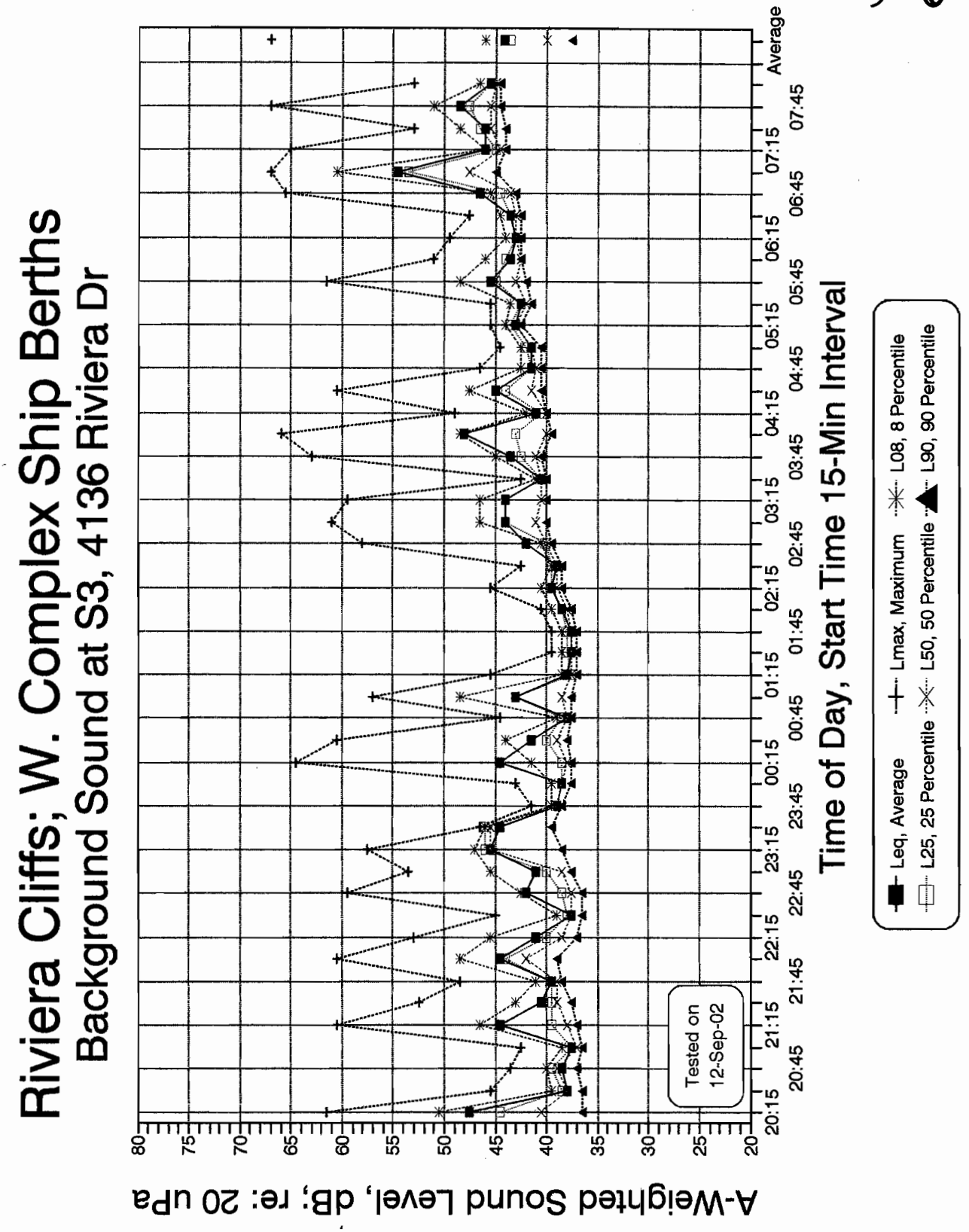

Figure 4. Results of Background Sound Measurements Made on September 12 at Site #3, 4136 Riviera Drive.

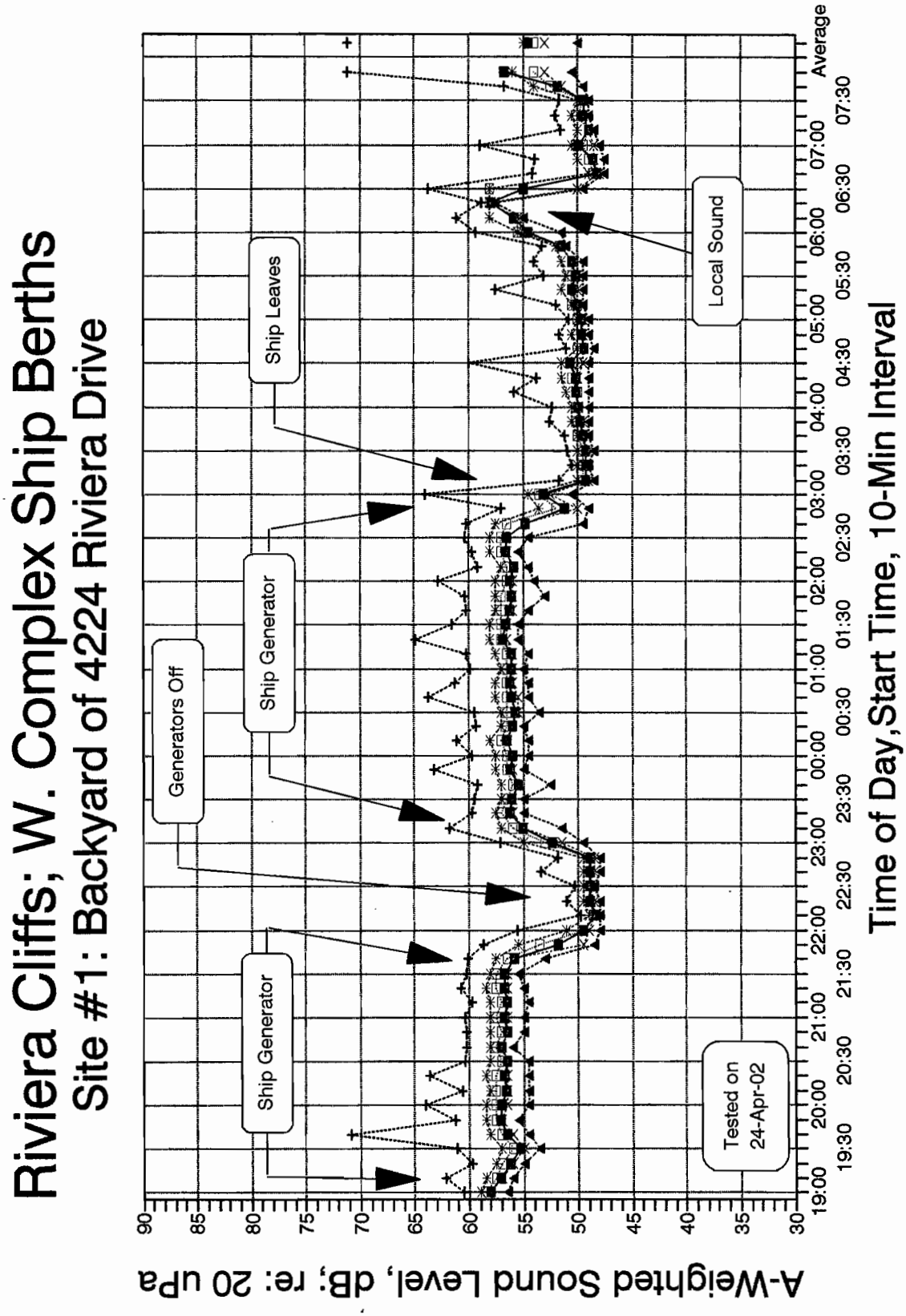

Figure 5. Variations in Sound Measured on April 24 at Position #1 With a Ship at the West Complex, Berth 20.

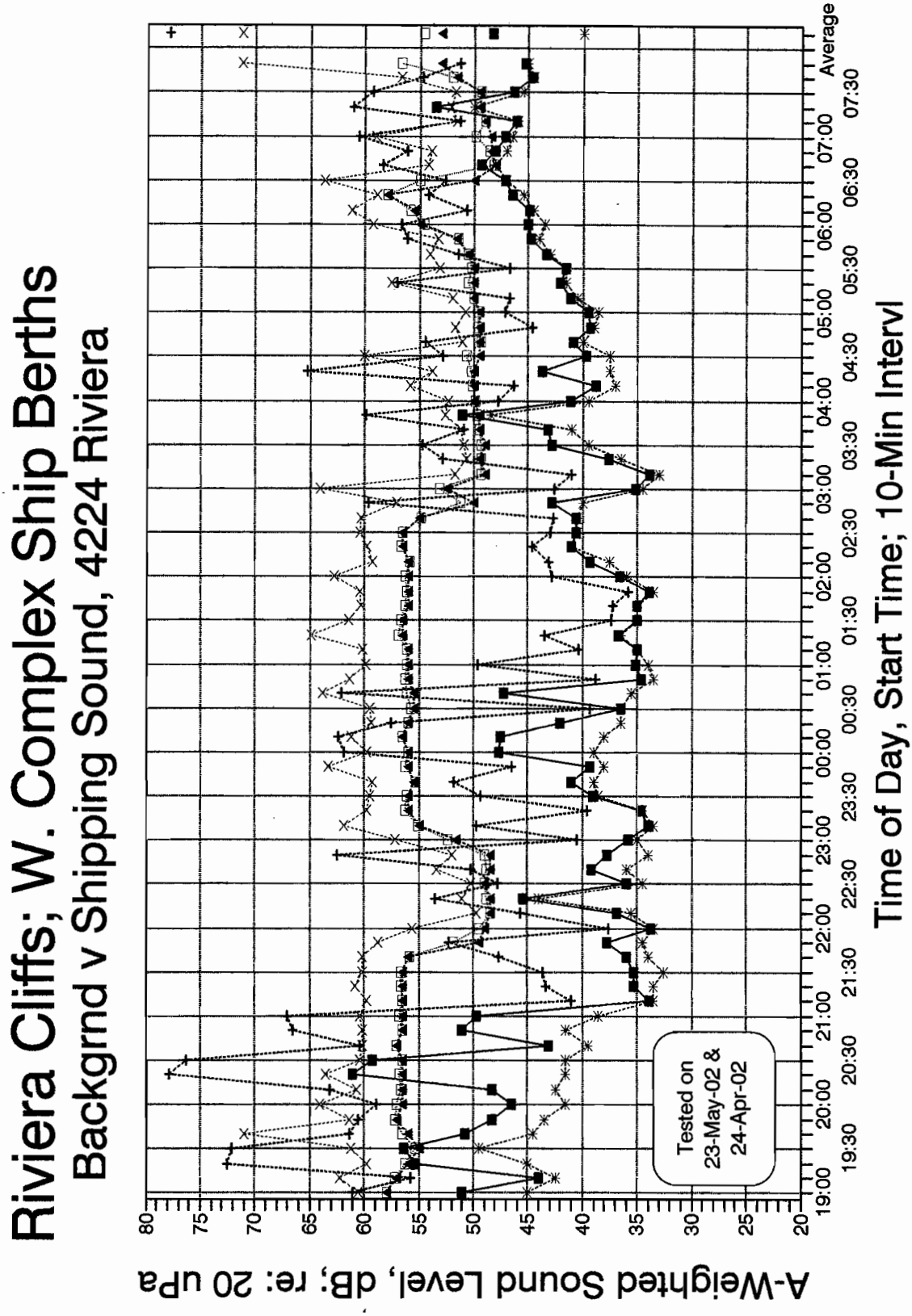

Figure 6. Results of Background Sound Test Compared to Sound Measured at Site #1 with a Ship in Berth 20.

R02136: SMW; POS Shipping; Noise Impact on Riviera Cliffs Residents, January 19, 2004

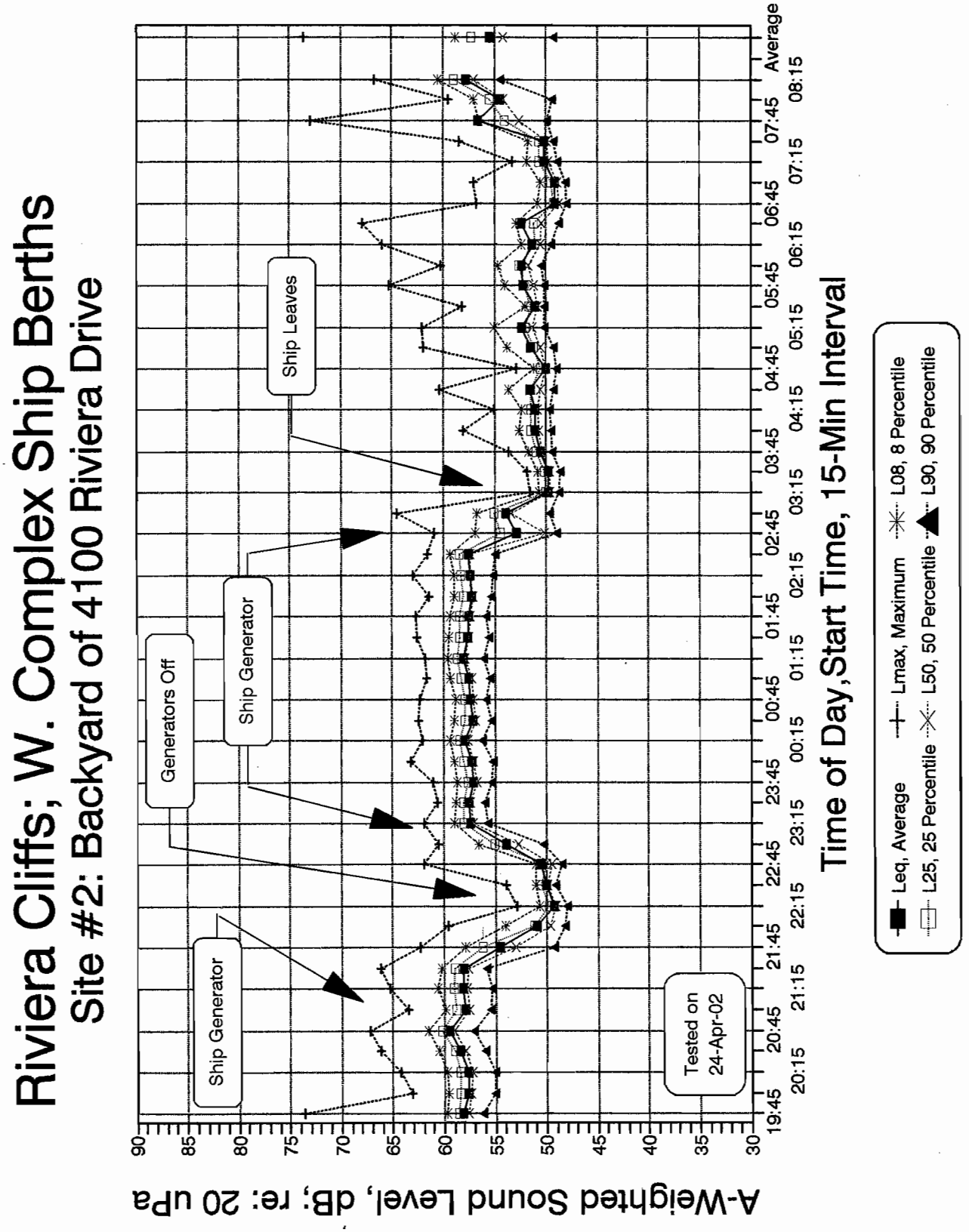

Figure 7. Sound Variations Measured on April 24 at Position #2 With a Ship at the West Complex, Berth 20.

R02136: SMW; POS Shipping; Noise Impact on Riviera Cliffs Residents, January 19, 2004

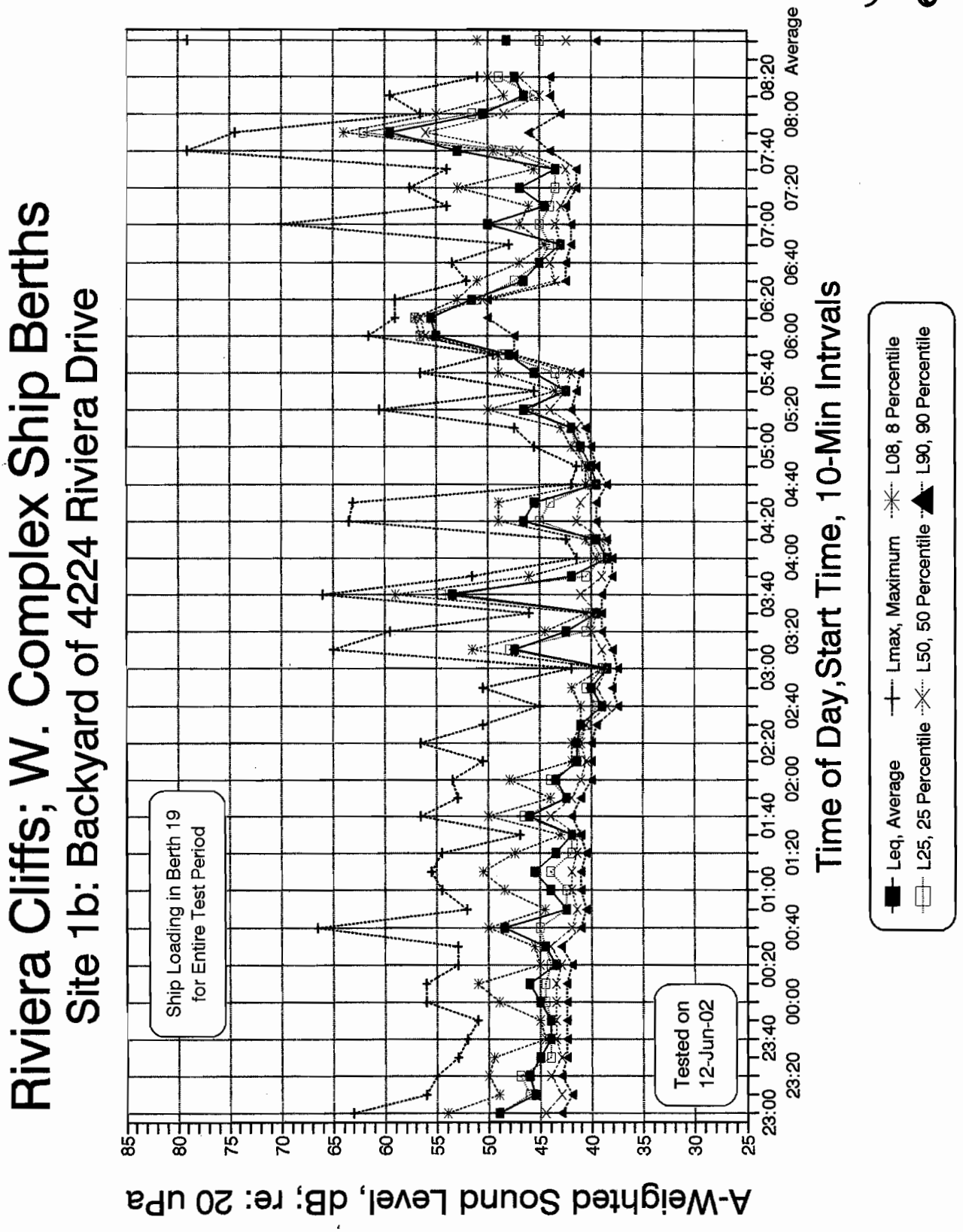

Figure 8. Variations in Sound Measured on June 12 at Position #1b With a Ship at the West Complex, Berth 19.

R02136: SMW; POS Shipping; Noise Impact on Riviera Cliffs Residents, January 19, 2004

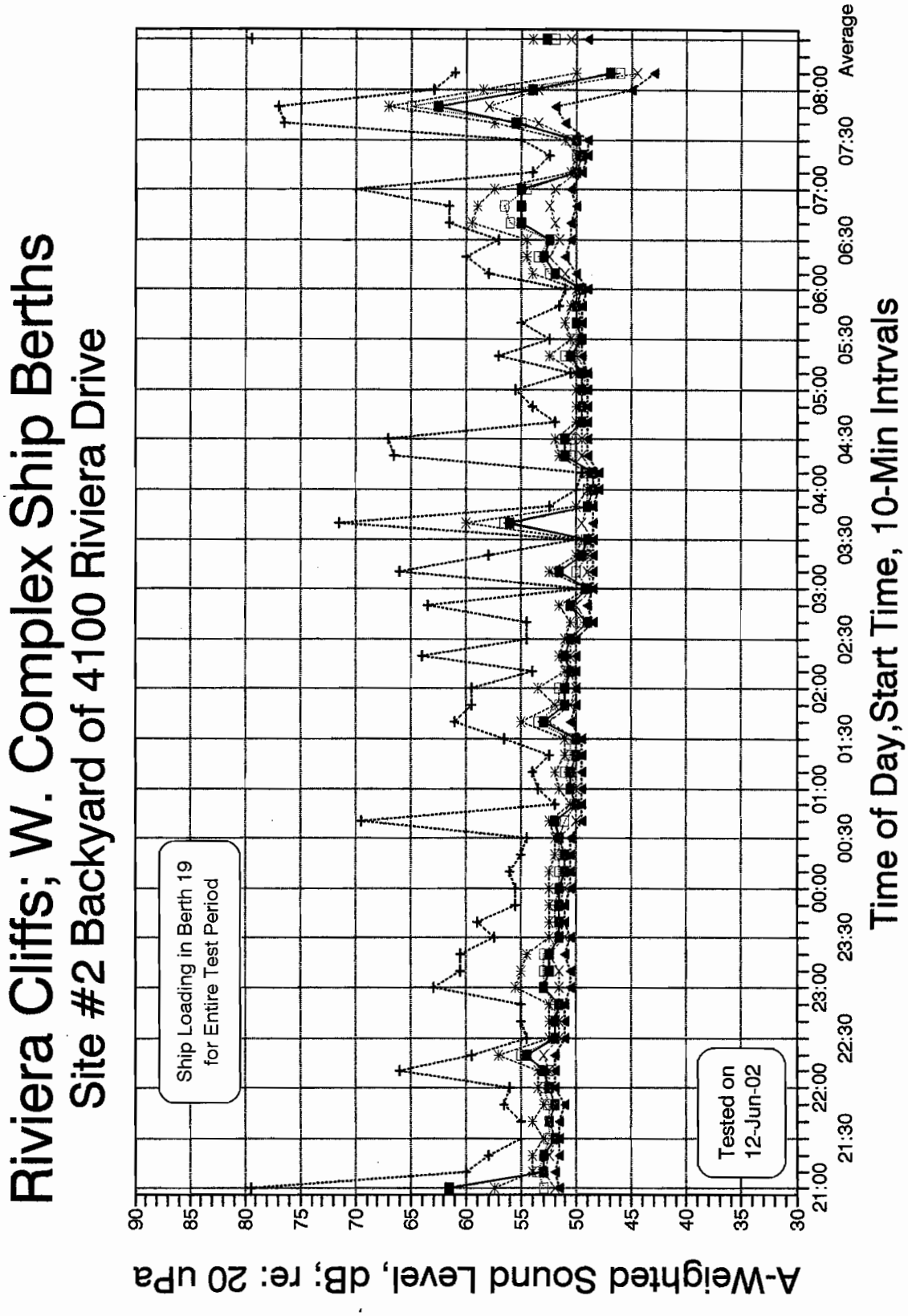

Figure 9. Sound Variations Measured on June 12 at Position #2 With a Ship at the West Complex, Berth 19.

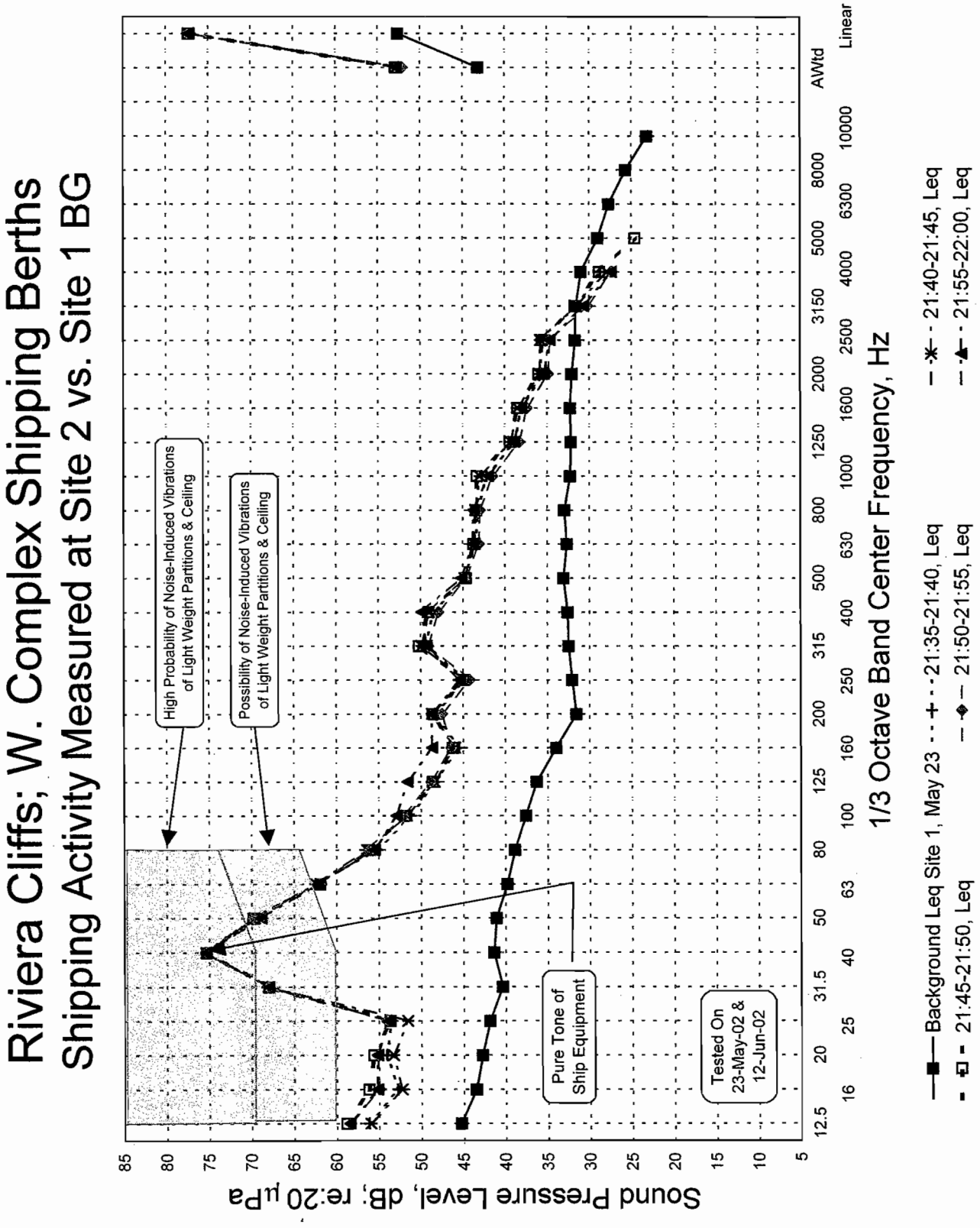

Figure 10. Tonal Content of Sound Measured at Site #2 with a Ship in Berth 19 Compared to Background at Site #1.

R02136: SMW; POS Shipping; Noise Impact on Riviera Cliffs Residents, January 19, 2004

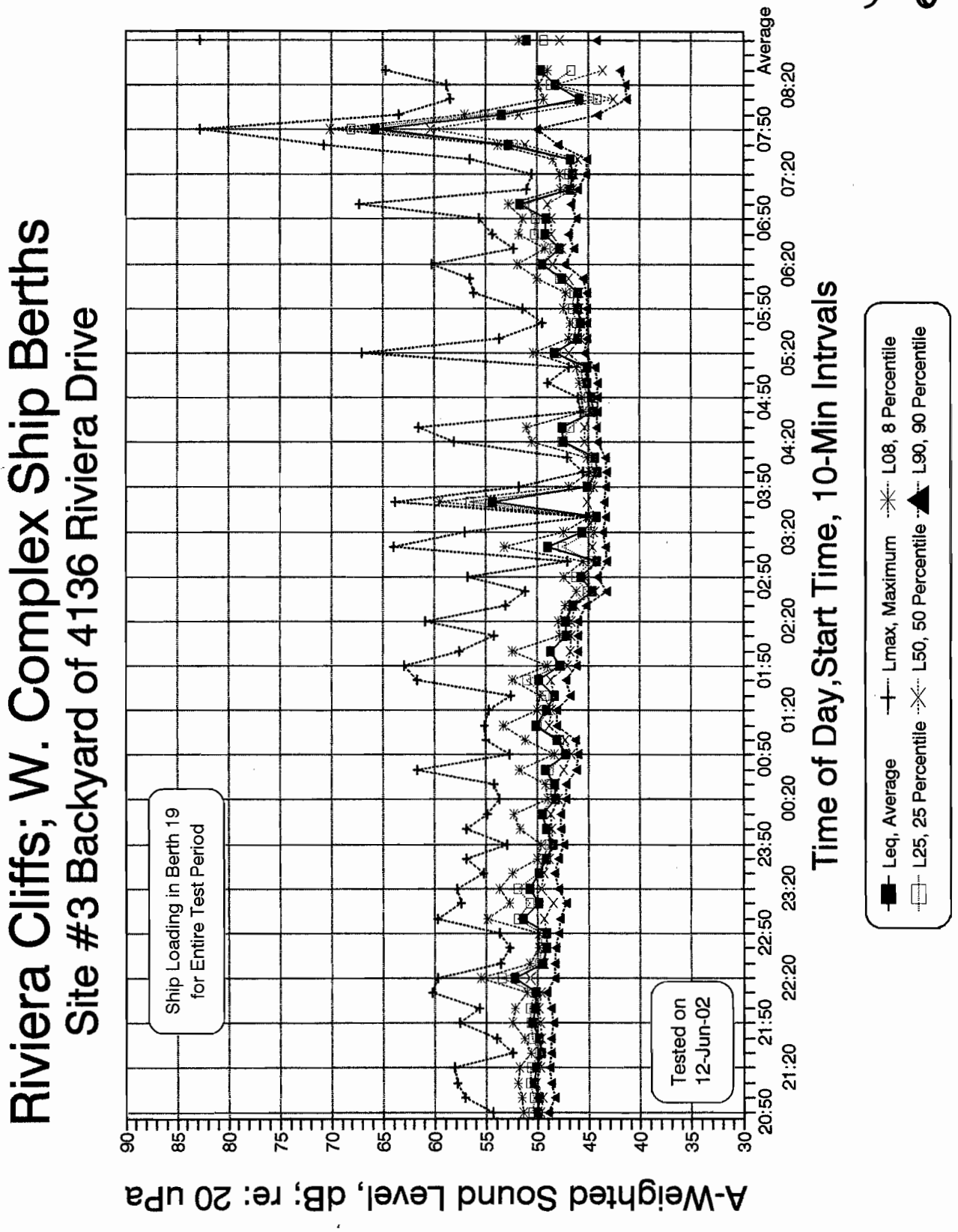

Figure 11. Results of Continuous Sound Measurements on June 12 at Position #3 With a Ship in Berth 19.

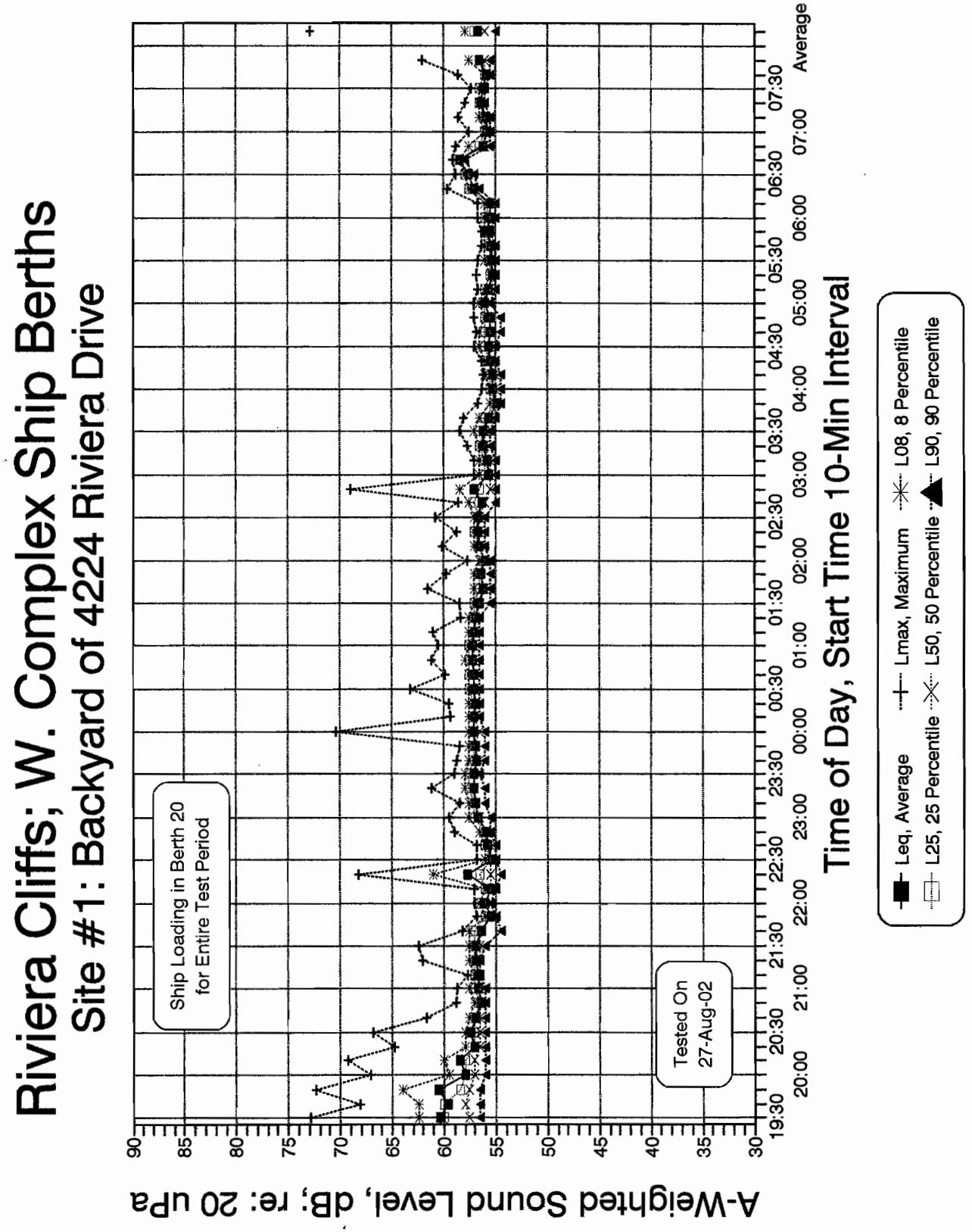

Figure 12. Variations in Sound Measured on August 27at Position #1 With a Ship at the West Complex, Berth 20.

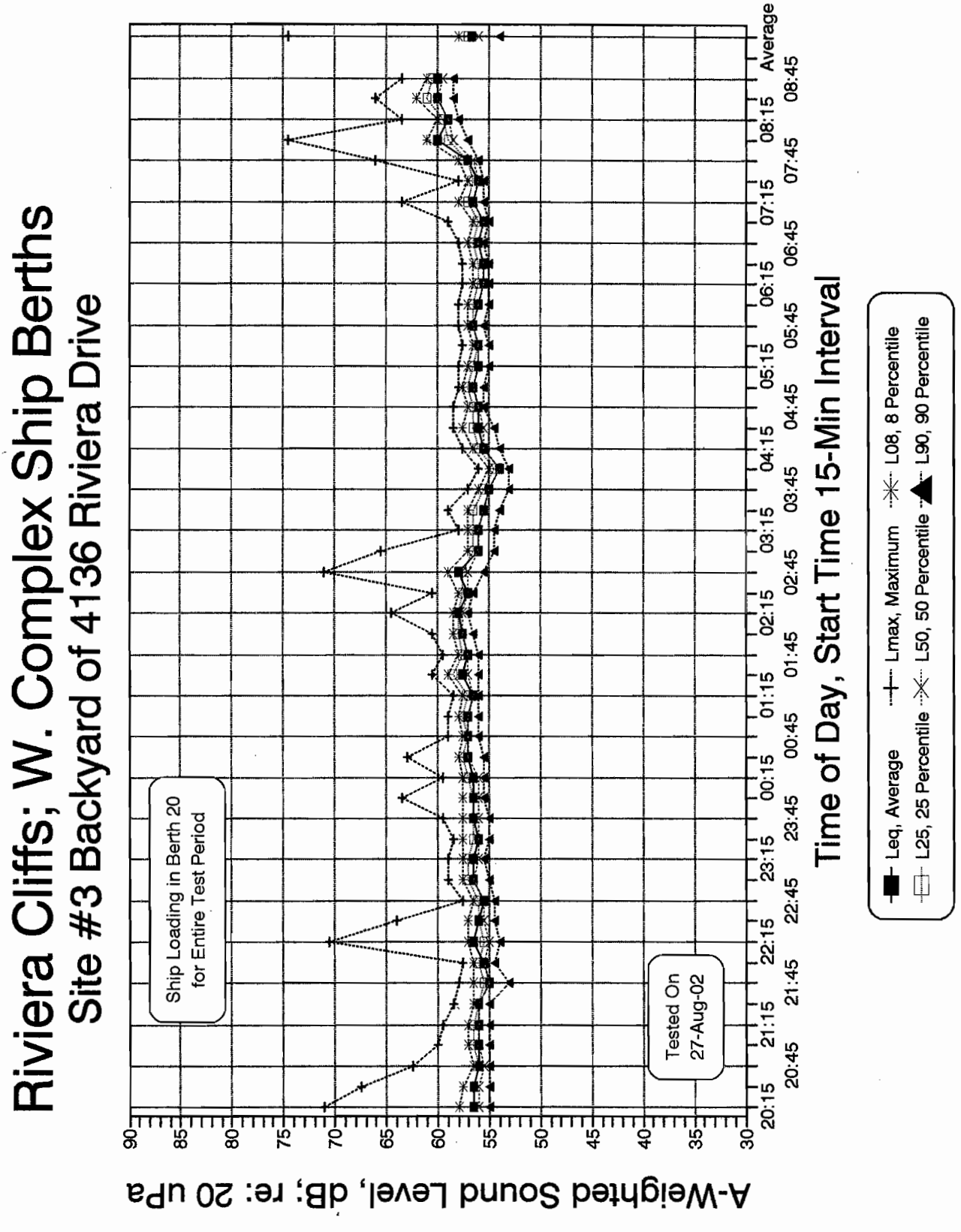

Figure 13. Sound Variations Measured on August 27 at Position #2 With a Ship at the West Complex, Berth 20.

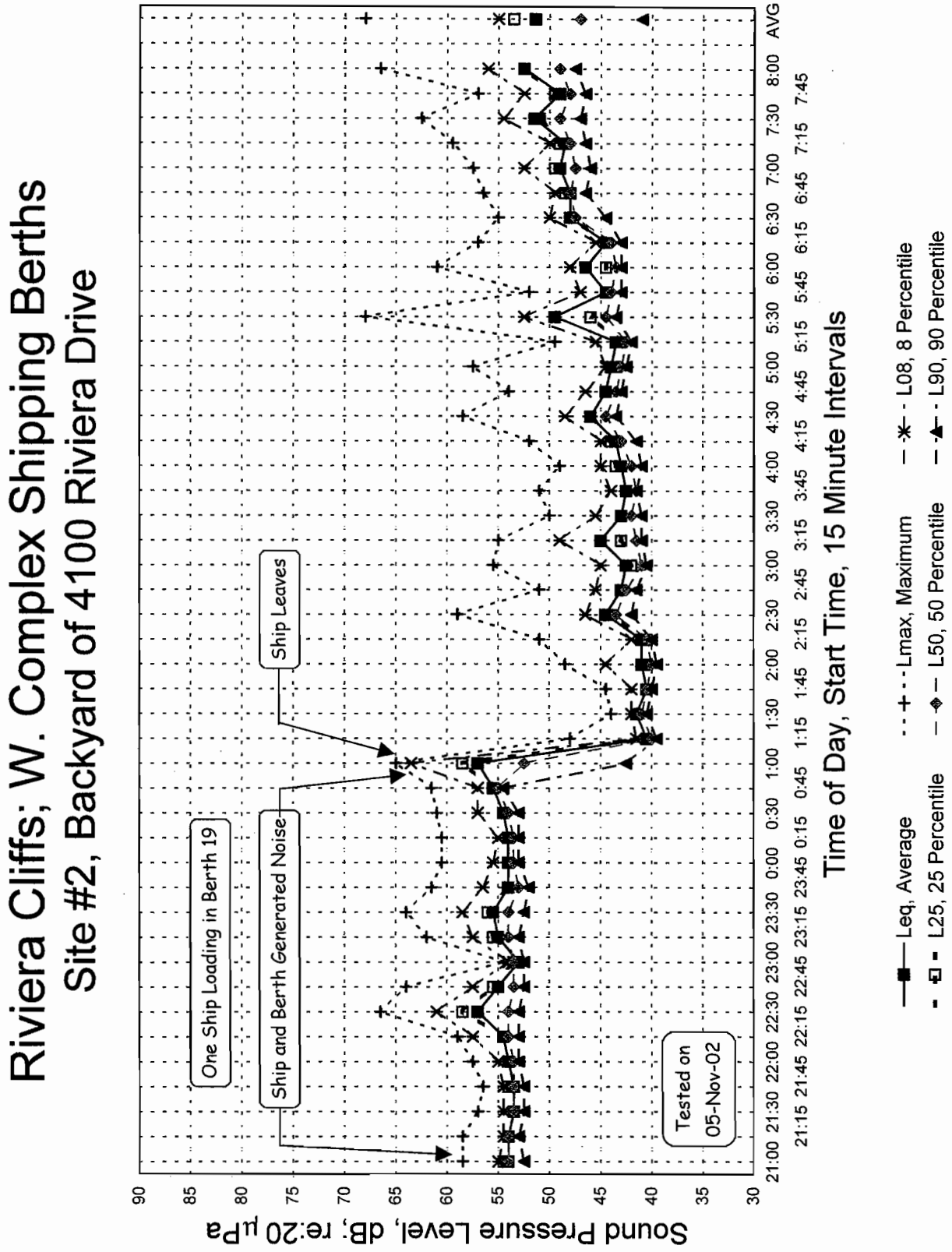

Figure 14. Results of Continuous Sound Measurements Made on November 5 at Position #2 With a Ship in Berth 19.

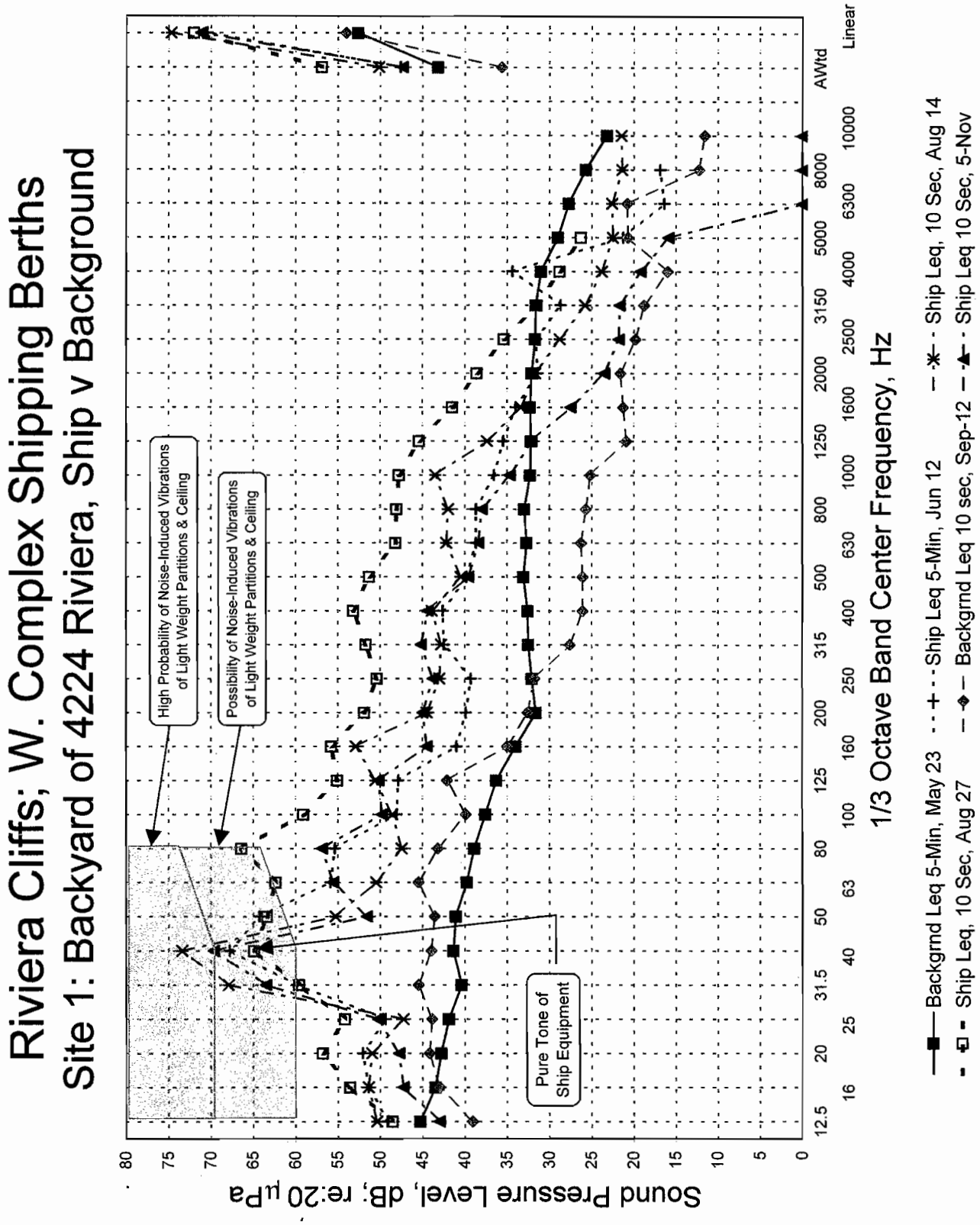

Figure 15. Tonal Content of Sound Measured at Position #1 with Ships in Berths 19 and 20 Compared to Background.

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The Acoustics & Vibration Group

5700 Broadway Sacramento, CA 95820-1852

916-457-1444 FAX. 916-457-1475

Consultants in Acoustics, Vibration & Noise Control

Letter of Transmittal

RECEIVED
JAN 22 2004

ENVIRONMENTAL SCIENCE ASSOCIATES
RECEIVED
JAN 2 2 2004
PORT OF STOCKTON

Date: January 21, 2004

To: Ray Weiss
Environmental Science Associates
8950 Cal Center Drive, Suite 300
Sacramento, CA 95826

From: Brian R. Smith

SUBJECT: Corrections to Port of Stockton West Complex Noise Impact Study

---

Upon further review of the report entitled, "Noise Impact Study of Shipping Activity at the Port of Stockton West Complex on Residents of Riviera Cliffs," we found an error in two of the figure titles. Enclosed are the corrected figures along with a new list of tables/figures from the table of contents section. Please contact us if you have any questions or comments.

LIST OF TABLES

TABLE I. Applicable Maximum Allowable L_{dn} Sound Levels for Transportation Sources Excerpted from the City of Stockton Noise Element. 3

TABLE II. Maximum Allowable Exterior Sound Limits for Locally-Regulated Noise Sources as Given in Table 1 of Noise Section of City of Stockton ***General Plan***. 4

TABLE III. Noise Limits from the State's Model Noise Ordinance for Suburban Residential Land Uses for Non-Transportation Sound Sources. 5

TABLE IV. Sound Levels Measured on 23-May-02 at Two Positions Along Riviera Drive With No Ships in Port, West Complex, Port of Stockton. 8

TABLE V. Sound Levels Measured on 12-Sep-02 at Two Positions Along Riviera Drive With No Ships in Port at West Complex, Port of Stockton. 9

TABLE VI. Sound Levels Measured on 24-Apr-02 at Two Positions Along Riviera Drive With a Ship in Port at Berth 20, West Complex, Port of Stockton. 11

TABLE VII. Sound Levels Measured on 12-Jun-02 at Three Positions Along Riviera Drive With a Ship in Port at Berth 19, West Complex, Port of Stockton. 12

TABLE VIII. Sound Levels Measured on 27-Aug-02 at Two Positions Along Riviera Drive With a Ship in Port at Berth 20, West Complex, Port of Stockton. 14

TABLE IX. Sound Levels Measured on 5-Nov-02 at One Positions Along Riviera Drive With a Ship in Port at Berth 19, West Complex, Port of Stockton. 16

LIST OF FIGURES

Figure 1. Results of Continuous Background Sound Measurements Made on May 23 at Site #1, 4224 Riviera Drive. 18

Figure 2. Variation in Background Sound Measured in 10-minute Intervals at Position #2 on May 23, 2002. 19

Figure 3. Background Sound Variations Measured in 10-Minute Intervals at Position #1 from September 12, 2002. 20

Figure 4. Results of Background Sound Measurements Made on September 12 at Site #3, 4136 Riviera Drive. . . . 21

Figure 5. Variations in Sound Measured on April 24 at Position #1 With a Ship at the West Complex, Berth 20. . . 22

Figure 6. Results of Background Sound Test Compared to Sound Measured at Site #1 with a Ship in Berth 20. . . . 23

Figure 7. Sound Variations Measured on April 24 at Position #2 With a Ship at the West Complex, Berth 20. 24

Figure 8. Variations in Sound Measured on June 12 at Position #1b With a Ship at the West Complex, Berth 19. . . 25

Figure 9. Sound Variations Measured on June 12 at Position #2 With a Ship at the West Complex, Berth 19. 26

Figure 10. Tonal Content of Sound Measured at Site #2 with a Ship in Berth 19 Compared to Background at Site #1. 27

Figure 11. Results of Continuous Sound Measurements on June 12 at Position #3 With a Ship in Berth 19. 28

Figure 12. Variations in Sound Measured on August 27at Position #1 With a Ship at the West Complex, Berth 20. . 29

Figure 13. Sound Variations Measured on August 27 at Position #3 With a Ship at the West Complex, Berth 20. . . . 30

Figure 14. Results of Continuous Sound Measurements Made on November 5 at Position #2 With a Ship in Berth 19. 31

Figure 15. Tonal Content of Sound Measured at Position #1 with Ships in Berths 19 and 20 Compared to Background. 32

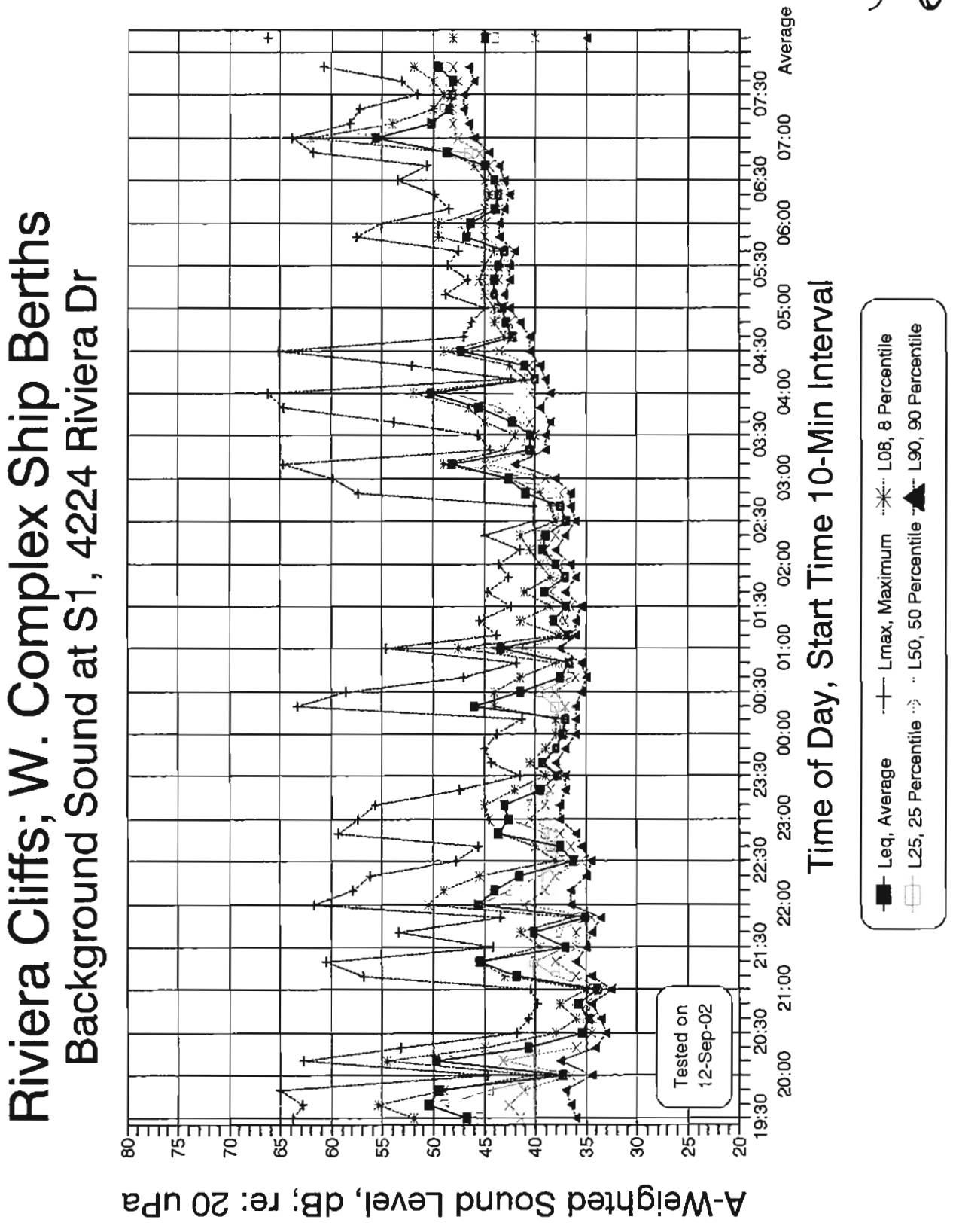

Figure 3. Background Sound Variations Measured in 10-Minute Intervals at Position #1 from September 12, 2002.

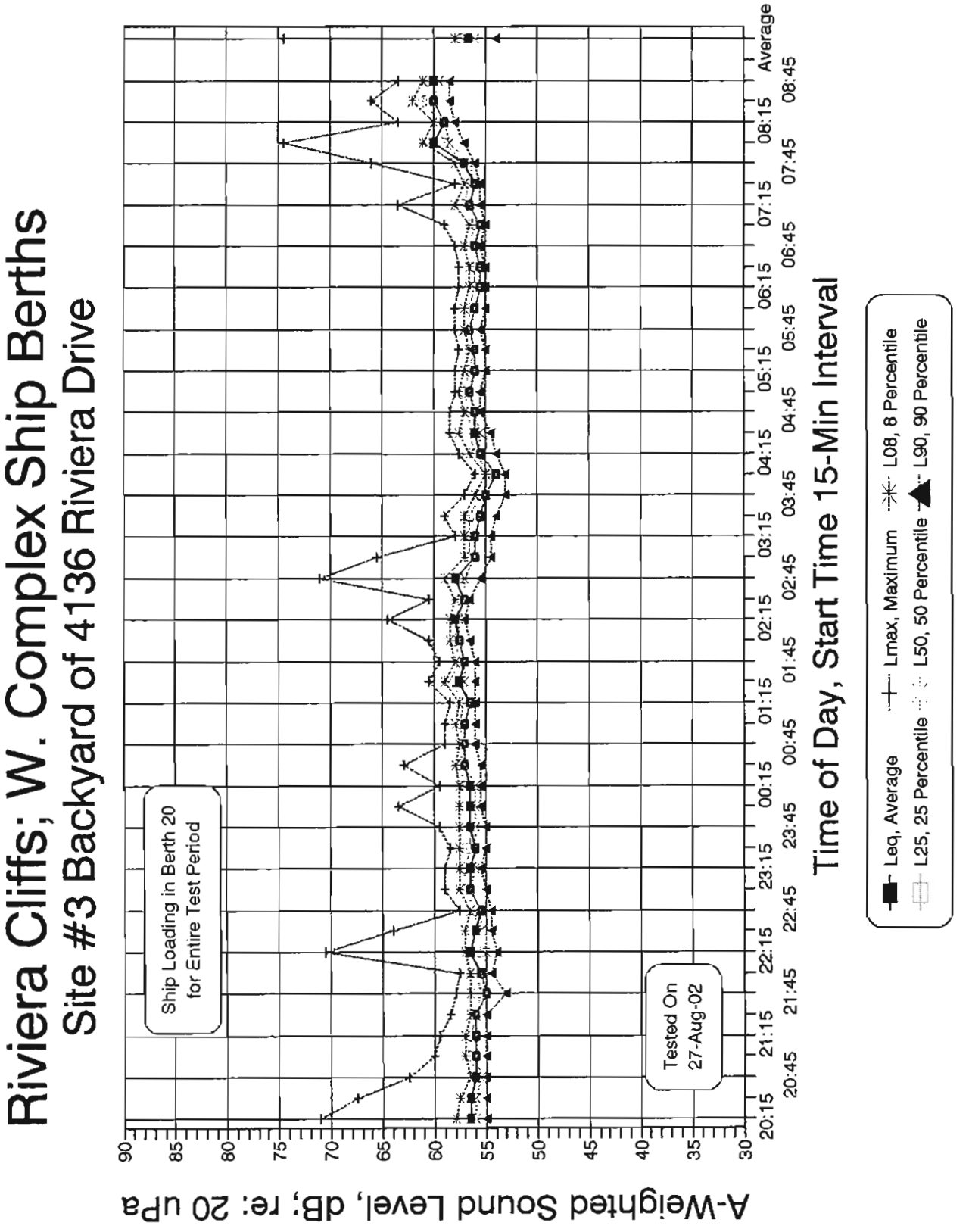

Figure 13. Sound Variations Measured on August 27 at Position #3 With a Ship at the West Complex, Berth 20.

Letter P26

4136 Riviera Drive
Stockton,CA 95204
January 20, 2004

RECEIVED
JAN 2 0 2004
PORT OF STOCKTON

Ray Weiss, Project Manager
Environmental Science Associates
8950 Cal Center Drive, Suite 300
Sacramento, CA 95826

RE: Draft Environmental Report , Port of Stockton

Dear Mr. Weiss:

In reference to the above named report, the following comments are offered for your consideration.

According to the Navy Property Transfer/Review Environmental Assessment, dated April, 1998, Rough & Ready Island (Island) was used by the Navy during the war as an annex to the Navy Supply Depot of Oakland. After the war, the facility was largely unused from 1956. In 1965 the Island was decommissioned as a supply annex and recommissioned as the Communications Center. From 1965 on, there was virtually no Navy activity other than the Communication Center, which was located to the south of the warehouses. P26-1

The 200 foot wide shipping channel has historically been maintained by the Army Corps of Engineers to allow ships to pass through on the way to the Port of Stockton at the location established 70 years ago. Other than the 200 foot wide area, the channel had not historically been dredged.

I.

The Draft Environmental Impact Report (DEIR) at page 3-5 refers to the Amended Initial Study/Mitigated Negative Declaration(IS/MND) was "for the dredging of Berths 14, 15, & 16...and was completed in December, 2001". In fact, the IS/MND described berths K, J, & I, not 14, 15, and 16. K, J, and L were subsequently redesignated 19 and 20. The map in that report at Figure 1-2 shows the 1400 linear feet along 19 and 20 at the west end of the Island, not 14, 15, and 16 to the east, then designated B, C, and D. Further, what the DEIR describes as "maintenance" dredging was not to bring the area to a previously maintained depth, but to deepen it by 11 feet to achieve a depth of 30 feet (IS/MND at page 1-5). P26-2

A further error is noted at pages 2-7 and 3-5 where it describes "existing" Ro-Ro uses. There is not now, nor has there ever been that type of shipping at the Island. In fact, while the property was owned and used by the Navy and its lessees, there had been no commercial shipping along the Stockton Channel. Until the Port of Stockton gained control of the Island, the only cargo ships in the channel were those moving to or from the Port of Stockton.

II.

This DEIR is the required study of the Development Plan commissioned by the Port in 2000. This study is mandated by CEQA, and should therefore be based on the existing conditions as of 2000, and the impact P26-3

of the planned changes evaluated.

The fundamental purpose and function of the EIR is to provide information of potential impacts of a proposed project before approval, not to justify the project already commenced. Therefore, this study should have preceeded alterations or additions to the Island. The Port, by dredging the waterway at the west end of the Island; by building infrastructures and railroad facilities; by leasing its property for heavy industrial uses; and, by bringing ships and shipping activity to that area has in effect approved and proceeded with the Development Plan without the studies mandated by CEQA.

In the paragraph entitled "Existing Noise Environment", at page 4.5-8, the noise described in the project area (1-5) have all been created by and as a result of additions or alterations made by the Port since 2000. P26-3 (Cont.)

The DEIR should use as a basis for the study the conditions as of 2000, and not the conditions as modified or changed since that date. To treat the current use and conditions as a basis, and to weigh the impact only of that portion of the planned project not yet completed, is to effectively allow development without a mandated environmental study.

The Port has bypassed the process established by CEQA by proceeding with the Development Plan since 2000. To make a true assessment of the impact of the proposed project, it must be by comparison to the use and activity over the 40 to 50 years before it was acquired by the Port - not the unapproved and unstudied alterations.

III.

To properly assess the potential harm of the project, it is necessary to adequately describe the areas impacted. At each section in the DEIR where reference is made to the area to the north of the Island, it states that the project area is bounded on the north by the Stockton Channel. When there is a description of the area across the channel, it is broadly described as "industrial, residential, and recreational facilities, including the Stockton Country Club and Louis Park". In fact, the only industrial area opposite the Island is across from the private 23 acres and the adjoining golf course at the most easterly end of the Island. P26-4 Of the proposed development as shown in Figure 3-4, all will be across the channel from residences and recreational facilities, some as close as 400 feet away, and at the widest point, less than 700.

Figure 4.5-3 marks "Offside Residential Sensitive Receptors". Nowhere is there a description of the nature of these residential sections. The marked area to the west of the Calaveras River is in the Brookside development, one of the newest and most exclusive developments in Stockton. It is a gated community with lakes and a

private golf course, and many homes valued over $1. million. Riviera Cliffs is between the Calaveras River and Stockton Golf and Country Club, was developed in the 1950's, with 109 homes, and a desirable upper middle class neighborhood. To the east of the golf course, is the very exclusive Atherton Island, accessible by a single gated bridge, and Atherton Cove, one of the newest gated developments, with large and expensive homes. Also marked are the wonderful homes along Smith's Canal. (Also see the enlarged map of this area at 4.5-4). P26-4 (Cont.)

The impacted residences are on some of the most expensive real estate in Stockton, well maintained and desirable neighborhoods, which by impact of noise, pollution,and reduced quality of life - will suffer sutstantial devaluation.

It is also noted that the DEIR has marked only those homes on the water as impacted. However, noise and pollution does not stop so abruptly, and many more homes will be equally impacted.

IV.

Prior to the transfer of the Island to the Port, the Navy Property Transfer/Review Environmental Assessment (REA) was prepared. Included in that document at Appendix B is a letter dated February 16, 1996, and attached "Port Facility Redevelopment Plan (PFRP)", both signed by Alexander Krygsman, the then Port Director. As part of its proposal to the Navy, the Port proposed a recreational boat facility in great detail on page B-4, as follows:

> "The Port proposes to develop a recreational boat facility which would contain a boat storage facility for both covered and uncovered storage, a boat repair and washdown area, retail shops, and restrooms. Ramps accessible to the channel would be installed for boat traffic. A secured parking area would be provided for automobiles with ample lighting, and the landscaping within the facility area could include a picnic/ park area." P26-5

In its decision, the Navy considered the PFRP land uses and development assumptions - including expressly the recreational marina (see REA, page 2-5).

A recreational marine would be more compatible with existing neighborhoods; would not harm the environment; would utilize the space 365 days a year and provide full time employment rather than temporary or part time employment which is typical of shipping labor; and provide services to the boaters who use our1,000 miles of inland waterways.

V.

The DEIR does not weigh alternatives in a meaningful way. Although as stated above, the recreational marina was proposed by the Port and acknowledged by the Navy as it evaluated and approved the transfer to the Port, the DEIR rejects that use summarily because it is different than the current objectives. As a further reason for rejection, the P26-6

marina "would eliminate existing Port operations". For the reasons stated in paragraph III above, that is not a valid position.

An alternative that would not harm neighbors, and would be aesthetically pleasing is worthy of more than a cavalier rejection over the proposed activity which admittedly causes substantial and unavoidable impact on extensive, established, valuable and above-average residential neighborhoods.

VI.

There is an environmentally superior alternative to the plan depicted in Figure 3-4, which would not create the serious impact on hundreds of families. The DEIR does not evaluate the current Port facilities, which have serve Stockton for 70 years. There are 10 berths available, and there are 600 acres owned by the Port. (See description at page 2-8) Much of that is in leased out and some portions are not currently used at all. P26-6 (Cont.)

The Port has said recently that there was only one occasion when there were 5 ships in Port at one time. The DEIR should address the ability of the current facility - with full utilization - satisfy their needs, and balance that alternative against the extensive harm that they acknowledge will be suffered under the proposed project.

In considering the various alternatives at page 2-7, with a choice between the marine terminal development on the north side of the Island, and the commercial development/industrial park, the defining choice was the salvaging of 405 acres of agricultural land. When one considers the hundreds of thousands of acres of agricultural lands that have been converted to other uses - just in this valley - it is incomprehensible that 405 acres - inbalance - are more significant than the damage to hundreds of families caused by proceeding with the heaviest of all industrial activities within a few hundred unobstructed feet of valuable residential properties.

VII.

The waterway along the Island is very narrow and creates a safety issue.

Historically, the Army Corps of Engineers has maintained a shipping channel to a depth of 35 feet. The shipping channel is 200 feet wide, and runs 125 to 150 feet from the Island. If, as the Port proposes, the waterway is dredged to 35 feet from the shipping channel to the docks, the total width of the navigable waterway would be at the most 350 feet wide. When a large cargo ship is docked at the Island, it leaves very limited space for another ship to pass by. Added to the problem of a narrow space is the curve in the channel. On those occasions when a ship is docked, there is little leeway for the huge passing ship, and a real potential for accidents. P26-7

The DEIR describes the kinds of products shipped from the Port, including liquified petroleum gas, fertilizers, amoniated products,

as well as other toxic materials. If a ship carrying one of those products had an accident, the resulting environmental harm could be felt for years. If there was an explosion in the narrow waterway, it woul cause a high magnitude disaster. P26-7 (Cont.)

The DEIR should address the issue of public safety.

It is respectully suggested that, considering the character of the adjacent properties that would be impacted by the proposed project, it is not the highest and best use available for Rough and Ready Island. P26-8

Very truly yours,

Ann M Chargin

ANN M. CHARGIN

cc - J. Gordon Palmer
Port of Stockton
P. O. Box 2089
Stockton, CA 95201-2089

Robert Perlmutter

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Letter P27

FREEMAN, D'AIUTO, PIERCE, GUREV, KEELING & WOLF
A PROFESSIONAL LAW CORPORATION
1818 GRAND CANAL BOULEVARD, SUITE 4, STOCKTON, CALIFORNIA 95207

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THOMAS H. KEELING
ARNOLD J. WOLF

JOHN W. VISS
ELIZABETH F. GUREV
COREN D. WONG
KOURTNEY C. VACCARO
ALYSIA F. STEVENSON

RECEIVED
JAN 20 2004
PORT OF STOCKTON

January 20, 2004

Port of Stockton
Administrative Building
2203 W. Washington Street
Stockton, CA 95201

HAND DELIVERED

Attention: Richard Aschieris, Port Director
J. Gordon Palmer, Jr., Deputy Port Director

Re: Port of Stockton West Complex Development Plan
Comments to Draft Environmental Impact Report, November 2003

Gentlemen:

Thank you for meeting with me at my home on Tuesday, December 23, 2003. Per our discussion, these are my comments and concerns:

I live at 2300 Virginia Lane, opposite the Port Embarcadero wharfs and warehouses. I request the following studies and remediation:

1. All lighting should be hooded so as not to point at my house. P27-1

2. Land based generators, if any, should be selected based on the lowest possible decibel emission and the best sound muffling and baffling available (i.e. electric). Ships may be required to use land based quiet electric generators. They should be studied to determine if ship to shore electric connection requirements are reasonable. P27-2

3. Ships should be managed so as to be docked with generators as far away from our house and other residences, as possible. We need a study to determine if all

3-601

TELEPHONE 209.474.1818 • FACSIMILE 209.474.1245 • EMAIL: MAIL@FREEMANFIRM.COM

high noise emission cargoes (i.e. steel as opposed to auto) can be directed to the downtown wharfs a the east end of the channel.

4. Often the most intrusive sound is from the shrill backup horns on the forklifts. A study should be made to determine if there are alternative less shrill backup horns which comply with law. Further, a complete study should be made to determine what legal exceptions allow a reduced or lower register sound from backup horns including possible application to governmental agencies including OSHA.

5. A study should be made to determine what land based baffles can be placed on or adjacent to the warehouses to absorb and reduce decibel emission toward our house to the north.

6. In our discussion you pointed out that one of the major sources of noise emissions came from the vessels, onboard generators and loading operations. You also indicated that you believed that the Port had no practical power to regulate noise emitted from the vessel's generator and ancillary operation and that to be competitive the vessels had to be allowed to operate 24/7. I know that even through there are economic consequences, that airports around the country have regular noise emissions particularly at night so as to lessen the interference with the quiet enjoyment of residential homeowners. I request that you have experts study to determine whether or not other ports have regulated import vessels either as to time of operation or as to requiring that the vessels utilize quiet generators and/or muffling or baffling devices. Liberia should not necessarily set the standard of care for our ports. It is unjust to allow foreign registry vessels to operate without employing available decibel baffling and muffling technology. The result is to shift the financial burden of nuisance, trespass, inverse condemnation claims to the Port. A comprehensive study of what methods are used at other American ports should be undertaken. P27-2 (Cont.)

7. I wish to immediately commence the program set forth in Chapter 4.5.2b of the Environmental Impact Report as follows:

"At the request of any homeowner where noise from Port operations exceeds 60 DNL, the Port will retain a <u>qualified acoustical consultant</u> to evaluate interior noise levels to determine if Port operations are resulting in interior noise that exceeds 45 DNL. Residences with air-conditioning will be evaluated with windows closed; residences with no air conditioning will be evaluated with windows open if that is the normal operating condition. If it is determined that

Port of Stockton
January 20, 2004
Page 3

Port operations are resulting in interior noise levels exceeding 45 DNL , the Port will identify building treatments to reduce interior noise resulting from Port operations to 45 DNL or less. Treatments may include installation of air-conditioning, upgrading windows and doors, and eliminating noise flanking paths. The Port will provide construction drawings and specifications for the treatments to the homeowner. The homeowner will then be responsible for receiving 3 bids from qualified contractors to implement the treatments. The Port will reimburse the homeowner for the cost of the lowest bid after treatments are completed. The Port will not implement the treatments unless wall systems are generally in compliance with building codes." P27-2 (Cont.)

This last sentence is unacceptable and should be stricken because only brand new homes comply with current code. Homes, as mine, which passed building inspection when built should be entitled to this assistance.

Please advise me as soon as possible of the names of the acoustical consultant contemplated in this paragraph.

I look forward to working with you on a good neighbor basis to mitigate potential, future damage and/or acquisition occasioned by the Port's decibel emissions when studies are completed. I look forward to meeting to discuss this with you further. So far the port utilization and construction activities have not been nuisance at my house. Before expansion of uses to our vicinity I request that studies be completed so that appropriate mitigation measures may be instituted. Once again thank you for your kindness in meeting with me. Hopefully we can enter into a good neighbor agreement having specific mitigation measures for my house. P27-3

Very truly yours,

MAXWELL M. FREEMAN

MMF:dm

cc: Gary Christopherson

PROOF OF SERVICE

I hereby certify that I am a citizen of the United States, over the age of eighteen years, and not a party to the within action. My business address is 1818 Grand Canal Boulevard, Suite 4, Stockton, California 95207. On this date, I served the attached

Letter to Port Director Richard Aschieris, and J. Gordon Palmer, Jr., Deputy Port Director

by personally delivering a true copy thereof to the parties or persons or with the receptionist or person having charge of the premises at the address(es) set forth below.

Name of Party and Attorney:

Port of Stockton
Administrative Building
2203 W. Washington Street
Stockton, CA 95201

Name of Party and Attorney:

The acts described above were undertaken and completed on January 20, 2004.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, and that this declaration was executed on January 20, 2004, at Stockton, California.

Christian Gaines

Letter P28

January 20, 2004

Port of Stockton
Administrative Building
2203 W. Washington Street
Stockton, CA 95201

RECEIVED
JAN 2 0 2004
PORT OF STOCKTON

Attention: Richard Aschieris, Port Director
J. Gordon Palmer, Jr., Deputy Port Director

Re: Port of Stockton West Complex Development Plan

Gentlemen:

Thank you for taking the time to meet with the Homeowners Group of Atherton Cove. I appreciate that the administrators of the Port are going to make every effort to insure proper mitigation of the problems that will result from the expansion of the Port across the river from our homes.

My home is located directly behind the levy, in Atherton Cove. There are approximately 25 homes in the cove with an average age of 20 years. Currently the resale value of our homes average $1,000,000.00+.

Below I have outlined my concerns:

Allowing the ships to operate 24/7 with no rules in place on regulating noise emitted from generators, forklifts and overall operations of the port.

a. Ships should be docked with generators facing away from residences. Ships, with high noise emission, should be directed to the east port.
b. Land based generators should be carefully looked at and selected based on the lowest decibel emission.
c. Forklifts noise should be evaluated and time restrictions courteous of the homeowners should be recognized.
d. As Airplanes and Trains have definite restrictions placed on evening activity, so should the expansion of the Port of Stockton. Time restraints on evening traffic and noise should be minimally invasive to residential homeowners.
e. Our homes are 20-25 years old therefore they may not be in compliance with present building codes. I do not think this should be considered for mitigation.

P28-1

In conclusion, I feel that this expansion needs to be carefully researched for both the residential homeowners and the Port of Stockton to continue to exist in harmony. Thank you again for your time and effort in meeting with the community and I look forward to the follow up discussions on the research completed by the Port of Stockton. I do request that all research be completed and the results be made available to homeowners before permits are issued.

P28-2

Very Truly Yours,

Dwayne McClendon
3334 Cove Circle
Stockton, CA 95204

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Letter P29

RECEIVED
JAN 22 2004
ENVIRONMENTAL SCIENCE ASSOCIATES

January 20, 2004

RECEIVED
JAN 2 2 2004
PORT OF STOCKTON

Ray Weiss
Project Manager
Environmental Science Associates
8950 Cal Center Drive, Suite 300
Sacramento, CA 95826

Dear Mr. Weiss:

This letter will serve as comment to the Draft Environmental Impact Report (DEIR) for the Port of Stockton development plan for the West Complex (Rough and Ready Island).

Please note we have great concern about the serious air quality issues already facing our state. Most importantly, the Port of Stockton proposes to bring the ***most polluting industry*** into the interior of the center of California. To increase the activities of this kind of industry is the worst possible thing for our air and water quality in view of the fact that it is introduced into the heart of the interior region. P29-1

We are already in trouble.

This will affect the health of citizens and will bring serious water quality problems into the inland waterways. It is not in the best interest of society if it harms our environment… and there is no way to avoid the harm.

Sincerely,

Sherry Shields
4224 Riviera Drive
Stockton, CA 95204

Sent via fax 916 564-4501
Sent Regular Mail

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ORGANIZATIONS

KPM

KATZAKIAN
PROPERTY
MANAGEMENT
LTD

Letter O1

Received
JAN 2004

January 20, 2004

RECEIVED
JAN 2 2 2004
PORT OF STOCKTON

J. Gordon Palmer, Jr.
Deputy Port Director
Environmental, Planning & Facilities
P.O. Box 2089
Stockton, CA 95201

VIA FAX @ (209) 463-2362 AND REGULAR MAIL

Dear Mr. Palmer:

Many residents of Atherton Cove attended the meeting on January 15, 2004, regarding the proposed expansion of the Port of Stockton and listened to both sides of the project. The members present have some concerns which they wish to have expressed in this letter.

The noise and vibrations from the new facility will severely impact the quality of life of the residents of Atherton Cove. This impact, according to the report, cannot be eliminated. Although these impacts may be reduced through insulation, dual pane windows, etc. there is no mitigation for the residents to enjoy the outdoor amenities of their homes. Many of these homes are located on the water and others have large backyards with pools, BBQs and playground equipment. There is no mitigation efforts that would allow these residents to continue to use these areas without being disturbed by the noisy port. The current practice of opening up the windows during the summer months would also be impacted. This will cause increases in utilities and add to the pollution of the environment. The anticipation of being bombarded with noise and vibration 24 hours a day is not a favorable thought. If the expansion is allowed, limiting the hours of operation so that the residents can enjoy a peaceful nights sleep would help. O1-1

The pollution of the environment of the area is another concern. Builders are not allowed to put in fireplaces due to the poor air quality in the area during the foggy winter and hot summers. For those of us who still use wood burning fireplaces or wood stoves, we are being asked not to use them during the extended foggy days. There are fines being levied for those who do not comply yet some of the worst polluters in the world will be coming into the Port of Stockton belching their toxic smoke into the sky. Even when they are O1-2

1811 Grand Canal Blvd. Suite 5 • Stockton, CA 95207-8107 • Phone: 209-957-6061 Fax: 209-957-3371 • Email: scpm@gotnet.net

docked, many will have their diesel generators going adding to the air pollution. According to those who have had time to review the DEIR, this issue was not addressed. The impact on the quality of the air will extend far beyond Atherton Cove and the adjacent property owners. O1-2 (Cont.)

The residents of Atherton Cove are not anti-Port of Stockton, but feel that there are major impacts on the quality of life for all Stockton residents that need to be addressed. According to you and the Director of the Port, the maximum number of ships in port at anyone time is 5. If there are 10 docks why is it necessary to expand into Rough & Ready Island. Why can't the current outdated warehouses be modified to accommodate new usages. Use part of the island away from current housing for off-loading vehicles and containers and install a buffer zone on the channel side of the island. O1-3

They also feel that the Port should not be above the process that all others must follow and should not be allowed to expand "existing" operations when none exist. The Port does not have the capability of off-loading of vehicles or containers or docking at Rough & Ready Island. Before these operations are granted, the total impact should be reviewed. There is currently very limited railroad access and this expansion should also be studied. O1-4

For whatever reason, the extensiveness of the proposed expansion was not readily publicized. Many nearby residents are just now hearing about the proposed expansion. They have not had an opportunity to fully review the DEIR for comments. It is therefore requested to either extend the public comment period or have an additional one granted so that the most severely impacted neighbors have adequate time to review this major change in their homes. Everyone has the right for peaceful enjoyment of the homes. Residents, workers and visitors of Stockton have a right to breath clean air. Please consider these issues when deciding the fate of the DEIR. O1-5

Sincerely,

Liz Franco, CCAM, PCAM for
Concerned Residents of Atherton Cove

cc: Dennis Erardi, President, Atherton Cove
Board of Directors of Atherton Cove
Ray Weiss, Environmental Science Associates
San Joaquin Valley Air Pollution Control District

DeltaKeeper

A PROJECT OF SAN FRANCISCO BAYKEEPER

Letter O2

RECEIVED
JAN 2 0 2004
PORT OF STOCKTON

20 January 2004

Gordon Palmer
Port of Stockton
2201 W. Washington Street
P.O. Box 2089
Stockton, CA 95201

Via Facsimile

Re: DRAFT EIR, PORT OF STOCKTON WEST COMPLEX DEVELOPMENT PLAN

Dear Mr. Palmer:

On behalf of DeltaKeeper, WaterKeepers Northern California, California Sportfishing Protection Alliance and the San Joaquin Audubon Society (hereinafter DeltaKeeper), thank you for this opportunity to comment on the Draft Environmental Impact Report for the Port of Stockton's West Complex Development Plan.

We incorporate by reference the comments regarding the DEIR submitted by the Central Valley Regional Water Quality Control Board and the comments submitted by Shute, Mihaly & Winberger on behalf of the residents of Riviera Cliffs. O2-1

Please place us on all mailing lists for this project, specifically; we request that you notify us of any hearings and issuance of the Notice of Determination. If you have questions or require clarification, I can be reached at 209-464-5090. Thank you. O2-2

Sincerely,

Bill Jennings

3536 Rainier Avenue
Stockton
CA 95204

Telephone: 209 464 5090
Facsimile: 209 464 5174
Hotline: 1 800 KEEPBAY

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CHAPTER 4.0

RESPONSES TO COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT REPORT

CHAPTER 4.0

RESPONSES TO COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT REPORT

4.1 INTRODUCTION

Neither the comments on the Draft EIR nor the responses thereto raise any "significant new information" within the meaning of Public Resources Code section 21092.1 and CEQA Guidelines section 15088.5, therefore, the Port of Stockton, as the CEQA Lead Agency, directed that a Final EIR be prepared rather than recirculating the Draft EIR.

4.1.1 INDEX TO COMMENTS AND RESPONSES

Multiple comments were received with respect to most environmental issues raised in the Draft EIR. In order to provide the commenter with a complete picture regarding his or her concern, the Port prepared a master response to all comments regarding a given subject. These master responses provide some background regarding the issue, how the issue was addressed in the Draft EIR, and additional explanation to address the commenters' concerns. Where changes to the Draft EIR text result from responding to comments, those changes are summarized in the master response and presented in **Chapter 5.0, Minor Changes and Edits to the Draft Environmental Impact Report**, with revision marks (underline for new text, strike-out for deleted text). Comments which present opinions about the project unrelated to environmental issues or which raise issues not directly related either to the substance of the EIR or to environmental issues are noted without response.

Table 4-1 is an index to each comment received and the response to that comment. The comment numbers correspond to those in **Chapter 3.0, Comments on the Draft Environmental Impact Report**. Table 4-1 also serves to identify and acknowledge those comments regarding the Proposed Project or the Draft EIR which do not require a written response in the Final EIR.

TABLE 4-1
INDEX TO COMMENTS AND RESPONSES

Commenter	Comment #	Section Where Response Located	Notes
	Agency Comments		
Department of Water Resources	A1-1	4.19	
San Joaquin County, CDD	A2-1	4.2.2	
Delta Protection Commission	A3-1	4.21	
	A3-2	4.21	
	A3-3	4.21	
	A3-4	4.2.2	
	A3-5	4.12	
CA Department of food and Agriculture	A4-1	4.15	
	A4-2	4.2.2	
US/EPA	A5-1	4.8	
Stockton, City of, Fire Department	A6-1	4.12	
	A6-2	4.12	
	A6-3	4.11	
	A6-4	4.12	
State Lands Commission	A7-1	4.19	
Regional Water Quality Control Board	A8-1	4.20.3	
	A8-2	4.20.3	
	A8-3	4.20.3	
	A8-4	4.20.3	
	A8-5	4.7	
	A8-6	4.7	
	A8-7		Comment noted.
	A8-8	4.12	
	A8-9	4.6	
	A8-10	4.8	
	A8-11	4.8	
	A8-12	4.7	
	A8-13		Comment noted.
San Joaquin County CDD	A9-1	4.3	
San Joaquin County Public Works	A10-1	4.3	
	A10-2		Reference is correct.
	A10-3	4.3	
	A10-4	4.3	
	A10-5	4.3	

Commenter	Comment #	Section Where Response Located	Notes
San Joaquin County PW (Cont.)	A10-6	4.3	
	A10-7	4.3	
	A10-8	4.12	
Stockton, City of	A11-1		Attachment noted.
	A11-2	4.2.1	
	A11-3	4.5	
	A11-4	4.12	
	A11-5	4.12	
	A11-6	4.12	
	A11-7	4.12	
	A11-8		See Letter A6.
San Joaquin Valley APCD	A12-1	4.4	
	A12-2	4.4	
	A12-3	4.4	
California Department of Transportation	A13-1		Comment noted.
	A13-2	4.3	
	A13-3	4.3	
	A13-4	4.3	
	A13-5	4.3	
	A13-6	4.3	
	A13-7	4.3	
	A13-8	4.3	
	A13-9	4.3	
	A13-10		Comment noted. See MM 4.3-4
	A13-11		Comment noted. (a)
	A13-12	4.3	
	A13-13	4.3	
	A13-14		Comment noted.
	A13-15	4.3	
	A13-16	4.3	
	A13-17	4.3	
	A13-18		Comment noted. (b)
	A13-19		Comment noted. (c)
	A13-20		Comment noted. (d)
	A13-21	4.3	
	A13-22		Comment noted.
	A13-23	4.9	

Commenter	Comment #	Section Where Response Located	Notes
CA Dept. of Transportation (Cont.)	A13-24	4.3	
	A13-25	4.3	
	A13-26	4.3	
	A13-27	4.3	
	A13-28		Comment noted.
San Joaquin County Public Works	A14-1	4.3	
	A14-2	4.3	
	A14-3	4.3	
	A14-4	4.3	
	A14-5	4.3	
Public Comments			
Alexander, Dean	P1-1	4.5	
	P1-2	4.14	
	P1-3		Opposition noted.
Ingraham, Blanche L.	P2-1		Comment noted.
	P2-2	4.5	
	P2-3		Comment noted.
	P2-4	4.14	
	P2-5	4.8	
	P2-6		Comment noted.
Conrad, Luzanne	P3-1	4.5	
Rishwain, D.D.S., Raymond J.	P4-1	4.17	
	P4-2	4.5	
	P4-3		Comment noted.
Thomas, Thomas A.	P5-1		Comment noted.
	P5-2	4.5	
Shields, Jim	P6-1		Extension request.
	P6-2	4.17	
	P6-3	4.5	
	P6-4	4.4	
	P6-5	4.11	
	P6-6	4.17	
	P6-7		Opposition noted.
Shields, Sherry	P7-1		Opposition noted.
Hackett, Richard C.	P8-1		Extension request.
	P8-2	4.19	
	P8-3		See attachment to P25.
	P8-4	4.5	

Commenter	Comment #	Section Where Response Located	Notes
Hackett, Richard C. (Cont.)	P8-5	4.19	
	P8-6		Enclosure received.
	P8-7	4.4	
	P8-8		Comment noted.
	P8-9	4.14	
	P8-10	4.19	
	P8-11		Comment noted.
	P8-12		Comment noted. (e)
	P8-13	4.11	
	P8-14		Opposition noted.
Lawson, Mr. and Mrs.	P9-1	4.5	
	P9-2	4.8	
	P9-3	4.4	
	P9-4		Comment noted.
Moreno, Stephen and Marcia	P10-1		Opposition noted.
Thomas, Donna G.	P11-1		Opposition noted.
	P11-2	4.17	
Benninger, Alyce and Bruce	P12-1		Opposition noted.
	P12-2	4.17	
	P12-3		Opposition noted.
F., Bishop Mark	P13-1		Opposition noted.
	P13-2	4.17	
	P13-3		Opposition noted.
Faso, Joe	P14-1		Opposition noted.
	P14-2	4.17	
	P14-3		Opposition noted.
Foclo, Michael	P15-1		Opposition noted.
	P15-2	4.17	
	P15-3		Opposition noted.
	P16-1		Opposition noted.
	P16-2	4.17	
Gifford, D.D.S., David G.	P16-3		Opposition noted.
Hackett, Richard C.	P17-1		Comment noted.
	P17-2	4.19	
	P17-3		Opposition noted.
Jones, Paul and Kathleen E.	P18-1		Opposition noted.
Larson, Bob and Kathleen	P19-1		Opposition noted.
Celle, Larry	P20-1		Opposition noted.

Commenter	Comment #	Section Where Response Located	Notes
Flaherty, Christopher M.	P21-1		Comment noted.
Jones, Gina	P22-1		Extension request.
	P22-2		Comment noted.
	P22-3		Opposition noted.
Jones, Matt	P23-1		Extension request.
	P23-2		Comment noted.
	P23-3		Opposition noted.
Rafert, Peter J. and Kerry L.	P24-1		Opposition noted.
	P24-2	4.17	
	P24-3		Opposition noted.
Shute, Mihaly & Weinberger	P25-1	4.17	
	P25-2	4.17	
	P25-3	4.17	
	P25-4	4.18	
	P25-5	4.11	
	P25-6	4.18	
	P25-7	4.20.1	
	P25-8	4.20	
	P25-9	4.18	
	P25-10	4.5	
	P25-11	4.5	
	P25-12	4.5	
	P25-13	4.5	
	P25-14	4.5	
	P25-15	4.5	
	P25-16	4.5	
	P25-17	4.5	
	P25-18	4.5	
	P25-19	4.20.2	
	P25-20	4.4	
	P25-21		Attachment noted.
	P25-22	4.3	
	P25-23	4.7	
	P25-24	4.11	
	P25-25	4.20.3	
	P25-26	4.6	
	P25-27	4.20.1	
	P25-28	4.20.3	

Commenter	Comment #	Section Where Response Located	Notes
Shute, Mihaly & Weinberger (Cont.)	P25-29	4.20.3	
	P25-30	4.20.3	
	P25-31	4.20.3	
	P25-32	4.8	
	P25-33	4.20.1	
	P25-34	4.20.4	
	P25-35	4.20.4	
	P25-36	4.2.2	
	P25-37	4.10	
	P25-38	4.10	
	P25-39	4.10	
	P25-40	4.11	
	P25-41	4.16	
	P25-42	4.20	
	P25-43	4.15	
	P25-44	4.14	
	P25-45	4.1	
Chargin, Ann M.	P26-1	4.17	
	P26-2	4.17	
	P26-3	4.17	
	P26-4	4.2.1	
	P26-5	4.14	
	P26-6	4.14	
	P26-7	4.11	
	P26-8		Comment noted.
Freeman, Maxwell M.	P27-1		
	P27-2		
	P27-3		Comment noted.
McClendon, Dwayne	P28-1		
	P28-2		Comment noted.
Shields, Sherry	P29-1		Extension request.
	P29-2		Comment noted.
	P29-3	4.17	
	P29-4	4.5	
	P29-5	4.4	
	P29-6	4.11	
	P29-7	4.17	
	P29-8		Opposition noted.

Commenter	Comment #	Section Where Response Located	Notes
Organization Comments			
Concerned Residents of Atherton Cove	O1-1	4.5	
	O1-2	4.4	
	O1-3		Comment noted.
	O1-4	4.17	
	O1-5		Extension request.

Notes: (a) All NOP letters received by the Port of Stockton, as Lead Agency, were included in Appendix A of the Draft EIR.
(b) The Proposed Project is not a general plan within the meaning of Government Code §65300.
(c) Significant and unavoidable impacts are summarized in Section 8.3 of the Draft EIR.
(d) Individual written responses to NOP comment letters are not required under CEQA.
(e) Although this is not an environmental effect, Homeland Security objectives are discussed on page 3-7.

4.2 LAND USE AND AGRICULTURE

4.2.1 LAND USE

IMPACTS TO RESIDENTIAL LAND USES

Residential areas potentially affected by the project include the Louis Park and the Riviera Cliffs areas located to the north of the Project Area across the Stockton Deep Water Ship Channel, and the Boggs Tract area to the east of the project site, and south of the East Complex. The potentially significant environmental effects which may impact these residential areas are discussed extensively in the sections regarding traffic (4.3).air quality (4.4), noise (4.5), visual (4.10) and impacts related to the proposed dredging operation (5.4.4, 5.4.5 and 5.4.10).

CITY OF STOCKTON PLANNING AND ZONING CODE

As discussed in Section 4.2.1 (page 4.2-8), the City of Stockton is considering the creation of a Port (PT) zoning district. This new zoning district would be part of a comprehensive revision of the Planning and Zoning Code (which would be renamed the “Development Code”). See **Chapter 5.0, Minor Changes and Edits to the Draft EIR** for the revised text.

4.2.2 AGRICULTURE

The Proposed Project would remove 405 acres from agricultural production, as discussed in Section 4.2. Of the 405 acres, 272 acres are acres classified as Prime Farmland. The loss of 272 acres of Prime Farmland is considered a significant impact (see Impact 4.2.2).

Several comments suggest that the Port consider mitigation for loss of the 272 acres of Prime Farmland due to development under the West Complex Development Plan. Mitigation, as defined by CEQA

Guidelines §15370, includes: (a) avoiding the impact; (b) minimizing the impact; (c) rectifying the impact through restoration, (d) reducing the impact through preservation and maintenance; or (e) compensating for the impact through the replacement or substitution.

Avoiding, minimizing, rectifying or reducing the impact would not be feasible under the project as proposed, as build-out of the Proposed Project would ultimately develop the prime farmland on the site and remove current agricultural activities. As suggested by several comments, modifying the project to limit or preclude development of this farmland would reduce or avoid this impact. For example, the Marine Terminal Development Alternative would avoid development of these agricultural lands. Variations on the other alternatives could also be employed to avoid development of this agricultural land. For example, the low intensity alternative, which calls for a 25% reduction in overall development, could be implemented by eliminating any development within areas of the site classified as prime farmlands. Implementing such an option is available for the Board of Port Commissioners' consideration as a method of avoiding or minimizing impacts to prime farmlands.

Several comments suggest that the Port should consider a mitigation measure providing for acquisition of conservation easements over agricultural land elsewhere as a way to mitigate the loss of agricultural land. A significant question exists, however, whether implementation of such a measure would constitute mitigation for development of farmland on the site under CEQA.

Acquisition of off-site conservation easements obviously would not mitigate the loss of Prime Farmland on the site itself since it would not avoid, minimize, rectify or reduce the impact to the Prime Farmland on the site. Providing funding for conservation easements over existing agricultural land off site is characterized by several commenters as mitigation under CEQA under the theory that it would compensate for the impact by replacing or providing substitute resources or environments, consistent with CEQA Guidelines section §15370(e). The contrary view, however, is that placing a conservation easement over other existing farmland elsewhere does not compensate for the development of farmland because even with use of a conservation easement, the net loss of farmland due to the project is the same. Under this interpretation of CEQA's mitigation requirements, to constitute mitigation, actions taken to replace or provide substitute resources for a resource lost to development must reduce or eliminate the loss in resource value caused by the project to constitute compensatory mitigation—i.e., to achieve "no net loss" of the resource.

In the context of wetland resources, for example, imposing a conservation easement over other, off-site wetlands is ordinarily not considered adequate mitigation under CEQA because it does not reduce the net loss of wetlands due to the project. However, programs that create new wetlands or restore or enhance degraded wetlands are usually considered mitigation because they replace the resource values that would be lost, resulting in no net loss of resource value.

Some proponents of offsite conservation easements argue they should be employed because, while conservation easements do not prevent the net loss of farmland due to a particular development project, they do prevent conversion of the farmland subject to the conservation easement. For example, one comment suggests that conservation easements can provide mitigation by preserving agricultural land that is otherwise likely to be developed. However, development of agricultural land can only occur if the city or county with jurisdiction over the property decides to change the general plan designation for the

property from an agricultural designation to a designation allowing such development, rezones the site to authorize the developed use, provides sewer, water and other infrastructure necessary to support the developed use, and approves a specific development proposal. A conservation easement over the property would obviously prevent the city or county from taking such steps, but by doing so it would at the same time create a potential conflict with the city or county's ability to make or implement policy determinations regarding where growth and development should occur.

For these and related reasons, agricultural conservation easements have largely not been used by local governments to protect farmland from anticipated development. In the few instances where such conservation easement programs have been put into place through city or county development fee programs, they have been used to place conservation easements over prime farmland that is not envisioned for development and that is designated under the policies of the applicable city or county general plan for long term agricultural use. These programs are generally used to implement local land use policies providing for the long term preservation of important agricultural lands (and in some instances, the maintenance of community separators). Viewed in this context, agricultural conservation easements can be a useful mechanism for reinforcing a city or county's long term land use and planning policies as an adjunct to general plan and zoning designations. It does not necessarily follow from this, however, that conservation easements constitute effective mitigation under CEQA for the loss of agricultural land due to specific development projects.

The question of whether conservation easements over other agricultural land constitute mitigation under CEQA has been addressed in three unpublished court of appeal decisions. First, in *Friends of the Kangaroo Rat v. California Dept. of Corrections*, (Fifth District Court of Appeal, Aug. 18, 2003) the State Department of Corrections completed an EIR that concluded that the impact of converting 480 acres of farm land to construct a prison could not be mitigated through funding of conservation easements over other existing agricultural land. The Court of Appeal held that the Department was correct in concluding that the impact of converting farmland to another use could not be mitigated. The Court found that the Department had correctly concluded that conservation easements would not reduce the loss of farmland due to the project or create any new farmland. The Court therefore held that offsite conservation easements would not constitute mitigation under CEQA and the Department was therefore not required under CEQA to implement them.

Similarly, in *County of Santa Cruz v City of San Jose* (Sixth District Court of Appeal, March 27, 2003) the court upheld the city's determination not to adopt offsite conservation easements as CEQA mitigation. The court agreed with the EIR's finding that offsite conservation easements over existing farmland would not provide mitigation because they would not compensate for the loss or farmland due to the project or replace the resources lost because they would not reduce the overall net loss of farmland due to the project. The court noted that while cities and counties may adopt policies providing for the preservation of open space and agricultural land, CEQA does not mandate that such policies be adopted as mitigation.

Finally, the court in *South County Citizens v City of Elk Grove* (Third District Court of Appeal, February 5, 2004) took a somewhat different approach. The court explained that conservation easements are not always required whenever a Proposed Project would convert farmland to other uses and that CEQA leaves the matter for resolution on the facts and circumstances surrounding a particular project.

The court further noted that it is obvious that conservation easements over other land will not replace agricultural land converted to other uses. On the other hand, in some cases where a project can lead to development of other farmland, conservation easements can be useful in preserving such other farmland. The court held that because the developer had agreed to pay, and the city had agreed to accept, a payment for conservation easements as mitigation, the parties had tacitly agreed that a conservation easement would constitute mitigation.

Because the opinions in these cases are not published, they do not establish binding legal precedent. However, they do illustrate the significant difference of opinion that continues to exist regarding whether conservation easements over existing agricultural land constitutes meaningful mitigation under CEQA for the loss of agricultural land resulting from a development project.

Several comments note that impacts to agricultural land may be in the form of either direct conversion, or may occur indirectly, when a project has a growth inducing effect that can encourage or facilitate conversion of farm land to another use. As explained in section 4.15, below, however, it is not likely that the Project would have such an indirect effect here. It should also be noted that, in any event, the courts have concluded that CEQA does not require mitigation for a project's effect on growth in other areas. See *Napa Citizens v Napa County*, 91 Cal.App.4th 341, 371 (2001).

One comment notes that the San Joaquin County General Plan includes a measure calling for a study of the feasibility of establishing mitigation fees to be paid when lands subject to the County's jurisdiction are converted from agriculture and/or open space to an urban use. In 2002, the County published a "Draft White Paper: Model Agricultural Impact Mitigation Ordinance and Farmland Preservation Program" which evaluated a potential agricultural mitigation fee. However, the County has not pursued this proposal and has not adopted an agricultural mitigation fee program.

Ultimately the determination whether Prime Agricultural land in the unincorporated areas of the County will be preserved for agricultural use or developed for other purposes is within the ultimate discretion and control of the County Board of Supervisors through its adoption of land use policies and land use designations in its General Plan, through adoption of zoning applicable to agricultural parcels, and though individual determinations whether to approve conversion of a parcel of agricultural land to another use. Accordingly, protection of important agricultural land within the County to other use is under the jurisdiction and control of the County.

Implementation Measure 13.b of the county's growth accommodation policy states that a general plan amendment to convert agricultural uses to non-agricultural uses shall consider, among other things, the availability of alternative sites, the potential to create premature development pressure on surrounding agricultural lands, the availability of infrastructure, and the classification of the land in question (prime farmland, etc.). In addition to these policy considerations, there are other economic and planning reasons why the implementation of the West Complex Development plan will not create significant pressures to prematurely convert the agricultural lands adjacent to Rough and Ready Island. These include lack of infrastructure and the availability of developable land elsewhere in the Stockton area. For a further discussion of these growth inducement issues, see Section 4.15 of this response to comments.

The City of Stockton does not have specific requirement for purchase of agricultural conservation easements. The City does have a right to farm ordinance. As discussed in the draft EIR, page 4.2-11, and reiterated in comment P25-36, the policy of the City of Stockton, as stated in the ordinance, is to preserve, protect and encourage the use of viable agricultural lands for the production of food and other agricultural products. The intent of the ordinance is to limit nuisance complaints against existing agricultural operations and to provide notification to future property owners of the possible effects of living and working next to agriculture. The ordinance does not prohibit the conversion of land properly zoned and designated by the general plan for non-agricultural uses. In fact, the Proposed Project represents orderly growth and efficient use of urban land, consistent with Goal 1 of the General Plan Natural and Cultural Resources Element and Goal 2 of the Land use Element. In addition, the Proposed Project would not involve residential development, which is more sensitive to agricultural uses, as discussed below.

San Joaquin County has suggested a list of mitigation measures beyond the acquisition of agricultural conservation easements (comment A2-1). These items or measures are:

1. Providing water supply for agriculture.
2. Assisting agriculturalists in developing restoration and conservation projects.
3. Purchasing and combining smaller parcels to make agriculture more viable.
4. Conducting or funding flood plain restoration projects that benefit agriculture.
5. Developing or funding buffer zones between urban development and agricultural land.
6. Improving levees to protect agricultural land from flooding.
7. Conducting or funding erosion control projects that benefit agriculture.
8. Clustering development of the “Project” to support efficient use of agricultural land.
9. Conducting or providing funding for techniques that increase production by identifying new processes, new techniques, or new crop potential on heretofore limited agricultural production lands, i.e., converting grazing land to vineyards.
10. Conducting or funding programs that identify best agriculture management practices to increase efficiencies, such as land adjacent to wetlands, and potentially bring more agricultural land into production.
11. Conducting or funding Urban Limit Line studies that provided for improvement of geometric shape and compactness of urban development that reduces pressure to prematurely convert agricultural lands.

Most of these proposed mitigation measures suffer from the same drawback as the purchase of agricultural conservation easements, which is to say they do not address the environmental impact at issue: the net loss of agricultural land that will result from the project. For the most part, these measures address the economic issues associated with agricultural production. While steps to increase productivity of existing agricultural operations is a worthy public policy goal, by failing to address the physical change

in the environment (loss of agricultural land) identified in the EIR, it does not provide mitigation for an environmental impact under CEQA.

Three of the listed items – items 5, 8 and 11, are not limited to agricultural productivity, and are related, to one degree or another, to the use or protection of agricultural land. Item 5, suggests use of buffers between agricultural land and urban development. Use of buffers obviously would not compensate for direct conversion of agricultural land, and would not be mitigation for development of agricultural land. As noted in several comments, buffers can be used to address compatibility issues of the agricultural-urban interface, such as the effects agricultural operations can have on nearby residential uses (such as noise, dust, pesticide drift) and the effects residential uses can have on nearby agricultural operations (vandalism or theft of agricultural property, and the introduction of dogs and cats). Buffers can be used in tandem with a "right to farm" ordinance, in order to relieve farmers of nuisance related complaints from nearby residents. The City of Stockton has such an ordinance, as discussed above.

When buffers are employed, the width will vary with the purpose and circumstances. For example riparian buffers to protect waterways are different from buffers separating agricultural uses from residential development or schools. Vegetation and berms can also increase the effectiveness of buffer zones. Some cities and counties that use buffers adjacent to agricultural land specify a buffer width, or an acceptable range, which can vary depending on the certain circumstances. Neither the City of Stockton nor the County have policies or ordinances specifying a width for buffer zones. By contrast, the Delta Protection Commission has recommended a distance of 300 to 500 feet between agricultural uses and new development in the Delta Primary Zone.

In this case, the agricultural uses on Middle Roberts Island are separated from the West Complex, by Burns Cut-off, a levee on each side of the waterway, and a levee setback. The levee is thirteen feet high in some areas. Near Daggett Road, the total horizontal distance from the proposed future development on Rough and Ready to the agricultural fields on Middle Roberts Island is 3,200 feet. The combination of width and height, and the physical separation provided by Burns Cut-off make this an effective buffer between development on the site and agricultural land. In addition, no residential uses are proposed in the West Complex. As mentioned above, residential uses are the most problematic neighbors for agriculture. The commercial and industrial uses planned for the southern portion of the West Complex do not raise the same potential conflicts.

Clustering of development (item 8), which is again typically a strategy for residential or rural-residential development also can reduce the impacts of new development on agriculture. In this case, development is effectively "clustered" due to the physical boundaries of the island. Confining development to the island itself, and providing for its full use for maritime, commercial and industrial purposes in an area particularly suitable for those purposes achieves many of the land use benefits of planned, clustered development. As discussed above, the amount of prime farmland on Rough and Ready Island converted to other uses under the development plan could also be reduced through adoption of an alternative eliminating or reducing development of the area of the site containing prime farmland. These options will be considered by the Board of Port Commissioners.

Item 11, which is apparently intended to fund the study of compact development, is not relevant in this particular case. Again, the West Complex is contained within geographic features which define its shape

and physically separate it from adjacent property. In addition, the West Complex is within the limit line of the City of Stockton's General Plan Study Area, which runs along the Burns Cut-Off. The Burns Cut- also separates Rough and Ready Island from the Delta Primary Zone. The West Complex is therefore in a distinctly different planning area than the agricultural lands to the south and west.

4.3 TRANSPORTATION AND CIRCULATION

CCS Planning and Engineering Incorporated conducted a transportation impact assessment for the West Complex Development Plan. The complete transportation impact assessment, including the identification of specific roadway and intersection improvements that could be implemented to improve level of service (existing and plus-project), is provided in **Appendix D** of the Draft EIR. In order to assist the reader, an executive summary of the complete transportation impact assessment was provided within the body of the Draft EIR as **Section 4.3, Transportation and Circulation.** It should also be noted that project-level analysis of potential traffic impacts associated with the two project components was also included in **Chapter 5.0, Environmental Analysis – Project Specific Components – Dredging and Placement Operations Project** and **Chapter 6.0, Environmental Analysis – Project Specific Components – McCloy Avenue, Daggett Road, and Daggett Road Bridge Project.**

TRAFFIC CIRCULATION

Currently, the Navy Drive Bridge, which spans the San Joaquin River, provides the only access to Rough and Ready Island and the West Complex Development Plan area. East of the island, Navy Drive connects with Washington Street and, indirectly, Interstate-5 (I-5) and State Route (SR) 4. The Navy Drive Bridge would be replaced under the West Complex Development Plan, but will not meet the future needs of the proposed expanding Port activities and projected employment growth. The proposed McCloy Avenue, Daggett Road and Daggett Road Bridge Project (see **Chapter 6.0** of the Draft EIR) would provide a much needed primary access to Rough and Ready Island, via Daggett Road, and improve West Complex traffic circulation for the planned development. McCloy Avenue and Daggett Road will become the West Complex's major arterial collectors, and Fyffe Avenue will become a minor collector. Roadway circulation safety would be improved by reducing the number of public railroad crossings on Rough and Ready Island. In addition, the construction of the McCloy Avenue, Daggett Road and Daggett Road Bridge Project will divert traffic away from Washington Street and reduce the potential for additional truck traffic through the Boggs Tract neighborhood.

BOGGS TRACT

In 2001, the Port of Stockton, together with San Joaquin County and the City of Stockton commissioned an *Issues and Alternatives Report* for the Boggs Tract Specific Plan area, adjacent to the Port and lying partially within the City Stockton and San Joaquin County. According to this report (LSA June 14, 2001), the Boggs Tract community faces a number of issues due to its location, adjacent to the Port's East Complex and situated in an L-shape at the terminus of the Crosstown Freeway (State Route-4), and due to the lack of storm drain and sewer facilities. Among the problems identified were compatibility due to truck traffic from the Port's East Complex, septic tank failure due to high water, and localized flooding. The purpose of the report was to "assist the County, City, Port of Stockton, and the Boggs Tract

community to understand the issues that the community faces, define the options that are available to manage the community's future, delineate alternative strategies for managing Boggs Tract's future, and to assist the County, City, Port District and community to jointly select the comprehensive strategy which best fits their needs."

As a result of the study, three alternatives were identified, one of which (Alternative B) was recommended. Alternative B, "Create New Neighborhood Boundaries", would essentially leave the Boggs Tract area as a neighborhood, although the boundaries would be changed in order to buffer residential from industrial uses, reduce the impacts of heavy truck traffic on existing residences and relocate residents away from areas most impacted by flooding. According to this alternative, some land uses would be altered in order to buffer truck traffic on existing designated truck routes. Infrastructure improvements were also proposed to resolve sewer, flooding and roadway issues. Specifically, it was recommended that the intersection of Charter Way and Navy Drive would be signalized and a bridge at Daggett Road would be constructed (LSA 2001:VI3) to provide "feasible alternate routes."

PORT ACCESS FEASIBILITY STUDY 2003

Subsequent to the Boggs Tract Specific Plan *Issues and Alternatives Report*, a report was prepared by CCS Planning and Engineering, Inc. for the San Joaquin Council of Governments (SJCOG). The intent of this report, *Port Access Feasibility Study* (CCS September 2003), was to "identify and analyze specific access alternatives and/or combination of alternatives and to address the feasibility of implementation" (CCS September 2003:3). According to the preparers of the report, "it will be used to provide decision makers a choice of realistic long-term capital solutions to improve circulation to and around the Port." Although the SJCOG had previously studied access to the Port (in 1984, 1991, and 1993), previous studies did not consider the acquisition of Rough and Ready Island and both the needs and opportunities provided by the acquisition. As pointed out in the CCS report, access to international port facilities is a major emphasis in both the National Highway System and the International Trade Corridors sections of the Transportation Equity Act of the 21st Century (TEA 21). Although the study addresses land uses compatibility issues, the primary issue addressed is the current capacity of existing roads and the ability to handle the movement of traffic in and out of the Port both currently and in the future.

Numerous alternative access concepts were identified in this study. Several alternatives were considered but rejected due to a number of reasons, including: the potential for removal / relocation of established businesses within the Port; disruption to the Boggs Tract Community; and, segmentation of the existing Boggs Tract local street system. The final study examined five proposed alignments which are outlined in the report. The report concludes that three of the final alignments studied would yield a project that could have potentially mitigated many circulation and access problems and minimize impacts to the adjacent Boggs Tract community. However, after completing the final analysis of the three alternative alignments, it was determined that an additional alternative should be studied that was not identified earlier. According to the report (CCS September 2003:19):

> The future of State Route 4 must be determined in order to go forward with any of the studied alignments or derivative of those alignments. The California Department of Transportation has a Freeway Route Adoption with both the City of Stockton and the County of San Joaquin for an Ultimate Transportation Corridor that would have State Route 4 continue from where it currently

> terminates on Fresno Avenue and connect through [to existing Highway 4, diagonally through Boggs Tract].

Therefore, a second phase of study was recommended.

Comments included in Letter A9 address the Boggs Tract compatibility issue and the commentor's preference for Alternative Alignment No. 1, as presented in the *Port Access Feasibility Study* (CCS September 2003). The comments suggest that the Draft EIR did not address impacts to the residents of Boggs Tract from development at the West Complex. However, the commentor is referred to **Sections 4.3, 4.4, 4.5, and 4.11** of the Draft EIR which address the impacts of additional traffic and related air, noise, and hazards impacts to surrounding uses and calls for mitigation to reduce those impacts. In addition, a project-level analysis was conducted for the proposed McCloy Avenue, Daggett Road, and Daggett Road Bridge Project and is included in the West Complex Development Plan Draft EIR. This project is scheduled to go to construction soon after approval and will provide for an access route that is intended to direct the traffic from Rough and Ready Island (the Development Plan area) directly to Highway 4, thus reducing potential impacts to the Boggs Tract area.

It should be noted that the existing land use compatibility issues associated with Boggs Tract and the Port's East Complex are outside the purview of this EIR. Instead, this issue has been the subject of the ongoing studies summarized above, in which the Port has and will continue to participate.

DRAFT EIR TRAFFIC STUDY

IMPACT ANALYSIS METHODOLOGY

As noted in the Draft EIR, CCS Planning and Engineering Incorporated conducted a multi-phased transportation impact assessment for the West Complex Development Plan. The transportation impact assessment is included in its entirety as **Appendix D** of the Draft EIR. Technical appendices have been available for public review at the Port of Stockton. In addition, traffic models results were provided in CD format to Caltrans staff at a meeting on December 5, 2002 and again, as a result of comments received in Letter A13. The assessment addressed several interim levels of project development (2005, 2010, and 2015 background conditions) in addition to existing and cumulative conditions (2020) typically required under CEQA guidelines. The assessment evaluated level of service (LOS) at 20 intersections affected by implementation of the West Complex Development Plan. It also evaluated LOS on 60 freeway facilities considered to be potentially affected by the Proposed Project.

CCS's impact analysis evaluates both the regional and local transportation network. Caltrans and the City of Stockton are the two agencies primarily responsible for the transportation facilities in the vicinity of the project area. The technical approach used in the traffic impact assessment was developed in consultation with these two agencies. A memo (CCS, April 11, 2002) from CCS staff to Caltrans and City of Stockton staff provides a summary of topics discussed during a coordination meeting on April 10, 2002. This memo outlined agreed upon methodology for both the development of future year traffic forecasts and level of service analysis.

Level of Service Analysis

CCS's April 11, 2002 memo provides the following summary of the agreed upon approach for level of service analysis:

> "During the April 10 meeting, we discussed the methods that will be used to calculate level of service (LOS) for the Development Plan EIR traffic analysis. As we discussed, Caltrans' requires that LOS be calculated using the Highway Capacity Manual 2000 method, while the City of Stockton requires that LOS be calculated using the Transportation Research Circular 212 method.
>
> As we also discussed, CEQA requires a clear identification of the significance of each impact. Since the joint use of two LOS analysis methods may result in different conclusions on the same impact, the use of one LOS analysis method for determining the significance of each impact will be necessary. It was noted that, while the significance of each impact will need to be made using one LOS analysis method, the EIR can present information based on other LOS analysis methods.
>
> During the April 10 meeting, we agreed on the following:
>
> - LOS on freeway facilities and LOS at the intersection of state facilities (e.g., the Charter Way and Interstate 5 ramp intersections) will be based on Highway Capacity Manual 2000 methods.
> - LOS at the intersection of local facilities (e.g., the intersection of Washington Street and Fresno Avenue) will be based on the Transportation Research Circular 212 method.
> - LOS at the intersection of a state facility and a local facility (e.g., the intersection of Fresno Avenue and Charter Way) will be based on the worst-case LOS analysis method. That is, the EIR will: analyze LOS using both the Highway Capacity Manual 2000 method and the Transportation Research Circular 212 method, will present the calculation of LOS using both methods, and will use the method that results in the worst LOS as the basis for determining the significance of impacts."

As noted above, the assessment of impacts on intersections and freeway facilities was based on a multi-phased (existing, 2005, 2010, 2015, and 2020) LOS analyses. In compliance with requirements of CEQA and the City of Stockton, the full project was evaluated under both existing and cumulative background conditions. Level of service (LOS) calculation worksheets used in preparing the traffic analysis are presented in a technical appendix, available for review at the Port of Stockton. As shown in the LOS calculation worksheets, passenger car equivalence (PCE) factors are applied in the LOS calculations to represent truck travel. PCE factors are used to reflect the greater effect large trucks have on vehicle flow, compared to passenger cars. A PCE factor of 1.00 would reflect little or no effect of large trucks. Larger PCE factors (e.g., 1.05, 1.10, etc.) reflect a greater degree of trucks affecting traffic flow. The source for PCE factors are the Transportation Research Board's Highway Capacity Manual, and local measured data.

For the Draft EIR, LOS A through D were considered acceptable for non-freeway facilities; LOS E and F were considered unacceptable. This is generally consistent with City of Stockton LOS policy standards. For freeway facilities, LOS A through E were considered acceptable; LOS F was considered unacceptable. According to comments received from Caltrans (Letter A13), LOS E is not considered acceptable. However, the Port of Stockton is the lead agency for the Development Plan EIR and,

therefore, has discretion over the analysis approaches used in the EIR. LOS E was used in this EIR as a common threshold for freeway facilities. For example, the National Transportation Library's Congestion Management Program Resource Handbook notes that California Government Code 65089(b)(1)(B) (see **Appendix A,** page A-3) requires that level of service standards for the Congestion Management System must be established no worse than: (1) Level of service E; or (2) Level of service F, if that is the current level of service. The handbook also notes that California Government Code Section 65089(b)(1)(A) (see **Appendix A**, page A-2) requires that at a minimum, the Congestion Management System include all state highways, and principal arterials.

As presented in Impact 4.3.6 of the draft EIR, implementation of the Proposed Project would result in a significant and unavoidable impact on freeway facilities. Application of the acceptable LOS standard suggested by the commenter would not change this conclusion nor would the severity of the impact be substantially more severe. The EIR preparers have reviewed the results of the freeway LOS analysis to determine how many additional freeway facilities (i.e., mainline segments, ramp areas, and weave areas), that were not already identified in the draft EIR as being projected to experience LOS F with implementation of the Proposed Project, would be projected to experience LOS E operations as a result of implementation of the Proposed Project and other growth. This review was conducted using Cumulative (2020) Plus Project conditions. The EIR preparers have determined that, of the 60 freeway facilities analyzed in the EIR, 6 facilities would be predicted to experience degradation to LOS E from LOS D or better as a result of implementation of the Proposed Project and other cumulative growth.

Future Year Forecasts

At the meeting of April 10, 2002, the approach agreed upon for developing future year traffic volumes was that CCS would use the latest version of the City of Stockton's General Plan traffic model. For the purpose of the Development Plan EIR analysis, CCS would add detail to both the highway network and land use data traffic analysis zone system used in that model. However, in a later memo (CCS December 19, 2002) to Jerry Erwin at Caltrans District 10 and Andy Chesley at the SJCOG, CCS proposed an alternative method that would include both the City's model to reflect General Plan land use designations and the SJCOG model to reflect regional travel behavior. According to CCS (December 18, 2002):

> "The City of Stockton General Plan traffic model and the SJCOG traffic model have different study areas, and different advantages and disadvantages that result from each model having a different purpose. The purpose of the City of Stockton model is to forecast travel specifically within the Stockton area. The purpose of the SJCOG model is to forecast travel on a countywide basis and an inter-regional basis.
>
> … the City of Stockton traffic model focuses on the Stockton urbanized area. The City of Stockton model reflects adopted General Plan land use designations, and incorporates a relatively high degree of detail in how these land uses access the roadway network. However, the City of Stockton model does not directly address inter-regional travel (i.e., travel between Stockton and the Bay Area and the Sacramento area).
>
> … the SJCOG model network includes both the Bay Area and the Sacramento area in the model network. Therefore, the SJCOG model directly addresses inter-regional travel. However, the land use data in the SJCOG model does not reflect the adopted City General Plan land use designations, and incorporates a lesser degree of detail in how these land uses access the roadway network."

CCS further defines the use of the models in the EIR analysis:

> "During the initial development of the technical approach for the traffic analysis of the West Complex Development Plan, use of only the City of Stockton General Plan model was anticipated. The use of the City's traffic model was agreed on during an April 10, 2002 meeting attended by staff from the City of Stockton, Caltrans, the Port of Stockton, and the consultant team. Details of the meeting's discussion are contained in an April 11, 2002 memorandum from Wayne Shijo of CCS Planning and Engineering to Gregg Meissner and Jerry Erwin.
>
> Since the time of the April 2002 meeting, we have become aware of Caltrans' concern that the City of Stockton traffic model does not reflect inter-regional travel behavior. These concerns have been raised in the context of other projects in the Stockton area, and in the context of Caltrans' responsibility for operating facilities that serve inter-regional travel.
>
> Because of the size of the West Complex Development Plan project, implementation of the plan may have effects on inter-regional travel and facilities. In light of this, we are proposing a change in the technical approach for the traffic analysis.
>
> Proposed Technical Approach
>
> The proposed technical approach for the traffic analysis of the West Complex Development Plan would be based on data from both the City of Stockton General Plan traffic model and the SJCOG traffic model. The analysis would be conducted by running the SJCOG model with the West Complex Development Plan to determine the inter-regional travel effects of the plan. The technical approach would then use data from the SJCOG model to modify traffic volumes at the edges of the City of Stockton General Plan traffic model network (i.e., modify the cordon station values).
>
> The City of Stockton traffic model would be run with the West Complex Development Plan and the SJCOG traffic model cordon station values. These model runs would be used to develop travel forecasts for the EIR on the Development Plan. As originally anticipated, the traffic analysis will also involve adding detail to both the roadway network and the land use data structure of the City of Stockton traffic model.
>
> We believe this technical approach for the traffic analysis would incorporate the relative strengths of both traffic models."

CCS requested and subsequently received concurrence with this technical analysis approach and a request that SJCOG allow use of their traffic model for this analysis.

As outlined above, the City of Stockton General Plan traffic model and the SJCOG traffic model were used to develop forecasts of background future traffic volumes. These models incorporate forecasts of future changes in land use. In general, the traffic models forecast increases in traffic volumes on roadways that serve geographic areas that will experience increases in land use development. In many cases, the traffic models forecast little, if any, increases in traffic volumes on roadways that serve areas that are already fully-developed.

Comment A13-14 (Letter 13) has pointed out instances where no changes in background traffic volumes are forecast in the future. In some cases, the geographic re-distribution of travel in the future results in the traffic models forecasting decreases in traffic volumes on specific travel movements. Rather than

using the raw traffic model forecasts of decreases in traffic volumes, in general the EIR traffic analysis used a conservative approach of assuming a continuation of existing traffic volumes.

The Charter Way interchange on I-5 is a good example of a location where the traffic models forecast little or no increase in traffic volumes on some roadways. On some of the roadways in the area of this interchange, both the City of Stockton General Plan traffic model and the SJCOG traffic model forecast little or no increase in traffic volumes. Comparing existing conditions to future year conditions, the City of Stockton General Plan traffic model forecasts a 1% total increase in traffic volumes on Charter Way east of I-5, a 21% decrease on the southbound on-ramp at this interchange, and a 36% decrease on the northbound off-ramps at this interchange. Similarly, the SJCOG traffic model forecasts a 4% total increase in traffic volumes on Charter Way east of I-5, and a 4% total decrease in traffic volumes on Charter Way west of I-5.

In response to comments included in both Letters 13 and 14, it should be noted that both traffic models assume a substantial amount of future growth in the area around Daggett Road and south of Charter Way. Both models assume an increase of several hundred new dwelling units, and several hundred employees in this area.

Trip Distribution

San Joaquin County staff (Letter A10, Comment A10-4) has requested a clarification of how trip distribution was determined. The trip distribution used in the EIR traffic analysis was determined using data from the City of Stockton General Plan traffic model and the SJCOG traffic model. In general, the City of Stockton General Plan traffic model was used to determine localized trip distribution, and the SJCOG traffic model was used to determine regional trip distribution. Both traffic models use a geographically distributed set of land use data and a description of the roadway network to determine how many vehicles will take the various travel routes. Both traffic models use “gravity models”, which are the most common form of trip distribution used in traffic models. The land use data were used to determine the number of vehicle trips (e.g., the number of trips that would be generated by development on Rough & Ready Island). The land use data and the roadway network data were used to determine the number of vehicles that would use specific routes (e.g., the number of trips that would use Washington Street.)

The gravity models use geographically disaggregated land use data and a description of the roadway network to determine the geographic distribution of travel. The land use data were used to determine how relatively “attractive” each geographic area is to vehicle trips. The roadway network description was used to determine how relatively difficult it is to travel between different geographic areas. The land use data and the description of roadway networks in both the City of Stockton General Plan traffic model and the SJCOG traffic model are based on locally-adopted and regionally-adopted plans and, therefore, are considered a valid tool for assessing trip distribution.

Caltrans (Letter A13, Comment A13-14) has suggested an alternative trip distribution pattern. However, lacking justification or data to support this position the commentor’s suggested alternative pattern must be considered an intuitive belief, which is not adequate for use in the EIR traffic analysis.

Significance Criteria

The Draft EIR identifies the significance criteria used during the traffic impact analysis. Caltrans (Letter A13) has commented that their Traffic Operations Department does not agree with impact statement 4.3.5, where traffic impacts are considered less-than-significant because the Proposed Project would not substantially increase (greater than 5%) vehicle traffic on the listed roadway facilities. **Section 4.3.2** of the Draft EIR identifies significance thresholds used for determining the level of impacts under CEQA. For the purposes of this EIR and based on information from City staff, a substantial increase in traffic is defined as an increase in traffic volumes of 5% or more.

EXISTING TRAFFIC CONDITIONS

Table 4.3-10 has been revised to include the data for PM Peak Hour. While not in Table 4.3-10, this data was available in **Appendix D**, Table 7 of the Draft EIR. Please refer to **Chapter 5.0, Minor Changes and Edits to the Draft EIR** for the revised table.

Figures 4.3-2 and 4.3-5 of the Draft EIR have been corrected to show an eastbound through lane at Intersection 14 on Charter Way. Left turn movements to I-5 are illustrated in Intersection 15. Please refer to **Chapter 5.0, Minor Changes and Edits to the Draft EIR** for the revised figures. It should be noted that Intersection 14 has two through lanes, however, east of the I-5 over crossing one of these through lanes turns into a dedicated left-turn to the southbound I-5 ramp.

TRUCK TRAFFIC COUNTS AND TRUCK TRIP GENERATION RATES

As presented in the traffic impact study, some new truck traffic counts were conducted for purpose of the Development Plan EIR analysis. This was supplemented by existing truck count data collected by Caltrans. The EIR preparers also conducted a literature search of trip generation estimates specifically related to truck traffic. Truck-related trip generation rates were found for some land use categories included in the Proposed Project. For other land use categories included in the Proposed Project, truck-related trip generation rates were not available. Where these data were available, estimates of truck trip generation are presented in Table 4.3-13 of the EIR. Table 4.3-13 indicates that in the case of some land use categories (e.g., “High Tech – Research & Dev”), data are not available. The indication that data are not available should not be construed to mean that no truck trips would be generated, it means the data are simply “not available.” Where data are not available, it is not possible to calculate separate estimates of truck trip generation, and no separate assumptions can be made.

NO PROJECT SCENARIO

Letter A10, Comment A-10 requests clarification of the traffic impact analysis findings regarding trip generation associated with the No Project Alternative. Letter 13, Comment 7 also refers to perceived inconsistencies in the traffic volumes identified in the Draft EIR. In an effort to provide an assessment of the number of vehicle trips that could be generated if the Port does not decide to adopt and implement the Development Plan, the traffic analysis also includes a discussion of a No-Project alternative that outlines Port development of the site under its existing Institutional General Plan land use designation, referred to as the No-Project/Slow-Build Alternative. Under the No Project/Slow Build Alternative, the Port would

take no formal action to develop the Project Area as presented in the West Complex Development Plan and the Stockton Redevelopment Agency would not adopt a Redevelopment Plan for the Project Area. The land transfer from the Navy would continue as anticipated, and the Project Area would continue to be developed under its existing Institutional General Plan land use designation and P-L zoning designation. Under this alternative, growth could occur similar to that proposed in the West Complex Development Plan, but over a longer period of time due to the lack of approval of a unified plan for development. The lack of redevelopment funding under this alternative would also slow development because under the Proposed Project, redevelopment funding would be used to support infrastructure necessary to revenue-earning maritime and commercial/industrial development. Under this alternative both the McCloy Road, Daggett Road and Daggett Road Bridge Project and the Dredging and Placement Operation Project are assumed to occur, upon separate CEQA review and approval.

IMPACTS AND MITIGATION

TRAVEL DEMAND MEASURES

Impacts related to traffic generation are identified as significant and unavoidable in the Draft EIR. However, the size of the project presents opportunities to implement travel demand management (TDM) measures on a scale not feasible with smaller projects. The West Complex Development Plan does not describe proposed land uses in sufficient detail to allow the preparation of specific TDM measures. Nor is quantification of the effectiveness of the mitigation measures possible at this time. However, Mitigation Measure 4.3.1 identifies travel demand measures included in the San Joaquin Valley Air Pollution Control District document, *Guide for Assessing and Mitigating Air Quality Impacts*, and requires implementation of TDMs where feasible. Response 4.4 (Air Quality) further describes these TDM measures.

FAIR SHARE FUNDING

Letter A10, Comment A10-3 references Mitigation Measure 4.3.4, Contribution of Fair Share for Intersection/Roadway Improvements. This mitigation measure recognizes that the Proposed Project is not the only source of traffic congestion on the roadway facilities that would be affected by implementation of the Proposed Project. It requires that, upon establishment by the City of Stockton, San Joaquin County, or other appropriate public agencies of fair share fee programs to fund construction of Intersection/ Roadway improvements identified in **Appendix D** of the Draft EIR, the Port will contribute its fair share of funding for the cost of improvements that would be required to improve the levels of service on intersections/roadways affected by the Proposed Project.

Comments A10-3 and A10-5 indicate that the Draft EIR analysis should include a calculation of roadway improvement costs and identify the Port's fair share contribution to the cost of each improvement. There are several reasons why this approach would not be feasible at this time. The traffic impact analysis addresses cumulative plus project traffic impacts for the year 2020. It would be possible to calculate the Port's percent contribution based on this analysis but it may not accurately convey the changing cumulative context over the next 15 to 20 years. Build out of the Port of Stockton will be market driven and take place over a number of years. In addition, the City of Stockton is updating its General Plan, with

a proposed adoption date in late 2004. Land use and related travel forecasts in the area will change. In addition, many of the improvements may be constructed in 10–20 years, therefore obligating the Port to a specific dollar amount at this time may not represent fair share in the future. While this programmatic EIR has attempted to identify the impacts on local and regional roadways and identifies key roadway segments and intersections subject to impacts by build-out of the Port's West Complex, the most reliable mechanism for assuring fair share funding is for the public agencies responsible for roadway improvements to adopt fee programs and for the Port to enter into fair share programs with those agencies.

TRUCK TRAVEL CONTROL PLAN

Letter A10, Comment A10-3, references the Draft EIR's identification of a Truck Travel Control Plan and states that "any access proposed that utilizes Washington Street will not be allowed." Comment A10-6 also references potential conflicts between truck traffic and the school located at the intersection of Sonora and Fresno Avenues. However, both the City of Stockton and San Joaquin County have designated Washington Street, Fresno Avenue and Harbor Street as truck routes. Washington Street and Fresno Avenue are designated as Collector roadways in both jurisdiction's Circulation Elements. Both the SJCOG *Port Access Feasibility Study* (CCS September 2003) and the *Issues and Alternatives Report* for the Boggs Tract Specific Plan area (LSA June 14, 2001), commissioned by the Port of Stockton, San Joaquin County and the City of Stockton were intended to address existing conflicts between the truck traffic related to Port activities and residential uses in the Boggs Tract area. At this time, no alternative circulation plan or land use plan has been adopted in order to resolve these existing issues.

It should be noted that these conflicts predate the acquisition of Rough and Ready Island and are primarily related to the Port's existing East Complex. However, as noted in Impact 4.3.2 of the Draft EIR, implementation of the West Complex Development Plan would increase the number of off-site truck trips by up to 8,850 trips per day. Both the City of Stockton and San Joaquin County have designated Washington Street as one of the truck routes in the area. Washington Street is also designated as a Collector roadway in both jurisdiction's Circulation Elements. Washington Street is an important roadway connection between the West Complex and I-5. Therefore, it is expected that a substantial portion of all project-related trips, including truck trips, would use Washington Street. The Port of Stockton does not entirely agree with the San Joaquin County (Letter A10, Comment A10-4) staff contention that truck traffic "is not acceptable", and "will not be allowed." However, the Port of Stockton does acknowledge that the additional project-related truck traffic is a significant impact. The impact is characterized as significant in the draft EIR in Impact 4.3.2.

The proposed mitigation for this impact is to develop a truck traffic control plan. Such a plan would include signage, identify travel routes and direct the flow of truck traffic within those areas where potential conflicts could occur. As noted above, Washington Street, Fresno Street and Harbor Street are designated truck routes and will continue to be so until an alternative access plan is approved by the City, County, SJCOG and Caltrans. The Truck Travel Control Plan is not intended to modify routes but is intended to reduce conflicts with other uses and insure that trucks remain on designated routes. In order to clarify the intent of the measure, the following revisions have been made (see also **Chapter 5.0, Minor Changes and Edits to the Draft EIR**):

4.3.2 Develop and Implement Truck Travel Control Plan

<u>Until such time that the City, County, SJCOG, and Caltrans approve and implement an alternative access plan for the Port that reduces potential conflicts with adjacent residential uses,</u> the Port shall develop and implement a truck travel control plan to reduce the effects of project-related truck traffic on local roadways within the vicinity of the Project Area. The plan shall identify feasible methods ~~(including signage, suggested travel routes, etc.)~~ to manage truck traffic accessing the Project Area, including the following:

- **As alternative access becomes available from the West Complex (i.e., Daggett and McCloy Roads), the Port will direct truck traffic, in coordination with Caltrans and to the extent capacity of Highway 4 allows, to that route;**
- **Additional signage will be provided to direct trucks to only designated truck routes;**
- **Additional signage will be provided to limit truck speeds in residential areas or other areas of potential conflict with pedestrians and/or passenger vehicle traffic;**

The Port will continue to work with the City, County and Caltrans on studies of alternative access routes and will coordinate with all agencies in the implementation of the Truck Travel Control Plan.

FUTURE PROJECTS

Chapter 6.0, Environmental Analysis – Project Specific Components – McCloy Avenue, Daggett Road, and Daggett Road Bridge Project, addresses the potential environmental impacts resulting from the project specific components, as proposed at this time: 1) construction of McCloy Avenue from Navy Road Bridge approach ramp to Humphreys Drive, including a 360 foot conform to Humphreys Drive; 2) construction of Daggett Road from Burns Cut-Off to McCloy Avenue/Daggett Road intersection; and, 3) construction of a new bridge over Burns Cut-Off at Daggett Road, including construction of approximately 1,200 feet of new roadway to connect to the existing Daggett Road on Middle Roberts Island. There is currently no proposed component that would alter the current intersection configuration at Daggett Road and State Route 4.

According to Caltrans (Letter 13A, Comment 13) the future intersection of State Route 4 and Daggett Road will need to be widened to three through lanes to accommodate triple left turns from Daggett Road. Since this will be a future project, subject to coordination and an encroachment permit process with Caltrans, design features will be determined through consultation with Caltrans and additional environmental documentation will likely be required.

4.4 AIR QUALITY

DESCRIPTION OF THE ENVIRONMENTAL SETTING OF THE PROJECT FOR AIR QUALITY PURPOSES

EMISSIONS FROM OTHER SOURCES OF POLLUTION IN THE AREA

The Draft EIR identifies the major sources of ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, respirable particulate matter, and fine particulate matter in the project vicinity. (Table 4.4-1). Major sources of air pollutant emissions in the San Joaquin Valley include mobile sources, solvents, oil and gas production, power generation, industrial processes, wood burning, construction, farming, and waste burning. (Draft EIR 4.4-12, 4.4-14)

The Draft EIR recognizes that the San Joaquin Valley Air Basin (SJVAB) is designated as severe nonattainment for national and state ozone and serious nonattainment for PM10 standards. (Draft EIR 4.4-7) The Draft EIR reports that the urbanized area of Stockton is designated as an attainment zone for the federal CO standard and the SJVAB is an attainment or unclassified zone for the other ambient air quality standards. The Draft EIR describes the consequences of the nonattainment designations, and describes the plans for achieving attainment adopted by regulatory agencies with jurisdiction over air quality. (Draft EIR 4.4-7 – 4.4-8)

In order to provide quantified information regarding existing conditions, the EIR provides monitoring data for the Stockton area from 1996 through 2001. (Draft EIR Table 4.4-2, p. 4.4-13) The Draft EIR explains that pollutant concentrations measured at these stations are representative of background air pollutant concentrations for the Project area. (Draft EIR 4.4-12)

A commentor states that the Draft EIR "only includes emissions from the Project and wholly ignores both the baseline emissions from nearby Port of Stockton facilities and emissions from the surrounding area." The monitored concentrations of air pollutant emissions in the Stockton area reported in Table 4.4-2 of the Draft EIR include the emissions from the existing Port facilities, as well as other surrounding facilities and other sources of emissions affecting the air basin as a whole. These data constitute the best available information regarding the air people in the Project vicinity breathe, existing conditions and the project setting.

To further update this information, revised Table 4.4-2 (see Chapter 5 of this document) summarizes additional monitoring data for the Stockton Area gathered during 2002 and 2003. In addition, Table 4.4-2 summarizes monitoring data for the San Joaquin Valley Air Basin as a whole for the period from 1996 through 2003.

Based on the additional monitoring data for 2002 and 2003, the number of days during which ozone concentrations violated the state standard in Stockton peaked in 1998 (9 days at E. Mariposa Road station and 10 days at Hazelton Street station). Since then the number of violations has substantially decreased in recent years (5 days at E. Mariposa Road and 3 days at Hazelton Street station). For PM10, based on data reflecting the highest 24-hour average concentrations recorded, state standard violations peaked during the years 1999 to 2001 and have subsequently decreased.

To summarize, the EIR recognizes the degree to which the San Joaquin Valley Air Basin is not in attainment of specified state and federal standards. The EIR reports the actual air quality in the Stockton area based upon monitoring data. Further, the EIR specifies the degree to which the pollutant concentrations at these monitoring stations exceeded the state or federal standard in each year. This context is provided for the purpose of evaluating the Project's effects on the environment.

THE REGULATORY SETTING FOR THE PROJECT

The Draft EIR describes the regulatory setting for the project, including requirements imposed by the federal Clean Air Act, the California Air Resources Board, and the SJVAPCD, and the degree to which the region has achieved compliance with the State Implementation Plan.

A commentor requests that the EIR also consider whether the Project would comply with public nuisance statutes. The EIR addresses both air pollutant emissions and odors, which appear to be the basis for the commentor's concern. The EIR demonstrates that the Project would not result in significant increases in health risks associated with exposure to toxic air contaminants, and also would not result in a significant increase in odors perceived in residential areas.

Some of the residents across the federal shipping channel have filed suit against the Port of Stockton, claiming that ongoing Port operations constitute a nuisance. It is not the role of this EIR to resolve that dispute.

CONSTRUCTION IMPACTS

The EIR's analysis of impacts from construction-related emissions is based upon, and consistent with, the San Joaquin Valley Air Pollution Control District's *Guide to Assessing and Mitigating Air Quality Impacts* (GAMAQI). SJVAPCD reviewed the Draft EIR, and did not seek additional quantification of construction emissions. SJVAPCD determined the impact analysis to be adequate: "The Draft EIR adequately addresses existing air pollution conditions and current regulations, and identifies air quality impacts from the development of the West Complex on the surrounding environment as a significant impact." Nevertheless, at the request of other commenters, the Port has provided additional information regarding construction-related emissions.

PARTICULATE MATTER, INCLUDING FUGITIVE DUST

Significance Criteria

The SJVAPCD recognizes that the entire SJVAB is a serious nonattainment area for PM10, and that any addition to the current PM10 problem could be considered significant. However, the SJVAPCD explains that it has established regulations governing various activities that contribute to the overall PM10 problem. "The SJVAPCD has adopted a set of PM10 Fugitive Dust Rules collectively called Regulation VIII. Several components of Regulation VIII specifically address fugitive dust generated by construction related activities." (GAMAQI at 23) The SJVAPCD has chosen, as a policy matter, to focus the analysis of significance upon the implementation of the control measures that the SJVAPCD considers to be effective in minimizing PM10 emissions during construction-related activities. "Therefore, the

SJVAPCD has determined that any determination of significance with respect to construction emissions should be based on a consideration of the control measures to be implemented." (GAMAQI at 23) As long as a project proponent incorporates all of the required measures, the project's contribution of PM10 is considered less than significant:

> From the perspective of the SJVAPCD, compliance with Regulation VIII for all sites and implementation of all other control measures indicated in [GAMAQI] Tables 6-2 and 6-3 (as appropriate, depending on the size and location of the project site) will constitute sufficient mitigation to reduce PM10 impacts to a level considered less-than-significant. (GAMAQI at 23)

A commentor has requested that the Draft EIR establish a numeric significance standard for PM10 in the form of fugitive dust from construction activities, citing various standards adopted by air quality management districts in other areas of the state (275 lb/day—Sacramento Metropolitan Air Quality Management District, 150 lb/day—South Coast Air Quality Management District, 2.5 tons per quarter—San Luis Obispo County Air Pollution Control District). The fact that each of these air districts has adopted a different standard shows that adoption of such a standard is a policy decision requiring the judgment of the air quality management district in a particular region, based upon the pollutant concerns in that region and the strategies adopted by the region for achieving compliance with state and federal standards.

In this case, the SJVAPCD is the agency charged with achieving compliance with state and federal standards. The SJVAPCD could have chosen to require that project proponents quantify PM10 emissions associated with construction, and incorporate mitigation measures when emissions would exceed a given numeric threshold. Instead, this particular District has chosen, as a policy matter, to require that *all* projects incorporate specified dust reducing measures regardless of the quantity of dust that would be generated by a particular construction project.

The SJVAPCD provides the basis of its recommended standards of significance in its published "*Guide for Assessing and Mitigating Air Quality Impacts*" (GAMAQI). This guidance document implements a control measure in the SJVAPCD's 1991 *Air Quality Attainment Plan*, which requires that the District conduct an enhanced CEQA review program, including provision of technical assistance to Lead Agencies in addressing air quality issues in environmental documents.

The guidance document explains that, in designing thresholds of significance, the SJVAPCD used the Office of Planning and Research's definitions of significant environmental effect as its basis. Section 15382 of the CEQA Guidelines defines "significant effect on the environment" as "a substantial or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including … air." The SJVAPCD recognized that Appendix G of the CEQA Guidelines contains a list of effects that may be deemed significant, including: a project that will conflict with or obstruct implementation of the applicable air quality plan; violate any air quality standard or contribute substantially to an existing or projected air quality violation; result in a cumulatively considerable net increase in any criteria pollutant for which the project is non-attainment under applicable federal or state ambient air quality standards (including releasing emissions which exceed quantitative thresholds for ozone precursors); or expose sensitive receptors to substantial pollutant concentrations.

According to the SJVAPCD, "For some types of impacts, the criteria listed above are straight forward, but in other cases they require interpretation." (GAMAQI at 21) The SJVAPCD provides the following examples:

> A violation of air quality standards can be predicted for pollutants that can be modeled for atmospheric concentration. This is the case for carbon monoxide for which violations can be predicted using a dispersion model. Ozone, however, is the product of a photochemical reaction that may occur many miles away from the source of emissions. Although atmospheric ozone models exist, they are only sensitive enough to register changes caused by the largest projects. What is more important for determining ozone impacts is a project's contribution to existing violations of the ozone standard in the SJV. By comparing a project's ozone precursor emissions with emission levels considered important under state law, this impact can be evaluated. One such level is the stationary source emissions offset threshold required by the CCAA." [1] (GAMAQI at 21-22)

The SJVAPCD recognizes that the significance of an effect may vary with the setting. "The SJVAPCD has determined that the setting, as referred to in CEQA, can be defined for air quality." (GAMAQI at 22) In this case, the setting is the San Joaquin Valley Air Basin, "a distinct geographic area with a critical air pollution problem for which ambient air quality standards have been promulgated to protect public health." Based upon its expert knowledge of the setting, and its air quality expertise, the SJVAPCD's guidance document instructs **"As such, the SJVAPCD resolves that significance thresholds established herein are based on scientific and factual data. Therefore, the SJVAPCD recommends that these thresholds be used by Lead Agencies in making a determination of significance."** (GAMAQI at 22, emphasis added)

The SJVAPCD also recognizes that the final determination of whether or not a project has a significant effect is ultimately within the purview of the Lead Agency. In this case, the Port of Stockton relied upon the SJVAPCD with regard to the appropriate threshold for determining the significance of construction-related emissions.

Reliance upon the applicable air quality management district's recommended thresholds for determining the significance of air quality impacts is the accepted practice throughout California for the preparation of EIRs. As explained above, air quality management districts publish CEQA guidance documents for use by lead agencies as a method of achieving compliance with state and federal ambient air quality standards. Environmental Sciences Associates, the environmental consulting firm that prepared the EIR for this project, has prepared several hundred EIRs in California and reports that, to its knowledge, in every EIR it has based its analysis upon the applicable air quality management district's published thresholds of significance. Port of Stockton staff who have worked on EIRs throughout the state confirm that this is their experience as well.

[1] The SJVAPCD also addresses toxic air contaminant and odor impacts. See sections below, for responses to comments regarding these issues.

Construction Emissions from the Proposed Project

The SJVAPCD has determined that, because of their relatively short-term nature, construction-related emissions should be considered separately from emissions occurring in the operational phase of project implementation:

> The SJVAPCD recommends separating emissions occurring in the construction phase of a project from emissions occurring in the operational phase for analysis purposes. The reason for this separation is because construction produces only temporary impacts while the operational phase will produce emissions indefinitely into the future. Although construction activities can produce substantial emissions and can represent a significant air quality impact, the effect is not permanent. (GAMAQI at 44)

As explained above, the SJVAPCD's approach to CEQA analyses of construction impacts is to require implementation of effective and comprehensive control measures rather than to require detailed quantification of emissions.

Based upon comments on the Draft EIR, the Port of Stockton has elected to augment the constructions emissions information in the Draft EIR by quantifying anticipated construction-related emissions of PM10. This analysis is based upon a conceptual construction schedule or overview that describes anticipated road construction, and other construction associated with the West Complex Development Plan. The construction overview is included as **Appendix B** of this document.

A commenter estimates that emissions from construction activities will be very high, because it was assumed in the comment that very large areas (108 acres to 428 acres) would be subject to soil disturbance simultaneously. This would not be the case. Instead, projects would be carried out on an incremental basis, and a much smaller area would be disturbed on a given day. Typically, about one to two acres would be disturbed on a given day. Consequently, daily fugitive emissions would be much less than what was stated in the comment.

A spreadsheet program developed by Sacramento Metropolitan Air Quality Management District (SMAQMD) was used to calculate daily fugitive dust emissions for various construction scenarios. A scenario that could lead to the highest daily dust emissions would be clearing and grading activities for construction of the Automobile Import Facility, where about 140 acres would eventually be covered by this project. This construction activity would lead to the highest daily fugitive dust emissions, because it would involve the greatest amount of soil disturbance. Assuming that two acres would be actively disturbed on a given day, fugitive dust emissions for this scenario were estimated to be 121 lbs./day. Tailpipe emissions of PM10 from construction equipment are estimated to be slightly less than one lb/day, leading to a total PM10 emission estimate of 122 lbs./day. These emissions are below levels reported in the comment and are below the numeric standards used by other air districts to determine whether construction-related PM10 would be significant. By adopting standard dust mitigation measures contained in the spreadsheet model, the estimated daily emissions of PM10 associated with this project component would be 53 lbs./day. This level is well below any numeric significance threshold for construction-related emissions of PM10 recommended by other air districts.

In addition, part of the land that will be subject to construction activities is presently used for agricultural purposes, which use would cease as the land is developed for commercial sites. Agricultural activities generate emissions of criteria pollutants, mainly PM10 emissions. Since these emissions would cease, the emission reductions would offset emissions generated by the Project, both during the construction part of the Project and during the operations phase. A recent study published by California ARB states that PM10 emissions for various agricultural activities can generate PM10 emissions ranging from 1.2 to 12.5 lbs/acre-pass, depending on the activity (CARB, 2003).

If two acres of agricultural land are disturbed in a day, PM10 emissions could be as high as 25 lbs/day. These emissions, which usually occur each year as the land is being farmed, would cease as the land is used by the Project, and could offset the construction and operations PM10 emissions of the project. Thus net construction emissions in the area as a result of the Project would be less than those reported above.

Reference: California ARB, Emission Inventory/Farming Operations, January 2003, http://www.arb.ca.gov/emisinv/areasrc/fullpdf/full7-4.pdf

Effect of Control Measures Required By The SJVAPCD

The SJVAPCD recognizes that "PM10 emitted during construction can vary greatly depending on the level of activity, the specific operations taking place, the equipment being operated, local soils, weather conditions, and other factors, making quantification difficult." (GAMAQI at 24) Nevertheless, the SJVAPCD has determined that implementation of its adopted control measures will reduce construction-related emissions of PM10 to a less-than-significant level:

> Despite this variability in emissions, experience has shown that there are a number of feasible control measures that can be reasonably implemented to reduce PM10 emissions from construction. The SJVAPCD has determined that compliance with Regulation VIII for all sites and implementation of all other control measures indicated in Tables 6-2 and 6-3 (as appropriate, depending on the size and location of the project site) will constitute sufficient mitigation to reduce PM10 impacts to a level considered less-than-significant. (GAMAQI at 24)

The Draft EIR recognizes that the Port of Stockton is required to adhere to the SJVAPCD's Regulation VIII control measures, and includes a mitigation measure specifying that the Port will retain an onsite air quality monitor to further ensure compliance with these measures:

> The Port shall comply with the SJVAPCD's Regulation VIII control measures, and shall retain an onsite air quality monitor during periods of construction-related activity to ensure compliance with the SJVAPCD's Regulation VIII control measures. The monitor must be familiar with the SJVAPCD's Regulation VIII Fugitive PM10 Prohibitions, including implementation of all feasible control measures specified in the SJVAPCD's Guide for Assessing Air Quality Impacts. (Draft EIR, p. 4.4-20)

Regulation VIII Control Measures for Construction Emissions of PM10 are found in Table 6-2 of the SJVAPCD's *Guide for Assessing and Mitigating Air Quality Impacts*:

Regulation VIII Control Measures. – The following controls are required to be implemented at all construction sites. (Includes changes effective May 15, 2002)
• All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover. • All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant. • All land clearing, grubbing, scraping, excavation, land leveling, grading, cut & fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking. • With the demolition of buildings up to six stories in height, all exterior surfaces of the building shall be wetted during demolition. • When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained. • All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions.) (Use of blower devices is expressly forbidden.) • Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant. • Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday. • Any site with 150 or more vehicle trips per day shall prevent carryout and trackout.

The District's CEQA guidance clarifies that "Compliance with Regulation VIII does not constitute mitigation because it is already required by law." (GAMAQI at 64) In other words, compliance with the required control measures is a requirement of all projects, and is not imposed separately on a project-by-project basis. Table 6-3 of the SJVAPCD's *Guide for Assessing and Mitigating Air Quality Impacts* contains Enhanced and Additional Control Measures that can provide a greater degree of PM10 reduction than Regulation VIII. The District's guidance document states that these additional measures are recommended *if* the District determines that project conditions warrant their implementation:

> The SJVAPCD will recommend these enhanced and additional measures when project conditions warrant, e.g., potential for impacting sensitive receptors, construction sites of significant size, or any other conditions that may justify additional emission reductions. (GAMAQI at 64)

Here, the SJVAPCD provided comments on the Draft EIR, including a request that the EIR address the feasibility of several specific measures pertaining to operational-phase project emissions. The District did not recommend further consideration or implementation of any enhanced or additional PM10 control

measures beyond those identified in the Draft EIR for project-specific components of the West Complex Development Plan. Thus, the Draft EIR's determination that construction-related emissions of PM10 will be less-than-significant is supported by the SJVAPCD's *Guide to Assessing and Mitigating Air Quality Impacts.*

As described above, mitigation measures prescribed by the District were applied to construction, and the net daily PM10 emissions after the mitigation measures are estimated to be 53 lbs./day, well below any numeric significance threshold published by other districts.

Other Mitigation Measures for Construction-Related PM10 Emissions

SJVAPCD Enhanced and Additional Measures

The SJVAPCD's enhanced and additional PM10 control measures are identified in Table 6-3 of the District's *Guide to Assessing and Mitigating Air Quality Impacts.*

Enhanced Control Measures. – The following measures should be implemented at construction sites when required to mitigate significant PM10 impacts (note, these measures are to be implemented in addition to Regulation VIII requirements):
• Limit traffic speeds on unpaved roads to 15 mph; and • Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope grater than one percent.
Additional Control Measures. – The following control measures are strongly encouraged at construction sites that are large in area, located near sensitive receptors, or which for any other reasons warrant additional emissions reductions:
• Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site; • Install wind breaks at windward side(s) of construction areas; • Suspend excavation and grading activity when winds exceed 20 mph; and* • Limit area subject to excavation, grading, and other construction activity at any one time. * Regardless of windspeed, an owner/operator must comply with Regulation VIII's 20 percent opacity limitation.

Each of the enhanced measures was considered for the project-specific components evaluated in the EIR. These measures will continue to be considered as the Port determines whether to approve other specific projects implementing the West Complex Development Plan.

In order to clarify the process that will be employed as project-specific approvals are considered in the future, an additional mitigation measure will be added to the programmatic analysis of the West Complex Development Plan as follows (see also **Chapter 5.0, Minor Changes and Edits to the Draft EIR**):

4.4.1b Further reduction of emissions of construction-related fugitive dust

When the Port approves a project component implementing the West Complex Development Plan, the Port will require compliance with any feasible and appropriate SJVAPCD Enhanced and Additional Control Measures applicable to the particular project component.

Additionally, mitigation measures 4.4.1 and 4.4.2 on page 4.4-20 of the Draft EIR are re-numbered as 4.4.1a and 4.4.2c (see also **Chapter 5.0, Minor Changes and Edits to the Draft EIR**).

None of the District's enhanced or additional dust control measures is applicable to the dredging component. The Dredging and Placement Operations component does not involve traditional construction activities. Dredged sediments are extracted and deposited via pipeline to the disposal site. During extraction and placement onto the disposal site, the dredge slurry consists primarily of river water, with approximately 10 to 15% solids. Thus, there is no fugitive dust associated with these processes.[2] The Draft EIR explains that the Port would comply with the SJVAPCD Regulation VIII requirements. (Draft EIR 5-20) Given the unique type of construction activity associated with dredging, the SJVAPCD's enhanced and additional fugitive dust mitigation measures are not applicable to this project component.

Several of the District's enhanced and additional dust control measures have been recommended for implementation during construction of the road and bridge component. The McCloy Avenue, Daggett Road, and Daggett Road Bridge project-specific component involves road and bridge construction and paving. The Draft EIR recognizes that the Port is required to comply with the SJVAPCD Regulation VIII requirements when it constructs this project-specific component. (Draft EIR 6-29) In addition, the EIR's identified mitigation measures include the following enhanced control measure:

> The speed of all construction vehicles shall be limited to 15 miles per hour on unpaved roads. (Draft EIR 6-20)

The SJVAPCD's second enhanced control measure also will be implemented as part of the Port's BMP's to protect water quality. Nevertheless, to further clarify that this measure also applies to dust control, the following bullet will be added to the list of measures on page 6-220 (see also **Chapter 5.0, Minor Changes and Edits to the Draft EIR**):

- **Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.**

With this clarification, all SJVAPCD Enhanced Control Measures would be required for the road and bridge project component.

The Draft EIR's mitigation measures also include a requirement that is not specified by the SJVAPCD:

> Vegetation shall be replanted in disturbed areas as quickly as possible. (Draft EIR 6-20)

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[2] The Draft EIR also recognizes that after the dredge material dries at the disposal site, wind erosion has the potential to generate PM10. Mitigation measures are identified to reduce or eliminate PM10 generation from wind erosion of dried sediments. (DEIR 5-22 and 5-23)

In addition, the Draft EIR identifies the SJVAPCD's adopted rules under Regulation VIII that apply to the roadway construction project. (Draft EIR 6-20) Those rules include measures that are similar to the second and fourth bullets under the SJVAPCD's Additional Control Measures:

> During active operations, apply water or chemical stabilizers or suppressants and construct wind barriers sufficient to limit VDE to 20% opacity. Water or chemical stabilizers/suppressants should also be applied to unpaved haul/access roads and unpaved equipment traffic areas. The wind barriers should be maintained after construction for dust control.
>
> During preconstruction, water site and phase work to reduce the amount of disturbed surface area sufficient to limit VDE to 20% opacity.

These rules specify performance standards so that the precise measures can be tailored to a specific project. Here, for example, it is highly unlikely that road construction would result in violations of the opacity limits specified by the rule. Very little excavation, if any, will be needed for the road and bridge project. Road segments will be constructed above ground on a base of imported soil and rock. Imported soil will be moist, and will be stabilized using chemical stabilizers. Once soil placed on the site for roadbed segments has been compacted, it will be covered with a layer of rock. Thus, construction of wind breaks is unlikely to be needed along the road alignment. Wind breaks would, however, be placed near any area used for stockpiling of dirt, or near any other areas that would be disturbed and not stabilized for an extended period.

Because the road and bridge component is not expected to result in large areas of unstabilized disturbed soils, the project is not located near sensitive receptors, and opacity performance standards will be required, the Additional Control Measure encouraging suspension of excavation and grading activity when winds exceed 20 mph is not necessary to control fugitive dust.

Finally, the Additional Control Measure encouraging installation of wheel washers, or washing off trucks and equipment leaving the site will be employed as needed. Rather than installing wheel washers, the Port likely will create gravel pads at access points to prevent tracking of mud on to public roads by dump trucks or delivery trucks. All other construction equipment will be cleaned off before leaving the construction site. The following measure will be added on page 6-20 to identify this practice (see also **Chapter 5.0, Minor Changes and Edits to the Draft EIR**):

- **Install gravel pads as needed to control track out onto public roads from dump trucks and delivery trucks. Clean all other construction equipment before leaving the construction site.**

Measures Recommended by Other Districts

A commentor has provided a list of measures recommended by other air districts and agencies for reducing construction-related fugitive dust. In some cases, those measures are specific to localized conditions. For example, several of the measures are taken from best management practices identified by Clark County, Nevada and the Arizona Department of Environmental Quality. Sandy, desert conditions in Clark County, Nevada and Arizona are not similar to conditions in the San Joaquin Valley. In other cases, the measures are duplicative of the measures already specified for road and bridge project.

In its guidance document, the SJVAPCD has identified the dust control measures that it has determined to be "effective and comprehensive." GAMAQI at 24. Because the SJVAPCD has extensive knowledge of local conditions and air pollution reduction strategies, it is reasonable for the Port of Stockton to rely upon the SJVAPCD's judgment as to which fugitive dust control measures should be implemented in the San Joaquin Valley.

In addition, for road construction projects, the Port of Stockton includes in its contract specifications a requirement that the contractor comply with the California Department of Transportations (Caltrans) Standard Specifications for Construction of Local Streets and Roads (July, 2002). The Caltrans specifications include measures to protect air quality, including a requirement that water or dust palliative be applied for the alleviation of dust both inside and outside of the right of way. (Section 10-1,01) The contractor must develop a water supply and furnish all water required for the work. (Section 17-1.01) Water for compacting embankment material, subbase, base and surfacing material, and for laying dust must be applied by means of pressure-type distributors or pipe lines equipped with a spray system or hoses with nozzles that will ensure a uniform application of water. (Section 17-1.02) Dust palliative for the prevention of dust must conform to specific chemical requirements. (Section 18-1.02) The rate of application is specified. (Section 18-1.03).

As it implements its West Complex Development Plan, the Port will continue to consult with the SJVAPCD and Caltrans in order to include all applicable dust control measures in its construction specifications.

CONSTRUCTION – RELATED EXHAUST EMISSIONS

According to the SJVAPCD, PM10 is the pollutant of greatest concern during a project's construction phase. (GAMAQI at 24) As explained above, the District's approach to CEQA analyses of PM10 impacts is to require implementation of effective and comprehensive fugitive dust control measures rather than to require detailed quantification of emissions. (GAMAQI at 24)

The preceding responses expand upon the information in the Draft EIR by quantifying PM10 emissions from construction activities, including PM10 in the form of fugitive dust from earth-moving activities and entrained dust.

Section 2, above, also provides a quantified estimate of PM10 from construction equipment exhaust, and it is a small fraction of total PM10 emissions (about 1 to 2%). With regard to other pollutants emitted in exhaust from construction equipment, the SJVAPCD recognizes that these pollutants contribute to regional pollutant levels and, can, in unusual circumstances exceed the District's significance thresholds:

> The use of diesel powered construction equipment produces ozone precursor emissions besides combustion related particulate emissions. Large construction projects lasting many months may exceed the District's annual threshold for NOx emissions and could expose area residents to diesel particulate. (GAMAQI at 24)

The District also states that it will advise agencies, on a case-by-case basis, if construction-related emissions might be significant:

> The SJVAPCD recognizes that construction equipment also emits carbon monoxide besides ozone precursor emissions. However, the SJVAPCD has determined that these emissions may cause a significant air quality impact only in the cases of very large or very intense construction projects. The SJVAPCD will advise Lead Agencies on quantification procedures and significance on a case by case basis. (GAMAQI at 24, n. 33)

In this case, the Port and its air quality consultants concluded that the construction activities would not be expected to take place in a very large area because construction would occur incrementally over many years. Further, construction associated with the West Complex Development Plan would not be very intense. Rough and Ready Island is flat. Much of the maritime area already is paved, and very little earth-moving is anticipated. Thus, this is not the type of project that would be likely to lead to significant emissions from construction activities.

SJVAPCD reviewed the Draft EIR, and did not seek additional quantification of construction emissions. SJVAPCD determined the impact analysis to be adequate: "The Draft EIR adequately addresses existing air pollution conditions and current regulations, and identifies air quality impacts from the development of the West Complex on the surrounding environment as a significant impact."

It is also noted that EIRs in most Northern California regions do not normally quantify construction-related exhaust emissions. Several air quality management districts, including the Bay Area Air Quality Management District, have concluded that such temporary emissions are unlikely to substantially affect air quality, and therefore need not be quantified.

Nevertheless, to respond to public comments requesting further information, the Port has elected to quantify emissions associated with exhaust from construction equipment.

Significance Thresholds for Construction-Related Exhaust Emissions

As stated above, SJVAPCD does not recommend use of numeric significance thresholds for exhaust emissions related to construction. Other districts, however, do choose to address construction emissions through use of numeric standards. For example, the Sacramento Metropolitan Air Quality Management District (SMAQMD) has published significance thresholds for construction-related emissions of NOx and ROG of 85 lbs/day for use in that District. A commenter reports that SCAQMD has construction emissions significance criteria of 75 lbs/day for ROG, 85 lbs per day for NOx and 550 lbs per day for CO; the MBUAPCD has construction emissions significance criteria of 137 lbs per day of ROG and NOx and 550 lbs per day of CO; and the SLOCAPCD has construction emissions significance criteria of 185 lbs per day for both ROG and NOx. The SMAQMD standard is among the lowest of those published by air quality management districts. Thus, as a point of reference, emissions from construction of West Complex Development Plan projects are compared to the SMAQMD standard.

Estimated Construction Exhaust Emissions

A conceptual construction overview developed for the purpose of estimating construction emissions is found in **Appendix B** of this document. Most anticipated construction activities associated with implementation of the West Complex Development Plan are not complex. Road and pavement construction is anticipated to follow basic procedures; other construction in the industrial and maritime

likely would involve simple "tilt-up" style buildings. Bridge construction will involve placement of pre-formed concrete segments.

Daily ROG and NOx emissions for construction activities were calculated using the SMAQMD spreadsheet. Maximum daily emissions for each pollutant would occur for different activities. For ROG, maximum emissions would occur during paving operations, where these emissions were estimated from the spreadsheet to be 35 lbs./day, or below the numeric significance threshold recommended by SMAQMD of 85 lbs./day.

For NOx, maximum daily emissions would occur when the greatest amount of diesel equipment would operate, which is during road construction operations. Maximum daily NOx emissions for road construction were estimated by use of the spreadsheet to be 79 lbs./day, again below the numeric significance threshold recommended by SMAQMD for construction of 85 lbs./day.

In addition, NOx emissions from diesel construction equipment would not cause a localized NO_2 impact. Exceedances of the state 1-hr. NO_2 standard rarely occur anywhere in the state, and there have been no exceedances monitored in the area. The principal component of NOx emissions from diesel engines is nitrogen oxide (NO), a nontoxic gas. Only about 10% of NOx emissions are NO_2. Part of the NO can be converted to NO_2 by atmospheric ozone and would add to total NO_2. However, the amount of conversion is limited by the amount of available atmospheric ozone. Therefore, there is little opportunity for exceedances of the NO_2 standard to occur.

With regard to CO, exceedances of the ambient standards from construction activities would not occur. Construction equipment are diesel engines, and these engines by nature are not large emission sources of CO, unlike gasoline engines. Also, monitored CO levels in the Stockton area are well below the state and federal ambient air standards.

Health Risks Associated With Construction-Related Diesel Emissions

The Draft EIR explains that emissions from diesel equipment during construction would contribute to ambient concentrations of toxic air contaminants and associated exposure levels. However, because these emissions are occasional and temporary, their long term contribution to chronic health effects would be small.

Cancer risk is calculated based upon exposure to a carcinogen over the course of a 70-year lifetime. Thus, one year of exposure to a carcinogen, when assessed in relation to a 70-year lifetime presents only a very small fraction of increased health risk as compared to 70 years continuous exposure to the same carcinogen.

Here, in calculating the potential increase in risk from exposure to emissions from project-related operations, the EIR assumed 70 years' continuous exposure to the diesel emissions from maritime, rail, yard equipment and motor vehicle traffic.

Construction emissions, by comparison, would occur for a far shorter duration. Also, construction activities would not occur at a single location but would move from place to place as each day of

construction activity occurs, leading to a minimal effect at a given receptor over a long period. Thus, even if some operations-related emissions overlap with some of the construction-related emissions, this overlap would occur only briefly, not over 70 years, and the impact on incremental lifetime cancer risk would be very small.

In addition, the EIR quantified health risk based upon operations at full build out of the West Complex Development Plan. Construction would be completed by full build-out. To the extent that construction emissions overlap with emissions from project operations, such overlap would only occur at *partial* build out of the West Complex Development Plan.

Further, most of the construction emissions would occur at the south side of Rough & Ready Island, in the area to be developed as a Commercial and Industrial Park. Very few construction emissions would be generated on the north side of the Island, near sensitive receptors across the channel, except for dredging emissions, and these activities would have a duration of only about two months. Because health risks primarily are associated with chronic exposure to localized concentrations of toxic air contaminants, and because the prevailing wind direction is from the west/northwest to the east/southeast, construction on the south side of the Island would not affect residents across the channel to the north. The nearest residents located downwind of the construction areas are over 1.5 miles away.

Based upon all of the above information, emissions from construction activities combined with emissions from project operation would not exceed the 10 in a million significance threshold.

Mitigation Measures for Construction-Related Exhaust Emissions

The EIR did not find exhaust emissions from construction equipment to be a significant impact. (Draft EIR 4.4-19) Nevertheless, to further reduce this less-than-significant impact, the EIR included a mitigation measure addressing construction equipment:

> The Port shall require construction contractors to minimize idling time from heavy duty construction equipment (e.g., scrapers, trenchers, earth-movers). (Draft EIR 4.4-20)

Inclusion of this measure is consistent with guidance from the SJVAPCD. The SJVAPCD focuses on measures to reduce dust from fugitive sources. However, in its CEQA guidance, the District provides a list of mitigation measures that "Lead Agencies seeking to reduce emissions from construction equipment exhaust should also consider." The SJVAPCD does not mandate implementation of the measures on the list, and expressly recognizes "these measures are difficult to implement due to poor availability of alternative fueled equipment and the challenge of monitoring these activities." The SJVAPCD also acknowledges that new control devices are expected to be available soon that can substantially reduce PM and NOx emissions from diesel engines. "This new technology requires the use of ultra low-sulfur diesel (15 ppm) to be effective." (GAMAQI at 66)

Minimization of idling time is one of the six measures included on the SJVAPCD's list of measures that Lead Agencies should consider.

The Port of Stockton will consider inclusion of the remaining five measures identified by the SJVAPCD as it considers project-level approvals implementing the West Complex Development Plan. As

technology changes, measures that may be difficult or infeasible today could become more feasible in the future. Thus, these measures should be considered on a project by project basis. The EIR will be modified to identify the following additional mitigation measure on page 4-4-20 (see also **Chapter 5.0, Minor Changes and Edits to the Draft EIR**):

4.4.1d. Further reduction of exhaust emissions from construction equipment

When the Port approves a project component implementing the West Complex Development Plan, the Port will consider the Construction Equipment Mitigation Measures identified by the SJVAPCD, and will implement those Construction Equipment Mitigation Measures that the Port determines are feasible and appropriate for the specific project-component.

The following information is provided for the purpose of determining whether the additional Construction Equipment Mitigation Measures identified by the GAMAQI should be implemented for the McCloy Avenue, Daggett Road, and Daggett Road Bridge component.

Use of alternative fueled or catalyst equipped diesel construction equipment

The Port has researched the current availability of alternative fuels or catalyst equipped diesel construction equipment in the Stockton vicinity, and PuriNOx has been used on diesel equipment in other areas of the state. The cost of PuriNOx is market driven and will vary widely depending on the location and availability. However, Ramos Oil a PuirNOx dealer estimates the fuel cost at $0.15 to $0.16 higher per gallon than the cost of #2 Diesel. In addition, because of the water additive, fuel use is increased by 10%. Therefore, the total increase per gallon may approach $0.30 to $0.40. PuriNOx can be used in all diesel applications in both new and old equipment. (Evans pers. comm.). The CARB verified emission reduction is 14% for NOx and 63% for Particulate.

Sacramento Metropolitan Air District only recommends PuriNOx as mitigation for equipment older than 1996. The District does not recommend or require the use of both CARB certified engines and PuriNOx. (Christensen pers. comm.). Emission reductions are still obtained in newer engines. However, the District feels the technology is most cost effective on older engines that do not include other controls.

CARB certified engines (engines newer than 1996 and 1998) are widely available on construction equipment. However, most air districts do not believe that it is practical for 100% of the construction fleet to have CARB certified engines, mainly because smaller construction companies may not be able to easily comply with this mitigation, and they usually recommend a 20% fleet mix. Based on equipment mix and the phasing out of old equipment, this is now the standard mix and does not represent a mitigation measure.

In determining whether this measure should be implemented for the road project, the following factors are relevant. First, construction of the road project will occur well before the West Complex Development Plan is fully built-out. Emissions associated with roadway construction are not anticipated to result in a significant impact to air quality. Further, the construction fleet expected to be used in Stockton is likely to have a high percentage of CARB certified engines; thus, the reductions in emissions from use of PuriNOx would not be substantial compared to the increased price added to the construction project.

Limit the hours of operation of heavy duty equipment and/or the amount of equipment use

Limitations on the hours of operation of construction equipment can reduce peak daily emissions by spreading emissions out over a long time. Such limitations do not reduce total emissions or annual emissions. Peak daily emissions can be reduced by managing the work schedule and reducing the overlap of equipment operation on a given day. The incorporation of this measure could lengthen the construction period, thereby increasing costs to the Port of Stockton, without a substantial benefit to air quality.

Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set)

Electrically driven equipment tends to be less powerful than fossil fueled equipment. Road construction requires heavy equipment for grading and paving operations. Presently, electrically-driven heavy equipment of the type used in roadway projects is not available in the marketplace. The technology has not yet been developed to economically produce equipment that can perform these types of operations.

Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways

This mitigation measure would not reduce overall construction emissions, but could reduce localized concentrations of emissions during peak periods. Here, given the distance between construction sites and sensitive receptors and the prevailing wind direction, localized concentrations of emissions from construction equipment would be low. Further, most construction activities will occur far from roadways where peak-hour congestion would be substantial. Accordingly, this measure is not recommended for the road and bridge component.

Implement activity management, e.g., rescheduling activities to reduce short-term impacts

Like the preceding measure, this measure would not reduce overall emissions, but could reduce peak localized concentrations. Because such localized concentrations are not expected to be significant, this measure is not recommended for road and bridge component.

A commentor has provided a list of additional measures intended to reduce emissions from construction equipment. Many of those measures are the same as or similar to the measures identified by the SJVAPCD. For example, measures calling for use of alternative fueled equipment and catalysts on diesel equipment are addressed above. Measures relating to construction hours also are addressed above. Other measures reflect standard industry practice and therefore were not identified as mitigation in the Draft EIR. However, to respond to the commentor's request, the following mitigation measure will be included in the analysis of the road and bridge component on page 6-21 as follows (see also **Chapter 5.0, Minor Changes and Edits to the Draft EIR**):

To further reduce less-than-significant emissions from construction equipment, the Port will require implementation of the following measures:

- **Fuel off-road and portable diesel powered equipment, including but not limited to bulldozers, graders, cranes, loaders, scrapers, backhoes, generator sets, compressors, auxiliary power units, with ARB-certified diesel fuel (non-taxed version suitable for use off-road)**
- **Maximize to the extent feasible, the use of diesel construction equipment meeting the CARB's 1996 or newer certification standard for off-road heavy-duty diesel engines**
- **To the extent feasible, use CARB-certified engines in the construction fleet**
- **The engine size of construction equipment shall be the minimum practical size**
- **Construction equipment operating on-site shall be equipped with two to four degree engine timing retard or precombustion chamber engines**
- **Use electricity from power poles rather than temporary diesel power generators and electrify equipment where feasible**
- **Post a sign at the nearest public access point to the construction area advertising a telephone number to report gross-emitting vehicles**

The following mitigation measures suggested by the commentor are not recommended for inclusion:

Use of equipment that has Caterpillar pre-chamber diesel engines

Requiring use of a precise brand of construction equipment may preclude small or local businesses from competing for construction contracts, and could increase the construction costs. Because construction emissions are not expected to be significant, this measure is not recommended.

Snap acceleration test for heavy-duty diesel vehicles

Vehicles with CARB-certified engines have undergone a snap acceleration test. CARB-certified engines are addressed in the mitigation measures recommended for inclusion. The Port does not have the expertise to independently administer snap acceleration tests.

Require pre-1988 heavy-duty diesel commercial vehicles to meet 1988 federal emission standards

The Port is without sufficient expertise to monitor or enforce this measure. For example, the Port does not perform engine testing. Further, most (if not all) heavy duty construction equipment used by Port contractors will meet 1988 federal emission standards due to common industry practices related to replacement and turnover of equipment.

Construction worker trips should be minimized by requiring carpooling and by providing for lunch onsite

Carpooling would be potentially feasible only for large construction projects at which many workers would be expected to be present at the site during the work-day. Here, relatively few construction workers would be onsite during any particular time because construction will occur incrementally and sporadically. Given the small number of workers associated with the project and the geographic area in

which construction workers may live, a carpooling requirement likely would increase, not decrease emissions. The Port does, however, issue permits for mobile food providers during construction projects and there is food available for construction workers on Rough & Ready Island.

Emission offsets if ROG or NOx emissions exceed 6.0 tons/quarter

ROG and NOx emissions would not exceed 6.0 tons/quarter. Further, emission offsets are expensive, costing from $17,000 to $30,000 per ton (SJVAPCD, 2003). Given that construction emissions from project-specific components are not expected to be significant, purchase of offsets is not recommended.

Use ultra low sulfur diesel

According to the commentor's citations, this measure has only been recommended by the California Energy Commission, which has jurisdiction over new power plants. The measure has been applied where this type of fuel is available, such as at a project near a refinery in Southern California that already carries low-sulfur fuel. This type of fuel is not available in the Stockton area; thus, this measure is not recommended for this project component.

Demonstrate heavy-duty off-road vehicles achieve specified average reductions in criteria pollutants

Implementation of the mitigation measures identified in the EIR will reduce emissions from heavy-duty off road vehicles to the extent feasible. This mitigation addresses the same type of emissions by instead specifying a performance standard. Given the difficulty in monitoring or enforcing such a standard, implementation of discrete measures is recommended rather than establishment of this standard.

Require that off-road diesel powered equipment do not exceed 40% opacity for more than 3 minutes in any one hour.

Implementation of the mitigation measures identified in the EIR would be expected to reduce opacity associated with off-road diesel powered equipment. Given the difficulty in monitoring and enforcing this type of standard, implementation of the specific mitigation measures is recommended rather than this type of performance standard.

EMISSIONS FROM DREDGING

The Draft EIR's project-specific analysis for the Dredging and Placement Operations Project recognizes that dredging will result in emissions of PM10 and NOx. With regard to PM10, the Draft EIR summarizes the SJVAPCD's PM10 control measures that would be implemented as part of the project. (Draft EIR 5-20) The EIR also notes that the Dredging equipment must comply with applicable air quality permitting standards.

A commentor suggests that the EIR must quantify dredging emissions in order to ascertain the significance of the impact. The commentor goes on to suggest that the analysis of this impact has been deferred to another agency for future review.

As noted in the EIR and explained in greater detail below, equipment used for dredging must be permitted by the SJVAPCD or comply with the Statewide portable equipment program as Codified in Article 5 and sections 2450 through 2466 of Title 13, Division 2, Chapter 9. The portable equipment registration program and Title 13 of the California Code of Regulations list specific emission standards that any dredging equipment selected for the project must comply with prior to project implementation. The review and permitting of equipment in compliance with these regulations is not a discretionary action on the part of the SJVAPCD but rather a ministerial approval. The emission standards and applicable requirements are codified in the California Code of Regulations. At the time of Rule adoption, the California Air Resources Board and the San Joaquin Valley Air Pollution Control District prepared detailed analysis to show that these permitting regulations and actions would not adversely affect air quality, but rather would improve air quality conditions. Therefore, equipment subject to ministerial actions and permits issued in accordance with this program have been shown to comply with the applicable air quality standards and not adversely affect air quality in the Region. Because the regulations are published and specific standards are already in place, the analysis is not deferred but rather relies on existing laws and regulations and prior analysis of the effects of implementation of these laws.

The Draft EIR recognizes that dredging will result in substantial emissions of NOx. (Draft EIR 5-21) The SJVAPCD GAMAQI states "… large construction projects lasting many months may exceed the District's annual threshold for NOx emissions and could expose area residents to diesel particulate." The Draft EIR explains "As a result, the SJVAPCD recommends contacting it for guidance for the assessment of significance of large construction projects." (Draft EIR 5-21) The EIR preparers sought guidance from the SJVAPCD for this analysis. The SJVAPCD explained that, through its permitting process, the District places standards and controls on all dredging equipment with engines over 50 hp, and its requirements will minimize impacts from the operation of the dredge and any other diesel motors during the dredging process. (Draft EIR 5-21) On that basis, the Draft EIR includes a mitigation measure requiring the Port to ensure all diesel engines used during dredging go through the SJVAPCD permitting process and have a permit to operate. (Draft EIR 5-21).

The District maintains an emission inventory for all permitted sources. This inventory is used in the Air Quality planning process and the development of the State Implementation Plan and Ozone and Particulate Matter Attainment Plans. These plans account for projected emissions associated with permitted equipment and other area and indirect sources. The plan then proposes regulations and measures to demonstrate compliance with the NAAQS. The equipment used for dredging is subject to SJVAPCD permitting and emissions are included the emissions inventory. The permitting of the equipment represents an action that has previously been reviewed both at the time the SIP and attainment plans were developed and adopted and at the time the applicable permitting rules were adopted.

A commentor has stated that dredging should have been treated as part of project operations rather than as construction. Dredging is treated as a component of construction because the emissions associated with dredging are intermittent and short-term. Operational emissions are viewed as long-term in that they would continue to occur for many years after project build-out. Construction emissions, on the other hand, are temporary in nature, occurring for only as long as it takes to construct various components of a project or program. The GAMAQI explains:

> The SJVAPCD recommends separating emissions occurring in the construction phase of a project from emissions occurring in the operational phase for analysis purposes. The reason for this separation is that construction produces only temporary impacts while the operational phase will produce emissions indefinitely into the future. Although construction activities can produce substantial emissions and can represent a significant air quality impact, the effect is not permanent. (GAMAQI at 44)

Here, the Dredging and Placement Operations Project will be completed within a relatively short timeframe. Emissions associated with dredging will not extend indefinitely. Thus, it is reasonable to consider these emissions as construction emissions under the SJVAPCD's guidance. Operational emissions would include stationary equipment that would remain at the Port on a permanent basis. In addition, operational emissions would include the on-going vehicle trips generated by activities or projects associated with the West Complex Development Plan that continue to occur on a daily basis. Because the dredge equipment is a temporary source and emissions from dredging will end with the completion of the project in 60 to 90 days, the emissions are associated with temporary activities and do not represent a portion of the Port's operational emissions inventory.

Nevertheless, the Draft EIR recognizes emissions associated with dredging may exceed the District's annual threshold for NOx emissions. The District's annual threshold for NOx emissions is 10 tons per year—the threshold that applies to project operations. (GAMAQI at 25-26) In other words, even though the Draft EIR treats dredging as construction emissions, it also applies the air district's numeric threshold for annual emissions of NOx to these emissions. The Draft EIR found emissions of NOx from dredging operations to be a potentially significant impact. (Draft EIR 5-21)

QUANTIFICATION OF DREDGING EMISSIONS

While quantification of dredging emissions is not required under the GAMAQI and under the specific guidance from the Air District for this project, the following additional information is provided to address a commentor's request for more information.

Dredging emissions for the project were estimated using the applicable emission standards. The actual dredger that may be used for the Port project has not yet been selected. However, representative equipment was used to estimate emissions, including a diesel powered dredger with a typical engine size rated at about 2,000 Hp, a 400 Hp engine and a 550 Hp engine. Similar dredging equipment has been used for past dredging projects at the Port and within the San Joaquin Valley.

The assumptions used in the emissions estimates are that the dredger would operate for about 2 months (60 days). As noted in Chapter 5 of the Draft EIR, the total project may take a maximum of 90 days. However, actual dredge operation is anticipated at 60 days. The remaining time would be required for down time to clear debris and for site preparation activities. It was also assumed that the main engine on the dredger associated with the pump would operate at an average load factor of 70% over the 14 hour period in each 24 hour day. As noted on page 5-6 of the draft EIR, a nominal 24-hour operation results in approximately 12 hours per day of actual dredging. The dredger does not run continuously. However, to conservatively estimate emissions, operation time of 14 hours is assumed for the 2,000 horsepower engine associated with pumping operations. The statement on page 5-21 of the draft EIR that this engine would operate for 20 hours per day over a 90-day period was incorrect. The 400 Hp engine operates at

70% load and also typically operates only 14 hours in a 24 hour period. The remaining hours are spent on equipment clean-out activities, pump service, and equipment maintenance. The 550 Hp engine serves as a generator and operates at 50% load and would operate for 20 hours during the 24 hour period. Emission factors for the diesel engine were obtained from the requirements in CCR, Title 13 for NOx and EPA Emission factor document AP-42, Section 3.4 for other pollutants. These emission factors, along with the operating hours, and average load factor were used to calculate daily and total emissions of each pollutant over the entire 60 days. **Table 4-2** represents the current emission standards applicable to the project and the associated emissions.

Table 4-2 (below) was calculated using different assumptions than the commentor's, Dr. Fox's, calculations. Dr. Fox assumed both the use of a hydraulic dredge with pumps for hydraulic placement and support boats. This project will utilize hydraulic placement accommodated by the engines listed in **Table 4-2**. Support boats that would transport the dredge material away for mechanical placement will not be used. Further, the commentor uses general emission factors from the EPA AP-42 manual, which are based on national data and are not specific to California engine standards. Title 13 of the California Code of Regulations lists specific emissions requirements for equipment that would be used in the dredging project. These are the applicable NOx emission factors for the project. The AP-42 factors do not account for California engine standards. Furthermore, the commentor uses an operation time of 20 hours per day for all of the equipment. This is mistaken, as describe above.

TABLE 4-2
ESTIMATED DREDGING EMISSIONS IN COMPLIANCE WITH CURRENT REGULATIONS

Pollutant	Emission factor (lb/hp-hr)	Emissions 400 Hp engine (lbs./day) [c]	Emissions 550 Hp engine (lbs./day) [c]	Emissions 2000 Hp engine (lbs./day)[c]	Emissions Total (tons/year)[d]
NOx	0.0158 [a]	62.2	61.12	311.12	13.03
CO	0.0055 [b]	30.8	21.18	107.8	4.8 4
PM10	0.0007 [b]	3.92	9.8	13.72	0.82
ROG	0.0006 [b]	3.36	2.31	11.76	0.52

Source:
a) Title 13 CCR Section 2456 (converted from the 7.2 g/bhp-hr. standard).
b) U.S. EPA, *Compilation of Air Pollutant Emission Factors AP-42, Section 3.4 Heavy Duty Diesel Engines*, October 1996.
c) Note: Emission calculations = (emission factor) (engine Horsepower) (load rating, 0.7 or 0.5) (operating hours, 14 or 20)
d) Annual Emissions in tons= (lbs/day) / 2,000 lbs / ton*60 days

PROPOSED DREDGING EMISSION REDUCTION PROGRAM

The Statewide Portable Equipment program requires portable engines operated on a dredge to retrofit or re-power to comply with the more stringent 2005 Tier III engine standards with not to exceed standards for heavy duty diesel engines by January 1, 2005. These emissions standards are listed below in **Table 4-3**. The Port has agreed to require early compliance with these standards for the dredging

contractor selected for the project in the event the project proceeds in 2004. The new emissions associated with the dredging project with the inclusion of the 2005 emission standards are listed in **Table 4-3**. Implementation of the 2005 standards represents a substantial reduction in both NOx and PM emissions.

TABLE 4-3
ESTIMATED DREDGING EMISSIONS WITH IMPLEMENTATION OF 2005 EMISSION STANDARDS

Pollutant	Emission factor (g/hp-hr)	Emissions 400 Hp engine (lbs./day)	Emissions 550 Hp engine (lbs./day)	Emissions 2000 Hp engine (lbs./day)	Emissions Total (tons)
NOx	4.8 [a]	41.48	40.74	207.4	8.69
CO	2.6 [a]	32.10	22.07	112.35	4.99
PM10	0.15 [a]	1.85	1.27	6.48	0.29
ROG	0.272 [b]	3.36	2.31	11.76	0.52

Source:
a) Title 13 CCR Section 2420 et. Sec., 2005 Not to exceed standards for Heavy Duty Diesel engine greater than 750 Hp)
b) U.S. EPA, *Compilation of Air Pollutant Emission Factors AP-42, Section 3.4 Heavy Duty Diesel Engines*, October 1996. Converted from lb/bhp-hr factor.

MITIGATION IDENTIFIED IN THE DRAFT EIR

A commentor also has requested additional discussion of mitigation for dredging-related emissions. As described above, diesel-powered dredge equipment that will be used for the Dredging and Operations Project would be subject to permitting requirements. Any equipment operating at the Port would meet all applicable permitting requirements. Example permit language includes the following provisions designed to minimize emissions:

1. The engine shall be properly maintained and kept in good operating condition at all times.

3. Engine fuel must meet standards for California motor vehicle fuels as set forth in Chapter 5, Division 3, Title 13, of the California Code of Regulations.

5. This registration is not valid for operation in State Territorial Waters without written authorization from the corresponding onshore district.

6. The operator of a portable engine or equipment unit must obtain district authorization prior to operation at any specific location where the Statewide registration is not valid.

10. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann 1 or equivalent to 20% opacity.

11. Particulate matter emissions shall not exceed 0.1 grain per day standard cubic foot corrected to 12% carbon dioxide.

12. Authorization from the corresponding onshore district is required prior to operating this engine in State Territorial Waters. If authorization is in the form of a district permit, the terms and conditions of the district permit supercede the statewide registration requirements for the project, except that the most stringent of the control technology requirements and emission concentration limits contained in either the district permit or statewide registration apply.

13. The owner/operator of this engine shall submit any information deemed necessary by the corresponding onshore district to perform an air quality analysis (AQIA). This registration shall not be valid at any location where the AQIA demonstrates a potential violation of an ambient air quality standard.

These conditions represent the standards that have applied to past dredging activity. The area to be dredged is located within State Territorial Waters. Accordingly, the dredge cannot be operated absent authorization from the SJVAPCD. The SJVAPCD is entitled to impose more stringent requirements on the dredge than are present in the existing permit—but cannot impose *less* stringent requirements.

The mitigation measure presented in the Draft EIR is sufficiently concrete because it ensures that only a dredge that is a permitted source can be used for the project. Through the SJVAPCD emissions inventory process, a portion of the emissions associated with the statewide registered dredge fleet already has been allocated to the San Joaquin Valley Air Basin. If the diesel-powered dredge to be used is a California registered source, any associated air emissions have already been analyzed as part of the environmental clearance for the statewide dredge source registration program. In addition, emissions associate with the operation of registered and permitted equipment within the District would be included in the District emissions inventory and planning process. Use of a dredge that has a valid state operating permit will thus not cause “new” emissions that exceed the significance threshold.

In addition, the statewide permit for the dredge that will be used includes specific measures designed to reduce emissions from the dredge’s 2,000 hp diesel engine. These measures must be implemented in order for the dredging to occur.

OTHER MITIGATION MEASURES

Even though dredging activity is expected to be short-term, the Port has investigated use of an electric dredge in order to reduce air quality and noise effects. In constructing its much larger terminal project, the Port of Oakland used two electric cutterhead dredges. One, from Manson, Inc. is a 26” dredge which produces 40,000 gallons per minute. The other, from Great Lakes Dredging Corp., is a 36” dredge, producing nearly twice the water (with suspended material) as the Manson equipment. According to local (Delta Area) contractors, the Department of Water Resources and the Corps of Engineers have for approximately 15 years enforced a regulatory cap on the amount of water that can be pumped ashore, then clarified, and returned to the Delta of 9.8 million gallons per day. The 16” dredge the Port of Stockton has been using produces 10,000 gallons per minute (maximum), and can meet this requirement by a net dredging time of 17 to 18 hours per day considering shut down time for moving and cleaning trash from the cutting head. The electric dredges that were used at the Port of Oakland would not be able to meet this requirement.

There is only one electric dredge on the West Coast designed for very light duty, which is in Ventura. Thus, in order to use an electric dredge, the Port of Stockton would have to pay the costs of retrofitting an existing diesel-powered dredge. Refitting is estimated to cost $500,000 for set up for electric operation, mobilization of an additional barge for the power cord reel (too heavy for the existing dredge barge), and an additional demob (removing the electric motors) converting back to diesel power) of another $500,000. Power drops for 3,000 Kva for 9,600 to 13,000 volts, along with transformers, will cost in excess of $350,000 (Estimates Richard Smith, Electrical Engineer).

Coupling the cost with the large water volume problem, use of an electric dredge is not considered feasible.

EMISSIONS FROM PROJECT OPERATION

ODOR

A commenter states that residents across the federal shipping channel from the West Complex indicate that odors from fuel combustion exhaust are currently a problem and that residents report that malodorous fumes are generated from several different sources including tug boats and diesel trucks. As part of the preparation of this document, the EIR preparers contacted the SJVAPCD. The SJVAPCD is responsible for collecting and investigating odor complaints from the public for the West Complex and surrounding area. Discussion with the SJVAPCD indicates that they are unaware of any odor complaints being made against the Port of Stockton, either from residents upwind or downwind of Port operations, and that there were no complaints of diesel exhaust odors (Tom Busenbark, personal communication).

In addition, on February 6, 2004 at about 4:00 p.m., the air quality expert who prepared the EIR observed operations at the Port of Stockton for about 30 minutes, standing on the shore at the golf course, immediately opposite Berth 18. At that time, a cargo vessel was in hotel mode at Berth 18 and was loading rice bags onto the ship. Two of the three cranes onboard appeared to be operating and diesel engines were providing electrical power to the cranes.

Flags onboard the ship indicated that winds were blowing from the north and northwest during the half hour observation period. Wind measurements at Stockton Airport for that hour were in the same direction. There were no diesel odors detected while the operations were observed. According to the air quality expert, this was expected because the observation point was upwind of activities at the pier, and north and northwest winds would transport any emissions away from the observation point. As explained in the Draft EIR, residents located on the north side of the shipping channel are normally upwind of Port maritime operations.

Based upon the lack of reported complaints from current Port operations, the relatively low odor generated by diesel combustion, the distance between Port operations and residential receptors, and the prevailing wind patterns, significant odors from increased shipping, truck and train operations are not predicted.

Additionally, as currently described in the West Complex Development Plan, no additional land uses are proposed for the West Complex that would be likely to create additional or increased sources of odor.

PAVEMENT-RELATED EFFECTS AND MITIGATION

As stated on page 4.4-3 of the Draft EIR, ozone is a secondary pollutant that is formed in the atmosphere through a complex series of photochemical reactions involving emissions of the precursors NOx and ROG. The EIR also explains that the study area is in nonattainment of the ozone standard and that significance thresholds established by the SJVAPCD for NOx and ROG emissions are designed to limit the formation of ozone. The Draft EIR goes on to state that exceedances of these emission thresholds would constitute a significant impact because of their contributions to ozone levels.

One commenter states that the Proposed Project would indirectly increase ozone levels through decreased light reflectance associated with the installation of blacktop pavement over portions of the West Complex. While it is correct that in areas that are paved, blacktop pavement would reduce levels of light reflectance, there are many other factors that can influence the complex photochemical reactions which affect the formation of ozone. The effects of reflectance on temperature are usually discussed in the context of entire cities, in which several hundred square kilometers are involved. Determining the effects of smaller areas on ozone formation, such as those identified for the West Complex, is not possible.

In addition, the reduction in reflectance resulting from additionally paved areas at the West Complex may be cancelled somewhat by an increase in reflectance from the buildings, because they will have white or light colored roofs.

MITIGATION FOR TRAFFIC-RELATED EMISSIONS

The Draft EIR lists eleven measures designed to reduce travel, and resulting emissions, associated with operation of the West Complex facilities. In addition, the Draft EIR recognizes that other measures could become feasible as individual projects are designed and proposed. Thus, an additional measure also is identified:

> As it relates to traffic impacts associated with the Proposed Project, the Port shall develop an overall TDM Plan for the West Complex Development Plan. In developing the TDM Plan, the above measures would be included as components of the plan to be applied as appropriate to the specific uses developed. Additional measures, appropriate to the Project Area, not listed above, may also be included in the TDM Plan. As specific high-density employment projects within the Project Area are proposed, additional measures based upon the TDM Plan shall be developed and implemented, and shall be specifically tailored to address the specific characteristics of each project. (Draft EIR p. 4.3-28)

A commentor has asked that the Port consider several additional traffic demand measures for the purpose of reducing emissions. Consistent with the measure quoted above, all such TDM measures will be considered as projects are proposed. Nevertheless, the following analysis responds to each of the proposed measures:

<u>Provide on-site shops and services for employees, such as cafeteria, bank/ATM, dry cleaners, convenience market, postal services, etc.:</u> There presently is a food service facility and a credit union (including an ATM) on Rough and Ready Island. The Port expects that zoning on the Island will continue to allow these types of uses, and the Port will encourage provision of such services, especially in

the commercial/ industrial portion of the Island. As high employment-generating uses are proposed in the industrial area, the Port will consider providing incentives or requiring the provision of additional service type facilities to the extent these service businesses are not otherwise provided through the marketplace. Dry cleaning facilities are not allowed on Rough and Ready Island, and are unlikely to be allowed in the future due to environmental and regulatory concerns. A dry cleaning drop off/pick up service would be allowed as long as it did not conflict with security requirements.

Provide on-site eating, refrigeration and food vending machines: Please see the response, above.

Provide pedestrian signalization and signage to improve pedestrian safety: As roads are designed and constructed in the commercial/industrial area, the Port will ensure that pedestrian crosswalks and signalizations are provided consistent with industry-standard requirements for protecting pedestrian safety. In the secure, maritime area, pedestrian activity is expected to be extremely limited. Emissions would be reduced by designing roadways and intersections to minimize idling and to enhance efficiency of maritime cargo-related operations. Also, as discussed in the Draft EIR, pedestrian facilities will be installed only to the extent they do not conflict with security and safety. (Draft EIR 4.4-22)

Provide incentives to employees to carpool/vanpool, take public transportation, telecommute, walk, bike, etc: The Draft EIR includes measures consistent with this suggestion, including provision of satellite telecommuting centers, implementation of a carpool/vanpool program, provision of shuttle service to transit stations, preferential parking for carpool and vanpool vehicles, parking cash-out program for non-driving employees, provision of transit incentives, and implementation of a home-based telecommuting program.

Include teleconferencing capabilities, such as web cams or satellite linkage, which will allow employees to attend meetings remotely without requiring them to travel out of the area. This measure is included in the Draft EIR's list of traffic demand measures. In addition, a fiber optic system that could be used for this service is available at Rough and Ready Island.

Provide on-site child care or contribute to off-site child care within walking distance: Onsite child care facilities are prohibited by deed as a condition of the Federal transfer of Rough and Ready Island to the Port. It is infeasible to provide off-site child care within walking distance from Rough and Ready Island due to the distance between the Island and residential areas and due to the fact that the Island is separated from housing by an active industrial area.

Provide secure, weather–protected bicycle parking for employees. One bicycle parking space for every 10 car parking spaces is recommended. This measure likely is successful when employment generating facilities are located in mild climate areas, near residential areas with good bicycle access. Here, because Rough and Ready Island is separated from residential areas by an active industrial area, with substantial heavy truck traffic and poor bicycle access, it is highly unlikely that workers will be willing to bike to work. As is explained in the Draft EIR, the Port considered provision of bicycle facilities when it developed the list of traffic demand measures identified in the Draft EIR, but concluded "inclusion of bicycle facilities is not likely to effectively reduce emissions due to the location of the Project Area." (Draft EIR 4.4-22) Pursuant to the last paragraph of the traffic demand management mitigation measure,

the Port will continue to consider TDM measures as it considers individual employment-generating projects.

Provide direct, safe bicycle access to adjacent bicycle routes: There are no bicycle routes adjacent to Rough and Ready Island.

Provide showers and lockers for employees bicycling or walking to work, typically one shower and three lockers for every 25 employees: Please see the responses, above. Walking and bicycling to work is not likely due to the location of Rough and Ready Island. However, the Port will continue to consider TDM measures as it considers individual employment-generating projects.

Short-term bicycle parking for retail customers and other non-commute trips: For the same reasons as employees are not likely to bike to work, customers or others visiting the industrial/commercial area are not likely to use bicycles as their mode of travel.

Include a bicycle/pedestrian lane on the new bridge: Please see the responses above regarding bicycle/pedestrian use by employees and customers and visitors to the industrial/commercial area. For each of these reasons, a bicycle/pedestrian lane on the new bridge would not be expected to reduce automobile-related emissions and is not recommended.

Employ a transportation/rideshare coordinator: The Draft EIR includes a measure requiring the Port to develop a TDM Plan for the West Complex. If an additional employee is needed to develop and manage that plan, one would be hired. However, existing Port staff may be able to implement this measure, at least in the early stages of project development; thus, the EIR does not dictate whether the Port should hire a staff person for this purpose.

Implement a rideshare program: The Draft EIR includes this measure.

Design and locate buildings to facilitate transit access, e.g., locate building entrances near transit stops, eliminate building setbacks, etc: The Draft EIR includes a measure encouraging the provision of transit enhancing infrastructure.

Currently, there is no fixed route transit service to Rough and Ready Island; however, fixed route service may be provided in the future if there is sufficient demand. San Joaquin Regional Transit District (SJRT) is an independent agency providing transit service throughout the county. Fixed route service serves the Port of Stockton via the Boggs Tract Route which reaches Los Angeles Street. This is about 3 blocks from the East Complex area. The buses include accommodations for persons with disabilities. Through local and intraregional connections, service is provided throughout the county. In addition SJRT provides "Dial-A-Ride" program. This program provides "Para-transit services to persons who, due to their disability, are unable to get to or from the fixed route bus stops." Dial-A-Ride is a curb to curb service operating in the Stockton Metropolitan Area. This service is available 7 days a week, 365 days a year. Another service is known as the "Hopper." The SJRT Hopper is a flexible-fixed route bus service connecting most of the San Joaquin communities to Stockton. They also provide interregional service to Sacramento and the Bay Area Counties.

SJRT's has a fleet of 115 fixed route, intercity and interregional buses. These vehicles have capacities between 30 – 56 passengers. This fleet is comprised of 113 vehicle burning clean diesel, and two that use CNG. In addition they have two hybrid vehicles on order. The fleet of smaller vehicles is used for the Dial-A-Ride and Hopper services averages 16 passenger capacity. They have 40 of the smaller vehicles, 35 burn clean diesel, three are CNG and 2 burn unleaded gas.

The San Joaquin Council of Governments (SJCOG) also provides commuter services throughout the area. Some of the services provided by SJCOG include; park and ride lots, ride matching service for those interested in car pooling, van pool coordination and assistance with implementing tele-commuting. These services are further enhanced by a "Guaranteed Ride Home" program. This program overcomes a major objection to ride sharing and alternative transportation by assuring that for certain emergencies a taxi or rental car will be provided at no cost.

While transit service may need to be limited in the maritime area due to security requirements, the Port would encourage transit service to other areas of the Island. To the extent that design considerations such as those suggested by commenter can be incorporated into plans for individual projects in the commercial/industrial area, the Port would consider the feasibility of such measures when it determines whether to approve those individual projects.

Provide preferential parking locations for low-emissions vehicles, e.g., hybrids: The Draft EIR includes a measure to provide preferential parking for carpool and vanpool vehicles. While inclusion of hybrids is not a traffic demand measure because trips are not reduced, such inclusion would create an incentive to reduce trip-related emissions. Thus, hybrids and other low emission vehicles can be included in this preferential parking program.

Reduce single-occupancy parking fees for low-emission vehicles: The Draft includes a measure to implement parking fees for single occupancy vehicle commuters, and a parking cash-out program for employees. When these measures are applied to appropriate projects, reduced parking fees for low-emission vehicles can be included in the program.

MITIGATION FOR EMISSIONS FROM MARITIME-RELATED OPERATIONS

Under international and federal law, the Port's ability to reduce emissions from marine vessels, trains, and transport trucks is severely constrained.

Regulation of Ship Emissions. All ships currently calling at the Port of Stockton, and expected to call pursuant to the West Complex Development Plan, are foreign-based ships subject to international laws and treaties. The Port cannot regulate emissions from these ships, nor can the Port require ship operators to install emissions-controlling devices.

To the Port's knowledge, the only U.S. port to have negotiated voluntary emissions controls relating to international ship calls is the Port of Los Angeles, the largest (*i.e.*, busiest) port in the U.S. Several years ago, the Port of Los Angeles entered into a lease with the China Shipping Company for a new terminal dedicated to China Shipping operations. During construction of the new terminal facilities, an appellate court ruled that the Port of Los Angeles had not complied with CEQA prior to entering into the lease, and

ordered that the Port cease construction of the terminal, rescind its lease, and perform further environmental analysis -- potentially subjecting the Port of Los Angeles to delay damages to China Shipping as well as lost revenues. To settle the litigation, the Port of Los Angeles agreed, among other things, to an experimental "cold-ironing" program.

All cargo ships require power while they are at the dock (to run electrical systems, keep fuel warm, etc.). "Cold-ironing" refers to turning off a vessel's generators while it is at dock and connecting the vessel into shore-side power. Cargo ships cannot hook up to shore-side power unless the shipping company fits the ships with specially made devices to enable such hook-ups to occur. Because no nation requires cold-ironing for cargo vessels, ships in the international cargo fleets do not have on-board equipment that would enable them to connect with shore-side power. Shipping companies have maintained that installation of such equipment is economically prohibitive.

The Port of Los Angeles legally could not require China Shipping to fit its ships with equipment necessary to accommodate cold ironing. Instead, the Port of Los Angeles negotiated with China Shipping to allow retrofit of the ships that would call at Los Angeles. The Port of Los Angeles, unlike the Port of Stockton, has a "liner" relationship with China Shipping, in which the same five ships would consistently use the same Port of Los Angeles terminal leased by China Shopping year-in and year-out. Therefore, the Port of Los Angeles could conclude that if it both paid to provide shore-side power and paid to retrofit China Shipping's five vessels, the local area would receive the air quality benefit.

However, almost a year after the settlement agreement was executed, China Shipping still has not moved into its new Port of Los Angeles terminal, at least in part because of difficulties with the cold-ironing program. The Los Angeles Port Director reports that the settlement agreement must be renegotiated to allow China Shipping to call without cold-ironing all of its vessels; only two vessels have actually been retrofitted.

The Port of Stockton is not in a position similar to the Port of Los Angeles. The Port of Stockton is not engaged in a "liner" business, in which the same ships repeatedly visit the same port from week to week and year to year. Approximately 170 different ships made a total of approximately 180 ship calls to the Port of Stockton in 2003 and most of those particular ships are not expected to return in 2004. Thus, there is very little economic incentive for a shipping company to voluntarily retrofit a particular ship or set of ships in order to call at the Port of Stockton. Further, even if a subsidy were provided by the Port of Stockton for a voluntary retrofit of a particular ship, that ship might never visit the Port again and the environmental benefit of the retrofit to the Stockton region would be virtually nonexistent.

Implementation of the West Complex Development Plan is not expected to substantially change this situation. Existing rice-type operations would continue, and could expand. New cargo operations likely would include roll-on/roll-off automobile carrier operations. However, automobile carriers generally have large fleets of vessels operating at west coast ports. An individual vessel is not very likely to call at a specific port multiple times over the course of a year. In addition, leases with individual automobile carriers tend to be short-term (about 5 years). While the physical facilities needed for roll on/roll off type cargo operations may be in place longer than that time, the carriers themselves may change—further decreasing the likelihood that individual ships would call at Stockton repeatedly. Other new types of cargo operations at the West Complex, such as container operations, could occur far into the future if

there is a market for such operations. No details about such operations are known at this time, and no prospective tenants have been identified.

While the Port of Stockton is not likely to be in a position to influence international shipping companies' installation of cold-ironing equipment on their vessels, the Port certainly will continue to monitor progress in this area (see, for example, Environ, Cold Ironing Cost Effectiveness Study, 2004, prepared for the Port of Long Beach.) The fact that cold-ironing is not feasible today does not mean that it would not become feasible some time in the future. As the Port continues to consider discretionary approvals for maritime projects in future years, it will consider whether implementation of cold-ironing program would be feasible.

Regulation of train locomotive emissions. As with ship emissions, the Port of Stockton cannot regulate emissions from train locomotives, nor can the Port require the railroads to install emissions-reducing equipment on their locomotives.

A commenter has pointed to a measure adopted by the Port of Oakland in April, 1999 to "encourage" early re-powering of diesel engines on switch trains. There, the Port of Oakland adopted a measure to request that switch engines operating at the onsite joint intermodal terminal use engines that would meet the requirements of the then-recently promulgated federal regulation limiting locomotive emissions relating to switching activities.

At the Port of Stockton, the Port performs railroad car switches on the piers, rather than at a separate terminal. Very few switching operations occur at the Port on a daily basis.

Regulation of truck emissions. The Port of Stockton also cannot directly regulate emissions from privately-owned and operated trucks, nor can the Port require that truckers install emissions-reducing equipment on their vehicles.

The Draft EIR includes a measure designed to reduce truck emissions through measures that the Port can directly implement onsite:

> As part of the Proposed Project, the Port has included internal roadway improvements designed to reduce congestion. The Port will monitor roadways within the Project Area and will, to the extent feasible, improve onsite roadways as necessary to reduce congestion and truck idling. The Port also will carry out a truck driver information program aimed at reducing truck-idle emissions. (Draft EIR 4.4-22)

A commenter cites measures adopted by the Port of Oakland to create incentives for truck owners to voluntarily retrofit or replace truck engines. The Port of Stockton is aware of this program, and will continue to monitor its implementation. In 1999, Oakland adopted a measure to provide a subsidy toward the cost of retrofitting diesel truck engines with new engines meeting California emission standards for new diesel engines, or add-on exhaust treatment devices. Oakland also funded installation of add-on exhaust devices on 40 local trucks doing business in the near port area as a demonstration project, and Oakland adopted a measure to evaluate an emission testing station for heavy-duty diesel trucks on the port area.

Oakland has not yet implemented its diesel truck mitigation measure. Recently, in February 2004, Port of Oakland staff reported to its Board that the design of the Truck Program has presented two primary challenges: (1) finding appropriate emissions reductions technologies, and (2) making the selected technologies attractive to the owners of trucks that serve the Port's terminal. Based upon surveys of the existing local truck population, Oakland found that about 40% of the trucks operating at the port have engines older than 1994—the first year that less-polluting engines were required. Oakland's survey also found the trucking companies serving the Oakland terminals generally fall into two categories (1) companies that primarily shuttle containers within the Port area, or (2) companies that primarily transport containers to an from points beyond the Oakland port area. The first category, the "shuttle companies", reported that almost all of their business is port-related, and that the trucks they dispatch tend to be independently owned and operated. These independently owned and operated trucks tend to be the oldest and most polluting trucks in the Oakland port area.

The Port of Oakland therefore has decided to focus its first phase of its $1.5 million truck mitigation on these "shuttle companies." Initially, Oakland will provide grants to truck owners for installing catalysts and replacing older trucks with newer trucks. Oakland estimates that initially the grants for truck replacement would be about $7,500 per truck. In today's market, this is about half the cost of a new truck. Oakland also plans to put into place safeguards to ensure that these new trucks would remain in use in the Port area for a prescribed period of time.

Oakland's program is based in part upon the Gateway Cities Clean Air Pilot Program sponsored by the Gateways Cities Councils of Governments, the California Air Resources Board, and the Port of Long Beach. Under this program, grant money is distributed to private truck owners to repair, retrofit and replace older, more polluting diesel truck engines.

The Port of Stockton's operations (and revenues) are not on the same scale as the operations at Long Beach or Oakland. For example, revenues for the year 2003 were $217 million for the Port of Oakland and $249 million for the Port of Long Beach, compared to $23 million for the Port of Stockton. Thus, a $1.5 million expenditure for truck replacement at Oakland would be similar to a $158,700 expenditure at the Port of Stockton.

Nevertheless, depending upon the economics of a particular project implementing the West Complex Development Plan, and the types of trucks that would be associated with the specific project, it may be feasible to implement a truck incentive program designed to encourage private truck owners to install catalysts on existing trucks, or to replace trucks with newer trucks. The feasibility of such a program would depend in part upon whether the trucking operations associated with the specific project would be such that trucks would remain in the Port vicinity, similar to the "shuttle companies" identified in the Port of Oakland's survey, as opposed to trucking operations that use numerous trucks, few of which are associated with Port operations on a given day, and which travel outside of the air basin.

Feasibility also will depend upon the cost of an incentive program at the time that the Port approves specific projects, and the air quality improvement expected to result from the expenditure. Notably, regulations that went into effect in 1994 and in 2003 require far cleaner burning diesel engines than engines produced prior to 1994. As time passes, more and more of the truck fleet will be equipped with the cleaner burning engines, making a truck program less and less effective.

In addition, projected revenue from a particular project and Port revenues in general also will affect the determination whether a truck program is feasible. The Port's key responsibility is to provide regional economic benefits by constructing and maintaining facilities that generate much needed jobs and provide business opportunities for the Stockton area. Thus, the Port generally invests all Port revenues back into Port facilities. As the Port moves forward with its West Complex Development Plan, it will need to weigh the costs and benefits of additional air quality mitigation measures against the cost and benefits of its other programs.

At this time, without details about the timing of implementation of specific projects, the specific trucking operations associated with those projects, and the projected revenues associated with those projects, it is not possible to determine whether a truck repair, replacement or retrofit program would be feasible. As the Port considers specific projects implementing the West Complex Development Plan, it will evaluate the feasibility of such a program for each such project. The following mitigation measure will be added to page 4.4-22 of the Draft EIR: (see also **Chapter 5.0, Minor Changes and Edits to the Draft EIR**):

4.4.2c At each time that the Port evaluates a project-specific proposal expected to result in a substantial increase in truck trips, the Port will evaluate the feasibility of adopting a mitigation measure for that project that would implement a program to provide incentives to truck owners to retrofit, repair, or replace diesel engines in trucks which would primarily serve activities within the Port. In addition, on an ongoing basis Port staff will work with regional transportation planning agencies, local governments, and regional and state air quality agencies to determine whether grant money would be available to the Port to fund an incentive program pertaining to diesel truck mitigation, to attempt to obtain such grant money to the extent that it is available and feasibly could be applied to Port-related trucking operations, and to use such grant money to reduce emissions from Port-related trucking operations.

The Port of Oakland also investigated a truck emissions testing station in the Port area. The Port found this measure to be infeasible because it conflicted with the jurisdiction of other agencies.

Regulation of Yard Equipment. Two types of yard equipment currently operate at the Port of Stockton: equipment owned by independent stevedoring companies and equipment owned by the Port, and rented to stevedoring companies. The Port cannot regulate the off-road equipment owned and operated by the stevedoring companies; however, the Port can control its own yard equipment.

Of the Port-owned equipment, much of the equipment is propane-fueled. The Port owns 48 liquid propane gas-fueled lifts, 17 diesel lifts, 2 diesel bulldozers, 8 diesel loaders, 2 gasoline-powered generators, 3 liquid propane gas-powered generators, 3 diesel-powered generators, 1 diesel and 1 gasoline on-trailer, 1 liquid propane gas and 4 diesel track mobiles, 1 diesel sweeper, and several seldom-used pieces of equipment including 1 diesel pilot boat, 1 diesel aluminum boat, 1 diesel work boat, and 2 diesel firepumps. None of the aforementioned equipment operates continuously and only a small fraction operates at the West Complex (6 diesel lifts, 1 propane generator, 1 diesel generator, 1 diesel trackmobile). The Port regularly maintains its equipment in order to keep it in good working order, which results in lower pollutant emissions.

The Proposed Project would not result in a substantial increase in yard equipment. Rice ship operations would continue to use the same equipment that is in place today; however the number of annual hours that the equipment is operating is expected to increase. The diesel equipment currently operating at the West Complex is relatively new, and cleaner burning equipment compared to older diesel equipment. Roll-on/roll-off automobile cargo operations do not require yard equipment. Automobiles are driven from the ships to a sorting and processing area, and then driven onto car carrier trucks or car carrier rail cars. Container operations may occur in future years; however, no operator has been identified.

Nevertheless, recognizing that the Port feasibly can control Port-owned yard equipment, the Draft EIR includes a mitigation measure designed to ensure that emissions from such equipment are minimized at the West Complex:

> As equipment is replaced or new equipment is added, the Port shall require that cargo-handling diesel equipment at the West Complex include new engines meeting California emissions standards for diesel engines. (Draft EIR 4.4-22)

Regulation of tugs: The tugs operating at the Port of Stockton are tenant-owned and are not subject to direct regulation or control by the Port. However, as explained in the Draft EIR, in May of 2003, the U.S. EPA proposed new emission standards for nonroad diesel engines and sulfur reductions in diesel fuel that would dramatically reduce emissions attributed to nonroad diesel engines, including tugs. In addition, the Ports of Oakland and Los Angeles each are conducting pilot projects under which they have contracted with one of their tenants to retrofit a diesel tugboat as a demonstration project to determine the air quality benefits of replacing existing tug engines with new engines meeting California emission standards for new diesel engines. Data from these demonstration projects can be considered by the U.S. EPA and the California Air Resources Board as those entities continue to promulgate regulations in the future.

Because new regulations have been proposed, and because two demonstration projects already are being performed, there would not be a substantial benefit from funding yet another demonstration project in Stockton.

Other potential measures: In its air quality mitigation program, the Port of Oakland also included operational features designed to minimize emissions. Each relevant measure is in place at the Port of Stockton or has been included in the Draft EIR's mitigation measures:

1. Provide electric connections to allow tugs to "cold iron" while berthed. Tugs at the Port of Stockton are able to hook up to electrical shore-side power.

2. Provide subsidized 24-hour truck parking facilities in the maritime area. This measure was adopted in Oakland due to public complaints that independent truck owners were parking their trucks in the residential neighborhood adjacent to the port, starting these trucks early in the morning, sometimes allowing them to idle. Similar complaints have not been received in the Stockton area and the project is not expected to result in an increase in truck parking in residential neighborhoods.

3. Configure parking to minimize traffic. Configuration within the West Complex development plan area would not affect trip distribution to and from the island. However, the draft EIR includes a mitigation measure requiring the Port to design roadways in a manner to reduce congestion and idling and associated emissions.

4. Work with City of Oakland to synchronize traffic signals in West Oakland. This measure is not relevant to the West Complex development plan.

5. Encourage employees and tenants to use alternative transportation on "Spare the Air" days. The draft EIR includes a measure requiring the Port to prepare and implement a TDM program. Once such a program is in place, it likely will become feasible to extend it to increase awareness of the need to carpool or use alternative transportation on days when pollution is high. This measure will be included in the TDM program.

6. Offer transit subsidies to Port employees. This measure is included in the Draft EIR's mitigation program.

7. Establish an employee "cashout" policy at new marine terminals. This measure is included in the Draft EIR's mitigation program.

8. Restrict the supply of parking for tenant vehicles. Given the limited public transit serving the Port of Stockton at this time in comparison to the network of transit facilities serving the Port of Oakland, this measure is not considered feasible. This measure can be reconsidered in the future if sufficient public transportation becomes available. The draft EIR includes a comprehensive TDM program designed to accomplish this same objective.

9. Enhance maintenance of Port and tenant vehicles. The Port of Stockton regularly maintains all of its vehicles and yard equipment. The Port of Stockton also has an environmental compliance lease clause for tenants which requires compliance with all applicable regulations. The Port conducts annual environmental compliance inspections of tenants to monitor compliance with environmental regulations.

10. Carry out truck driver education program aimed at reducing truck-idle emissions. This measure is included in the Draft EIR's mitigation program.

In addition to onsite mitigation, the Port of Oakland also included in its program subsidies for studies of potential emissions reductions at two nearby facilities known to emit high levels of pollutants associated with manufacturing. No additional control measures have been installed at either facility to date. No similar facilities are located next to the Port of Stockton.

Finally, the Oakland program included subsidies for retrofit of diesel bus engines operated by the regional transit district and serving the Port vicinity with new engines meeting California emission standards for new diesel engines or with alternative fuel engines. The Port of Stockton has investigated the feasibility and effectiveness of a similar measure, and has learned that SJRT's fleet of 115 fixed route, intercity and interregional buses is comprised of 113 vehicles burning clean diesel, and 2 that use CNG. Thus, this mitigation measure already has been implemented in the Stockton vicinity.

MITIGATION FOR ALL OFF-ROAD EQUIPMENT

The SJVAPCD asked that the Port consider two mitigation measures pertaining to off road equipment. First, the SJVAPCD asked that the Port require all off road diesel equipment, including harbor craft, to use CARB-certified on road diesel. In a personal communication with air district staff, the Port confirmed that CARB-certified off road diesel would be equivalent to the use of CARB-certified on road diesel fuel, and would achieve the district's objective of requiring use of fuel with a low sulfur content

specification. (Pers. comm. Cadrett) The only difference between on road and off road CARB certified diesel is that on road diesel is taxed, while off road diesel is not taxed. The air district did not intend for the Port to incur an additional tax burdens. The following mitigation measure will be added to page 4.4-22 o the Draft EIR (see also **Chapter 5.0, Minor Changes and Edits to the Draft EIR**):

4.4.2d Reduction in Emissions from all Off Road Equipment

The Port will require that all off-road and portable diesel powered equipment, including harbor craft, to use ARB-certified diesel fuel (non-taxed version suitable for use off-road)

In addition, the SJVAPCD asked that the Port consider providing heavy duty vehicle users with information regarding the District's Heavy Duty Engine incentive (Carl Moyer) programs. This measure can be part of the truck driver information program identified in the Draft EIR, and that information can be expanded to apply to all heavy duty vehicle users. The following mitigation measure will be added to page 4.4-22 of the Draft EIR (see also **Chapter 5.0, Minor Changes and Edits to the Draft EIR**):

4.4.2e Heavy Duty Vehicle Education Program

The Port will provide all port heavy duty vehicle users information regarding the SJVAPCD Heavy Duty Engine incentive (Carl Moyer) programs.

The remaining two measures that the District asked the Port to evaluate, cold ironing and incentive money to replace older diesel engines, are addressed above.

CUMULATIVE IMPACTS

The relevant geographic area for evaluating cumulative emissions of criteria pollutants is the entire San Joaquin Valley Air Basin. This is because pollution, such as ozone is not directly emitted from a particular source. Instead, ozone forms as a result of complex interactions between compounds emitted from a variety of sources. Ozone may be formed far from the individual sources of those emissions. Ozone, therefore, is evaluated, and monitored on a regional basis—not on a site specific basis. Particulate matter similarly is a regional issue because small windborne particulates can travel long distances, and are of basin-wide concern.

To evaluate these types of regional pollutants, an EIR describes ozone precursors (ROG and NOx) and particulate matter from individual project-related sources. Those emissions are then evaluated to determine whether they would be substantial in light of basin-wide conditions. The analysis is, in that manner, inherently a cumulative analysis. For this reason, in determining whether a project would result in a cumulative impact, the GAMAQI states:

> **Cumulative Impact.** Any Proposed Project that would individually have a significant air quality impact (see Section 4.3.2—Thresholds of Significance for Impacts from Project Operations) would also be considered to have a significant cumulative air quality impact. (GAMAQI p. 29)

The Draft EIR predicts that implementation of the West Complex Development Plan will have a significant air quality impact. Thus, the EIR explains that the project also would have a significant cumulative air quality impact. (Draft EIR 8-4) The EIR also points out that because the air quality analysis is based on the traffic analysis, it is also a cumulative analysis for that reason. The traffic analysis used to prepare the EIR includes all projected growth in the Port vicinity, including nearby industrial areas.

In contrast to regional pollutants such as ozone and PM, there are other types of pollutants that can result in significant localized concentrations. However, the project is not expected to result in or contribute to any significant localized concentrations of pollutants. A screening analysis for CO concentrations was performed to calculate anticipated highest concentrations of CO at intersections affected by project-related traffic in 2020. The CO modeling shows that project-related and cumulative traffic would have a less-than-significant impact on CO concentrations. (Draft EIR 4.4-23 and 4.4-24) The EIR also evaluates whether combined diesel PM emissions from project operation and construction could result in significant impacts to local residents, concluding that such an effect would not be significant. (Draft EIR 4.4-25)

A commenter suggests that the EIR was required to list other individual sources of emissions that could combine with project emissions, and quantify those other sources. Doing so, however, would be infeasible and would not provide meaningful information. As explained above, all stationary and mobile sources in the SJVAB contribute to ozone and PM levels that exceed the national and state standards. The ozone precursors emitted from ships are not materially different from the ozone precursors emitted from cars on the other side of the air basin. Thus, there is not a meaningful distinction or rationale for quantifying emissions from nearby facilities or businesses, as opposed to other sources elsewhere in the basin. Instead, to provide information regarding basin-wide conditions, the EIR presents monitoring data from several sites in the Stockton area. This data represents emissions for existing sources.

Future conditions in the air basin are projected on a basinwide level by the SJVAPCD. These emission inventories and projections are used in the Federally mandated ambient air quality standards demonstration plans for both Ozone and Particulate matter. The complete plans are available on the SJVAPCD website at www.valleyair.org.

The San Joaquin Valley Air Pollution Control District is responsible for monitoring and projecting basin-wide emissions, **Table 4-4** presents a summary of the planning emission inventories for the Rate of Progress (ROP) baseline year (1990) as well as for the ROP target years of 2002 and 2005. The 1999 Emissions Inventory is also presented since 1999 was the ROP target year immediately preceding 2002 and it was also the year used as the basis for reconstructing the baseline year. A county-by-county planning emission inventory has also been prepared by the SJVAPCD and is included in the **Appendix A** of the 2002 Rate of Progress Plan.

TABLE 4-4
RECALCULATED 1990 BASE YEAR EMISSIONS INVENTORY, 1999 EMISSIONS INVENTORY, AND 2002 AND 2005 PROJECTED PLANNING EMISSIONS INVENTORIES (SUMMER, TONS/DAY)

Source Categories	1990 VOC [3]	1999 VOC	2002 VOC	2005 VOC	1990 NOx [1]	1999 NOx	2002 NOx	2005 NOx
Total Stationary Sources	163.8	96.6	99.7	102.7	326.0	183.8	168.8	172.0
Total Area Sources	172.5	184.7	191.9	196.1	5.7	6.3	6.4	6.5
Total On-Road Motor Vehicles	261.7	126.3	98.8	78.9	258.5	225.6	210.7	179.7
Total Other Mobile Sources	72.4	73.0	73.9	61.4	196.6	158.8	147.7	134.0
Total Mobile Sources	334.1	199.3	172.7	140.3	455.1	384.4	358.4	313.7
Total San Joaquin Valley	670.4	480.6	464.3	439.1	787.0	574.5	533.6	492.2

The FCAA requires the District to prepare ROP plans every three years that demonstrate that precursor emissions are being reduced by an average 3 percent per year. The next ROP plans for the SJVAB is due 2005. In addition, the SJVAPCD is also considering an Extreme Ozone Attainment Demonstration Plan.

Even though emissions of ozone precursors and PM from implementation of the West Complex Development Plan are only a small fraction of future emissions basin-wide, consistent with GAMAQI guidance, project-related emissions are considered cumulatively considerable because of the attainment status in the Air Basin and because of the health effects associated with ozone formation on a regional basis.

4.5 NOISE

BACKGROUND INFORMATION ON NOISE

The Draft EIR explains that a typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to low and extremely high frequencies instead of the mid-range. (Draft EIR, p. 4.5-1.) The A-weighted sound level is universally accepted as an appropriate means of assessing environmental noise effects on humans. As stated in White 1975, "The A scale is reasonably matched to the human hearing sensitivity for a wide range of sound, and this weighting is stipulated for virtually all governmental and industrial regulations." White, Frederick A. 1975. Our acoustic environment. Wiley-Interscience. The comment discussing the origin of the A-weighting filter also is noted.

[3] Reconstructed 1990 Emission Inventory as described in Section 3. Emissions data for on-road motor vehicles came from EMFAC2002, version 2.2, provided by the CARB to the San Joaquin Valley Unified Air Pollution Control District on November 4, 2002. Emissions data for all other source categories came from the CARB emissions inventory dated December 5, 2001.

To provide additional background information, the Draft EIR includes a figure (4.5-1) comparing noise levels commonly associated with various activities, and information about public reactions generally associated with those noise levels. Figures of this sort are commonly included in EIR noise chapters; the source of this particular figure is the Caltrans Transportation Laboratory Noise Manual. The intent of Figure 4.5-1 is to generally provide the reader with a sense of typical sound levels and how changes in sound levels are generally perceived. For example, the figure indicates that noise from a diesel truck at 50 feet is between 80 and 90 dB. This is a reasonable measurement. While truck noise on a low-speed residential street may not be this high, urban areas such as Stockton include freeways passing through the City, as well as busy roadways. The figure also includes information, based upon Caltrans' experience and expertise, about the likelihood that noise complaints will be generated by noise at particular sound levels. The figure does not state or suggest that complaints are likely only when sound is at 80 dB. It indicates that complaints are likely when the sound is 80 dB but does not exclude complaints when the sound level is below 80 dB; the figure states that complaints are possible when the sound level is 70 dB and rare, but not unheard-of, even at 60 dB. One comment states that the figure contradicts information in the EIR section entitled "Effects of Noise on People," but does not explain what the contradiction is perceived to be, and no contradiction is apparent.

NOISE EXPOSURE AND COMMUNITY NOISE

TRANSPORTATION AND NON-TRANSPORTATION NOISE SOURCES

A comment states that a majority of the existing residential area will be impacted by non-transportation sound sources, so noise limits governing the project must be tailored to such sources. However, as explained in the Draft EIR, the noise sources associated with the Proposed Project that would most affect residential neighborhoods are: ships (at certain residences north of the deepwater shipping channel) and motor vehicles (at residences and a school along certain roadways approaching the port facilities. These are transportation noise sources.

The north-shore residents' comments generally agree with the EIR that the primary West Complex noise sources affecting the north shore are ships. Ships are "transportation" as the word is commonly understood, and are similar to other transportation noise sources—such as cars, trucks, trains and aircraft—in that they are not locally regulated. Because ships move in interstate and international commerce, only federal and international law regulate the noise that they generate. The Draft EIR recognizes, however, that constructing improved maritime facilities on Rough & Ready Island could increase the number of ship calls, as well as the location of ship calls. The Draft EIR therefore assesses increased ship noise as an effect of implementing the proposed West Complex Development Plan.

THE MODEL NOISE ORDINANCE

One comment refers to the State's Model Noise Ordinance and asserts that certain noise values "adopted by the State" in that Model Noise Ordinance" have been found to be more appropriate" for non-transportation sound sources than the Ldn/CNEL sound descriptors used in the EIR. As discussed above, however, the Proposed Project would add primarily transportation noise sources. The appropriateness of the Ldn/CNEL noise descriptor is discussed below. It should also be noted that the State of California has

not "adopted" any noise values but rather created, and later abolished, an Office of Noise Control that identified values in a model noise ordinance that it suggested could be included in a City or County's local noise ordinance; there was never any regulatory requirement for any jurisdiction to adopt this model noise ordinance.

EFFECTS OF NOISE ON PEOPLE

Noise from a variety of sources can affect ambient conditions—from transportation sources such as cars, trucks, trains and ships; to stationary sources such as processing plants and factories; to residential sources such as yard equipment, music, voices and pets. Each source produces noise having different characteristics, each of which can contribute to annoyance. One such characteristic is the relative loudness (or volume) or a particular noise event. Other characteristics include the duration of the noise event, the pitch of the noise, the time of day that the noise occurs, and whether the noise is continuous or intermittent.

The decision regarding which metric should be used to describe a particular noise source depends upon the relevant characteristics of the type of noise that is being measured and the purpose of the measurement. The EIR uses DNL/Ldn and CNEL. These descriptors characterize the noise that occurs from both continuous sources and single event sources over the course of a 24-hour period. Both DNL and CNEL are derived by measuring the total sound occurring at a given receptor site over a 24-hour period. In calculating DNL, noise occurring between 10:00 p.m. and 7:00 a.m. is weighted more heavily than daytime noise by adding 10 dBA to nighttime noise events in order to take into account the greater annoyance of nighttime noise. CNEL incorporates the same 10 dBA nighttime "penalty" as DNL, but also adds 5 dBA to noise occurring during the evening hours between 7:00 p.m. and 10:00 p.m.

DNL and CNEL reflect the frequency and time of day of noise events, together with the amount of sound resulting from each event. These descriptors are not additive, or average noise levels, but instead are calculated logarithmically; thus, the loudest events heavily influence the DNL or CNEL results. In addition, because these descriptors penalize nighttime noise by adding 10 decibels (dB) to each nighttime event, every nighttime noise event is treated the same as 10 daytime noise events – or, in other words nighttime noise is evaluated as if it were 10 times as loud as daytime noise.

The DNL and CNEL metrics are used in the Draft EIR to characterize noise associated with maritime operations. A ship can be in port for an entire 24-hour period and beyond. Thus, this metric takes into account the continuous noise that can occur over that period, as well as individual events that may occur such as closing hatches and other intermittent noise events.

The Draft EIR identifies several of the ways that noise can affect people, ranging from hearing loss and ear pain to interference with sleep and speech, to subjective effects such as annoyance. The draft EIR's general description of how changes in sound level are perceived is consistent with commonly accepted notions about human noise perception. The discussion on page 4.5-4 of the draft EIR is taken directly from a Caltrans noise reference document. A similar discussion is provided on page 34 of Cowan 1994.

The noise levels associated with Port-related activities would not result in hearing loss or ear pain. However, the noise levels at some receptors would be within the range that would be expected to cause

annoyance in some individuals. Reactions to noise, measured in terms of annoyance, are based upon a combination of factors including sleep disturbance, speech disturbance and stress. The relative loudness of a single event, standing alone, is not a sufficient predictor of annoyance. A very loud noise event may be startling during any time of day, and may awaken much of the community during the nighttime hours. A less intense noise event may not be annoying if it occurs once, but may be highly annoying if it happens frequently and interferes with speech. There also is a psychological component to the perception of noise—noise events that are highly annoying to one individual may be only mildly annoying to another. The draft EIR acknowledges:

> There is no completely satisfactory way to measure the subjective effects of noise, or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists, and different tolerances to noise tend to develop based on an individual's past experiences with noise. (Draft EIR, page 4.5-4)

The DNL metric has proven to be the best descriptor for assessing community annoyance. This is because that metric takes into account the loudness of individual noise events, the duration of the events, the time of day that the noise events occur, and the frequency at which they occur. Further, the DNL metric takes into account the potential for sleep disturbance by penalizing nighttime noise by adding 10 decibels. No other metric can account for all of these factors.

Based upon the DNL metric, federal state and local agencies have developed land use compatibility standards. Where, as here, a public agency is determining whether noise generated by a particular project should be deemed "excessive" or "significant," the local agency turns to locally adopted noise standards designed to protect the community at large from annoyance. As an example, a noise compatibility standard of 60 Ldn for residential use is based upon statistical analyses showing that approximately 10 percent of the population would be highly annoyed at this level. Nelson, Paul M. 1987. Transportation noise reference book. Butterworths. London. (Nelson, 1987) Again, "annoyance" takes into account the effects noise can have on communication, sleep, stress, and other human annoyance and comfort considerations. Accordingly, an analysis of noise impacts that evaluates noise against an Ldn noise standard inherently addresses the effects of noise on human stress, sleep, disturbance and other factors. However, a particular compatibility standard will not protect all individuals. A small percentage of the population will be highly annoyed at noise levels that would be considered relatively low by the majority of the population.

In addition to the use of residential compatibility standards based upon the DNL metric, some projects can be analyzed using other supplemental metrics that correspond with specific types of (or subsets) of community annoyance. For example, it may be appropriate to analyze speech disturbance caused by a noise-generating source located next to a school. In other cases, the attributes of a particular project may lend themselves to an analysis of sleep disturbance. Although the EIR properly uses the DNL descriptor, which captures all of the annoyance effects raised by the commenters, the information presented in the EIR allows annoyance effects to be broken down into components and addressed using descriptors other than Ldn, as follows:

SPEECH DISTURBANCE

Speech disturbance can occur when noise levels at a receptor site exceed 65 decibels. Based upon attenuation expected from standard building construction of 20 dB, most noise modelers predict interference with outdoor speech when exterior noise measures 65 dB, and interference with indoor speech when exterior noise measures 85 dB. At 65 dB speakers would need to raise their voices or move about 2 feet apart to maintain the same degree of intelligibility. (Nelson, 1987) Thus, in some cases, noise modelers express noise in terms of the amount of time noise levels are expected to exceed 65 dB or 85 dB. Predicted hourly Leq values from the operation of ships in port are about 6 dB less than the Ldn values reported in Table 4.5-6 through 4.5-9 in the draft EIR. This means that the highest predicted hourly Leq values from shipping operations are not expected to exceed 60 dBA-Leq at residences across the channel. This indicates little if any potential for noise from ships in port to result in speech interference. The traffic noise levels in the range of about 67 Ldn to 72 Ldn as indicated in Table 4.5-12 of the draft EIR indicate some potential for speech interference in outdoor use areas but little if any potential for such interference in interior areas.

SLEEP DISTURBANCE

Relatively few studies of sleep disturbance from exterior noise sources have been conducted. Generally, sleep disturbance is associated with loud, discrete noise events that are readily discernible over background ambient noise levels. An individual aircraft flying near a residence therefore has the potential to disturb sleep because aircraft noise involves numerous short-term, high sound level noise events.

Here, by contrast, the main source of nighttime noise is expected to be the continuous hum of the ships' generators when in port. Because the noise produced by the ships generators is continuous and at a constant level for up to several days, the 24-hour day-night average sound level (Ldn) is an appropriate descriptor for assessing the compatibility of an interior noise environment with sleeping. As described on page 4.5 of the draft EIR California noise insulation standards set forth an interior noise standard of 45 Ldn for habitable rooms of dwellings. U.S. EPA also identifies 45 Ldn as being suitable for indoor residential areas (U.S. EPA. 1974. Information on level of environmental noise requisite to protect public health and welfare with an adequate margin of safety. Washington, D.C.) At the nearest residential receptors on the north bank, the hum of the ships' generators are predicted to produce exterior noise levels of approximately 65 Ldn. Standard residential construction, with windows open, would be expected to reduce the exterior noise by about 10 to 15 dB. Predicted interior noise levels with windows open at the nearest residence would then be in the range of about 50 to 55 Ldn. With windows closed, standard residential construction would be expected to reduce the exterior sound level by between 15 to 20 dB resulting in predicted interior noise levels with windows closed of 45 to 50 dBA. This indicates that there is potential for ship noise to exceed 45 Ldn at the interior of the nearest residences to the West Complex berths, and to result in some sleep disturbance depending on whether windows are closed, the acoustical insulation of the dwelling, actual noise levels, the location of sleeping areas within the residence, and the sensitivity of the resident. This is consistent with the conclusion in the EIR that noise impact of operation of the Proposed Project is potentially significant and supports Mitigation Measure 4.5.2b, specified in the draft EIR.

Discrete noise events substantially exceeding the hum of the ships' generators, or occurring when a ship is not in port, also have a potential to disturb sleep. For example, some residents on the north bank of the shipping channel have complained that the back up warning signals from forklifts operating at the existing warehouses on Rough and Ready Island have disturbed them at night. The proposed West Complex Development Plan is not expected to result in increased operations at the existing warehouses along the waterfront when a ship is not in Port compared to existing conditions. Further, implementation of the proposed Plan is anticipated to bring more ships to the wharf areas, which would often shield the sounds of forklifts and other vehicles operating in the existing warehouse areas.

The Draft EIR recognizes, however, that an increased number of ship calls could increase the number and frequency of discrete noise events associated with maritime operations, such as opening and closing hatches, or dropping heavy objects. (Draft EIR 4.5-23) The Draft EIR also recognizes that these types of noise events can result in sleep disturbance. To the Port and its consultants' knowledge, no studies have been conducted regarding the potential for sleep disturbance from such maritime-related single events. However, studies regarding aircraft noise may be relevant.

Studies regarding aircraft noise events have found that sleep disturbance typically is associated with individual noise events exceeding 90 dB SEL. For example, the United Kingdom Department of the Environment, Transport and the Regions (DETR) conducted a landmark field study of sleep disturbance in order to develop nighttime restrictions on aircraft operations at Heathrow, Gatwick and Stansted Airports (DETR, 2001). DETR's research, conducted in 1992, concluded that outdoor noise events below 90 dB SEL are unlikely to cause any increase in the normal rate of sleep disturbance. Specifically, the report stated: "For outdoor event levels in the range of 90 to 100 dB SEL (80 to 90 dB Lmax), the chance of the average person being wakened is about 1 in 75."

In 1997, the Federal Interagency Committee on Aircraft Noise (made up of U.S. agencies including the Environmental Protection Agency, the Department of Transportation, the National Park Service, and the National Aeronautics and Space Administration) published a document summarizing the current state of knowledge concerning the effects of aviation noise on awakenings. The FICAN report includes a dose-response curve that correlates indoor sound exposure levels (SEL) with the percentage of the exposed population expected to be awakened. The curve adopted by FICAN represents the upper range of the available data—all actual data points are below the adopted curve. Thus, the curve is not an average—it represents the maximum percentage of the exposed population predicted to be awakened from an individual noise event. According to the FICAN report, the maximum percentage of the population expected to be awakened at an interior SEL of 75 dB is 7.9 percent. Assuming standard residential construction, with windows open, an interior SEL of 75 dB corresponds to an exterior SEL of 85 to 90 dB.

TABLE 4-5
MAXIMUM PERCENT AWAKENINGS DUE TO A SINGLE AIRCRAFT NOISE EVENT (PER FICAN, 1997)

Indoor SEL (dB)	Maximum Percent Awakened
30	0.0
35	0.2
40	0.5
45	1.1
50	1.9
55	2.8
60	3.8
65	5.1
70	6.4
75	7.9
80	9.6
85	11.3

SOURCES: FICAN, 1997; Brown-Buntin Associates, Inc., 2003.

In 2000, another comprehensive noise analysis was published by Fidell et. al, assessing the effects of changes in aircraft noise on sleep disturbance at three different airports (Fidell et. al., 2000). Fidell found that regardless of aircraft noise sources, spontaneous awakenings occurred, on average, between 1.3 and 1.5 times per night. The range of spontaneous awakenings was from 0 to 19 times per night. Despite this range of spontaneous awakenings, Fidell was able to establish a correlation between indoor aircraft-related SEL values and awakenings. Fidell reported awakenings in terms of “prevalence of awakenings” rather than “maximum percent awakening” to refer to the most likely, or typical condition. As a result, the prevalence of awakening is a substantially lower value than the maximum percent awakening described by FICAN. According to the Fidell study, at an interior SEL of 75 dB, the prevalence of awakening is 3.1 percent of the exposed population. Again, an interior SEL of 75 dB typically is correlated with an exterior SEL of 85 to 90 dB, assuming windows are open.

TABLE 4-6
PREVALENCE OF AWAKENINGS DUE TO A SINGLE AIRCRAFT NOISE EVENT (PER FIDELL, 2000)

Indoor SEL (dB)	Prevalence of Awakening, Percent
55	0.5
60	1.2
65	1.8
70	2.4
75	3.1

SOURCES: Fidell, 2000; Brown-Buntin Associates, Inc., 2003.

The studies conducted regarding aircraft noise recognize that habituation plays a role in the rate of awakenings; however, habituation may occur in a relatively short time. In at least one study, participants who had lived in the study neighborhood for a three-month period were considered sufficiently habituated to be included in the analysis. (Fidell, et. al., 1994)

During one of the noise measurement sessions conducted by Jones & Stokes part of a crane was dropped on a ship, producing a maximum sound level of 82 dBA at a position in the channel fairly near the residences in Riviera Cliffs. This was the loudest single event observed during the measurement session. The one-second average sound level was within 10 dB of this maximum sound level for 3 seconds. The calculated SEL value for this 3 second period is 79 dBA. If this sound level were to occur at the exterior of the closest residence, the interior SEL value with windows open would be about 69 dBA. The Fidell Study, above, indicates that the prevalence of wakening would be less than 2.4 percent, indicating low potential for awakenings from peak sound levels to occur.

STRESS

Nelson 1987 discusses noise and stress and in summary indicates the following: Noise can induce a range of physiological response reactions such as increases in blood pressure, heart rate, and breathing. However, there is no strong evidence that noise alone has a direct causal effect on health outcomes such as cardiovascular disease. The “stress hypothesis” contends that noise causes stress which, in turn, has a detrimental effect on health. A fundamental problem with this hypothesis is the definition of stress, which cannot be defined or measured precisely.

A discussion in Kryter 1985 relates the percentage of physician contacts for stress-related disorders to noise level. This discussion indicates that the percentage of physician contacts for stress-related disorders is 3.2 percent where noise levels are less than 60 Ldn, 4.4 percent where noise is between 60 and 65 Ldn, and 4.7 percent where noise is greater than 65 Ldn. This indicates some correlation between stress and

sound level. However, other factors beside noise present in an urban environment can contribute to stress so it cannot be stated with certainty that the increased physician contacts are the direct result of increased noise. Kryter, Karl D. 1985. The effects of noise on man. Academic Press. Orlando.

In sum, the noise impact analysis presented in the draft EIR concludes that increased maritime operations and increased ground vehicle traffic could result in significant noise impacts. The Proposed Project is not expected to result in any new sources of operations noise. The EIR's assessment considers, and is based upon, the effects that project-related noise would have on the residents living near the access roads to the port facilities and the effects project-related noise would have on residents living across the shipping channel. The Port is aware and concerned that existing operations at the West Complex have generated complaints from residents. These complaints also are an indication that increasing the number of maritime operations at the West Complex is likely to result in significant adverse impacts to residents sensitive to noise from Port operations.

It should be noted, however, that for residences opposite Berth 20, implementation of the Proposed Project may reduce nighttime noise compared to existing conditions. Under the Proposed Project, Berth 20 is expected to become an automobile terminal. Auto carriers generally arrive at Northern California ports in the morning, spend four to twelve hours unloading (more often four hours than twelve), and then depart. This is in contrast to the rice ships and other vessels currently visiting Berth 20, which tend to operate day and night for several days. Although other cargo vessels might use Berth 20 at times when no auto carrier was expected to dock, auto carriers would take priority, so visits by bulk ships to Berth 20 —and therefore nighttime noise at Berth 20—may be reduced compared to existing conditions.

NOISE REGULATIONS, PLANS, AND POLICIES

CITY OF STOCKTON GENERAL PLAN NOISE ELEMENT

The Acoustics and Vibration Group ("TAVG") Review submitted on behalf of Friends of Riviera Cliffs accurately quotes Goal 1 of the General Plan Noise Element: "Protect the citizens of the Stockton Planning Area from the harmful and annoying effects of exposure to excessive noise." Noise Element Policies 1 through 12 are intended to effectuate that goal and the Port used these policies in developing the EIR's significance criteria.

The TAVG Review states that the Draft EIR is incorrect in stating that "General Plan Policies 1 through 5 restrict residential development near existing noise sources." The statement in the Draft EIR is correct, but will be modified in the Final EIR to add, "; Policy 2 restricts residential and many other types of Proposed Projects near transportation noise sources." All five of these General Plan policies address the avoidance of noise impacts *from* the environment *on* a new development; they do not regulate the noise from a Proposed Project on its surrounding environment. Policies 6 and 7, on the other hand, which set noise limits for commercial (75 dBA L_{dn}) and industrial (80 dBA L_{dn}) land uses, are intended to regulate the impacts of such uses on their neighbors.

It is, therefore, incorrect to state that General Plan Policy 2 or CEQA requires that "*any* project that will have an influence on existing or proposed future sensitive land uses would have to be in compliance with

the requirements of the land use compatibility chart." CEQA imposes no such requirement, but rather requires lead agencies to determine reasonable significance criteria. Policy 2, as discussed above, applies to impacts of the environment on a new land use rather than vice versa (although, as discussed below, the Port did make use of Policy 2 in developing its significance criteria for noise).

It should be noted that the TAVG Review and Noise Study tables purporting to represent Table I and Figure 1 from the City's General Plan Noise Element do not match Table I or Figure 1; TAVG's tables recharacterize, add TAVG's opinions to, and in one instance simply misstate the limits of Noise Element Table I and Figure 1. (Compare Stockton General Plan Noise Element Table I and Figure 1 (attached to TAVG Review) to TAVG Review Table I and Noise Study Tables I and II.)

TAVG points out that General Plan Policy 1 imposes a 5-dBA "penalty" for pure tone noise, but as discussed above, Policy 1, governing new residential uses near locally-regulated noise sources, does not apply to ships. In addition, although frequency spectra data presented in Appendix G give some indication that pure tones are present, this cannot be decisively concluded with the data presented with one octave band resolution. Observations by Jones & Stokes Associates of actual ship operations did not indicate strong pure tones from such operations.

General Plan Noise Element Policy 10 provides, "Prepare a community noise control ordinance consistent with the performance standards of the noise Element and the guidelines of the State Office of Noise Control." The Draft EIR discusses the City of Stockton Noise Ordinance itself but does not discuss Policy 10. TAVG suggests that the EIR should look beyond the City's actual noise ordinance and interpret Policy 10 in particular ways. It is not appropriate, however, for an EIR to characterize what the jurisdiction's noise ordinance might have been, rather than what it is.

In addition, the suggested reading of Noise Element Policy 10 cannot be supported. First, it is suggested that Policy 10's reference to "performance standards" includes only Policy 1 or Policy 2 of the Noise Element; as discussed above, Policies 1 and 2 set limits for certain types of new development proposed near locally-regulated (Policy 1) and non-locally-regulated (Policy 2) noise sources. Nothing in Policy 10, however, suggests that Policies 1 and 2 are "performance standards" whereas Policies 6 and 7 (noise limits for commercial and industrial uses) are not. Policy 8 specifically refers to Policies 6 and 7 as "standards," the same word used to describe Policy 1; Policy 2 nowhere uses the term "standard." In the Port's view, Policy 10 provides for a noise ordinance that is consistent with *all* standards set forth in the Noise Element.

Second, it is suggested that Policy 10's reference to "the guidelines of the State Office of Noise Control" requires the EIR to look beyond the City of Stockton Noise Ordinance and use the Office of Noise Control's 1977 "Model Community Noise Control Ordinance." Policy 10 does not refer to the 1977 Model Noise Ordinance but rather to "guidelines." The Office of Noise Control was abolished in 1993 and therefore no longer issues guidelines. In addition, the 1977 Model Community Noise Control Ordinance suggests noise standards that are inconsistent with those set forth in Policies 1, 2, 6 and 7 of the General Plan Noise Element. Moreover, even had the Model Noise Ordinance been adopted in full by the City of Stockton, TAVG's comment observes that the Model Ordinance noise levels would apply to *non-transportation* noise sources. As noted above, the Proposed Project involves transportation noise sources that are subjected to different standards. For all of these reasons, the General Plan's reference to

"the guidelines of the State Office of Noise Control" cannot be interpreted to read the entire 1977 Model Community Noise Ordinance into the City's General Plan Noise Element.

One comment asserts that part of the City's Noise Ordinance "is a duplicate of the requirements of Section 5 of the State's Model Noise Ordinance." This comment appears to refer to section 5-702.A.2 of the City's Noise Regulations, which are similar, but not identical, to section 5 of the 1977 Model Noise Ordinance. This similarity only suggests that the City did in fact review the Model Noise Ordinance, adopted those provisions of the model ordinance that the City found appropriate and consistent with its General Plan, and rejected inconsistent Model Noise Ordinance provisions—such as those that TAVG's comment advocates.

SENSITIVE RECEPTORS AND EXISTING NOISE ENVIRONMENT

BASELINE

Many comments from north-shore residents assert that the currently existing level of activity at the West Complex is unlawful under CEQA. This assertion was also made in prior litigation, but was rejected. Section 4.17, Baseline, addresses most comments regarding the baseline noise condition used in the EIR. As that response notes, the proper baseline for analysis is the condition that existed when the Notice of Preparation of the EIR was issued, *i.e.*, March 8, 2002. Maritime activity at the West Complex was well established as of that date and will continue in the future regardless of whether the West Complex Development Plan is approved or disapproved. Accordingly, the baseline condition described in the EIR is proper and the north-shore residents' objections to current conditions are not, strictly speaking, objections to the Proposed Project.

It should, however, be noted that although it would be unrealistic and incorrect for the EIR to assume that the West Complex currently sits idle 365 days per year, the EIR in fact presents extensive comparisons to noise conditions on days when no ships are using the West Complex. See Draft EIR pages 4.5-20 through 4.5-28. The EIR shows noise levels at 30 different locations assuming that zero, one, two, three, four or five ships are using the West Complex on a given day. The Port chose this methodology, which it believes is unprecedented in CEQA analysis, specifically in order to capture the full range of operational impacts of the West Complex Development Plan. The Port's intent was also to provide the information that the Port believed was most likely to be of interest to the north-shore residents.

One impact of the Proposed Project is that the "noisiest" day at sensitive receptors near the West Complex would become slightly more noisy than it is today, because the maximum number of ships able to use the West Complex on one day would increase from three, under existing conditions, to five. Another impact is that the number of days per year when one or more ships would use the West Complex—and thus the number of days that ship-related noise would occur—would increase from 49 to 249. Thus although the EIR properly describes existing conditions (49 days per year of one, two or three ships using the West Complex) as its baseline for analysis, the EIR provides comparisons to noise conditions when no ship activity is underway at the West Complex.

Comments from some Riviera Cliffs homeowners assert that Berth 20 is only 300 or 400 feet from their homes in Riviera Cliffs. This is inaccurate. The distance between the shore at the nearest home across the channel and Berth 20 is over 600 feet. This point is important because noise attenuates with distance; every doubling of distance results in a reduction in noise of about 6 dB. (A change of 3 dB is generally perceived as being the threshold of a perceptible change, a 10-dB change is perceived as a doubling or halving of the sound level).

Several comments assert that the Port should have taken noise measurements at homes in Riviera Cliffs. At the scoping meeting for the EIR, Port staff advised Riviera Cliffs homeowners that the Port would take such measurements if the homeowners so desired; the Port received no requests. Lacking permission to take measurements at any residence, the Port took long-term measurements at other fixed locations and took short-term measurements from a boat in front of the residences and approximately 150 yards from the West Complex. These two sets of measurements allowed the noise experts who prepared the Draft EIR to estimate noise levels at the residences.

TAVG, which did have permission from three Riviera Cliffs homeowners to take long-term noise measurements in their backyards, presents eleven sets of overnight noise measurements. These measurements are consistent with the noise levels presented in the Draft EIR. Using TAVG's selected noise descriptors, L_{eq} sound levels increased by an average of 6.6 dB when a ship was using Berth 20 or Berth 19, compared to nights when no ship was present. L_{50} noise level increases averaged 10.6 dB. The EIR shows the same areas with noise increases of 7-12 dBA L_{dn} when one ship uses the West Complex. Because of the way Ldn values were calculated in the EIR, changes in Ldn values are comparable to changes in Leq values. Accordingly, the noise increases are comparable; if anything, the EIR found greater noise increases than did TAVG.

One comment asserts that the Draft EIR should have used long-term noise measurements at Berth 20 (ranging from 73 to 85 dBA L_{dn}) rather than the long-term noise measurements at Dad's Point (ranging from 57 to 70 dBA L_{dn}) as "the most representative of the residential receptors." The Berth 20 measurement was, however, intended to—and did—record noise on the dock immediately next to a ship being loaded and unloaded—not noise than 600 feet across the channel, where the residences are. (The Berth 20 noise monitor was not, as incorrectly stated by the same commenter, a "sensitive receptor"—the nearest sensitive receptor is more than 600 feet away.) The Dad's Point measurement revealed long-term noise levels across the channel from the West Complex berths. See Draft EIR Figure 4.5-3. Noise levels at residential receptors across the channel were also based on modeling, taking into account the distance from the Berths to these residences.

The attorney for Friends of Riviera Cliffs disagrees with the draft EIR's statement that "[t]he existing noise environment is heavily influenced by recreational boating, which tends to result in loud peaks in noise over short periods of time and may substantially affect the overall DNL." TAVG, however, the noise consultant for Friends of Riviera Cliffs, repeatedly notes the influence of recreational boating on noise levels. See TAVG Noise Study, "Exterior Acoustic Environment/Existing," page 7 (emphasizing number of recreational boasts on the water on May 23, 2002), 8 (same), 9 (explaining that L_{50} sound level is "far less susceptible to these individual events" than is L_{eq} sound level). The draft EIR does not assert that recreational boating is responsible for late-night noise events on Berth 20, as the attorney's comment

suggests. The draft EIR's long-term sound measurements at Berth 20, Dad's Point and other locations, like TAVG's measurements at Riviera Cliffs, were not constantly attended. Accordingly, it is not possible to identify what sources of noise governed measured sound levels in all cases.

The attorney for Friends of Riviera Cliffs asserts that the EIR overstates existing noise, stating that TAVG "measured background noise at the Riviera Cliffs Development on May 23, 2002 when no ships were in Port at Berths 18-20" and found that "[o]ver twelve hours (from 7:00 p.m. to 7:00 a.m.), the noise level ranged from 32 to 50 dB, with a 12-hour average of 41 dB." However, Table IV of TAVG's Noise Study for the same night shows a range of 35 to 56 dBA L_{eq} and a "Total Time" average 48 dBA L_{eq}, not 41 dB. The Ldn value calculated from the data shown in Table IV of the TAVG's Noise Study is 52 dBA (conservatively assuming a daytime sound level of 50 dBA during hours where there is no data). Table 4.5-6 of the draft EIR shows the no-ship L_{dn} noise level in the same area as 52 dBA L_{dn}. Thus the measured sound levels in TAVG's Noise Study affirms the EIR's modeled estimate of noise under no-ship conditions.

Given the highly variable nature of background sound levels in the vicinity of the docks, the background sound level data reported by TAVG are not inconsistent with sound level data reported in the draft EIR. The comparison of measured sound levels with ships in port to sound levels without ships in port provided by TAVG on page 11 of its report indicates that at night, a ship increases noise at the nearest residential receptor by about 13 dB. It is also stated on page 15 of the report that "sound levels dropped by 11 to 15 dB" when a ship departed from Berth 19. These changes in sound level are consistent with predicted changes in sound level reported in the draft EIR in Table 4.5-6 which shows increases in noise relative to the no-ship condition of 12 dBA L_{dn} at Receiver 6. The data provided by TAVG therefore provides additional affirmation of the modeling methods and conclusions reached in the draft EIR.

The EIR uses both long-term and short-term measurements to characterize the existing noise environment along the channel where ship-in-port operations are the dominant source of noise. **Appendix F** of the draft EIR provides maximum hourly L_{eq} numbers based on long-term noise monitoring at five locations on a total of seven different dates. Graphs of the monitoring events that are summarized in **Appendix F** were intended to be included in **Appendix F** but were inadvertently omitted. These graphs are provided in **Appendix C** of the FEIR. As has been discussed, these monitoring results are consistent with the EIR's short-term monitoring, the EIR's noise modeling, and TAVG's overnight noise measurements at selected north-shore receptors.

Comments made by TAVG assert that the EIR should use hourly (L_{eq}) or other short-term noise levels rather than daily (L_{dn}) noise levels to assess ship noise. Unlike short-term noise from aircraft flyovers or train passages, however, most noise from ship-in-port operations is persistent in nature and generally occurs over several days, as the commenters themselves observe. As is discussed in more detail above ("Effects of Noise on People"), the widely-accepted day-night sound level, or L_{dn}, descriptor was developed to take into account exposure over time and increased human sensitivity at night (by applying a 10-dB "penalty" to nighttime noise). The City of Stockton General Plan uses L_{dn} to assess both transportation noise and noise from industrial land uses. (See City of Stockton General Plan Noise Element Policies 2 and 7.) For all of these reasons, the appropriate descriptor for determining

significance of noise from ship-in-port operations is L_{dn}. The Leq calculations provided by TAVG are noted, however, and augment the information in the Draft EIR.

In areas where traffic is the primary source of noise, short-term measurements (with simultaneous traffic counts) were taken. The approach to assessing traffic noise impacts associated with the Proposed Project is consistent with common practice. Short-term measures are used to generally characterize daytime noise levels and to validate the accuracy of the traffic noise model. The model is then used to develop 24-hour average L_{dn} values for comparison to compatibility standards expressed in term of L_{dn}. L_{dn} values for existing traffic noise conditions are presented in Table 4.5-12 on page 4.5-30 of the draft EIR.

One comment made on behalf of certain north-shore residents objects to the EIR's traffic noise analysis because it does not focus on *back* yards. Unlike ship noise (which affects the backyards of residences across the channel), however, traffic noise is most likely to affect the fronts of residences in the Boggs Tract neighborhood. Because residents may make use of their front yards, traffic noise was calculated in this location. Common practice is to apply noise standards at outdoor areas where there is frequent human use. This includes front yards, side yards, and back yards of residences. The noise measurement positions are considered to be representative of outdoor areas where frequent human use occurs. To ignore front yard noise would be to ignore the primary outdoor noise impact of the Proposed Project on these residents.

TAVG has provided several comments regarding truck percentages used to model the traffic. The field counts that were the basis of Table 4.5-2 separated the vehicles into two categories, autos and heavy trucks. Medium trucks were included with cars due to the relatively small number of vehicles that were observed to fit the description of a medium truck (e.g., delivery vehicle, etc). The purpose of the field counts was to calibrate the traffic noise model with actual data.

Because of the high percentage of total vehicles that were heavy trucks on three of the road segments, medium trucks would have a minimal effect, if any, on the noise levels. The other roadway segment analyzed was on 8th Street and this segment had virtually no trucks; ninety-nine percent of its traffic was automobiles. Adding medium trucks (that were counted as cars) in any of these model runs could slightly increase noise levels, however, the overall net change in noise levels would be even less affected. In all cases the resulting increase of the project would still be greater than 3 dBA (see Table 4.5-12). The impacts and mitigations would not change if the base were slightly higher.

Additionally, TAVG has provided comments regarding the location of various test positions or data. The sound level measurements in Table 4.5-2 are the basis for the percentage of heavy trucks used in **Appendix F** (West Complex Traffic Noise Estimates). The traffic volumes in Table 4.5-2 are 10-minute mid-day volumes. The total traffic numbers used in **Appendix F** are from the traffic study and represent estimated peak hour a.m. traffic volumes. The distances in **Appendix F** are shown in the third to the last column. The column is titled "Receptor Dist. from Roadway Center (m)" and in all cases the distance is 25 meters. These results are then presented in the Draft EIR in Table 4.5-12 (p. 4.5-30) and the footnote indicates that the "Noise estimates are for receptor locations 25 meters from the roadway center."

SIGNIFICANCE CRITERIA

The attorney and the noise consultant for Friends of Riviera Cliffs advocate significance criteria that disagree with the EIR but also disagree with each other. The Port has selected reasonable significance criteria to analyze the noise impacts of the Project.

The EIR's first significance criterion is whether the Proposed Project would "expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies." The Draft EIR explains that this criterion would not be exceeded unless the Proposed Project would cause noise in excess of 80 dBA L_{dn}, the limit set for industrial uses by the City of Stockton General Plan. (At page 4.5-12, the Draft EIR erroneously refers to the relevant General Plan policy as number 8 rather than 7. This error will be corrected in the Final EIR.) This is the only applicable standard established by the General Plan or Noise Ordinance. As is discussed above, Policies 1 and 2 of the General Plan apply to new *receptors* proposed to be added to an existing noise environment, which is not the case here.

Nevertheless, the Draft EIR recognizes that sensitive receptors could be disturbed by noise at levels lower than the 80-dBA L_{dn} limit at the property line of industrial uses. Accordingly, the EIR adopted as significance criteria the (otherwise inapplicable) compatibility thresholds of General Plan Policy 2: 60 dBA L_{dn} /CNEL for the exterior of residences (45 interior), 70 dBA L_{dn}/ CNEL for neighborhood parks, and 75 dBA L_{dn} /CNEL for golf courses. TAVG asserts that the use of these "Policy 2 standards to judge this Project is required by the General Plan," but elsewhere asserts that the 70 dBA L_{dn}/CNEL standard for neighborhood parks and 75 dBA L_{dn}/ CNEL standard for golf courses are "far too high." This comment does not suggest a different threshold or explain why these standards are too high despite their use in General Plan Policy 2 and in the state's "Land Use Compatibility for Community Noise Environments," to which Policy 2 refers. Here, the recreational areas are located in an urban area, not in a remote, natural setting. Given this setting, the compatibility standards adopted by the City and used in the EIR are reasonable.

Again, noise limits for new residences developed near locally-regulated noise sources in the General Plan (identified by the comment author as "noise limits for non-transportation sources") would not apply to ships in port, which are not locally-regulated. The L_{dn} noise descriptor is the most appropriate metric for evaluating impacts from the persistent and constant noise produced by a ship in port. The use of 60 L_{dn} in developing impact significance thresholds is much more conservative than the 80 L_{dn} criteria generally applied by the City for industrial sources.

The attorney for Friends of Riviera Cliffs asserts that the EIR should use different noise significance criteria than those advocated by the noise consultant for Friends of Riviera Cliffs. It is suggested, based on a 1974 EPA report, that the EIR is required to deem noise levels of 55 dBA L_{dn} a significant impact. The EPA report itself stated, however, that its "contents do not constitute Agency regulations or standards" and that "states and localities will approach this information according to their individual needs and situations." As noted above, the City of Stockton allows new residential developments in noise environments up to 60 dBA L_{dn}, and, as discussed below, the Friends of Riviera Cliffs' own jurisdiction, the County of San Joaquin, considers noise levels up to 65 dBA L_{dn} to be acceptable in residential neighborhoods.

The same commenter asserts, unlike TAVG, that the EIR should use a "Sound Exposure Level" or "SEL" metric to assess single loud noise events from West Complex operations. The draft EIR discusses single loud noise events as follows:

> While the model predicts specific noise sources, other aspects of the future noise environment may also have substantial effects on the nearby residences. Increases in discrete short-term noises from the ships and other activities could add to the overall noise environment, which may be expected to increase in frequency under the Proposed Project, and could disturb residents on the north bank of the DWSC. Heavy objects are sometimes mishandled or dropped on the ships, and opening of the hatches can be very loud. Noise from such activities, which may be expected to increase in frequency under the Proposed Project, can cause sleep disturbance if the activities occur at night. However, the L_{dn} noise descriptor used in this report to project future noise levels under the Proposed Project takes into account the increased sensitivity of people to nighttime noise.
>
> Based upon the model results, activities at some areas of the West Complex could substantially increase ambient noise levels at noise-sensitive locations. Other non-recurring incidents that cannot be accurately modeled (*i.e.*, large objects being dropped on ships) would also be expected to occur at an increased frequency that would be roughly proportional to increases in ship traffic. This is considered to be a **potentially significant** impact of the Proposed Project.

In fact, the noise measurements conducted by TAVG (which had permission to measure sound at north-shore residences) indicate that the loudest overnight (10:00 p.m. to 7:00 a.m.) noise events differed little depending on whether a ship was in port. The loudest event averaged 66 dBA L_{max} (TAVG Tables IV and V), with *no* ships in Port and 68.4 dBA L_{max} (TAVG Tables VI-IX) with ships in port. In addition, whether a ship was in port or not, by far the loudest noise events recorded by TAVG occurred in the evening hours before 10:00 p.m. or in the morning hours after 7:00 a.m. (See TAVG Tables IV-IX.) These events cannot be attributed to overnight West Complex activity; they are at least as likely to represent local north-shore activity. Thus the north-shore residents' own comments show that if anything, the Draft EIR exaggerates the effects of Port-related single event noise. This fact is also illustrated by a video recording of ship activity at the West Complex, taken from the north shore and submitted as a comment by a north-shore resident. Although the recording volume was turned up very high, the sound from West Complex activity was overwhelmed when a dog barked on the north shore. The section of this response regarding Noise and its Effects on People further addresses the SEL metric and the potential for sleep disturbance from single event noise.

The attorney for Friends of Riviera Cliffs also appears to assert that part of the City of Stockton's nuisance noise ordinance (Stockton Municipal Code, Part XVIII, section 5-702) should be used as a significance criterion in the EIR. Section 5-702 is, however, non-quantitative, and, not as useful as a significance criterion as the quantitative standards chosen by the Port. Section 5-702 hinges on evaluating the reasonableness of noise generators and noise receptors alike, a topic that is the subject of pending litigation brought by some homeowners in the Riviera Cliffs area against the Port. CEQA is not the proper forum for resolving these disputes.

Some comments disagree with the EIR's 3-dBA, 5-dBA, and 10-dBA sound increments and suggest that the EIR's significance criteria should deem *any* change in sound significant. The use of sound increments such as these in the EIR is common and reasonable; a sliding scale recognizes that smaller changes in noise (such as 3 dBA, which is "barely perceptible") should be considered significant the higher existing

noise levels are. A significance criterion of "any change" would be inconsistent with CEQA, which defines "significant effect on the environment" as "a substantial, or potentially substantial, adverse change in the environment." See Public Resources Code § 21068. For purposes of cumulative impacts analysis, an EIR should consider the potential significance of very small changes in noise levels where existing noise levels already violate health standards (*e.g.*, 70 dBA CNEL at a school), but that is not the case here.

Some comments disagree with the EIR's significance criterion for construction noise. Because the City of Stockton General Plan and Noise Ordinance set no specific limits for construction noise and because the only residences that could be affected by construction noise from the West Complex Development Plan are located in San Joaquin County, the Port considered the San Joaquin County General Plan and Noise Ordinance, which provides numerical limits for construction within the unincorporated county. Based on the County noise standards the Port chose to identify 65 dBA Lmax as the noise impact threshold for construction activity that occurs between 9:00 p.m. and 6:00 a.m. The Port has not adopted the County's Leq limit for construction noise as a significance standard. Dredging is the construction noise source most likely to be perceived by residents on the north side of the channel. The dredging operations will move from location to location over the course of a two to three month period, affecting an individual resident only briefly, if at all. Given that 65 dBA Lmax generally is protective of residential areas, and the relatively short time periods that construction-related noise would occur, this standard is reasonable under these circumstances. The Port, therefore, considers the 9:00 to 6:00 normal construction hours, with after-hours construction limited to 65 dB L_{max}, to be a reasonable significance criterion. However, as is discussed below, the Port has determined that most construction can be limited to the hours of 7:00 a.m. to 7:00 p.m., with monitoring to avoid exceedance of 65 dB L_{max} if construction is required at other hours.

Pages 4.5-14 and 4.5-32 of the Draft EIR have been revised to remove the reference to dBA values. As indicated in TAVG's comment, these are all un-weighted decibel values. This correction does not change the impact conclusion identified in the Draft EIR.

Finally, some north-shore residents assert that the EIR's analysis should take into account how exclusive and expensive their neighborhoods are. CEQA requirements do not vary, however, based on the exclusivity of neighborhoods or the prices of the residences in those neighborhoods. Accordingly, the EIR applies the same noise thresholds to north-shore residences as it does to residences in Boggs Tract and other less "exclusive" locations.

TRAFFIC NOISE METHODOLOGY

The attorney and the noise consultant (TAVG) for Friends of Riviera Cliffs assert that no information is provided to show that the noise model accurately predicted traffic noise levels and further comment that decibel levels should only be rounded to the nearest 1 dB. The data collected to support Table 4.5-2 was used to cross check the accuracy of the FHWA model with actual concurrent sound level measurement and traffic counts. In all cases the model over estimated the resulting sound (by 0.8 decibels to 4.1 decibels). Such an over estimation accounts for an offset in the sound levels but should not affect the overall "change" in noise levels. Therefore, the predicated increases of project noise levels are accurate.

The actual noise levels could be rounded to the nearest 1.0 dB, but the size of the increase at any location is relatively accurate to 0.1 dB, based on the traffic numbers. Because of the over estimation of actual noise levels, the distance used in Table 4.5-12 was reported at 25 meters, when in fact many of the residences may be closer than 25 meters. The 25 meters distance was reported because the calibration tests indicated the FHWA model results at 25 meters would be the most appropriate. In summary, the methodology used to prepare the Draft EIR was sound and the results are valid for the purpose of determining noise impacts; from the Proposed Project. The fact that traffic more than doubles with the Proposed Project in all cases would by itself predict that noise levels would increase more than 3 dBA.

Because of the heavy truck noise, TAVG questions the significance criteria used in the draft EIR. The significance criteria are identified on page 4.5-13 of the Draft EIR. The EIR uses a scale for determining impacts, depending on the existing noise level, impacts occur at levels from 3 dBA to 10 dBA. The EIR preparers do not believe any additional criteria (such as those suggested by TAVG) are needed to identify significant traffic-related noise impacts of the Proposed Project. Because sound levels for heavy trucks are 10 to 20 dBA higher than passenger cars traveling at the same speed (Caltrans, 1998), the sound energy from heavy trucks is the primary determinant of average sound levels in all traffic scenarios. This physical factor is embedded in the Calveno curves (noise curves for autos, and trucks) that are included in the FHWA noise model and used for traffic-noise analyses in this EIR. In any situation, if there is a large component of heavy trucks the noise levels will be much higher than a similar situation with the same number of cars but without heavy trucks. Traffic-related noise impacts are identified as significant and unavoidable (see draft EIR Impact 4.5.3).

SHIP NOISE METHODOLOGY

Because it is rare that three ships are in port at the West Complex at one time, it was not practical to measure noise from these multiple-ship conditions. However, the Port felt it was necessary to discuss and disclose the potential noise impacts from these potential multi-ship conditions. The only way to do this was with acoustical modeling. It is common and accepted practice to use acoustical models to predict noise levels from conditions that cannot be readily measured or that would occur in the future. Noise source levels for the modeling were based on measurements from actual ship-in-port operations. Measured changes in sound level between ship-in-port and no ship conditions reported in the report from TAVG are consistent with the predicted changes reported in the draft EIR. The consistency of the predicted sound levels with these measured sound levels affirms that the predicted sound levels do in fact bear a reasonable relationship to actual conditions.

As stated on page 4.5-19 and 4.5-20 of the draft EIR the source level used in the modeling assessment was measured with a ship in port. The draft EIR states ‘the predominant sources of noise are the generators used to power the ships while in port. Other sources include cranes and dock operations related to the movement and storage of materials (primarily forklifts).” Noise from the other sources are therefore included in the source level. The clearly dominant source of noise was the generators. Operations on the dock are substantially shielded from receivers across the channel as are opening of ship doors which are located on the dock side of the ship. This reduces their influence on sound levels on the channel side of the ship.

Tug boats are used to assist ships during arrival and departure. Two tug boats are stationed at the Port. One has an engine that is rated 2,000 HP while the other has an engine that is rated 1,600 HP. When assisting ships tug boat engines operate at full throttle (1,250 rpm) about 10% of the time and at slow or dead slow settings (700 rpm) about 90% of the time. Although specific sound level measurements were not made during tug operations, noise from the tug boat engines can be estimated based on the size and operation modes of the tugs using methodology suggested by Hoover 1995. (Hoover, Robert M. Noise control for buildings, manufacturing plants, equipment, and products. Houston, TX.) The engine from the largest tug is estimated to produce a sound level of 74 dBA under full throttle at 450 feet and 72 dBA (under slow setting) at 450 feet. The engine housing and muffling would be expected to reduce engine noise by 10 to 15 dB resulting in noise at full throttle of 58 to 62 dBA at 450 feet. As stated on page of 4.5-20 of the draft EIR, noise measured from the ship was 61 dBA at 150 yards (450 feet). Accordingly, noise from a tug boat would not be substantially different than the noise from the ship. Given this and the fact that tug operations are short-term and only occur during arrivals and departures, noise from tug boat operation would not meaningfully change ship noise predictions reported in Tables 4.5-6 through 4.5-11.

The draft EIR states on page 4.5-19 that the sound level used to develop the noise model was measured at 150 yards from the ship. Measurements were taken on August 29, 2002 with the rice cargo ship Liberty Wave docked at Berth 20. Sound level measurements were taken between about 1:40 p.m. and 3:50 p.m. with loading operations in progress. The sound level measurements were taken using a Larson-Davis Model 812 Type 1 sound level meter (serial number 0432). A-weighted sound levels using the slow meter response were measured. A Larson-Davis Model CA-250 calibrator (serial number 0125) was used to check the calibration of the sound level meter in the field. Sound generated by the ship clearly governed the measured sound level (i.e., there was no influence from localized noise on the measurement boat.). Graphs of the measurements are included in the Final EIR, **Appendix C**.

A laser range finder was used to measure distances from the measurement boat to the ship. This device reports distance in units of yards. This is the reason yards are used in this discussion. Yards are a common and well understood unit of measure.

Pages 4.5-19 and 4.5-20 of the draft EIR discuss noise sources associated with ship-in-port operations and identify on-board generators, cranes, and forklifts as noise sources. The primary reason that sound propagates readily over water is that water is an acoustically hard surface that does not absorb sound energy as the energy propagates over the surface. There could potentially be localized temperature inversion conditions close to the surface of the water that would tend to channel sound energy. However, with primary noise sources on a ship elevated well above the surface of the water, and the relatively short distance to residences, this potential channeling of energy would not be expected to have a meaningful effect on sound levels received at residences. The effect of sound propagation over an acoustically hard reflective surface (i.e., the water) was included in the assessment. Accordingly, the lower attenuation associated with sound propagation over water has been addressed.

CONSTRUCTION IMPACTS AND MITIGATION

Several comments request shorter construction hours than the 6:00 a.m. to 9:00 p.m. hours generally called for in the Draft EIR. It has been noted that these hours are consistent with the unrestricted

construction hours in the commenters' own jurisdiction (San Joaquin County). However, with the exception of dredging and the possible exception of paving (which is normally a nighttime operation), the Port could generally limit construction to the hours of 7:00 a.m. to 7:00 p.m. Construction work normally begins between 6:00 and 8:00 a.m. and is completed for the day by 4:30 p.m., with only equipment maintenance occurring thereafter, so the 7:00 a.m. to 7:00 p.m. limit for most construction activities would not unduly interfere with construction or lengthen the construction schedule. Outside the 7:00 a.m. to 7:00 p.m. hours, construction would be permitted only with monitoring to ensure that noise at residential property lines would not exceed 65 dB L_{max}. The first sentence of Mitigation Measure 4.5.1a is revised to read, "Construction activities shall be limited to between 7:00 a.m. and 7:00 p.m." (see also **Chapter 5.0, Minor Changes and Edits to the Draft EIR**).

With mitigation, the north-shore homeowners opposite Berth 20 would not experience significant impacts from construction of the closest maritime facility. Only minor repairs to the wharf and existing pavement would be required. Existing grades would be maintained at the locations where new paving and potentially a concrete tilt-up building would be added. None of these construction activities would be expected to generate 65 dBA L_{max} at north-shore residences.

One comment requests shrouding and shielding of engines and tools and judicious staging of construction equipment. Mitigation Measures 4.5.1b and 4.5.1c provide for these measures. It is not necessary to require "higher grade mufflers on all internal combustion engines than typically required by the manufacturer" in order to mitigate construction noise impacts to a less-than-significant level, although this option will be presented to construction contractors as a possible means of achieving noise standards if nighttime construction is deemed necessary.

OPERATIONS IMPACTS AND MITIGATION

The sound level of 61 dBA measured at 150 yards from the ship as reported on page 4.5-20 of the draft EIR is from a short term (5-minute) measurement. Because of the constant sound level produced by this ship, this value is representative of the hourly sound level.

TAVG asserts that the EIR provides annual noise information in order to minimize noise impacts. In fact, the intent of providing annualized numbers is to demonstrate that a major impact of the Proposed Project is the increase in the number of *days per year* that ships would use the West Complex under with-project conditions, a calculation that mere daily figures would not provide.

Several commenters request that engines of ships using the Port be retrofitted or shrouded to minimize noise. Under the Commerce Clause of the U.S. Constitution, however, the Port cannot require ships traveling in interstate or international commerce to install or use any particular equipment. The Port also cannot require locomotives to minimize noise from their horns. Locomotives operate horns for safety purposes; the Port has no authority to impose requirements or restrictions upon the horns.

Several comments raise questions regarding the last two sentences of Mitigation Measure 4.5.2b, which calls for Port-supplied interior noise mitigation at residences. Those two sentences will be replaced with the following (see also **Chapter 5.0, Minor Changes and Edits to the Draft EIR**):

> The Port will promptly pay the homeowner for the cost of the lowest bid after treatments are completed and accepted by the homeowner. The Port will pay for normal installation of the treatments but will not pay for any additional work necessary to allow installation of the treatments (*e.g.*, repair of dry rot or termite damage). Although significant ship noise impacts will not occur until the Proposed Project becomes operational, the treatment program for these residences will begin upon issuance of the last permit required for the dredging project to proceed. Significant traffic noise impacts will occur if and when traffic doubles on streets serving the Project; treatment of affected residences on these streets will begin when traffic counts double.
>
> Depending on the number of requests received for monitoring and the number of residences qualifying for treatment, the Port reserves the right to spread monitoring and treatment over 10 years, using a priority system that addresses the most impacted residences first. Once the program begins, the owner of each impacted residence may select the time at which noise monitoring and, if necessary, treatment, will occur, but the Port will treat each residence no more than once.

Several comments request a nightly curfew on ship operations and draw a parallel to certain airports that have flight curfews. Congress has banned airport curfews (although some curfews established prior to the ban have been allowed to remain in effect). Curfews on ship operations are infeasible and are not practiced at any port on the West Coast of North America. Vessels engaged in international commerce adhere to tight schedules and must enter and exit most ports, including Stockton, when tides are favorable. Imposition of a curfew would be tantamount to shutting down the Port because the Port would not be able to attract shipping business. This would be inconsistent with the objectives of attracting maritime business and jobs to the West Complex to replace the jobs lost when the Navy closed its Rough and Ready Island facilities.

Response 4.4 (Air Quality) addresses cold-ironing of cargo ships as a potential mitigation measure.

One comment suggests that ships be docked with generators facing away from the residences. Generators are generally at the stern of the ship and the ships are docked parallel to the shoreline, so residences are automatically shielded from generators by half the width of the ship. To the extent that the comment suggests that ships be docked facing east or west to keep generators as far from residences as possible, this would not be feasible because doing so would block the shipping channel. Safety is always the paramount consideration in docking these ships.

It is suggested that ships “with high noise emission” be directed to the east port. All ships emit noise and even disapproval of the Proposed Project would leave some ships emitting noise at the West Complex. Two points should be reiterated, however. First, nighttime noise at the West Complex may be reduced under the Proposed Project because auto carriers operate predominantly during the day and for much shorter stays than bulk carriers. (It should also be noted that auto carriers, unlike bulk carriers, do not use the forklifts that some residents find disturbing.) Second, Mitigation Measure 4.5.2a provides:

> As feasible, maritime vessels shall be directed away from berths located across from residential areas to other available locations. Ships shall be directed to these available locations at the time that a vessel makes its initial call to the Port.

One comment requests that land based generators, if any, should be baffled. This additional measure would not reduce the operational noise effects of the project (Impact 4.5.2) to a less than significant level,

for the reasons discussed above and in the Draft EIR (pages 4.5.19 through 4-5.29). Nevertheless, it is feasible to baffle *stationary* land based generators, and this measure will be included in the Final EIR as Mitigation Measure 4.5.2c, stated below:

4.5.2c Stationary land based generators within the marine terminal shall be baffled to the extent feasible in order to minimize increases in the ambient noise level.

See **Chapter 5.0, Minor Changes and Edits to the Draft Environmental Impact Report,** for the revised text.

A concern has been raised that noise from dock operations is being reflected off of the warehouse walls to north-shore residential locations across the channel. If the warehouse walls were a perfect noise reflector, the sound energy transmitted to the residences would be doubled (i.e., they would receive the directly transmitted sound energy plus a comparable amount of reflected sound energy). If this were to occur the sound level at the residences would increase by 3 dB. A 3 dB change is commonly considered to be a barely noticeable change. However, the walls are not a perfect noise reflector because they do not extend the entire length of the dock and because open doors in the wall would not reflect sound. In addition a ship in port will typically block the line of sight between the warehouse walls and the residences therefore creating a substantial sound barrier to reflections off the wall. For these reasons there is very low potential for sound energy that is reflected off the walls to reach residences across the channel. Any reflected sound energy would certainly result in less than a 3 dB change in noise, if any. Accordingly, the placing of ”baffling” (i.e., acoustically absorptive panels) on warehouse walls would not be expected to have any meaningful effect on perceived sound levels across the channel.

TRAFFIC IMPACTS AND MITIGATION

The data collected to support the information presented in Table 4.5-2 was used to cross check the accuracy of the FHWA model with actual concurrent sound level measurements and traffic counts. In all cases the model overpredicted the resulting sound by 0.8 decibels to 4.1 decibels. Such an overprediction accounts for an offset in the sound levels but should not affect the overall “change” in noise levels. Therefore, the increases of project (DNL/dBA) are accurate, but actual noise levels could be less. Because of the overprediction, the distance used in Table 4.5-12 was 25 meters, when in fact many of the residences may be closer than 25 meters. The 25 meters distance was reported because the calibration tests indicated the FHWA model results at 25 meters would be the most appropriate.

Comparisons between short-term measured and predicted sound levels varied from 0.8 to 4 dBA. The commenter is correct in noting that the actual decibel levels could be rounded to the nearest decibel. The results would be similar as the traffic-related noise impacts are identified as significant (see Draft EIR Impact 4.5.3).

The relative accuracy of various measurements and modeling results in the EIR does vary. As indicated above, noise modeling can differ from actual measurements by more than 1.0 dBA. However, noise meters are generally calibrated so that they are accurate to about 0.1 – 0.3 dBA, and “relative differences”

between different traffic scenarios can also be accurate to 0.1 dBA. For these reasons, noise data is reported in 0.1 dBA increments in the EIR.

Mitigation for the effects of traffic noise on sensitive receptors is provided by Mitigation Measures 4.5.3a and 4.5.3b. Mitigation 4.5.3b requires the Port to reimburse the homeowner for the cost of the lowest bid after treatments are completed. The ultimate burden will be upon the Port. The EIR does disclose on page 4.5-32 that,

> "In those locations where noise levels cannot be mitigated, the increases in noise levels along the travel routes to the West Complex impact would remain significant and unavoidable."

Such significant and unavoidable noise impacts certainly could include effects on sleep, speech or educational activities, or the backyards of homes. The EIR does not attempt to subcategorize these effects at each location, but does identify practical and feasible mitigation measures that could reduce overall noise effects at all locations. However, as stated in the Draft EIR, in some locations the impacts of noise from traffic would remain significant and unavoidable.

Mitigation Measures 4.5.3a and 4.5.3b are triggered by a doubling of traffic on road segments identified in Impact 4.5.3. Additional clarification is provided in this Final EIR to specify how the doubling of traffic will be determined. See **Chapter 5.0, Minor Changes and Edits to the Draft EIR** for the revised text.

The ANSI standards identified for schools are guidelines for schools and they are very strict as noted. The EIR identifies two options for noise mitigation at the school on Fresno Avenue near Eight Avenue (see Mitigation Measures 4.5.3a and 4.5.3b) so that the project noise impacts at this facility would be mitigated. This school is misidentified as Marshall Middle School in the Draft EIR. The school is San Joaquin Elementary School.

LOW-FREQUENCY NOISE IMPACT AND MITIGATION

Pages 4.5-14 and 4.5-32 of the Draft EIR have been revised to remove the reference to dBA values. As indicated in a comment these are all un-weighted decibel values. This correction does not change the impact conclusion identified in the Draft EIR.

As indicated on page 4.5-32 of the Draft EIR, the only additional mitigation measure that would reduce vibration impacts from low-frequency noise would be to prohibit the proposed use of the berths.

DREDGING PROJECT NOISE

A-weighted sound level measurements taken over a 10 minute period were used to characterize sound levels generated by dredging activities. The reported values are average L_{eq} values. However, dredging operations generally resulted in a constant sound level indicating little difference between average and maximum sound levels. The predicted dredging sound levels and the associated impact assessment provide a reasonable evaluation of potential construction noise impacts.

As stated on page 5-7 of the draft EIR, the DPS is a federally approved dredged-material placement site that has been used by the USACOE and is owned and maintained by the Port. Dredged material is transferred to the DPS via dredge slurry pipeline. The site is actually located in an undeveloped area with no adjacent noise sensitive land uses. Accordingly, no noise impacts will occur in this area. Page 5-23 of the draft EIR has been changed to state: "The DPS is located in an undeveloped area with no adjacent noise sensitive land uses." See **Chapter 5.0, Minor Changes and Edits to the Draft EIR** for the revised text.

The significance criterion for construction stated on page 4.5-14 of the draft EIR states that the maximum sound level (L_{max}) is used, not the "daily average sound levels." The FTA guidance manual provides a general methodology for assessing construction noise which is based on commonly accepted acoustical modeling methods. This methodology has been applied to the assessment of dredging noise impacts. Based upon that assessment, dredging will not result in a significant noise impact. Therefore, no mitigation is required.

4.6 GEOLOGY AND SOILS

The issue of levee bank erosion as a result of an increase in the size and frequency of ship traffic is discussed in Impact 4.6.4. The evaluation of this potential effect is based on a boat wake wave analysis performed by Moffat & Nichol Engineers, and included as **Appendix H** of the Draft EIR. The study concludes that for shoreline segments which currently have adequate protection, the effect of larger and more frequent ships in the Deep Water Ship Channel is negligible. However, an increase in tug traffic at the West Complex could increase the rate of levee erosion in nearby areas currently unprotected or inadequately protected, and shoreline treatment should be considered.

Mitigation Measure 4.6.3 requires an annual levee monitoring and inspection program. This mitigation program reiterates a mitigation measure already put into place as part of the transfer of Rough and Ready Island to the Port of Stockton in 2000. Maintenance of the perimeter levee is an ongoing process to deal with both erosion issues and seismic hazards, as discussed in Impact 4.6.3. A licensed geotechnical or civil engineer shall prepare any necessary levee treatments to reinforce the structural integrity of the perimeter levee.

With regard to Impact 4.6.4, "areas that are inadequately protected" include the area immediately opposite the West Complex on the north side of the DWSC – the area between the Calaveras River and the eastern leg of the Burns Cut-Off. As is noted in several comments, Mitigation Measure 4.6.3, providing for levee monitoring, inspection and reinforcement is incorporated as a mitigation measure applicable to potential levee bank erosion for shoreline areas that are not adequately protected. However, mitigation measure 4.6.3 does not include specific language making it applicable to those areas. To make it clear that the mitigation set forth in measure 4.6.3 will also be applied to shoreline segments that are either inadequately protected, unprotected or eroding under existing wave conditions as described in Impact 4.6.4, new Mitigation Measure 4.6.4 is added as follows:

4.6.4 The annual levee-monitoring and inspection program referred to in mitigation measure 4.6.3 shall include inspection, monitoring, and, where necessary, reinforcement of any

segments of shoreline on the north side of the DWSC, across from the West Complex, between the Calaveras River and the eastern leg of the Burns Cut-off that is either inadequately protected, unprotected or eroding in order to protect against levee erosion due to increased tug boat traffic during the lifetime of the Development Plan. A licensed geotechnical or civil engineer shall prepare levee treatments proposed under the program in accordance with applicable local, state and federal requirements.

Where there is an existing levee or shoreline maintenance program in place, such as a Reclamation District levee maintenance program, the Port of Stockton shall work with the existing program.

See **Chapter 5.0, Minor Changes and Edits to the Draft EIR** for the revised text.

It should be noted that the monitoring and inspection program does not identify the specific reinforcement method to be used. All proposed treatments shall be prepared by a licensed geotechnical or civil engineer, in accordance with all applicable local, state, and federal requirements. Such methods will include maintenance or augmentation of existing rip-rap and may also include, if appropriate, steel bulk heading, as suggested in several comments. However, the exact type of reinforcement, if any, should be based on the particular circumstances identified during inspection and monitoring. No significant adverse impacts to shallow water aquatic habitat are anticipated because virtually the entire length of the shoreline opposite the West Complex is currently covered by rip rap. The mitigation described in measure 4.6.4 will accordingly not result in a significant change to existing habitat conditions in this area.

Future placement of any shoreline treatment will be examined in light of this Program EIR, and any necessary further environmental review will be carried out at that point. With regard to potential impacts to shallow water aquatic habitat, Mitigation Measures 4.8.2a and 4.8.2b will apply to any subsequent activities under the Development Plan, including any shoreline treatment in the event of impacts to shallow water aquatic habitat.

Impact 4.6.4 and the Boat Wake Wave Analysis finds that potentially significant impacts related to increased ship traffic are due primarily to increased tug boat activity in the immediate vicinity of the marine terminal. As stated in the analysis, “erosion due to larger and more frequent ships navigating the channel is negligible.” Because tug boats will not be operating in the DWSC to the west of the Calaveras River, shoreline impacts to the DWSC between the Port of Stockton and Sherman Island are less-than-significant.

Impact 4.6.4 acknowledges that erosion could contribute to sedimentation of surface waters. Mitigation for erosion impacts is provided by Measures 4.6.3 and 4.6.4 as well as 4.7.1a, 4.7.3b, and 4.11.3. With implementation of these mitigation measures, no significant adverse erosion impacts will occur.

One comment raised concerns that dredging and operational vibration may weaken the structural integrity of the levees on the DWSC. As discussed in Appendix G of the Draft EIR, the Wilson Ihrig Vibration Analysis shows that the vibration from ships berthing at the West Complex will not rise to a level that can cause structural damage (the impact to residential receptors is discussed in Impact 4.5.4). The discussion of dredging noise under Impact 5.4.5a shows that noise levels within 50 feet will not exceed 79 dB, while

north of the DWSC the level will be less than 65 dB. As discussed in Appendix G, the threshold for structural damage due to low frequency sound is 100 dB.

4.7 HYDROLOGY AND WATER QUALITY

STORM WATER ISSUES

Impacts associated with storm and non-storm runoff water are described in Impacts 4.7.2, 4.7.3, and 4.7.5. Proposed mitigation measures will reduce runoff water impacts with respect to both quantity and quality to a less-than-significant level. Mitigation Measure 4.7.2 states that the Port shall prepare a Drainage Plan which incorporates Best Management Practices (BMPs) as described in Mitigation Measure 4.7.3b. These BMPs will address existing facilities and drainage standards for future development projects and will include a combination of source controls, structural improvements and treatment systems and will be designed to ensure no net increase in contaminants. These BMPs will apply to the West Complex site as a whole as well as individual development projects within the West Complex. Because these mitigation measures describe multiple methods of reducing storm water impacts, performance standards are included which specify that the specific measures taken will maintain the quantity and quality of runoff waters so that there is no degradation of water quality as a result of the project. For purposes of CEQA, potential project impacts are gauged against existing conditions which are defined as the environmental baseline. As discussed in response 4.17, below, the environmental baseline is the date of the NOP (March 8, 2002).

In addition to the performance standard that will ensure no net increase in contaminant releases in comparison with pre-project conditions, storm water discharges will comply with all water quality standards in the Ports Amended Municipal NPDES Permit, the City's Storm Water Management and Discharge Control Ordinance, and the NPDES General Industrial Permit. The Port operates under a municipal separate storm sewer system NPDES permit. This permit requires the Port to maintain a comprehensive storm water management program (CSWMP). The CSWMP requires the Port to annually evaluate compliance with water quality standards and the need for new BMPs. This evaluation and annual report is submitted to the CVRWQCB storm water section each year. In addition, the revised permit which is currently in draft form includes a provision for the Port to develop a plan for stormwater run-off controls from new development and newly constructed impervious areas. The City of Stockton has a similar condition for review of development projects already in effect. Under these standards, storm water discharges shall not cause or contribute to a violation of applicable water quality standards, including federal and state water quality standards. Compliance with these standards through implementation of pollution control technologies and practices as specified in Mitigation Measure 4.7.3b will ensure that the project will not have an adverse impact on water quality.

In addition to the drainage plan and implementation of BMPs, the Port will regularly clean roadways and parking areas as described in Mitigation Measure 4.7.3a. This will assist to minimize the amount of pollutants entering the storm drain system because dirt, oil, grease, metals and trash in runoff from streets, parking lots and other paved areas can be a major source of contamination in runoff. Once runoff enters the storm system, the BMPs that will be implemented pursuant to mitigation measure 4.7.3b will further

reduce contaminants in the runoff though facilities that will remove contaminants through settlement, infiltration and treatment.

The list of BMPs in Table 4.7-1 is not exhaustive. As stated in the Mitigation Measure 4.7.2, other measures may be developed as part of the drainage plan and/or the amendment of the Municipal NPDES Permit for the Port of Stockton. It should be noted that the measures in Table 4.7-1 include post-construction features that will be incorporated into future development (a concern raised by the RWQCB in comment A8-5). The BMPs will be implemented to address the increase in storm water runoff due to the addition of impervious surfaces due to development as well as the potential increase in contaminant loading associated with such increased runoff. In addition to the BMPs that will be incorporated in the West Complex site as a whole, BMPs will be incorporated in particular development projects as they are proposed and will be incorporated in project-specific designs. Because individual projects implementing the West Complex Development Plan will be proposed for implementation over an extended period of time, it is expected that technological advances may lead to development of additional BMPs that will be incorporated in the Port's Drainage Plan. Because the Drainage Plan is performance-based, the Port will use a combination of BMPs that will be sufficient to ensure that the quality of storm water released from the system satisfies all applicable water quality objectives.

It is suggested in two separate comments that the BMPs listed in Table 4.7-1 may be inadequate due to their similarity to BMPs employed at the East Complex and the failure of the East Complex to comply with appropriate storm water quality standards. There are two responses to this comment. First, as stated above, Table 4.7-1 lists typical BMPs used to address storm water quality. Additional BMPs may be added in order to meet the performance standards and NPDES requirements. Second, monitoring data for receiving waters submitted to the CVRWQCB indicates the East Complex has largely succeeded in meeting storm water standards (Port of Stockton Annual Report for Stormwater Management Program 2001/2002).

Runoff from the warehouse and dock areas is discussed in Impact 4.7.5 and addressed by Mitigation Measures 4.7.5a, 4.7.5b, 4.7.5c and 4.11.3. Under existing conditions, runoff from the warehouse and dock area along the DWSC drains directly into the channel via sheetflow. Per Measure 4.7.5a, runoff from the wharf shall be redirected from the DWSC to the Project Area's storm drainage system as part of the Phase I improvements. Implementation of this measure, coupled with implementation of the BMPs for removing contaminants discussed in Mitigation Measure 4.7.3b, will result in a significant improvement in comparison with conditions that now exist as well as with conditions that existed before the Port began operations at the West Complex.

With respect to comments relating to storage of bulk materials, as discussed in Master Response 4.11 of the FEIR, the West Complex will not handle the same types of materials as the East Complex. For example, anhydrous ammonia, which has the potential to contaminate runoff water, will not be handled at the West Complex. Currently, rice is the only bulk cargo handled at the West Complex. Rice is considered a break bulk cargo. No loose bulk cargo is planned for the West Complex. Furthermore, Mitigation Measure 4.7.5b is proposed as an additional precaution to protect against contamination of runoff water by releases from bulk materials storage. Measure 4.7.5b requires all stockpiles of bulk materials with potential to adverse impact water quality to be covered or contained during the rain season.

With respect to accidental releases of hazardous materials, Measures 4.7.5c and 4.11.3 require immediate clean-up of any accidental hazardous material release, including fuels. The Port's program to address accidental release includes a Spill Prevention Control and Counter Measure Plan (SPPC) to prevent the discharge of oil or other fuels into the navigable waters of the U.S. Refer to Section 4.11 of the Response to Comments for additional information.

Storm runoff associated with construction impacts are described in Impact 4.7.1. Construction activities carried out by the Port or its contractors will be subject to the conditions in the Port's municipal NPDES (National Pollution Discharge Elimination System) permit as outlined in Port-wide SWPPP. Construction activities carried out by tenants or their contractors that disturb one acre or more of land must obtain individual coverage under the NPDES General Construction Permit, which requires preparation of a SWPPP, implementation of BMPs, and monitoring to ensure impacts to water quality are minimized.

SEWER SYSTEM

Comments related to the sewer system are addressed in Response 4.12, below.

INCREASES IN TURBIDITY DUE TO SHIP OPERATIONS

Water quality impacts related to the effects sediment resuspension can have on dissolved oxygen levels are discussed in Impact 4.7.6. Because of the existing conditions in the DWSC, a reduction in dissolved oxygen is considered potentially significant. Impacts on dissolved oxygen will be fully mitigated, however, through the Port's agreement to take ownership and operational responsibility for the aeration device currently owned and operated by the USACOE as provided by Mitigation Measure 4.7.6. The aeration device will be operated by the Port in accordance with the standards set forth in Mitigation Measure 5.6.1. For additional discussion of dissolved oxygen impacts and mitigation, refer to Section 4.20 of these responses and Mitigation Measure 5.6.1 in Section 5.2 (Dredging) of the Draft EIR.

As explained in Impact 4.7.6, sediment resuspension leads to increased turbidity, i.e., impaired water clarity. The potential effects of increased turbidity on aquatic species are discussed in Impact 4.8.2 and additional clarification is provided in Master Response 4.8, below. As discussed in these sections, the impact on aquatic species is less-than-significant. The increase in turbidity also corresponds with a reduction in water clarity (the ability of light to penetrate the water column).

IMPAIRED WATER BODIES AND CUMULATIVE IMPACTS

As noted on page 4.7-5, the Delta waterways, including the DWSC, are listed as impaired for a number of pollutants (or stressors). The additional impairments discussed in paragraph two of page 4.7-5 have since been adopted by the SWRCB. For the revised text, please refer to **Chapter 5.0, Minor Changes and Edits to the Draft Environmental Impact Report.** As noted in Section 8.2.2 of the Draft EIR, page 8-5, any significant impact to water quality would be considered cumulatively considerable, given the existing impairment of the DWSC. As discussed in Sections 4.7 and 5.2 of the Draft EIR and Master Responses 4.7 and 4.20, proposed mitigation would prevent adverse water quality impacts due to the project.

One comment notes that the Delta waterways are listed as impaired for chlorpyrifos, DDT, diazinon, and Group A pesticides. These pollutants are associated with agricultural runoff and runoff from landscaped areas. Releases of such contaminants will not increase due to the project. In fact, as noted in Impact 4.7.3, with elimination of farming operations on the West Complex site, releases of contaminants associated with cultivated areas will decrease.

4.8 BIOLOGICAL RESOURCES

WETLANDS

The Draft EIR acknowledges the potential to impact wetlands (Impact 4.8.1). A wetlands delineation was done in 1996, as discussed in section 4.8 (page 4.8-19), and the results were included in the 1998 U.S. Navy Environmental Assessment. Although this delineation is probably no longer valid (for permitting purposes, a delineation is typically valid for up to five years), it is cited as an informational source in the Draft EIR. A review of the delineation by ESA staff indicates the existence of approximately 21 acres of wetlands, all in the western half of Rough and Ready Island. Approximately 9 acres are in the area designated for a future auto facility, and 12 acres are in the area designated for future diversified land use.

These wetland features may be subject to USACOE jurisdiction. However, preparing a formal delineation of the entire Rough and Ready Island would be premature at this time. This EIR functions as a program EIR for the West Complex Development Plan and as a project-level EIR for two specific components of the Plan, the proposed dredging of the Stockton Deep Water Ship Channel and the McCloy Avenue, Daggett Road, and Daggett Road Bridge Project (see Response 4.18, below).

The West Complex Development Plan provides a planning framework for the types of projects that could be implemented within the project area in the future. As individual projects with specific site plans and facilities are brought forward, the Port will evaluate each project to determine the extent to which the analysis in this EIR covers the impacts of the project and the additional environmental review that will be required. Under Mitigation Measure 4.8.1a, all impacts to waters of the United States will be evaluated, and formal wetland delineation made where needed, in connection with individual projects that may affect wetlands. Thus, if an individual project might affect a potential wetland area, a formal delineation will be undertaken to determine whether wetlands will in fact be affected, and the extent of the impact. As stated on page 4.8.28, in connection with such a delineation, a determination whether USACOE jurisdiction applies and the delineation will be submitted to the USACOE for verification. The Draft EIR accordingly does not assume that the wetlands are exempt from USACOE jurisdiction under the SWANCC decision, and that issue will be determined as part of the formal delineation and USACOE consultation process in connection with any Corps permits that may be necessary. The mitigating actions described in Mitigation Measures 4.8.1a through 4.8.1d will apply to any verified wetlands subject to USACOE jurisdiction that may be adversely affected by a Proposed Project.

Making all reasonable measures to avoid and minimize fill of wetlands is an implicit part of the USACOE permit application process since the Corps considers the “practicability of using reasonable alternative locations and methods to accomplish the objective of the proposed activity” (USACOE’s Sacramento District Regulatory Branch web page at www.spk.usace.army.mil/cespk-co/regulatory/permitting.html) in

the evaluation of every application. An example of this understanding is evident in Mitigation Measure 4.8.1b, which clearly states that no staging areas will be located in wetlands.

Where avoidance or on-site mitigation is not feasible, the Port may need to engage in off-site mitigation of wetlands. Any mitigation banks used to acquire mitigation credits for impacts to wetlands are required to be approved by the USACOE (Mitigation Measure 4.8.1a), which is an agency responsible for ensuring no net loss of wetlands. Mitigation Measure 4.8.1a requires a *minimum* of a 1:1 ratio for mitigation, and does not preclude a higher mitigation ratio which may be required by the USACOE.

Any attempt to analyze impacts to waters of the U.S. and wetlands at this time, beyond what has already been provided, will suffer from two important defects. First, site specific details regarding the specific configuration and site plan for future projects that will be proposed to implement the West Complex Development Plan are not available at this time. Such details are necessary to determine whether or not jurisdictional wetlands would be impacted, and whether or not such impacts could be avoided. Second, as noted above, a wetlands delineation is only valid for five years. Whether wetlands will in fact be affected by a specific development project, the amount of wetlands affected, and the amount of mitigation required, is best assessed in the context of an up-to-date wetlands delineation. The Development Plan is a long term document, and individual projects described by the plan will be proposed over an extended period of time. For that reason, the Draft EIR provides for timely preconstruction delineations where wetlands might be affected.

A permit under Section 404 of the Clean Water Act for development projects within the West Complex is not being applied for at this time. The analysis in the Draft EIR is not intended to address the specific permitting requirements of Section 404(b)(1) of the federal Clean Water Act for issuance of a permit by the USACOE to fill wetlands. All requirements for issuance of such a permit, including any applicable requirements for a LEDPA analysis under the USACOE Guidelines, will be complied with in connection with any future applications submitted to the USACOE for a section 404 permit. What the Draft EIR does provide, as a CEQA document, is a complete discussion of the potentially significant environmental effects of the proposed Development Plan, and a discussion of feasible mitigation measures and alternatives that would reduce these potentially significant effects.

SPECIAL STATUS SPECIES

The EIR acknowledge the potential for direct and indirect impacts to special status species by construction activities and project operations in the Project Area. The 12 special-status plant species and 27 special-status animal species, including birds and mammals, are listed and described in Section 4.8 under the heading “Special-Status Species Assessment,” and thus serves as an informational document for decision makers and the public. Potential impacts resulting from both construction activities and operation of the Proposed Project are acknowledged in Impact 4.8.2 and 4.8.3.

The Draft EIR identifies the types of habitats on the site and the regionally occurring special status species that could be potentially affected by development based upon habitat requirements. One comment suggested the EIR should define the specific impacts that will occur to specific bird or mammal species. However, as explained in the Draft EIR, the impacts to each species as a result of each

development activity will be assessed as provided in Mitigation Measures 4.8.2a, 4.2.8b and 4.8.3 as specific future development activities are proposed for consideration. This will allow the impact assessment to be based upon current conditions and to take account of the configuration of the proposed development. It will also allow for implementation of avoidance measures where appropriate, as well as mitigation tailored to match the specific impact.

Impact 4.8.2 refers to species covered by the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP). Impacts to covered species would be mitigated either by participation in the plan, Mitigation Measure 4.8.2a, or by implementing conservation measures commensurate with the SJMSCP, Mitigation Measure 4.8.2b. The potential conflict between construction activities and the SJMSCP is identified in Impact 4.8.6. This potential impact would be mitigated through compliance with the avoidance and mitigation measures of the SJMSCP (per Mitigation Measure 4.8.2a) or by implementing commensurate measures (per Mitigation Measure 4.8.2b). Note that any commensurate measures implemented outside of participation in the SJMSCP must be approved the regulatory agencies (i.e., DFG, USFWS).

Impact 4.8.3 refers to impacts to species not covered by the SJMSCP. The following mitigation measures would address potential impacts to uncovered species: 4.7.5a, 4.7.5b, 4.8.1a, 4.8.1b, 4.8.1c, 4.8.1d, and 4.8.3.

Anadromous fishes that are special-status species are addressed in the EIR. Section 4.8 describes the San Joaquin River in the vicinity of the project as a migratory corridor for anadromous fishes. Impact 4.8.3 acknowledges that anadromous fishes may be indirectly impacted by water quality impacts of the Project, including in the Deep Water Ship Channel, and refers to mitigation in Section 4.7 to avoid, minimize and mitigate impacts to water quality.

The issue of decreased dissolved oxygen (DO) is acknowledged in Impact 4.8.3 via reference to Impact 4.7.6, which acknowledged that DO can be decreased as a result of increased resuspended sediments. Mitigation Measures 4.7.6 and 5.6.1 describe the mitigation which would reduce this impact to a less-than-significant level. Refer also to Master Response 4.20, below for a discussion of dissolved oxygen.

Potential impacts of sediment resuspension in the DWSC on aquatic special status species discussed in Section 4.8 (Draft EIR page 4.8-29) are expected to result principally from the effect resuspension of sediments can have on dissolved oxygen (DO). As explained in section 4.20 of these responses, the increase in dissolved oxygen that will be provided by the Port's operation of the jet aeration device will offset all effects on dissolved oxygen that might result from implementation of the proposed dredging and increased maritime operations, including any impacts due to resuspension of sediments, and will in addition, significantly enhance dissolved oxygen in the DWSC in comparison with existing conditions.

Deposition of resuspended sediments (smothering) is not likely to be a significant concern for several reasons. Of the species covered in Section 4.8, only two would spawn in the Delta: Sacramento perch and longfin smelt; the remaining species spawn higher in the watershed. Sacramento perch were historically found throughout the Sacramento-San Joaquin River systems. They are currently restricted to Clear Lake and a few reservoirs and farm ponds into which they were introduced, thus they are not likely to spawn in areas affected by the Project (DFG http://www.dfg.ca.gov/hcpb/species/search_species.

shtml). Longfin smelt spawn in freshwater portions of the Delta, mostly from February through April. They are presumed to only rarely spawn above Medford Island in the San Joaquin River (DFG, 2004 http://www.dfg.ca.gov/hcpb/species/search_species.shtml).

Impact 4.8.6 states that project construction could conflict with the SJMSCP to the extent that construction activities would not avoid, minimize, or mitigate impacts to special status species, riparian habitat, or other sensitive natural communities. Mitigation provided in Mitigation Measure 4.8.2 (referenced as "mitigation above") requires compliance with the SJMSCP, or implementing mitigation commensurate with the SJMSCP to avoid, reduce and mitigate impacts to covered species. This measure thus ensures that the Project would not conflict with the SJMSCP.

Impacts to waterways of the Delta are identified in Impact 4.8.2, and include potential effects from bank erosion and reduced water quality. No special status amphibians, aquatic mammals, or birds that could be affected by bank erosion or reduced water quality were identified during the literature review for Section 4.8. In addition, Impact 4.6.4 refers to a Boat Wake Wave Analysis prepared by Moffat and Nichol Engineers (**Appendix H** of the Draft EIR), which indicates that the magnitude of large vessel boat wake waves would likely be similar to existing conditions.

BALLAST WATER

The EIR acknowledges that, although the Port records a high compliance rate with ballast water exchange regulations, the Proposed Project could increase the risk of introduction of non-native invasive species due to the increase in ship traffic. In addition to continuing the Port's education program, the EIR includes a mitigation measure requiring the Port to continue, to the extent feasible, "to cooperate with the State Lands Commission and other agencies with regulatory authority over release of non-native aquatic organisms from vessels, to facilitate biological monitoring, promote technological developments to better control non-native aquatic organisms, and otherwise support recommendations for future actions described in California State Lands Commission (2003)." While, there is a potential for release of non-native species, this potential and the associated risk is considered less than significant given the existing regulations and management programs currently required by the California State Lands Commission, the U.S. Coast Guard, and the International Maritime Association (IMO). Each of these agencies have adopted regulations to reduce the risks associated with Ballast Water release. While the risk has not been completely eliminated, the various regulations substantially reduce the probability and reduce the threat of significant impacts. The Port of Stockton and other California agencies are prohibited from adopting regulations for control of ballast water and must instead rely on the adopted regulations. Therefore, the Port will cooperate with the responsible agencies but cannot adopt additional restrictions on ballast water.

It is possible that the risk identified in the draft EIR would be further reduced by an event that occurred after the draft EIR was issued. In February 2004, the International Maritime Association (IMO) adopted its first mandatory instrument to address ballast water discharges, the International Convention for the Control and Management of Ships' Ballast Water and Sediments. The IMO Convention will now proceed to member states for ratification; if adopted, it will provide the first worldwide regulation of this worldwide problem.

One comment agrees with the EIR regarding the potential for non-native invasive species to be introduced into the Delta through ballast water discharges and the potential effects of such an introduction. The comment asserts, however, that the EIR neglects two feasible mitigation measures for this potential impact.

The first of these suggested measures is "pump out systems for the new port." This is assumed to refer to a system to pump ballast water from a ship into either an on-shore treatment tank or a sanitary sewer system. There are several obstacles to using such a system. No pump-out system has been developed for the types of ships that would use the Port of Stockton. Further, any such system would require retrofits to the ships themselves to allow for pumping. As is discussed in the Noise Master Response, the Port cannot require any vessel operating in interstate or international commerce to be retrofitted; the physical characteristics of such vessels are regulated by international law. Finally, a pump-out system would address only ballast water discharges that occur when a ship is in port; many, if not most, ballast water discharges occur while a ship is in transit. This is one reason that existing ballast-water exchange regulations (described in the draft EIR) and anticipated, but still experimental, on-board treatment systems are preferred to on-shore treatment systems.

Second, it is suggested that the Port could help to fund a "regional approach for on board ballast water treatment systems." The Port is aware of one larger port that has provided funding for an experimental on-board ballast water treatment system. This was not as a mitigation measure under CEQA, however. Experiments often help to advance knowledge, but they do not mitigate a project's environmental impacts (see CEQA Guidelines section 15370, defining "mitigation").

Although the spread of invasive aquatic organisms is recognized as a global problem, this EIR has characterized the increased risk of introduction of non-native aquatic species as a direct impact, but not a cumulative impact. While it is believed that several of the non-native species found in the Sacramento San Joaquin Delta may have been introduced via ballast water, it is not possible to prove this for each species or to assign risk to various ports. These non-native species may include the Asian clam (*potamocorbula sinensis*), the mitten crab (*eiocheir senensis*) and various zooplanktons. As stated in the Draft EIR, page 8-6, shipping at the other major port in the Delta, the Port of Sacramento is expected to decline. It is therefore reasonable for the lead agency to characterize this impact as a potential direct impact, but not as a cumulative impact.

On a related note, one of the comments this topic states that ballast water may transport pathogens and waste material. It is suspected, although not proven, that ballast water transported from Asia was the culprit in the 1991 cholera outbreak in Latin America (*Nature*, Nov. 2, 2000). The same cholera microbes were discovered in shellfish in Mobile Bay, Alabama. There are, however, no accounts of similar incidents in the Sacramento San Joaquin Delta, or on the western coast of the United States. Furthermore, the new regulatory requirements from the California State Lands Commission, the U.S. Coast Guard and the IMO have further reduced the risks of such exposure. Therefore, given the regulations and extensive review associated with reducing this risk, the impact is considered less than significant.

4.9 CULTURAL RESOURCES

No comments were received which addressed the issue of cultural resources. One comment recommended consultation with the Native American Heritage Commission (NAHC). The NAHC received both the Notice of Preparation and the Draft EIR via the State Clearinghouse. No comments were received from the NAHC.

4.10 VISUAL RESOURCES

Impacts related to visual resources are discussed in Section 4.10 of the Draft EIR. The Draft EIR analysis uses a common visual impact assessment methodology (for reference, see Federal Highways Administration, *Visual Impact Assessment for Highway Projects*, FHWA-HI-88-054). This method has three key steps: identifying the visual character and quality of visual resources, identifying the type, exposure and sensitivity of viewers, and identifying the potential change in visual resources. All three of these elements are considered when determining the level of visual impact. This methodology implements the CEQA thresholds of significance, listed on page 4.10-11, and is frequently employed in CEQA and NEPA analysis.

Section 4.10 discusses the setting (visual character, views to and from the project area, identified scenic resources), the viewers ("sensitive receptors"), and the impact of the Proposed Project. The discussion includes 14 photographs of various views of, and from, the project area. Impact 4.10.3 concludes that the visual impact, as viewed from Louis Park, the Stockton Country Club, and residences, would be less-than-significant. While the presence of sensitive receptors is acknowledged, the marine terminal will not substantially change in either visual character or quality. As discussed on page 3.10-13, the marine terminal will remain a port-industrial facility in character, while any change in quality may be viewed as beneficial (rehabilitation and modernization of the existing dilapidated facility).

CRANES

Cranes are discussed as a possible component of the expansion of the maritime terminal on pages 3-11 and 3-12. Figure 3-4 shows four proposed harbor cranes in the area proposed for container cargo. (Figure 3-3 of the Draft EIR, page 3-6, incorrectly shows these four cranes; this figure will be corrected in the Final EIR. See also **Chapter 5.0, Minor Changes and Edits to the Draft EIR**). The Port is not considering the idea of permanent rail-mounted cranes at this time. If market and operations requirements dictate the need for cranes at the West Complex, they would be of the mobile harbor crane type, such as the LHM 400 or equivalent, which would not significantly alter the existing appearance of the West Complex.

One comment cites the Port of Los Angeles/China Shipping settlement which is attached to the comment letter (Los Angeles County Superior Court Case No. BS 070017) and calls for the Port of Los Angeles to investigate the use of "low-profile" cranes which are up to 185 feet in height when *not* in use. (This agreement has, however, had to be renegotiated due to feasibility problems; under the renegotiated settlement, tall cranes will remain and low-profile cranes will not be added until a later phase of the China Shipping project; see Cunningham Report, Vol. 9, No. 11 3-15-04.). The (LHM) 400, in contrast, has a

maximum operating height of 48 meters (158 feet). This is less than the height of the "low profile" cranes referred to in the comment. These mobile harbor cranes would be less visible during container cargo operations than the ship mounted cranes currently in use, and shown in Figure 4.10-7. When not in use, the LHM 400 is 33.5 meters (110 feet) high. The cranes that might be used at the Port of Stockton would not alter the industrial character of the viewshed from residences across the channel and, unlike the cranes at issue in Los Angeles, would not obstruct views of the water from any residence. Impact 4.10.3 adequately addresses the potential change to the visual character of the site, and identifies this as a less-than-significant impact.

LIGHT AND GLARE

Light and glare is discussed in the setting section (page 4.10-3) and is analyzed in Impact 4.10.4. Light and glare was identified as an issue during the scoping process for the Draft EIR. Mitigation measures 4.10.4a and 4.10.4b would reduce the light and glare emanating from the project area. However, the Proposed Project would increase the number of vessels at the West Complex. Berthed vessels employ lighting necessary to facilitate cargo loading and unloading as well as to ensure safety and vessel and cargo security. The safe operation of the ship is the primary concern of the ship's captain and the Port has no authority to require changes in equipment or operations on vessels used in interstate or international commerce. The Port therefore cannot guarantee that the lighting from berthed vessels will be reduced to a level less-than-significant. The suggestion that the Port initiate a curfew to prevent night-time operations is contrary to the practices of all West Coast cargo ports (See Master Response 4.4, Noise.). As is discussed in Master Response 4.4, Noise, however, the Proposed Project would be expected to reduce the currently existing nighttime ship operations opposite the Riviera Cliffs neighborhood. The Proposed Project calls for an automobile facility at Berth 20; automobile carriers, unlike the bulk carriers currently using Berth 20, generally arrive at port in the morning and depart within 4 to 12 hours.

CONVERSION OF OPEN SPACE

The number and type of viewers is important when assessing the potential visual impact of a Proposed Project. The significance of a visual impact must take into account the change in the visual resource and the response of the viewers. The change in the visual resource depends on the quality and character of the view in the baseline condition, and the magnitude of the proposed change. Viewer response is based on factors including number of viewers, exposure time, and sensitivity. Residential viewers are assumed to be among the more sensitive viewers, and thus are discussed on page 4.10-10. This is also why scenic routes are important when analyzing visual impacts, as those viewers are also considered sensitive. As discussed on page 4.10-3 and shown in Figure 4.10-2, the existing areas of open space on Rough and Ready Island, located south and west of the existing facilities, consist mainly of agricultural fields and annual grasslands, with some background views of warehousing and remnant military facilities. There are no scenic routes which view these areas, no designated scenic vistas, or identified significant visual resources (either natural or man-made). In addition, there are no sensitive viewers, such as residences, recreational users, etc., who can normally view this area. The analysis of the Draft EIR therefore concludes, in Impact 4.10.1 (page 4.10-11), that this is a less-than-significant impact.

4.11 HAZARDOUS MATERIALS AND PUBLIC HEALTH

The Stockton Fire Department HazMat team has been relocated to Station #10. Please refer to **Chapter 5.0, Minor Changes and Edits to the Draft Environmental Impact Report**, for the revised text. According to the Stockton Fire Department, the relocation of the HazMat team will not cause response time to the West Complex to drop below acceptable levels.

At the West Complex, the Port operates two 3,000 gallon diesel aboveground storage tanks, one split 4,000 gallon aboveground storage tank containing 3,000 gallons of gasoline and 1,000 gallons of diesel, a 500 gallon diesel aboveground storage tank, two 50 gallon above ground oil tanks, a 20 gallon diesel aboveground storage tank, and a 70 gallon above ground gasoline tank. There have been no spills, leaks, or knowledge of leaks/spills of toxic chemicals to the storm water conveyance system after January 1995 (SPCC Plan, 2002). All tanks are subject to the provisions of the Above Ground Petroleum Storage Act (AGPSA), which is administered by the State Water Resources Control Board and the California Regional Water Quality Control Board. As outlined in the AGPSA, owners and/or operators of aboveground storage tanks or storage tank facilities are required to:

- File a storage statement,
- Pay a facility fee, and
- Prepare and implement a federal Spill Prevention Control and Countermeasure Plan.

As a part of the Port's Storm Water Management Program, a Spill Prevention Control and Countermeasure Plan has been prepared which outlines spill prevention measures for the above ground storage tanks operated by the Port of Stockton. These measures include tank truck unloading operators, spill containment equipment, and tank inspections to prevent fuels from entering the storm drainage system. Unloading operations occur only within a designated secondary containment area and all delivery trucks are required to have adequate spill response materials and equipment on board the truck to respond to a release. All delivery tank truck operations are required to comply with Department of Transportation regulations with regard to the transportation of these materials along local and regional roadways.

The types of materials that are stored and used by existing tenant operations such as the fueling and maintaining of vehicles at the West Complex are diesel fuel, gasoline, kerosene, propane, cleaning solvents, antifreeze, motor oil, and waste oil. Although the types of materials that might be stored and used at the West Complex in the future would depend on the individual tenants, it is reasonable to assume that similar materials to those currently used would continue to be used and stored by future tenants. Any new tenant would have to go through the same regulatory procedures as existing tenants and would need to obtain permits for their materials and would need to develop a Hazardous Materials Management Plan that would be reviewed and approved by the San Joaquin County Office of Emergency Services. Hazardous Materials Management Plans are required to inventory hazardous materials stored and used on site, disclose the location of storage and use on site, maintain an emergency response plan, and contain provisions specifying employee training in safety and emergency response procedures. Each tenant must comply with the applicable hazardous materials regulations and file their own inventories and plans with the San Joaquin County Office of Emergency Services.

Currently, the only type of bulk materials that is stored and transported to and from the West Complex is rice. Rice is considered a break-bulk cargo and is contained in bags or boxes. Future plans call for maritime operations focused on break-bulk cargo, automobile transport and container cargo. Existing operations at the West Complex do not include (nor will they in the future) the unloading or transportation of loose bulk materials, such as fertilizers (ammonium nitrate, ammonium sulfate, potassium nitrate, boron, boric acid, sulfate of potash, soda of potash, urea), sulfur, anhydrous ammonia, and coal. Suitable areas for the storage of these types of loose bulk materials include the fertilizer warehouses within the East Complex. Unloading activities occur on Docks 9, 10, and 11 in the East Complex. The West Complex does not have transfer facilities to accommodate these types of loose bulk material loading and unloading and construction of such facilities is not contemplated by the West Complex Development plan. These types of bulk materials would continue to be stored, loaded and unloaded at the East Complex, where prevention and spill response measures are currently in effect. The Port's Storm Water Pollution Prevention Plan identifies the specific good housekeeping practices and Best Management Practices measures (BMPs) for the fertilizer activities at the East Complex. Several of the key measures are identified in greater detail below.

The Port of Stockton has procedures in place for the loading and unloading of materials in order to prevent spills and to immediately respond to any accidental spills. They include procedures to prevent releases from happening, as well as procedures in how to respond to accidental releases if they do happen. The Port of Stockton is mandated by law to have these procedures in place. The Port has its own police force, the Port of Stockton Police Department, which operates 24 hours a day. The Port of Stockton is mandated by the U.S. Coast Guard to report to them any accidental releases or explosions along the waterways and to take immediate steps to stop them and clean them up.

With respect to prevention of water pollution from activities at the Port, the Port of Stockton has developed Storm Water Best Management Practices as part of their Spill Prevention Control and Countermeasure Plan and Storm Water Pollution Prevention Plan (SWPPP) and as a part of their Comprehensive Storm Water Management Program to reduce, minimize, and prevent significant materials from impacting storm water quality. These practices are effective at reducing potential pollutant contact with storm water, and include:

> Preventive Maintenance Procedures: Routine observations and maintenance of facility equipment and storm water conveyance components (i.e., storm drains and catch basins), and inspection and maintenance of oil storage devices and equipment.
>
> Good Housekeeping Practices: Employees are informed that work areas are to be kept orderly to prevent track out or migration of pollutants from source areas to discharge points. Sweeping and or vacuuming is conducted by employees to clean dry and wet material spills. Absorbents are used to contain and clean liquid material spills. Absorbents are disposed of properly. Drip pans are used as necessary to contain minor leaks of oil when performing vehicle maintenance. In coordination / consultation with the Port of Stockton's Environmental and Regulatory Affairs Department, the Maintenance Supervisor is responsible for informing the outside contractors and employees of the BMPs governing the Maintenance Area and assuring that the BMPs are implemented properly. BMPs include the Port's policy requiring that outside maintenance activities be conducted under portable canopy covers during rainy weather. After use, the outdoor work area will be swept and cleaned before the end of the workday.

Spill Prevention: The Aboveground Storage Tank (AST) fuel nozzles are locked in place to prevent unauthorized dispensing of fuel. The AST's secondary containment drain is locked in place to prevent the unauthorized release of collected material. The fuel truck is parked within a secondary containment area to prevent migration of diesel fuel in the event of a spill. Double-walled steel tanks are used. Fill pipes are locked in place to prevent release by vandalism or unauthorized personnel. Covers are placed on nearby storm drains during AST filling operations at the Aboveground Tank Refueling Area to avoid pollutant migration or in the event of a release.

Spill Response: The Port developed an Environmental Emergency Response Network (E2RN) to facilitate quick response to spills of significant materials. The E2RN provides a quick and simple guidance to notify the appropriate personnel for responding to spill events. A laminated copy of the E2RN is provided to all Port employees and is also maintained in vehicles used by Port employees.

The initial point of contact to respond to spill events is the Port Police. The Port is monitored 24 hours a day by Port Police and during working hours by Port operations personnel. In addition, the Port is electronically monitored by strategically placed video cameras located throughout the facility where Port operations can be viewed remotely. The system allows for real-time monitoring of material handling procedures and quick emergency response to inadvertent spills.

In the event of a spill, employees are instructed to promptly clean up the spilled materials and report the spill to the Emergency Coordinator. The following BMPs have been implemented to facilitate spill response at the Port:

- Spill response materials (i.e., shovels, brooms, absorbents, etc.) are located in the eastern maintenance building for quick response to Maintenance Area spills. In addition, the Port has put in place, automated vacuum recovery systems which will provide quick and efficient recovery of any spilled materials.
- Spill response material is carried with the fuel truck to respond quickly to any spills that occur during on-site equipment fueling operations.
- The fuel truck operator is provided with radio communication to notify emergency response personnel in the event of a spill.
- Good housekeeping practice signs are posted near the ASTs instructing use of spill containment material and proper spill notification protocol.
- Dedicated spill response and cleanup containers are placed near the ASTs in the outdoor storage area.
- Personnel recover spillage and sweep areas traveled by vehicles to minimize track-out on vehicle tires in the outdoor storage area.

In addition, the following BMPs are being revised to improve response to spill situations.

- Spill response materials are located at the AST areas for quick response to minor spills.
- Fuel-spill cleanup signs are posted at the AST areas that provide instructions in use of spill containment material and proper spill notification protocol.

- All storm drain inlets immediately adjacent to and surrounding the fertilizer warehouses are plugged during fertilizer unloading events (unless dictated to be opened due to high flow/rainfall conditions) and dry/wet times of the year.

  Material Handling and Storage: Filling of the fuel truck and ASTs is performed within a secondary containment berm. When practicable, maintenance activities involving use of significant materials are conducted indoors to reduce exposure to storm water. Significant materials (i.e., lubricants, batteries, paints, solvents, etc.) are stored indoors to prevent contact with storm water. Only the fuel truck operator is allowed to dispense fuel from the fuel truck. The fuel truck operator is not allowed to leave the fuel truck unattended during fueling operations. When practicable, raw materials stored outdoors are placed on pallets to prevent sheet flow contact with the material. Because of leaks in the roof, significant materials are not stored in the western building.

  Training Programs: The Port's Director of Environmental and Regulatory Affairs designs, develops, and conducts training programs to increase awareness of storm water regulations and recommended BMPs. *Annual Multi-Media Environmental Compliance Workshops* encompass a multi-media environmental compliance presentation to tenants, non-tenants, contractors, stevedores, subcontractors, and employees addressing numerous environmental media concerns, including industrial and municipal storm water management. The seminar covers elements of the SWPPP and discussions of BMP implementation and effectiveness.

  Waste Handling and Recycling: The Port has designed and implemented comprehensive waste management and pollution prevention procedures to handle, accumulate, store, and dispose of waste and recyclable materials. Waste dumpsters with lids are used where practicable. Waste batteries, solvents, and oil are stored indoors or under overhead coverage and disposed of or recycled at off-site permitted facilities. Removal of waste and recyclable materials is conducted in a manner that protects against spills into the storm drain system. The Port has implemented procedures to handle, accumulate, store, and dispose of wash water and wastewater and recyclable materials in the Equipment Wash Pad Area. Wash water is collected from the wash pad into a sump and pumped into a nearby storage tank for proper recycling. The wash water is removed from the Port and recycled by TRIAD, Inc. of Modesto and other entities for beneficial reuse/recycling.

  Inspections: At a minimum, a member of the Port's Storm Water Pollution Prevention Team will perform quarterly inspections to assess potential pollutant source areas and BMP implementation at the Port's industrial areas. Deficiencies noted during the inspection will be documented, and appropriate corrective actions will be implemented. Upon discovery of the deficiency, the Port inspector will attempt to orally make the responsible party aware of the situation and seek prompt corrective action; otherwise a Field/Visual Observation and Corrective Measures Notice will be issued to the responsible party describing the findings and the required corrective measure. A duplicate copy of the notice will be retained by the Director of Environmental and Regulatory Affairs. Follow-up inspections will be performed and documented to ensure that corrective actions are taken.

To provide examples of emergency response, approximately two years ago sulfur was spilled into the water during loading/unloading activities at the East Complex. The emergency response system was implemented and a crew was immediately called to the location to remove the sulfur from the water. Another occurrence involved an oil leak from a ship. Again, the emergency response system was implemented and a crew was immediately called to the location to contain and remove the oil from the water.

In addition to the plans and procedures implemented by the Port of Stockton there are extensive federal, state and local regulations to control the transportation, use, and storage of hazardous materials. A summary of these regulations is provided in section 4.11 "Hazardous Materials and Public Health" of the Draft EIR. Large hazardous materials releases are rare, but in the event that one does occur there are rigorous response, notification, containment, and cleanup procedures. As further discussed in the Draft EIR, State agencies with primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol and the California Department of Transportation (Caltrans). Together, these agencies determine container types used and license hazardous waste haulers for hazardous waste transportation on public roads. The California Fertilizer Association (CFA) developed a carrier certification and driver training program in June 1989 to the anhydrous ammonia transportation industry in California. The goal of this program is to help carriers and drivers comply with existing laws and regulations and to enhance the transportation of anhydrous ammonia through a self-regulated industry program. CFA certifies carriers who meet the minimum requirements deemed necessary for safe transport of anhydrous ammonia. Although the certification is voluntary, California has a 100 percent certification record. Funding for the program development has been provided by the California Ammonia Company (Calamco) in Stockton (located in the Project Area), Chevron Chemical Company, and Unocal Chemicals Division.

4.12 PUBLIC SERVICES AND UTILITIES

FIRE PROTECTION SERVICES

The fireboat is no longer staffed by the Stockton Fire Department and is no longer a part of the Department's response plan. This change does not impact the ability of the Department to provide fire protection. Please refer to **Chapter 5.0, Minor Changes and Edits to the Draft Environmental Impact Report**, for the revised text.

The Stockton Fire Department does not anticipate that the Proposed Project will require additional fire response staff, facilities, or equipment to serve the Proposed Project (Rose, pers. Comm). However, build out of the container and warehousing facility, and the office park, could require the services of a full time fire inspector. This effect of the project does not meet the significance criteria identified on page 4.12-13. However, the Port of Stockton has previously agreed to address the potential effect on fire inspection services. In the environmental assessment completed under NEPA for the transfer of Rough and Ready Island from the Navy, Section 4.4.4, Mitigation Measure No. 1, states that the City of Stockton and the Port will explore funding mechanisms to finance a full-time fire inspector to serve Rough and Ready Island (U.S. Navy, 1998).

RECREATION AND PARKS

The northeastern portion of the Project Area contains an existing nine-hole public golf course, Lyons Golf Course. The Proposed Project does not include further development of recreation and park facilities. As discussed on page 4.4-2, Air Quality, the provision of dedicated publicly accessible pedestrian and bicycle facilities (either for recreation or circulation purposes) is not feasible due to the operational and security concerns of the Port. In addition, although the agricultural and natural grasslands on Rough and

Ready Island adjacent to the Burns Cut-Off may provide habitat (as discussed in section 4.8), they do not represent a unique scenic or recreational resource.

Recommended text changes have been made to page 4.12-3. Please refer to **Chapter 5.0, Minor Changes and Edits to the Draft Environmental Impact Report**, for the revised text.

WASTEWATER

One of the project objectives is to improve the infrastructure on Rough and Ready Island, including the wastewater system (see pages 3-16 and 3-17 for a discussion of proposed utility improvements). Minor text revisions have been made to the wastewater background information (page 4.12-3), clarifying Port and City maintenance responsibilities, and correcting the permitted dry weather discharge flows. A discussion of the RWCF capacity and planned improvements is presented on page 4.12-4. The discussion of projected wastewater flows on page 4.12-4 is based on the projected water usage on page 12.4-8 (which in turn is based on the anticipated land uses at the West Complex).

The descriptions of the wastewater system on pages 4.12-3 and 3-17 have been clarified to explain that no new major sewer connections will be allowed until the inspection of the existing system is performed.

Please refer to **Chapter 5.0, Minor Changes and Edits to the Draft Environmental Impact Report**, for the revised text.

WATER SUPPLY

Mitigation Measure 4.12.1a is revised to reflect the City's existing Class 1 ISO rating, and the system assessment shall reflect the need to maintain that rating, in addition to complying with City codes and adopted Building Code Fire Safety Standards. Please refer to **Chapter 5.0, Minor Changes and Edits to the Draft Environmental Impact Report**, for the revised text.

SOLID WASTE

As discussed on page 4.12-9, waste disposal services to the Port are contracted to Delta Container. Solid waste from the Port is disposed at two private landfills on Austin Road owned by Forward Inc. As discussed in Impact 4.12.8, there are no current landfill capacity issues affecting the Port of Stockton, and the Proposed Project is not expected to exceed current and future capacity.

A detailed waste characterization is not provided in the Draft EIR, as this impact has been determined to be less-than-significant. The major source of new waste generation resulting from build out of the West Complex Development plan would be the office development. Office waste can be diverted (from landfills through recycling and other programs) at a fairly high rate due to the high rate of recyclables (such as paper). Activities such as break bulk and Ro-Ro cargo would be expected to generate comparatively less waste. All activities at the West Complex will be subject to source reduction measures developed in conjunction with the City of Stockton (per the California Integrated Waste Management Act). The text of Mitigation Measure 4.12.8 has been revised to include a reference to the City of

Stockton Solid Waste Division. Please refer to **Chapter 5.0, Minor Changes and Edits to the Draft Environmental Impact Report**, for the revised text.

4.13 POPULATION, EMPLOYMENT AND HOUSING

No comments were received which directly addressed this section. However, the population, employment and housing data presented in the Draft EIR are discussed below in the response to growth inducement effects, below.

4.14 ALTERNATIVES TO THE PROPOSED PROJECT

REASONABLE RANGE OF ALTERNATIVES

The Draft EIR considers a reasonable range of potentially feasible alternatives, as required by CEQA Guidelines §15126.6. CEQA does not require an EIR to consider every conceivable alternative, and as noted on page 7-2, there are an almost limitless number of combinations of marine, commercial and industrial development that could be devised for the project area. The range of alternatives discussed is therefore governed by the "rule of reason" (CEQA Guidelines §15126.6(f)). The "rule of reason" requires that the alternatives chosen for evaluation could attain most of the project objectives, while avoiding or substantially lessening any of the significant impacts of the project. Of this range of alternatives, the Draft EIR should consider in detail only those alternatives which are considered potentially "feasible." "Feasibility" in the context of CEQA does not have an iron-clad definition. Feasibility depends on a variety of economic, environmental, legal, social, technological factors and other considerations, including, among other things, site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, land ownership or control, and the provision of employment opportunities. The rationale for selecting the alternatives discussed in the Draft EIR can be found in Section 7.2.

ALTERNATIVES EXAMINED IN THE EIR AND ELIMINATED FROM FURTHER CONSIDERATION

Section 7.3 of the Draft EIR identifies two alternatives that were considered and eliminated from further consideration as not presenting viable and potentially feasible alternatives capable of obtaining most project objectives, per CEQA Guidelines 15126.6(c). These alternatives are the Off-Site Alternative and the Marina Alternative.

OFF-SITE ALTERNATIVE

The CEQA Guidelines provide that an EIR should describe a range of alternatives "to the project, or to the location of the project" that would feasibly attain most basic project objectives while avoiding or substantially lessening any of the project's environmental impacts. Here, the fundamental purpose of the proposed West Complex Development Plan is to provide a long range plan for use and redevelopment of the 1,459-acre Rough and Ready Island site. The proposed Development Plan which is the subject of the EIR provides a programmatic overview of the uses that are envisioned for the site. Because the plan

considered in the EIR is a proposed plan for development of the site, the discussion of alternatives focuses on a range of alternative development plans for the Rough and Ready Island site itself.

The Port did, however, examine the question whether other locations could be used to at least partly meet the project objectives that are proposed to be met through the uses proposed in the West Complex Development Plan. That analysis showed that the only potentially suitable alternative site for expansion of Port maritime activities is north of the Deep Water Ship Channel, across from the Port's East Complex. This alternative location is discussed on page 7-2. The Draft EIR found that this location would not provide a realistic, feasible alternative site for the expansion of Port maritime operations proposed in the West Complex Development Plan. The reasons for this finding include the small size of the site (only 50 acres are available, while the Development Plan proposes 531 acres for maritime uses), and the fact that the site is not contiguous to the existing Port, precluding use of shared rail and other infrastructure. It is important to understand that maritime facilities such as Ro-ro berths require large acreages of backland to efficiently move and process cargo. Automobile processing, for example, requires very large pavement areas to park and move the automobiles, which are driven from the ships, processed, and then loaded onto trucks (car carriers) or rail cars. Maritime facilities without sufficient backland acreage are much more costly to operate, and are undesirable in the marketplace. Because the project objectives focus on attracting new commerce and associated jobs and economic benefits to the Stockton area, a facility severely hampered by backland constraints is not considered a feasible alternative.

Relocation of the existing maritime facilities to a different location on Rough and Ready Island is also infeasible. A new waterfront on either the west or east end of the island would require construction of a new wharf and would require extensive dredging and extensive widening of the Burns Cut-Off. Abandonment of the existing wharves and construction of all new facilities is cost prohibitive. Similarly, the eastern end of the island does not provide sufficient backland to meet the maritime objectives of the project, and would also necessitate removal of the existing golf course and removal of the existing private petroleum plant adjacent to the golf course. The abandoned wharf area would create a new area of blight, which is fundamentally at odds with the redevelopment goals of the West Complex Development Plan. The environmental and regulatory barriers associated with enlarging either the Burns Cut-Off or the San Joaquin River would also be a major impediment to use of such alternative locations. No land exists near the Port of Stockton or the City of Stockton, other than Rough and Ready Island, that meets the most basic requirements for a maritime terminal facility: sufficient waterfront adjacent to the deep water channel to provide adequate berthing space; backland acreage sufficient to support maritime uses; proximity to a turning basin large enough for commercial ships; adequate rail facilities on or adjacent to the site; and location near a major highway. Thus, there are not reasonable or feasible alternative locations for the Maritime Terminal component of the Development Plan.

MARINA ALTERNATIVE

The alternative of a public marina was suggested by several comments on the notice of preparation as an alternative that would eliminate most of the environmental impacts associated with the maritime terminal component of the West Complex Development Plan. This proposal is identified in the Draft EIR and rejected as not meeting the basic objectives of the project, as discussed on Page 7-3. The objectives of the Proposed Project are discussed in Section 3.2. The objectives of the West Complex Development Plan

are on page 3-7, and the objectives of the proposed Rough and Ready Island Redevelopment Project are on page 3-18. Such an alternative would be fundamentally incompatible with any commercial maritime use of the West Complex waterfront area because of the incompatibility of such a use with safe operation of a commercial maritime facility. Redevelopment of the area along waterfront portion of the project area would eliminate existing maritime use of this area. It would require massive reconstruction of the berths and adjacent backlands to accommodate a public use marina yet due to the narrowness of the channel, the site could only accommodate a small public marina facility. In addition, use of the waterfront portion of the site as a public marina facility would not provide any of the cost savings or other benefits that would be provided by being able to recycle and reuse the existing wharves, transit sheds, open storage areas and other maritime related infrastructure on the site and would instead require that those facilities be demolished or left unused. Development of a public marina instead of a maritime terminal at the west complex site would thus not feasibly achieve the most basic project objectives relating to job creation and economic use of the project area and provision of facilities that will support trade and commerce activities associated with regional economic growth.

Some comments suggest that the possibility of a recreational marina was discussed in the EA for the Navy property transfer. However, this potential use was identified in addition to, not in place of, cargo terminals; the Port proposed to use all of the existing dock facilities for cargo. (Navy Property Transfer EA, Rough and Ready Island, **Appendix B**, pages B-3 – B-4 (12/98)).

ALTERNATIVES SELECTED FOR FURTHER CONSIDERATION

Seven alternatives were examined in Section 7.4 of the Draft EIR. These alternatives include two “No Project” scenarios and five alternatives which examine different combinations of type and intensity of use.

ENVIRONMENTAL EFFECTS

The relative environmental effects of the seven alternatives and the Proposed Project are identified in a matrix, Table 7-3 of the Draft EIR, as recommended by the CEQA Guidelines. All of the alternatives discussed would lessen at least one significant environmental effect, with the exception of the High Intensity Alternative. Each of these alternatives is presented for consideration by the Board of Port Commissioners.

PROJECT OBJECTIVES

The alternatives are then analyzed relative to the project objectives in Section 7.6. Only the High Intensity Alternative would meet all of the project objectives.

The project objectives for the Proposed Project are discussed in Section 3.2. The objectives are divided into two parts. The first part is the proposed West Complex Development Plan, described on page 3-7, and the second part is the proposed Rough and Ready Island Redevelopment Plan, described on page 3-18. According to the CEQA Guidelines, the statement of project objectives should be clearly

written to help the lead agency develop a reasonable range of alternatives and should include the underlying purpose of the project. [Guidelines (§15124(b)]

The lead agency, Port of Stockton, is a port district, within the meaning of the California Harbors and Navigation Code. Therefore, the objectives of the proposed West Complex Development Plan are consistent with: (a) the purpose and authority of a port district (Harbors and Navigation Code §6200 et seq.); and (b) Public Law 104-106, federal legislation which authorized the transfer of the Naval Computer and Telecommunication Station to the Port of Stockton for "port activity." As the Environmental Assessment for the Navy Property Transfer states, "Congress passed and the President signed special legislation … to convey property and waterfront assets at Rough and Ready Island to the Port of Stockton for the purpose of expanding its maritime operations." (Navy Property Transfer EA, page ES-1 (12/98)).

The objectives of the proposed Redevelopment Plan for Rough and Ready Island are supportive of the objectives of the proposed West Complex Development Plan, and include elimination of blight, improving public infrastructure, and creating a strong industrial incentive program. The creation of a Redevelopment Project Area would provide funding opportunities to implement the Redevelopment Plan, including tax increment and Community Development Block Grant (CDBG) funds. However, these funding mechanisms are implementation tools for the project objectives, and are not objectives in and of themselves.

One comment questions the Draft EIR's statements relating to the effect alternatives that would reduce the levels of development proposed would have on redevelopment funding. As is explained in the EIR, financing and funding for redevelopment activities may be obtained through a variety of sources. See Draft EIR at 3-21. In addition, it is intended that the increment in property tax revenues generated within the Project Area will be allocated to the Stockton Redevelopment Agency as allowed by Health and Safety Code §33670. The primary relationship between reduced levels of development and redevelopment funding is that the amount of tax increment funding generated by development would decrease with reduced levels of development, reducing the amount of such funds available for elimination of blight conditions and installation of public improvements and public infrastructure, as well as funds available for low and moderate income housing offsite.

One of the comments on the Draft EIR asserts that the Draft EIR "discards" the alternatives discussed in the Draft EIR as failing to meet the Project objectives. This is incorrect. The Draft EIR evaluates each of the alternatives against the project objectives and considers the extent to which each alternative would achieve the project objectives. Consistent with CEQA Guidelines §15126.6(a) the range of alternatives includes alternatives capable of reducing one or more environmental impacts even though they would not fully attain all of the project objectives. The Development Plan that is proposed was developed to identify the uses, infrastructure improvements, and land use plan for the site that would best implement the project objectives. Each of the alternatives discussed in the Draft EIR, except for the High Intensity Alternative, would reduce various environmental impacts by changing the development plan to eliminate, or reduce the intensity of, the various uses included in the proposed Development Plan. It necessarily follows from this process that alternatives would impede attainment of various project objectives to one degree or another. See Guideline §15126(b). The Draft EIR's discussion of the consistency of the

alternatives with project objectives explains the effect such changes to the development plan would have on achievement of project objectives. This discussion is provided so that the major characteristics of the alternatives, including their ability to meet project objectives, as well as their significant environmental impacts, can be meaningfully compared with the Proposed Project. See Guideline §15126.6(d). The Draft EIR accordingly does not reject any of the alternatives evaluated in Section 7.4. It will be up to the Board of Port Commissioners, as the decision-maker, to weigh the relevant factors and to determine whether to approve the project as proposed, one of the alternatives, or a variation that incorporates one or more of the development concepts included in the alternatives.

A few comments criticize the project objectives, asserting that they are defined too narrowly and have the effect of eliminating any alternative that does not include maximum development of berths and upland areas. However, the project objectives clearly define the true goals that have been identified for the Proposed Project. Clearly defining the objectives of the project in this manner does not, however, unduly limit the range of project alternatives. CEQA contemplates that the lead agency will identify the objectives of a project it is proposing to carry out. It also recognizes that in most situations, alternatives to a Proposed Project that are devised to reduce environmental impacts will not be capable of achieving all project objectives. This is particularly true where the Proposed Project involves a land development plan where the alternatives available to reduce significant impacts necessarily involve various means of reducing the intensity of development or use, and/or reducing the area to be developed. For this reason, the range of alternatives discussed necessarily includes alternatives that will impede achievement of project objectives to some degree. It is then up to the agency decision maker, in this case the Board of Port Commissioners, to consider the reduction in significant environmental impacts that could be achieved through such alternatives along with all of the other relevant factors, including the extent to which project objectives will be achieved, and the weight to be given each objective, in determining what action to take with respect to the Proposed Project and alternatives to it.

ADDITIONAL VARIATIONS ON THE IDENTIFIED ALTERNATIVES

COMBINED ALTERNATIVES

One comment notes that the Limited Maritime Use Alternative, Alternative 6, would reduce all of the significant impacts associated with shipping activities that would take place in the Maritime component of the project. As the Draft EIR explains, the Limited Maritime Use Alternative would, by constraining development of maritime facilities, reduce the operational impacts associated with increased Maritime use such as noise, air pollution, and traffic, and would also eliminate the impacts of dredging to deepen the berths to a depth of 35 feet below MLLW. These reductions in environmental impacts are explained in Section 7.4.6 of the Draft EIR. Section 7.6 of the DEIR examines the consistency of the alternatives with the project objectives. As noted on page 7-32, Alternative 6 fails to meet all or portions of objectives 1, 2 and 3. In addition, Alternative 6 would not fully meet objective 7, the improvement of maritime operations per the transfer legislation.

The comment further suggests that Alternative 6 could be coupled with a development plan that avoids agricultural and wetland areas. With such a development plan, the commercial and industrial uses planned for the 436-acre area South of Fyffe Avenue would be reduced to 162 acres in order to leave the

272 acres south of Fyffe Road classified as prime agricultural land undeveloped. This would reduce commercial and industrial uses by about 2/3 in comparison with the proposed development plan. In addition to eliminating the impact on prime agricultural land, by significantly reducing the amount of commercial and industrial development, such a proposal, if combined with the Limited Marine Use Alternative would also reduce the other impacts associated with development of commercial and industrial uses on the project site. Daily vehicle trips related to commercial and industrial development would decrease by approximately 30,000 trips, resulting in a proportional reduction in traffic, air quality, and traffic noise impacts. In addition, like the Marine Terminal Development Alternative (Alternative 4) which would eliminate commercial and industrial development from the plan, construction impacts and other impacts from development of the area South of Fyffe Avenue, such as geological impacts, hydrological and water quality impacts, and public services and utilities impacts would be reduced in proportion to the reduction in development of commercial and industrial uses. It should also be noted that, as one variation on this proposal, another alternative would be to relocate some amount of the industrial and/or commercial development planned for the prime agricultural land south of Fyffe Avenue to the north of Fyffe Avenue that would not be used as backlands to serve maritime activities under a Limited Maritime Use Alternative.

With respect to avoidance of wetlands, wetlands identified as potentially jurisdictional are located in the Diversified Land Use portion of the project area, within the grasslands in that area. This area is not proposed for development as part of the West Complex Development Plan.

The configuration and combination of uses suggested by the comment is one of a vast number of possible combinations of uses and development areas that could be suggested as variations to the alternatives identified in the Draft EIR. The alternatives evaluated in the Draft EIR were selected in recognition of this fact and were designed, in part, to explore the pros and cons of various levels of development, as well as various combinations of marine and commercial/industrial development so that the effects of variations on the alternatives presented could be assessed as part of the process of reviewing and considering alternatives.

FULL DEVELOPMENT, NO-MARITIME ALTERNATIVE

Another development plan suggested in comments on the Draft EIR would be to use the northern portion of Rough and Ready Island for “warehousing, manufacturing and high-tech companies” as outlined in a letter to the Stockton Record. Under this proposal, which is set forth in a letter from Mr. Richard Hackett published in the Stockton Record on January 3, 2004, the Marine Terminal component of the project would be deleted and the existing Port facilities would be remodeled. As the Port understands this proposal, the east end of Rough and Ready Island, from the golf course to Louis Park, would be used for non maritime purposes such as commercial and industrial uses and warehousing, while the area across from the Riviera Cliffs residences would be left undeveloped. From an environmental perspective, this proposal is similar to Alternative 5, the Commercial and Industrial Park alternative which provides for no further development of existing marine terminal uses. It would provide the same reduction in impacts associated with expansion of the marine terminals as would be provided by Alternative 5. This proposal apparently would vary from Alternative 5, however, by also removing existing maritime uses from the Rough and Ready Island waterfront, eliminating the impacts of the maritime operations that currently

exist. Under this proposal, use of the northern half of the Island as backlands supporting maritime uses would not be necessary. The land designated in the proposed Development Plan for rail to dock, break bulk, container facilities, expanded break bulk, Ro-Ro and project cargo, container expansion/intermodal transfer, and future water related expansion (approximately 500 acres) would not be used for maritime purposes but instead would be used for commercial and industrial uses, including warehousing. This would have the effect of roughly doubling the land area within the site devoted to non maritime uses which would result in a corresponding doubling of the operational impacts (traffic, noise and air quality) projected for the Commercial and Industrial Park Alternative.

The comment outlines this suggested alternative development plan in very general terms, and does not specify the level of commercial, industrial and other non-maritime development under this suggestion. Other comments suggesting that the project site be used for a "technology park" or other non-maritime uses also do not provide any specifics in terms of the level of development that is being suggested. These suggestions may assume that the total amount of non maritime development would be roughly equivalent to, more than, or less than the amount non-maritime development envisioned by the proposed development plan. The foot print and operational impacts of such an alternative development plan would vary depending upon the amount of non-maritime development that is assumed. At one end of the spectrum, such a land use plan might call for the northern half of the island proposed for maritime uses to be planned for warehousing and/or campus industrial uses, with the area south of Fyffe Avenue used for commercial and industrial purposes as set proposed in the Development Plan. At the other end of the spectrum, the level of commercial and industrial uses (including warehousing and campus industrial uses) would be limited to the northern portion of the site proposed for maritime use, and limited to the level of intensity of non-maritime use proposed by the Development Plan. A broad range of variations and permutations between these two ends of the spectrum for such a non maritime scenario could also be devised. See also the discussion above relating to suggested alternatives for avoiding development of prime agricultural land that would provide for further variations on the reduced maritime alternative.

Finally, it should be noted that the assumption in the proposal that maritime activities be eliminated from the West Complex and the assumption that the East Complex could be "remodeled" to accommodate the shipping activities proposed in the West Complex development plan is incorrect. The types of shipping activities proposed for the West Complex require extensive backlands to support roll-on, roll-off, container and cargo storage, processing, container and cargo loading and unloading, and intermodal use. Over 500 acres are proposed for this purpose in the West Complex Development Plan. There is no land available within the East Complex that could be used to support the same types of backland uses and the waterfront area of the East Complex cannot be expanded to create additional berthing space. Furthermore, as explained above, the area across the deep water channel from the East Complex is also not suitable for such a use. Accordingly a non-maritime alternative would not be capable of achieving the project objectives that relate to expansion of Port maritime facilities.

OTHER SMALLER SCALE ALTERNATIVES

In addition to the combinations of alternative components and an increased industrial alternative, variations on the alternatives described in the EIR include an almost infinite number of reduced intensity alternatives. The Draft EIR presents some representative variations, but any reduced size from the full

project, down to the no project alternative could be described. Because an EIR cannot, as a practical matter, present all possible reduced intensity alternatives, the Draft EIR provides prototypical reduced intensity alternatives that enables the reviewer to assess the general trade-offs between environmental effects and project alternatives, and the degree to which reducing the project also reduces its environmental effects.

Oakland and Alameda Base Reuse Examples

Several comments look to Oakland and Alameda as models of appropriate land use at closed waterfront military bases and suggest that the EIR should do the same. The Oakland and Alameda examples are useful but do not suggest new alternatives that should be examined.

In the case of Oakland, a navy base and an army base adjacent to the Port of Oakland were both closed in the 1990s. The Port of Oakland has now developed all of the navy base for container terminals, a rail terminal, and maritime support, except for the Navy's "Middle Harbor," which could not feasibly be used for modern container shipping and has been converted to a park (land) and habitat enhancement area (water). The Port of Oakland has also received the portion of the Oakland Army Base waterfront that can be converted to a container terminal, and will receive other portions of the base for rail and marine terminal use; the City of Oakland plans other uses for the portion of Oakland Army Base that is not needed for rail facilities or marine terminals. Thus the Oakland example reflects the logic of using closed military bases adjacent to existing ports for port purposes to the maximum extent feasible. This example is consistent with the Proposed Project and all Alternatives that incorporate maritime uses at Rough and Ready Island. The Oakland example supports port reuse and does not suggest that new alternatives should be studied for reuse of Rough and Ready Island.

The Alameda example is equally useful. The Alameda Naval Air Station and the smaller FISCO Annex (collectively "NAS Alameda"), located directly across the Oakland Inner Harbor Channel from the Port of Oakland, have closed and are being redeveloped under a plan approved by the City of Alameda. The City of Alameda actually considered using 220 acres of NAS Alameda as a container port, but rejected that alternative because the channel separating NAS Alameda from the Port of Oakland was deemed too narrow to allow port operations on both shorelines. Thus the Alameda example supports the logic of considering Port reuse of waterfront military bases.

In fact, the City of Alameda ultimately adopted a mixed-use development plan that includes adding residences approximately 1,000 feet from the Port of Oakland's American President Lines terminal. Thus the Alameda example demonstrates that residential uses can coexist with active cargo ports; the proximity of the busy Port of Oakland has not deterred, and may have encouraged, the planning of new residences immediately across the channel from that port.

4.15 GROWTH INDUCING EFFECTS

The CEQA Guidelines provide that an EIR should "discuss the ways in which the Proposed Project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment [CEQA Guideline section 15126.2(d)]." Consistent with this Guideline, Section 8.1 of the Draft EIR includes a discussion of the ways the Proposed Project could

foster growth. In addition, data relating to population, employment and housing are discussed in Section 4.13.

As that discussion explains, the economic activity that will result due to development and use of the project site in accordance with the proposed West Complex Development Plan is an inherent goal of the project. Therefore, the growth in jobs that will occur as new employment-generating uses develop and expand in accordance with the Development Plan is economic growth that will result directly from the project. As the Draft EIR further explains, this direct effect will be confined to the Project Area. In other words, the physical development that will result in this growth in employment is the physical development proposed by the West Complex Development Plan itself. The amount of direct employment that is expected to result is estimated at approximately 15,000 to 20,000 new jobs. These jobs will be generated to support the office, manufacturing, warehousing and maritime related activities envisioned by the West Complex Development Plan. See Draft EIR section 4.13 for a further discussion of direct job growth.

One comment questions whether the growth that will occur within the project area is considered "significant." Under CEQA, economic growth by itself is not an environmental impact and creation of new jobs is a socioeconomic effect. The CEQA concept of a "significant effect" which applies to adverse changes in the physical environment in the area affected by the project (see Guideline section 15382) does not apply to socioeconomic effects. It bears noting, however, that the EIR does assess the Project's socioeconomic effect and concludes that the new construction related and permanent operations-related jobs expected to result directly from the project is a beneficial socioeconomic effect of the project. See Draft EIR section 4.13.2.

Additional housing needs generated by the project due to increased employment opportunities are expected to be minimal. Jobs generated at the West Complex are expected to be largely filled by residents of the area. As discussed in Section 4.13 of the Draft EIR, the surrounding area has a high rate of unemployment. In 2000, the City of Stockton's unemployment rate was 10.4%, compared to a statewide unemployment rate of 4.9% (Employment Development Department, 2004). There is thus a large pool of workers available both in the local area and elsewhere in the County within commuting distance to fill these jobs. In addition, the County has a large number of employed residents who make lengthy commutes out of the County for work. It is expected that some of these jobs will be filed by existing County residents seeking work closer to home. Furthermore, the jobs/housing ratio in the County is expected to decline significantly in the future, and the jobs/housing ratio of the City of Stockton is expected to decline even more dramatically (San Joaquin Council of Governments, 2002). This would indicate that the size of the local workforce is expected to grow much more rapidly than jobs in the area. These projections in turn reflect the very significant growth in housing projected in the County as well as in the City of Stockton.

Prior to full development of the site, the West Complex Development Plan will absorb rather than induce economic pressure for development of office, manufacturing and warehousing uses. By making available land that can be developed for such purposes, the West Complex Development Plan will have the effect of reducing the need for other land to be earmarked for such uses to respond to market demand.

As the EIR recognizes, however, the project's growth inducing effects are not limited to the growth in office, manufacturing, warehousing and maritime operations that will occur on the project site. As further discussed on page 8-1 of the Draft EIR, over the longer term, secondary, indirect growth can occur due to the economic "multiplier" effect that will result from the economic stimulation flowing from these activities envisioned by the West Complex Development Plan. The workers employed on the site would purchase goods and services from businesses in the area and the companies located on the site would also be expected to purchase some portion of the goods and services they need from businesses in the area. This economic activity can in turn be expected lead, indirectly, to additional employment in the Stockton area and elsewhere in the County. The direct job growth from the West Complex Development Plan, as stated above, is 15,000 to 20,000. The number of indirect jobs supported by this amount of activity varies depending on the actual industry type. Assuming a multiplier of 1.0 (an average multiplier for port terminals, office and light industrial activity), this would create demand for another 15,000 to 20,000 jobs in the local area.

Thus, the increased economic activity associated with the project (and which is one of the project objectives) should, over the long term, lead to an increase in the aggregate demand for goods and services in the area, which will in turn lead to expansion of business activity which in may result in an increased demand for expanded commercial and industrial facilities in the Stockton area.

It is not possible to project, however, the extent to which this additional economic activity and additional employment would lead to growth in commercial, industrial or other development or the specific locations where such development might occur. However, it is expected that much of such development would occur within the existing urban areas of the City of Stockton, which provides for such future development in its 1990 General Plan (currently being updated). The Stockton General Plan designates 14,067 acres as commercial or industrial land, with 2314 acres (16%) vacant. In addition to this vacant land, the ongoing redevelopment efforts by the City will allow more job growth to be absorbed within the existing city limits through the efficient use of existing urban land. The Port Industrial Redevelopment Project Area, which includes the existing East Complex, is adjacent to the Proposed Project Area and covers 1,185 acres of commercial and industrial uses. The proposed North Stockton Redevelopment Project Area would encompass a 3,800 acre area and would include commercial opportunities. In addition, there are currently 1399 acres of vacant residentially zoned land in the City of Stockton (City of Stockton Housing Element, 2003). This would support up to 21,061 additional housing units. The projected housing need for the city is an additional 18,081 housing units by the year (Housing Element, 2003).

It is not expected that development of the project will induce growth in agricultural areas near the project site. The land located to the south and west of the site, across Burns Cutoff, is within San Joaquin County and is designated as General Agriculture by the San Joaquin General Plan and is zoned AG-80. The Project will not extend any new infrastructure to this area or make any other changes that might remove obstacles to development of the area or facilitate development of this area for other uses. While expansion of Daggett Road will increase roadway capacity, that additional capacity will be provided to accommodate project-related traffic and will not have the effect of removing an existing constraint to development in the Daggett Road area given the extensive existing road capacity in the area. Furthermore, there is ample land available within the City of Stockton, designated for commercial,

industrial, and housing uses, and which is available for development or redevelopment for those uses, that is more than sufficient to satisfy any secondary demand for such development within the foreseeable future. As a result, there is no need to develop the agricultural land in this area in order to meet future development demands in the Stockton area.

Several comments indicate that development of the project site might, in some undefined way, encourage the County to allow development in the agricultural area subject to the County's jurisdiction. However, the County's zoning and general plan designations for this agricultural area prohibit its development for other purposes and its policies relating to preservation of productive agricultural land strongly discourage changes in these designations (Joaquin County, 2000). This land could only be developed for other uses if the County decides to change its General Plan policies and to approve development in this area. While such action remains within the County's legislative discretion, there is no evidence indicating that the County might take such action at any time in the foreseeable future. Because County policies preclude development of these agricultural lands, and a substantial amount of land within the City is available and designated for development, effects on the potential for development of the land in this area would be speculative. Further, any attempts to predict changes in land use policy that might or might not be enacted by County officials would also involve undue speculation.

4.16 CUMULATIVE EFFECTS

The environmental setting for cumulative analysis is discussed in section 8.2.1 (page 8-2) of the Draft EIR. This analysis is based on the Stockton General Plan (1990) and the accompanying City of Stockton General Plan Revision and Infrastructure/Public Facilities Master Plans EIR (1990). The cumulative analysis also includes the 1185 acre Port Industrial Redevelopment Area located to the east of the West Complex.

Section 8.2.2 describes the Proposed Project's contribution to each potential cumulative effect. Where the Proposed Project's incremental effect is not cumulatively considerable, or is reduced to a less than considerable level through mitigation, this is noted in the discussion, as per CEQA Guidelines §15130(a) and (a)(3). The cumulative impact discussion of Section 8.2.2 refers back to impact discussions and feasible mitigation measures discussed in the pertinent sections of Chapter 4, Environmental Analysis, of the Draft EIR. This is noted in each topic area discussed in Section 8.2.2.

SUMMARY OF STOCKTON GENERAL PLAN PROJECTIONS

The City of Stockton General Plan was adopted in 1990, to provide the goals and policies necessary for the orderly physical growth and development of the community. The EIR prepared for the general plan revision also analyzed various public facility master plans and was identified as a master environmental assessment per CEQA Guidelines §15169.

As stated in Section 4.2.1, the Proposed Project is consistent with the City of Stockton general plan. The General Plan EIR uses the projected build-out of the general plan area to analyze the potential environmental impacts of future development. Under CEQA Guideline section 15130(b)(1), an EIR may rely on a summary of projections *or* a list of projects in assessing cumulative impacts. Because the Draft

EIR's discussion of cumulative impacts is based upon the projections in the General Plan EIR, rather than a list of projects approach, a list of specific projects is not included in the Draft EIR. The cumulative analysis of the General Plan EIR (1990a) is incorporated into this EIR by reference, as provided by CEQA Guidelines §15130(d). This is discussed on page 8-3 of the Draft EIR. However, a summary of the 1990 General Plan projections and the associated cumulative impacts is provided below.

The City of Stockton General Plan was adopted in 1990, to provide the goals and policies necessary for the orderly physical growth and development of the community. The EIR prepared for the 1990 general plan revision also analyzed various public facility master plans and was identified as a master environmental assessment per CEQA Guidelines §15169.

The Stockton General Plan land use designations and policies provide for the development of the City through at least 2010. Planned build-out under the current general plan is 41,434 acres, with a population of approximately 389,000, and 150,431 housing units. Currently, the City of Stockton has a population of 261,253 with 85,988 housing units, so the City is well within its planned development range. Current acreage for the City of Stockton is 27,442, and 4,027 of those acres are vacant. The projected 2010 employment level for the current general plan is 102,449 jobs. The current estimate of jobs within the City of Stockton is 89,565 and that number is expected to grow to 99,586 by 2008 (City of Stockton, 2003 Housing Element).

In the General Plan EIR (1990) the following cumulative environmental effects were determined to be significant and unavoidable:

- Population and employment growth (because this is a socio-economic effect, the indirect environmental effects are analyzed in the appropriate sections of the EIR);
- Loss of agricultural land (approximately 9,000 acres);
- Compatibility impacts between agricultural and urban uses;
- Loss of habitat;
- Traffic volume increase resulting in some capacity deficiencies;
- Local and regional air quality impacts;
- Noise impacts adjacent to freeways and major thoroughfares;
- Potential growth inducing effects due to increased sewer service capacity;
- Consumption of non-renewable fossil fuels;
- Aesthetic impacts on the urban fringe due to loss of rural, pastoral views.

CUMULATIVE IMPACT ASSESSMENT FOR THE PROPOSED PROJECT

The cumulative effects of the 1990 General Plan are consistent with the cumulative environmental effects described in Section 8.2 of the Draft EIR. In addition, the Draft EIR provides additional discussion on the

setting and nature of cumulative effects, where appropriate, for each environmental impact, as well as the effect of feasible mitigation measures on potential cumulative impacts. The discussion from the various sections of the Draft EIR is described below.

- **Loss of agricultural land.** The loss of 272 acres of prime farmland is considered cumulatively considerable, as discussed on page 8-3 of the Draft EIR. Farmland is a regional issue, and has therefore been evaluated at the County level, which is the typical unit of analysis for both agricultural activity and soil type. (The feasibility of mitigating the loss of prime farmland is discussed above, in Section 4.2 of the Final EIR.)

- **Transportation and circulation.** As discussed on page 8-4 and Section 4.3 of the Draft EIR, the project will result in a cumulative impact to LOS at several facilities. The level of analysis is the commuting and goods movement vicinity, as shown in Figure 4.3-1. The traffic model used in the Draft EIR incorporates the City of Stockton General Plan traffic model and the SJCOG model and thus incorporates by design the cumulative effects of the future city and county buildout. Feasible mitigation measures have been proposed, but these measures will not reduce all impacts to a less-than-significant level.

- **Air quality.** The Proposed Project will have a cumulative impact on regional air quality. This is discussed on page 8-4 and in Section 4.4 (see page 4.4-16) of the Draft EIR. Cumulative analysis is based on the SJVAPCD's Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI). The air basin, which in this case corresponds to the jurisdiction of the SJVAPCD, is the recognized unit of analysis for examining cumulative air quality impacts. Feasible mitigation measures have been proposed, but these measures will not reduce all impacts to a less-than-significant level.

- **Noise.** The cumulative impact upon sensitive receptors is recognized as significant and unavoidable, despite the incorporation of feasible mitigation measures, as discussed on page 8-4 and in Section 4.5 of the Draft EIR. The geographic scope of noise effects is based on the location of sensitive receptors in the vicinity, including receptors affected by increased levels of traffic in the vicinity. Feasible mitigation measures have been proposed, but these measures will not reduce all impacts to a less-than-significant level.

- **Public services and utilities – water supply.** The project is likely to create an incremental contribution to existing groundwater overdraft, as discussed on page 8-8 and Section 4.12 (Impact 4.12.6) of the Draft EIR. Groundwater is considered an area-wide impact. Feasible mitigation has been proposed. While these measures will reduce the direct impacts to the water supply, the impact is still considered cumulatively significant.

The following environmental effects, while potentially significant, were rendered less than cumulatively considerable, with the implementation of mitigation measures:

- **Geology and soils.** The cumulative effects of exposure to seismic hazards and levee bank erosion in the project area are discussed on page 8-5 and Section 4.6. Mitigation Measures 4.7.1 and 4.6.3 will reduce this impact to less than cumulatively considerable.

- **Water quality.** Cumulative impacts to water quality are discussed on page 8-5 and section 4.7 of the Draft EIR. Additional discussion of cumulative water quality is discussed in the dredging analysis, Draft EIR section 5.6.1. Impacts to water quality have the potential to be cumulatively considerable because of the pre-existing impairment of the adjoining waterways. However, implementation of Mitigation Measures 4.7.1, 4.7.2, 4.7.3a, 4.7.3b, 4.7.5a, 4.7.5b, 4.7.5c, 4.7.6, 4.11.3 and 5.6.1 will reduce the project's incremental contribution to a level less than cumulatively considerable.

- **Biological resources.** Cumulative impacts to special status species are discussed on page 8-6 and Section 4.8 of the Draft EIR and are considered potentially significant. Implementation of Mitigation Measures, 4.8.2a, 4.8.2b and 4.8.3, which include but are not limited to, participation in the SJMSCP, would reduce the cumulative impacts to less than considerable. Impacts to aquatic resources related to water quality are also potentially cumulatively considerable. However, the mitigation measures described in Water Quality, above, reduce the project's cumulative contribution to less than cumulatively considerable.

  The potential for introduction of non-native aquatic organisms (via ballast water and other means related to shipping), is discussed on page 8-6 and Section 4.8. Mitigation Measure 4.8.4, which discusses the Port's role in implementing state ballast water regulation, will reduce the potential impact, but not below the level of significance. However, as described on page 8-6, the West Complex Development Plan is the only known maritime expansion in the Delta, and therefore, while Impact 4.8.4 is a direct impact, it does not constitute a cumulative impact.

The following environmental effects are considered to be less than cumulatively considerable:

- **Cultural resources.** Impact 4.9.2 identifies future demolition of structures within a potentially significant impact (the NSA Stockton Historic District). However, as discussed on page 8-7 of the Draft EIR, the impact is not considered cumulative because there are no other projected projects which could affect the NSA Stockton Historic District.

- **Visual resources.** As discussed in Section 4.10 and on page 8-7 of the Draft EIR, there are visual impacts related to light and glare which may be significant despite the incorporation of mitigation. However, there are no other projects within the relevant viewsheds. Therefore, this impact is not considered cumulatively considerable.

- **Hazardous materials/public health.** As discussed on page 8-7 and 8-8 of the Draft EIR, and Section 4.11, potential cumulative effects from hazardous materials in the project area are less than considerable.

- **Public services and utilities – solid waste.** As discussed on page 8-8 and Section 4.12.1, there is no anticipated capacity issues related to the landfills which serve the project area.

- **Public services and utilities – wastewater.** As discussed in Section 4.12, the City of Stockton Regional Wastewater Control Facility (RWCF) is currently undergoing phased expansion. Given the increase in wastewater flows compared to the planned capacity of the RWCF, the incremental effect is less than cumulatively considerable.

- **Population, employment and housing.** This effect is identified as less than cumulatively considerable on page 8-9 of the Draft EIR. The potential employment generated, and any indirect demand for housing is well within the projections of the Stockton General Plan. See the Growth Inducement master response, above, for more information on the project's contribution to employment and housing demand.

All feasible measures which could reduce a significant environmental effect have been discussed in the appropriate section of the Draft EIR (see Draft EIR Chapter 4.0). Nevertheless, several of the impacts discussed above will remain cumulatively considerable. In deciding whether to approve a project, the lead agency must balance the economic, legal, social, technological or other benefits against its unavoidable environmental risks. When a lead agency approves a project which will result in the

occurrence of significant and unavoidable environmental effects, as identified in the Final EIR, the agency shall state in writing the specific reasons to support its action. The Board of Port Commissioners will consider the unavoidable cumulative effects of the project, as they will all potentially significant environmental effects, when they determine whether or not to approve the Proposed Project.

4.17 ENVIRONMENTAL BASELINE

BASELINE

The normal baseline for physical conditions is the date the NOP was issued [CEQA Guidelines §15125(a); Save our Peninsula Committee v. Monterey Count Board of Supervisors, (2001) 87 Cal.App.4th 99]. Existing conditions on the NOP date are used as the baseline for CEQA review regardless of how those conditions came into existence. The NOP for the Proposed Project was issued March 8, 2002. By that date, shipping activities at the West Complex were well established.

PRIOR ACTIVITY

Congress authorized transfer of Rough and Ready Island to the Port of Stockton in February 1996, in Public Law 104-106, Sec. 2871, for the purpose of expanding the Port's maritime operations. An environmental assessment (EA) was prepared in 1998, pursuant to the National Environmental Policy Act (NEPA), for the transfer of property to the Port. The Navy issued a Finding of No Significant Impact (FONSI) on February 3, 1999. The end of naval operations and the first conveyance of property to the Port occurred in June 2000. Activity at the West Complex since July 2000 has consisted of use of the existing dock and warehouse facilities, consistent with Public Law 104-106 and the scope of the 1998 EA.

A mitigated negative declaration (MND) for Dredging of Berths I, J, and K was issued June 5, 2001. The Draft EIR makes numerous references to the maintenance dredging of berths 18, 19 and 20 (formerly identified as berths I, J, and K). (The maintenance dredging location is, however, incorrectly identified as berths 14, 15, and 16 in one paragraph on page 3-5 of the Draft EIR; this reference will be corrected in the Final EIR.). The stated purpose of the Berths I, J, and K Dredging Project was to provide adequate depth at available dock space so vessels could continue to navigate safely and berth without grounding and to make the berths usable by deeper-draft vessels.

The 2001 dredging of Berths I, J, and K consisted of removal of accumulated sediments, and did not increase the design depth of 30 feet at the dockside. By contrast, the dredging component of the proposed West Complex Development would lower the design depth to 35 feet. This would allow for a greater variety of shipping (75% of the shipping fleet) to use the West Complex. The proposed dredging would enable future development at the West Complex, which is the subject of this EIR.

4.18 PROGRAMMATIC NATURE OF THE EIR

This Draft EIR jointly evaluates, at a program-level, the Port of Stockton's (Port) West Complex Development Plan and also provides a project-specific evaluation for the proposed dredging of the

Stockton Deep Water Ship Channel and the McCloy Avenue, Daggett Road, and Daggett Road Bridge Project. As more fully described in the draft EIR, it is the intent of the Port to use this EIR as the project-level environmental assessment for the proposed dredging and roadway project.

The West Complex Development Plan provides a planning framework for the types of projects that could be implemented within the project area in the future. As individual projects with specific site plans and facilities are brought forward, the Port will evaluate each project to determine the extent to which the analysis in this EIR covers the impacts of the project. If the project would create impacts not addressed under this EIR, additional environmental analysis would be prepared. Overall, the EIR is programmatic in nature and addresses the broad framework of the West Complex Development Plan, with the understanding that the need for additional environmental documentation would be determined for specific projects before they could be considered, approved, or implemented.

PHASING

The West Complex Development Plan does not provide a phasing schedule for the reasons discussed in the Project Description, beginning on page 3-8. The plan is designed to respond to market conditions, and the phases are designed to function independently. However, the activities included in each phase are discussed in the Project Description, and summarized in Table 3-2. The analysis contained in the Draft EIR is based on the build-out of all three phases of both the Marine Terminal Development and the Commercial and Industrial Park Development, including construction activities. In order to analyze potential impacts which are more time-dependent, such as traffic and demographics, logical assumptions have been made in the quantitative analysis. For example, in the traffic analysis, build-out is assumed to occur in 2020, with interim projections at 2005, 2010 and 2015. This is a reasonable assumption, which also allows comparison to other local (City and County), regional (SJCOG), and state (DOF) planning documents. As stated in the CEQA Guidelines, the degree of specificity required in an EIR will correspond to the degree of specificity involved in the underlying activity which is described in the EIR (Guidelines §15146).

REDEVELOPMENT PLAN EIR

This EIR will also serve as a program EIR for the Rough and Ready Island Redevelopment Plan. The objectives of the Redevelopment Plan and the range of potential redevelopment activities proposed to be undertaken under the Plan are described in Section 3.2, beginning on page 3-18.

As stated on page 3-21, CEQA Guidelines §15180 states that "[a]ll pubic activities or undertakings pursuant to, or in furtherance of, a redevelopment plan shall be deemed to be a single project." In 2002, the Legislature amended Public Resources Code §21090 to clarify whether an EIR for a redevelopment plan should be prepared as a project EIR or a program EIR. The statute now provides that the EIR for a redevelopment plan must be identified as a project, program or Master EIR, making it clear that the agency has discretion to determine which type of EIR to prepare when a redevelopment plan is proposed. The EIR here is a program EIR for the Redevelopment Plan. The revision to the statute does not change the way in which a program EIR for a redevelopment plan should be handled. Specific redevelopment

activities will be examined in the light of the program EIR to determine whether or not additional environmental documents are necessary.

Section 2.2 of the Draft EIR on page 2-1 explains that the EIR is designed to function as a program EIR for the Redevelopment Plan. Page 3-21 has been revised to confirm that this EIR will serve as a "program EIR" for the Redevelopment Plan. Please refer to **Chapter 5.0, Minor Changes and Edits to the Draft Environmental Impact Report** for the revised text. Consistent with the requirements for a program EIR, future redevelopment actions shall be "examined in the light of the program EIR to determine whether an additional environmental document must be prepared" (CEQA Guidelines §15168).

4.19 PURPOSE OF THE EIR

The purpose of an EIR is to inform public agency decision makers and the public generally of the significant environmental effects of a project. In addition the EIR identifies possible ways to minimize the significant effects (mitigation) and describes a reasonable range of alternatives to the Proposed Project [CEQA Guidelines §15121(a)]. An EIR is an informational document. Thus, technical perfection is not required, but the EIR must be complete, adequate, and represent a good-faith effort at full disclosure [CEQA Guidelines §15003(i)].

ECONOMIC AND SOCIAL EFFECTS

In accordance with the environmental purpose of CEQA, economic and social effects are not to be treated as significant effects in an EIR (CEQA Guidelines §15131). Economic and social factors do, however, play two important roles in the CEQA process. First, economic and social factors are considered, along with technological and environmental factors when determining whether or not a mitigation measure or project alternative is "feasible." Second, economic and social factors, along with legal, technological or other factors, shall be balanced by the lead agency when weighing the merits of a project against any unavoidable environmental effects [CEQA Guidelines §15093(a)]. When a lead agency approves a project which will result in unavoidable environmental effects, it must state in writing the specific reasons to support its actions based on the final EIR and/or other information in the record [CEQA Guidelines §15093(b)].

ROLE OF THE LEAD AGENCY

Each public agency under the jurisdiction of the State of California is responsible for complying with CEQA. The public agency with primary responsibility for carrying out a project is known as the lead agency. The lead agency is responsible for preparing and circulating the draft EIR (when the lead agency has determined that an EIR is required). The lead agency may contract with a third party to prepare the EIR. However, the lead agency is ultimately responsible for the adequacy of the EIR. The decision making body of the lead agency is required to make the necessary findings under CEQA, and, when required, make any statement of overriding consideration, as discussed above. It is therefore appropriate, and in fact is required, that the Port of Stockton, as the lead agency, bears ultimate responsibility for the preparation, circulation, and certification of the West Complex Development Plan EIR (see CEQA Guidelines §15020, 15025, 15050, 15051, and 15084).

REGULATORY REQUIREMENTS, PERMITS AND APPROVALS

Section 3.3 of the Draft EIR identifies the necessary permits and approvals for the project, as required by CEQA Guidelines §1515124(d). The Department of Water Resources has correctly noted that an encroachment permit from the State Reclamation Board will be required for the Daggett Road Bridge and the Dredging and Placement Project (see page 3-25 of the Draft EIR). In addition, Section 3.3 is revised to identify that a lease from the State Lands Commission may be necessary for the Daggett Road Bridge and/or the Dredging and Placement Project. Please refer to **Chapter 5.0, Minor Changes and Edits to the Draft Environmental Impact Report** for the revised text.

4.20 DREDGING AND PLACEMENT OPERATIONS PROJECT

4.20.1 AIR QUALITY

Air quality impacts related to the dredging and placement operation are discussed in **Master Response 4.4, Air Quality**.

4.20.2 NOISE

Noise impacts related to the dredging and placement operation are discussed in **Master Response 4.5, Noise**.

4.20.3 HYDROLOGY AND WATER QUALITY

ASSESSMENT OF POTENTIAL TO RELEASE CONTAMINANTS DURING DREDGING

Comment A8-2 suggests that a worst-case scenario related to flow, ambient water quality, and maximum release of contaminants from dredging be used. The implication is that enough contaminated sediment/pore water may escape the hydraulic suction device attached to the cutterhead to create an unacceptable level of impacts from introduced contaminants when combined with adverse flow conditions and existing degraded water quality in the SJR. The comment also suggests that a single grab sample was used in the analysis and that this is not sufficient to characterize water quality conditions. However, extensive site-specific sampling and water quality monitoring was conducted for the analysis. The analysis does not rely on a single grab sample but rather on extensive monitoring and other water quality data and monitoring. In addition to the project specific monitoring, other data sources and continuous monitoring conducted by DWR and water quality monitoring performed for the aeration equipment were used in assessing water quality. Future sampling events also specify extensive water quality monitoring and analysis. Furthermore, the analysis in the Draft EIR does perform a numeric calculation of the worst-case scenario. Beginning on page 5-27, the document fully assesses the conditions of flow and ambient water quality. The calculations in the contaminant release model on pages 5-27 & 5-28 were made with the assumptions mentioned in comments. That is, the calculations assumed that there is no mixing available due to low river stage and no river flow during tidal shifts. Additionally, the calculations assumed that temperature, pH, and dissolved oxygen would all be unfavorable as well. Further, the document effectively describes the methodology used to calculate the

total escape of sediments/pore water from the hydraulic suction device. Predictions and actual field measurements during dredging operations show that less than 1% of all dislodged sediments/pore water escapes the device. Using a worst-case scenario, no constituents will be released in high enough concentration to violate water quality standards as defined by the Basin Plan.

One comment makes reference to ammonia concentration in the sediment measured as high as 1,300 mg/kg. However, this concentration was measured as a solid phase whole sediment sample. The data show that the dredging will likely result in release no greater than a concentration of 13 mg/kg solid phase ammonia under a worst-case scenario. This would not exceed water quality standards or result in a water quality violation. Furthermore, measurements of the concentration of solid phase constituents does not directly translate to measurable impacts to water quality as defined by measurements of constituents in the dissolved phase. The majority of solid phase constituents released will return to the river bottom as a result of natural settling processes. A more precise and accurate analysis of possible contamination release from disturbing sediments in the river than solid phase testing is the standard elutriate test. The elutriate test measures the concentration of constituents in the water found within the spaces between sediments in the river bottom. (Elutriates are sometimes referred to as pore water.) The elutriates contain dissolved constituents that are more readily available for uptake by aquatic biota once released into the water column if disturbed than those constituents that are bound up in the solid phase. The latter are typically absorbed onto sediments directly, bound (trapped) within sediments, and/or not readily taken up by biological processes.

The area that had 1,300 mg/kg ammonia in the solid phased whole sediment sample had a concentration of only 19 µg/l ammonia in the standard elutriate test. The highest measurement using this evaluation was 26 µg/l ammonia. Applying the same worst-case scenario to this constituent of concern, it is likely that no more that 0.26 µg/l ammonia would be released into the water column, which can be compared to a conservative water quality standard of 14.0 µg/l.

For the same reasons, none of the constituents that were analyzed and found in either the solid phase testing or in elutriate testing will be released in high enough concentrations to result in a water quality violation. And this finding is based on a worst case assumption of no dilution of releases by mixing with the receiving waters.

The calculations assuming worst-case conditions included the acknowledgement that discharges will likely follow the river bank initially and that some distance (upwards of 500–1,000 feet) will be traveled prior to the occurrence of lateral mixing. Both of these elements in association with adverse flow conditions result in a relative lack of available mixing. As such, the project considered that mixing (dilution) is not available.

Finally, as described on page 5-31 of the Draft EIR the Port has committed to utilizing a full time localized aeration device within 1,000 feet of the cutterhead at all times of operation. The aeration device adds a substantial measure of precaution in the event that high concentrations of an unoxidized constituent, such as ammonia, were to escape the hydraulic suction device and be transported into the surrounding water column (see discussion below).

As described in the DEIR, a number of variables were used in the calculation to predict the volume of sediment suspension and mass loading that will likely result from dredging activities. Comments request additional calculations to demonstrate that the release of solid phase ammonia in these sediments does not pose a threat to aquatic biota. Elevated concentrations of ammonia are known to be directly toxic to fish species. Additionally, biotic processes that utilize ammonia in normal life cycles deplete dissolved oxygen. Excessive depletion of dissolved oxygen poses a direct threat to oxygen-dependent aquatic biota.

The initial calculations predict that approximately 8,500 cubic yards per day (cy/d) of sediment will be removed by the dredging operations. The calculations, coupled with observations from previous dredging operations, predict that less than 0.5% of this volume will become entrained into the water as a result of escape from the cutterhead and hydraulic suction device. Therefore, the predicted volume of resuspended sediments in the river is 43 cy/d, which is equivalent to approximately 32 cubic meters per day (cm/d). The density of the dredged material is 1,320 kilograms per cubic meter (k/cm). As such, the total release of sediments into the water is approximately 42,000 kilograms per day (kg/d).

The area of impact for this analysis was determined while considering a worst-case condition of the river. That condition is a slack tide resulting in no river flow in either direction. Therefore, the water body receiving the resuspended sediments is finite and no mixing will occur. Note however, that this condition is temporary on a daily basis and river flow continues in both upstream and downstream directions due to tidal pushing for most of the day. Likewise, the entire water column is thoroughly mixed on average at least every other day. Nevertheless, at certain periods between tidal cycles, the net river flow is zero and this condition is used as the worst case. The finite volume of water used in this calculation is the dimension of the channel width (500 feet), channel depth (35 feet), and dredging width on any particular day (2,000 feet). The total volume is 35,000,000 cubic feet (approximately 1,000,000 cubic meters[m3]).

Combining the calculated resuspended sediment bulk with the volume of unmixed river water results in a net total increase of total suspended solids of 42 grams per cubic meter of water (g/m3). Comments noted that analytical samples of solid phase constituents in the sediments had elevated levels of a number of constituents, including ammonia. The highest concentration noted in the testing was 1,380 milligrams of ammonia per kilogram of sediment (mg/kg). The other 39 samples measured below 890 mg/kg. A calculation was performed using a conservative concentration of 1,000 mg/kg to determine the approximate release of ammonia from the sediments in the water during dredging. A total of 42 kg/d of ammonia will be associated with the 42,000 kg/d of sediment released into the DWSC.

The calculation assumes that approximately 25% of the ammonia in the sediment may enter the water in the dissolved state before the sediment settles out of the water. As such, only about 10 kg/d of ammonia is assumed to become introduced into the DWSC. The total amount of ammonia released in one day into the 1,000,000 m3 of DWSC will raise the concentration of ammonia by about 10 mg/m3 of DWSC. This is equivalent to just 0.01 mg/l of ammonia. But the amount of this ammonia that will nitrify (i.e., deplete oxygen) will depend on the nitrification rate in the DWSC that depends on the nitrifying bacteria biomass. This ammonia increase is not likely to change the biomass of nitrifying bacteria within the DWSC, and there is not likely to be any increase in the nitrification or corresponding oxygen demand. However, each gram of ammonia may ultimately result in the loss of up to 5 grams of dissolved oxygen. Therefore, this increase in ammonia (10 kg/day) represents an impact to dissolved oxygen of up to nearly 50 kg per day

(110 pounds per day). In terms of ammonia toxicity, the ammonia release will only increase the ambient ammonia concentration by 0.01 mg/l. This is a very temporary and localized effect.

As described in the DEIR, the Port will provide at least 500 pounds per day of dissolved oxygen within 1,000 feet of the cutterhead at all times. This is well in excess of the anticipated impact to dissolved oxygen. Additionally, the Port is providing an assurance to maintain the ambient dissolved oxygen levels above 5 milligrams per liter throughout the year not to exceed 250,000 pounds per year. These project components and mitigation measures ensure that any acute impacts to dissolved oxygen and ammonia toxicity are more than sufficiently resolved.

One comment noted the potential to disturb sediments and release pollutants in the water column as a result of disturbance of items of naval debris that will be removed by the proposed operation. Most of the referenced objects will be removed by the same equipment that is used during dredging operations. The cutterhead will grab the material, the cutterhead will cease to spin, the object will be lifted from the river to shore, and the object will be removed from the cutterhead and disposed of properly. During this procedure, the hydraulic suction device will remain in operation and it will effectively capture the majority of all resuspended sediments and contaminants. A couple of the larger objects in the sediments, such as an anchor and small vehicle, may be removed with the combined use of a crane, cables, and/or bucket dredge. While the larger objects are being removed, the hydraulic suction device will remain on and placed as close to the objects as possible in order to capture the maximum amount of sediment and elutriates as possible. The mobilization of sediments and elutriates will likely be slightly greater than those mobilized during normal dredging operations. However, the identical operation was performed less than four years ago at docks 18, 19, and 20. Periodic measurements of many water quality parameters were made at that time during removal operations with no measurable increase in turbidity, no measurable increase in metals release, and no decrease in concentration of dissolved oxygen. Noteworthy is the fact that these objects are likely a primary contributor of contaminants to the sediments and water column. The objects are comprised of numerous pollutants including cadmium, zinc, copper, lead, and nickel to list a few. Removal of these objects will result in a significant net benefit to water quality in the area. A related concern is the potential presence of petroleum oils that may be present in the objects. This concern is noted. However, it is likely that any containers that may have held petroleum products at one time have since ruptured due to natural degradation and most likely already spilled their contents. Most of the objects have been submerged for more than 40 years. In addition, a site-specific hazardous materials plan and spill prevention control and countermeasures plan will be developed that will include elements specific to the dredging operation. This plan will be reviewed by the CVRWQCB as part of the WDR approval process and must be completed prior to dredging activities.

IMPACTS TO WATER QUALITY RESULTING FROM DPS RETURN FLOWS

Several comments were received regarding the impacts to water quality resulting from the dredged material placement site (DPS) return flows (decant water). These included comments from the RWQCB on the available dilution in the San Joaquin River for effluent discharges and the sampling methods used to determine water quality characteristics for the River.

Mitigation Measure 5.4.7i on page 5-44 states, "The Port will hold all decant water until it has been determined through analysis that the water will meet all water quality objectives and will not pose a threat to aquatic biota." To accomplish this, the Port will commission bioassay studies (commonly referred to as toxicity studies), to ensure that the decant water will pose no threat to water quality. The Minimum Significant Difference (MSD) approach will be used. This is the magnitude of difference from the control where the null hypothesis (the effluent is not toxic) is assessed in a statistical test comparing the quality of the water to be released (effluent concentrations) and the quality of water in a control. This approach uses statistical measures of survival rates to assess relative toxicity. MSD is based on the number of replicates, control performance and the power of the test. The decant water will be directly compared to the water extracted from a reference site in the main channel of the San Joaquin River (control) in a location to be determined at that time and approved by the RWQCB. The site will be as closely located to the discharge point as possible and sited as far from known sources of contaminants as possible in an effort to collect the most relatively unbiased background sample of the San Joaquin River. If the reference site water itself results in statistically significant toxicity during the biosassay tests, then the decant water bioassay mortality results will be reviewed by staff at the RWQCB. If they are found to be statistically insignificant, then the water may be released. If they are found to be statistically significant, then the Port will commission a toxicity identification evaluation (TIE) to determine the chemical, biological, or physical nature of the toxicity. Once the source of toxicity in the decant water has been identified, then the Port will work closely with staff at the RWQCB which will identify the appropriate course of action to protect receiving water. If none can be identified, then the water will not be discharged until subsequent bioassay testing is successful. All tests will be performed using the most recent EPA-approved methodologies. By stating that decant water will comply with "all water quality objectives and will not pose a threat to aquatic biota … and held if samples do not meet water quality requirements," Mitigation Measure 5.4.7i is designed to ensure that the decant water will comply with regulatory standards and is grounded on the best available scientific methodologies for testing contaminant concentrations.

In addition to bioassay testing, the Port will commission sampling of decant water for specific constituents causing the impaired water quality condition that currently exists in the River. This testing will ensure that the water released meets all water quality objectives as specified in Mitigation Measure 5.4.7i. In a comment on the Draft EIR, the RWQCB requested that the testing parameters be defined to make it clear that all specific constituents that might have the potential to be present in high enough concentrations in the decant water to result in a violation of water quality standards will be included. To address this comment, Mitigation Measure 5.4.7i is revised to state in addition to the existing text, "In addition to the bioassay testing the additional sampling will include specific analysis for ionized ammonia, arsenic, barium, cadmium, copper, lead, mercury, nickel, organochlorine pesticides, and polyaromatic hydrocarbons for compliance with the numerical standards in the Basin Plan for these constituents. Decant water containing concentrations of any of these constituents exceeding these standards will not be discharged."

Concerns in the comments related to flow conditions, dilution, temperature, electrical conductivity, dissolved oxygen, turbidity, and pH in the receiving water body are noted. The receiving water's ambient conditions will be assessed prior to release of decant water. A worst-case condition (e.g., no available

dilution) will be assumed. All return flows from the DPS will meet all Basin Plan objectives relating to the constituents listed above prior to discharge or else the water will not be released.

With respect to comments regarding the volume and content of the decant water, the volume is described in Mitigation Measure 5.4.7i on page 5-44 that states, "Decant water that meets the requirements would be discharged at an approximate rate of 2 mgd." With respect to the specific quantity of potentially harmful constituents in the decant water, as explained above, the quality of those releases will satisfy all water quality objectives as defined by the Basin Plan.

One comment asserts that the performance standards in proposed Mitigation Measure 5.4.7i have "no basis in science." On the contrary, the basis in science begins with decades of dredging experience at this particular location accompanied by highly technical chemical and biologic analyses of the water in the channel during dredging operations and during decant water return operations. Both the Port of Stockton and the U.S. Army Corps of Engineers have the experience of using this dredging technology and these mitigation standards during annual dredging projects at this location for over forty years and have shown no significant impacts to water quality. Additionally, the Port spent substantial time and resources developing a comprehensive scientific analysis of the setting and impacts of this project as evidenced by **Appendix M** "Port of Stockton Draft Data Characterization Report" and **Appendix N** "Suitability of Roberts Island for Dredge Material Placement." These extensive reports utilize the best available science and EPA-approved methodologies to assess the existing environmental conditions. That information is in turn used to predict the relative level of impact posed by numerous constituents through the course of the proposed actions. For example, the studies provide a measurement of individual constituents in the river sediments. Using modeling and empirical evidence, scientists take the average and highest concentrations of the constituents and predict the likely extent of release of those constituents into the water column during removal by dredging. Likewise, geohydrologists and chemists then predict the fate and transport of those constituents at the DPS. Further, another extensive set of direct testing and analysis will be performed on the decant water prior to discharge to protect water resources. The methodology described in Mitigation Measure 5.4.7i is a standard toxicological evaluation tool used throughout the state of California to determine the relative level of impact to aquatic biota. This method and a number of variations of this method are thoroughly described in **Appendix M** "Port of Stockton Draft Data Characterization Report". The mitigation measures described in the Draft EIR are well supported by science and have been agreed upon by the US Army Corps of Engineers and the RWQCB. Both of which are responsible agencies on this project and which must issue approvals in the form of permitting prior to project initiation, and only after determining that water quality standards will be met.

DISSOLVED OXYGEN

Effect of Dredging Operation

As previously stated in these responses and in the Draft EIR, there will be no measurable impact to dissolved oxygen concentrations during dredging operations or during decant water return operations. This is based on field measurements taken during previous and nearly identical operations. This is also based upon numeric modeling, which resulted in the same conclusion.

Effect of Change to Channel Geomorphology

As explained in the Draft EIR, the dredging project will make a small, nonmeasurable contribution to the magnitude, frequency, and duration of low DO by altering the geomorphology of the deep water ship channel and increasing residence time of water moving through the deep water ship channel. This effect on DO concentrations is, however, too small to calculate using the Deep Water Ship Channel dissolved oxygen model currently used by the RWQCB and the TMDL process to quantify DO concentrations and areas of impairment in the DWSC. As stated in Impact 5.4.7l, the anticipated change will be less than 0.05 mg/L, This imperceptible change will be so low that no instrument is sensitive enough to actually detect it. By weight of comparison, 0.05 mg/L is two orders of magnitude smaller than the daily diurnal (24-hour) DO concentration cycle that fluctuates as much as 8.0 mg/L during extreme events and typically fluctuates approximately 2- to 4 mg/L. (The diurnal DO concentration cycles are dominated by oxygen producing photosynthesis by algae during daylight hours and oxygen stripping respiration by decaying algae in non-daylight hours.).

However, while this small change in DO attributable to the dredging project would not be significant when only the project's direct impact is considered, the incremental change to the depth of this part of the channel would make a contribution to the significant existing adverse cumulative impact on DO concentrations resulting from actions taken to deepen the River by the Corps of Engineers and the deepening of the Deep Water Ship Channel by the U.S. Navy and the Port as well as the other factors that contribute to low DO concentrations. This is therefore a significant cumulative impact. See discussion on page 5-69 of the Draft EIR.

Mitigation for Dissolved Oxygen

The project's effect on Dissolved Oxygen concentrations will be fully mitigated by mitigation measure 5.6.1. This mitigation measure will also significantly mitigate DO impacts of other cumulative conditions and activities that currently adversely affect DO. The operational guidelines set forth in that mitigation measure will ensure that DO concentrations are maintained at a higher level than existed in the DWSC since the dredging of the channel was performed by the Corps of Engineers. The Corps of Engineers have been operating an aeration device that dissolves a limited quantity of oxygen into the DWSC only during the months of September, October, and November. The quantity of oxygen is far less than the designed 2,500 pounds per day. Estimates suggest the device is dissolving between 1,500 and 2,000 pounds per day in these months.

The DO impairment has been observed in every month of the year and at levels up to 10,000 pounds per day. The incorporation of this Mitigation Measure will provide an upgrade to the device to input a quantifiable amount of at least 2,500 pounds per day of dissolved oxygen. Moreover, the device will be operated all year long as needed providing up to 250,000 pounds of oxygen per year.

The performance standard for operation of the aeration device by the Port is set forth in Mitigation Measure 5.6.1. Mitigation Measure 5.6.1 states that the dissolved oxygen target in the DWSC is to be maintained "…to provide a 0.2 mg/l DO increment above background conditions using the same formula above: DO load (lb/day) = 5.4 * Flow (cfs) * Concentration (mg/l) as warranted whenever the DO concentration drops below the target threshold of at least 5.2 mg/l during any period of the year measured

as a daily mean from either reference station." The Port's actions will seek to maintain this target by dissolving up to 2,500 pounds of oxygen per day into the water. This action will result in removing up to 25% of the total annual DO depletion that now occurs in the entire impaired area of the DWSC, estimated to be a deficit approaching 1 million pounds of oxygen per year. The 1 million pounds of oxygen per year deficit is the level of impairment determined by the SJR TMDL DO process after years of observation and scientific study.

The replacement of this quantity of dissolved oxygen by the aeration device will be sufficient to offset by many times over the projected impacts on dissolved oxygen levels due all aspects of the dredging project and operations envisioned by the West Complex Development Plan. On a collective basis, this includes potential dissolved oxygen impacts due to the initial dredging, subsequent maintenance dredging, return of decant water from the DPS, and increased ship and tug traffic, which taken together would account for significantly less than 1% of the total yearly deficit in dissolved oxygen.

Several comments requested that other methods for mitigating dissolved oxygen impacts be evaluated in addition to oxygen replacement by aeration. However, as noted above, the amount of dissolved oxygen that will be added through implementation of Mitigation Measure 5.6.1 will fully offset the project's contribution to oxygen depletion and accordingly no further mitigation for the project's contribution to dissolved oxygen impacts would be required under CEQA.

Other comments note that mitigation measure 5.6.1 will not fully eliminate the contribution to dissolved oxygen impairment due to the existing geometry of the DWSC. However, the discussion of mitigation measure 5.6.1 in this EIR is designed to address mitigation for the dissolved oxygen impacts of the *Proposed Project*. Comments asserting that this mitigation measure will not fully offset all DO impacts resulting from the *existing* configuration of the DWSC due to past dredging are misplaced. The discussion of mitigation measure 5.6.1 in the Draft EIR is intended to address mitigation for the impacts of the Proposed Project. This discussion is not intended to resolve the issues now being considered in the San Joaquin River Dissolved Oxygen TMDL process. That process is addressing the causes of existing impaired DO conditions and potential measures to reduce the effects of other cumulative projects and activities that already exist that are currently contributing to existing impaired DO conditions. With respect to such potential remedial actions, the TMDL process that is currently examining those issues is discussed below.

SAN JOAQUIN RIVER TMDL PROCESS

As noted in the Draft EIR, the San Joaquin River, including the DWSC, is currently the subject of a TMDL – total maximum daily load -- process relating to its impairment for dissolved oxygen. A TMDL refers to the amount of a specific pollutant a water body can assimilate and still meet federal water quality standards under the Clean Water Act. The Regional Water Quality Control Board, the agency responsible for developing the TMDL for oxygen depleting substances, has given stakeholders in the seven-county San Joaquin River watershed responsibility for proposing a TMDL allocation and implementation plan.

A technical TMDL report submitted by the CVRWQCB to the EPA in June 2003 describes a numeric target and includes a source analysis. However, the report does not assign a waste load allocation to any

responsible parties. Rather, it describes the three general causes for the dissolved oxygen problem in the San Joaquin River.

The TMDL report submitted to EPA, and that will form the basis of a Basin Plan Amendment in June 2004, explains that the intent of the TMDL is to meet the current Basin Plan objective using aeration and non-aeration approaches. As noted above, the TMDL report does not assign specific Waste Load Allocations to specific parties. Instead it identifies the three major categories of sources that contribute to DO depletion without identifying specific responsible parties and their relative responsibility within those categories. The categories are flow diversions that reduce river flows; input of oxygen depleting substances to the waters flowing in the river; and presence of the DWSC.

The SJR DO TMDL Process is currently assessing all available information, including all scientific studies, to determine the relative level of understanding between the causes and effects of dissolved oxygen depletion in the DWSC. While the linkages between depleted oxygen levels and low flows and increased residence time are relatively well understood, the relationship between growth of algae, inputs of nutrients, inputs of oxygen-depleting substances, and sediment dynamics with depletion of oxygen is still poorly understood. A number of studies are currently underway to establish a stronger understanding of these processes as they relate to dissolved oxygen. The information derived from these studies should provide a basis for identifying the most effective approaches to long-term improvement of the existing adverse dissolved oxygen condition.

As noted in comment P25-30, additional measures will need to be implemented by various stakeholders to maintain the dissolved oxygen objective in the Basin Plan consistently. The DO Stakeholder process is currently developing aeration and non-aeration approaches to address this issue. Replacing the oxygen directly and/or eliminating sources of oxygen removal will ultimately result in returning DO back into the channel at a level that consistently meets water quality objectives as defined by the Basin Plan. That objective, also referred to as a “numeric target,” is 5 mg/L throughout the year and 6 mg/L in September, October, and November.

Mitigation Measure 5.6.1 will input oxygen at target levels keyed to Basin Plan DO objectives for the DWSC. It is likely that this effort alone will not be enough to effectively reach this DO objective all year long. Nevertheless, it is a substantial input of oxygen that will alleviate up to 25% of the DO deficit as identified by the TMDL.

The stakeholder process is aware of the Port’s proposed Mitigation Measures in this document. The Port has actively cooperated in the process and supportive of the goals and objectives. As described in the CVRWQCB’s technical TMDL report to the EPA, the responsibility for depleted, dissolved oxygen levels involves numerous stakeholders and there will likely be numerous approaches applied to remedy the situation. No mechanism currently exists through the TMDL process or any regulatory process to forecast which actions in the upstream environment would be most effective in improving dissolved oxygen conditions in the DWSC. This is an area of investigation that is currently being addressed by the TMDL process, but it is too early to suggest an actual approach for implementation.

As noted in several of the comments, runoff from agricultural lands contributes nutrients and other oxygen-demanding substances to the San Joaquin River. The addition of such materials to the River by

agricultural operations has been identified as being one of the potential contributors to existing depleted dissolved oxygen condition in the DWSC. Controls on runoff from agricultural lands might provide a significant benefit to dissolved oxygen conditions. However, as discussed above, given the current uncertainty about the contribution of such factors to dissolved oxygen depletion, the effectiveness of such controls is not yet known.

One comment notes that the target DO that would be provided by MM 5.6.1 would not fully address the DO level allocated to the Port's existing activities (apparently referring to the presence of the Deep Water Ship Channel) by the TMDL process for dissolved oxygen. The comment then erroneously concludes that MM 5.6.1 fails to mitigate "the project's" impacts. This comment confuses efforts to improve existing depleted oxygen conditions due to existing conditions (such as the DWSC) through the TMDL process with mitigation of the impacts of the project now proposed for approval. As noted above, project-related DO impacts will be fully offset. This will ensure that the project will not worsen the impaired conditions that now exist.

Another comment indicates that the stakeholder group is developing an aeration plan for the DWSC and anticipates that aeration beyond that provided by the Port's jet aerator may be necessary to meet target dissolved oxygen levels for the DWSC. It should be noted that further aeration beyond that provided by the Port's jet aerator, like other actions that might be taken to improve DO conditions, would help to further improve *existing* DO conditions in the DWSC. Such further actions would not be necessary to mitigate the effects of the Proposed Project which, as explained above, will be fully offset by implementation of measure 5.6.1. In addition, as further explained above, implementation of measure 5.6.1 will also significantly enhance existing DO conditions, reducing the existing deficit by approximately 25%. Implementation of further actions by stakeholders as contemplated by the TMDL process would result in a still further reduction in the *existing* DO deficit.

IMPACTS RELATED TO EXPOSURE OF NEW SEDIMENT LAYER

The proposed dredging would create a new river bottom and expose a new layer of sediment. The new sediments will be tested for toxicity, as described in Section 5.4.7 on pages 5-37. The water quality specialists that prepared this section of the EIR have determined that the resultant toxicity after dredging is likely to be less than significant with no mitigation required. To avoid any impact and as a precaution to ensure that no significant impact will occur, however, the project description includes remedial actions (described on page 5-38) that will be taken to eliminate any toxicity in the unlikely event that a toxic sediment condition occurs as a result of dredging activities as described in the Draft EIR at pages 5-37 – 5-38. These mitigation measures are components of the project as proposed. They will be implemented in the event a toxic condition occurs at the sediment horizon and are described as integral to the dredging process on page 5-38 of the Draft EIR, and as such will be adopted as components of the dredging process upon approval of the proposed dredging project. In addition, the CVRWQCB will be responsible for reviewing and issuing a Report of Waste Discharge permit for the project. This permit will include several site-specific conditions to ensure compliance with applicable water quality standards including toxicity. The program for evaluating toxicity and responding to potential issues was included in the Report of Waste Discharge. The details of the plan to comply with the applicable standards and suggests draft language will be a condition of approval for the WDR in addition to being included as an element of

the project description in the EIR. In response to the request of the RWQCB, these mitigation measures will also be included in the Port's mitigation monitoring program.

SALINITY INTRUSION

As described above, the project will slightly change channel morphology. It will not, however, have any measurable effect on salinity intrusion. This assessment was made by modeling the residence time of water in the DWSC and taking into account the actions of the tidal prism. For a sense of scale, the quantity of material that will be removed by this project represents less than one millionth of the material removed to create the Stockton Deep Water Ship Channel. The millions of cubic yards of material that were removed to create the DWSC in conjunction with increased manipulations to the surface hydrology (due to use, exports and transfers of water) have resulted in moving the salinity prism progressively further upstream. These manipulations to the Bay/Delta have been massive in scale. By contrast, this project will have no measurable impact to the existing tidal prism and salinity gradient because of the small change that will be made in the channel relation to the total volume of the areas of the Bay/Delta System subject to tidal influence.

CUMULATIVE WATER QUALITY ANALYSIS

With the exception of potentially significant impacts to dissolved oxygen concentration in the DWSC as described in Impact 5.6.1, there are no significant cumulative impacts related to dredging activities to any resources. The temporary impacts are either less than significant or they have been reduced to less than significant with the incorporation of mitigation measures. As noted above, with respect to dissolved oxygen, the dredging project's contribution to the cumulative impact will be rendered less than cumulatively considerable through implementation of mitigation. In addition to the proposed dredging project under consideration, other future projects include future maintenance dredging as well as the potential future dredging project associated with deepening from dock 20 to Burns Cutoff. Because these activities would not occur simultaneously with the proposed dredging project, the water impacts of such dredging activities would not cumulate with those of the proposed dredging project. With the exception of dissolved oxygen, which has previously been addressed, the water quality effects from dredging projects are short term and near field and as such do not contribute cumulatively to other dredging projects occurring at a different time. Actions taken to improve water quality as a result of the TMDL process are expected to benefit dissolved oxygen. However, because that process is still ongoing, it would be speculative to attempt to predict the extent of the overall cumulative effect.

All maintenance dredging activities are addressed at a project level of detail prior to execution. Each maintenance dredging operation is approached as a distinct project in the same manner as this Proposed Project. The sediments are analyzed for levels of contamination. A sediment balance and water balance is performed. A suitable placement site is identified and analyzed for suitability. A CEQA document is prepared and all required permits are obtained. This document addresses these future actions at a program-level of detail only. Because these maintenance dredging projects occur at different times and have short-term, near-field effect, their impacts are not additive.

DREDGING PLACEMENT SITE (DPS)

CAPACITY

Comments were also received regarding the total holding capacity of the DPS. As explained in the Draft EIR, the DPS has sufficient capacity to contain the 326,000 cubic yards of dredged material that will be removed during dredging operations. However, because a hydraulic dredge will be used, a large volume water will be captured during dredging operations and released to the DPS along with the dredged material. While a portion of this water will evaporate, or infiltrate into the ground, given the large volume of water that will be captured during dredging, the DPS does not have sufficient capacity to hold all of the water captured during dredging. As the capacity of the DPS to hold water is reached, the decant water will be gradually discharged into the San Joaquin River. The decant water will not be discharged to the River unless in meets the water quality standards specified in the RWQCB permit regulating the discharge. The rate of dredging operations and the resulting releases of slurry to the DPS will necessarily be coordinated so that discharges of decanted water from the DPS satisfy permit standards at all times. A detailed water balance and capacity analysis was submitted as an appendix to the Report of Waste Discharge. This water balance detailed the specific dredging rates and available storage capacity. The analysis used standard engineering calculations and relied on levee height information and available storage area needed to maintain two feet of freeboard given specific climate and infiltration and evaporation data. After certification of the EIR, the CVRWQCB will be responsible for reviewing and issue a Waste Discharge Report for the project. This permit will include several site-specific conditions to ensure adequate capacity. The Report of Waste Discharge details the plan to comply with the applicable standards and suggests draft language.

CAPACITY FOR FUTURE PROJECTS

Another comment states that the Draft EIR does not adequately describe the ability of the DPS to "handle" the volume of dredged materials estimated at 250,000 cubic yards that would result if dredging from dock 20 to Burns Cutoff were to occur.

Dredging between dock 20 and Burns Cutoff is a potential future project that is not currently proposed for consideration or approval by the Port, and accordingly is not part of the project level actions analyzed in this Draft EIR. This potential future project has not been included in the budget and funding process at the Port and no specific timeline has been developed for further study and consideration of this potential project. Before this project will be considered further funding would need to be identified. In addition, a further feasibility analysis would be required.

If the Port were to proceed with this project, it would not begin for 5 to 7 years after completion of the dredging project that is currently proposed. The DPS would likely have sufficient capacity to be able to handle the additional dredge material due to beneficial reuse of the dredge material placed during prior dredging operations. Each year, dredge material is removed from the DPS for various beneficial reuse applications including levee stabilization, construction fill, and other approved uses. The dredge material has a high reuse value in the Delta given the settling that occurs on Delta islands. There is currently a shortage of acceptable material for these restoration and stabilization uses and the dredge material from the DPS is in high demand for such uses. Therefore, it is reasonable to anticipate that the material placed

on the DPS from the prior dredging activity will have been removed for reuse and that the capacity of the site will be sufficient to accommodate additional dredging between dock 20 and Burns Cutoff it that project is approved some time in the future.

The Port initially applied for a permit from the USACOE for dredging between Dock 14–20 and from Dock 20 to the Burns cutoff. Dredging the area between Dock 20 and the Burns cutoff would make the berthing process for vessels using the western-most docks somewhat easier, reducing the need for tug assistance during berthing. Subsequently, however, the Port determined that it would not proceed with consideration of the dredging from Dock 20 to the Burns cutoff at this time. Dredging in this area is not necessary to implement the West Complex Development Plan. As noted above, no funding is currently available for this project. In addition, the studies needed to assess the volume and characterization of the sediments at this specific location have not been completed and a comprehensive analysis of the sediments would need to be completed before any decision is made whether to consider this project further. Because this potential project is not currently proposed for approval by Port, a project level analysis of it has not been undertaken in this EIR. In addition, a detailed sampling and Analysis Plan and Report of Waste Discharge would need to be prepared for the Regional Water Quality Control Board. In the event the Port decides to consider this project in the future, a project level analysis will be required before the project and permitting would move forward. As indicated in the DEIR, while it is likely that the impacts of such a project would be the same as the proposed dredging project, a comprehensive sediment analysis would be required to confirm this and complete the environmental analysis.

The dredging project currently under consideration, which involves dredging between docks 14–20, is proposed for approval and implementation by the Port. A Sampling and Analysis Plan and Report of Waste Discharge for this project have already been prepared and filed with the RWQCB. This proposed dredging project will result in a total of 326,000 cubic yards (cy) of dredged material. As is explained in **Appendix N** the DPS has more than enough capacity to contain this amount of dredged material.

Maintenance dredging is expected to occur approximately every 3 to 7 years. The Corps permit and notice lists the allowed frequency as every 2 years to provide sufficient flexibility to account for the potential for extreme weather years and to avoid emergency operations. However the likely scenario is a 3 to 7 year cycle, based upon the historic frequency of maintenance dredging at Port facilities which has been every 3 to 7 years. These maintenance activities will be short duration of approximately 15 days and dredge material volumes are small in comparison to project volumes. Recent maintenance dredging operations have generated 4,000 cy in 2002 and 10,000 cy is proposed for the next maintenance dredging cycle. Given the removal and reuse of dredge material at the DPS it is anticipated that these small volumes could be easily accommodated. In addition to the DPS currently listed for disposal activities, the Port has several other previously used and permitted disposal sites for maintenance dredging that could also accommodate dredge material if needed. Prior to the individual dredging operation, an environmental review of the proposed activities will be performed in order to determine if they are consistent with this document. If it is found that the proposed activities and associated impacts are adequately addressed within this EIR, then environmental review will be based upon the analysis in this EIR.

DPS SOIL ANALYSIS

One comment notes that the Draft EIR indicates that the Port would implement a soil management plan if the soil pH drops below 6.0 S.U., and that if the Port plans to continue to use lime applications to control the soil pH, then both the soil pH monitoring and lime application procedure must be incorporated into Draft EIR as mitigation measures The comment goes on to explain that if the Port does not mitigate the acidic soil conditions at the DMA site, then it is not appropriate to use deionized water as the extractant for the waste extraction test (WET), and instead the sediment must be tested using the citrate buffer solution. The soil monitoring and soil management program that currently occur at the DPS site are the result of the RWQCB WDR permit conditions for a prior dredging project. In accordance with this WDR permit, the Port will continue to monitor the DPS site for soil pH and continue to use lime applications to control the soil pH when soil sampling results indicate this is action is warranted to control soil pH. The provisions for soil pH sampling and monitoring for the proposed dredging project have been included in the Report of Waste Discharge for the project and will be included as a condition of the WDR permit for this project. The soil pH monitoring and lime application procedure need not be incorporated into Draft EIR as mitigation measures because they are part of a related permitting process and are included in the permit standards that are enforceable by the RWQCB. After certification of the EIR, the CVRWQCB will be responsible for reviewing and issue a Waste Discharge Report for the project. This permit will include several site-specific conditions to ensure adequate capacity. The Report of Waste Discharge details the plan to comply with the applicable pH standards and suggests draft language for the soil management plan. Based on the review by the RWQCB, the appropriate monitoring and reporting will be required prior to implementation of the Proposed Project.

The Report of Waste Discharge submitted to the RWQCB contained a soil management plan to maintain neutral conditions. Therefore, the current characterization and test methods are appropriate. In addition to the information submitted in the Report of Waste Discharge, the Port of Stockton met with the RWQCB during the development of the Sampling and Analysis Plan (SAP). The SAP and methodologies were approved by the RWQCB prior to implementation of sampling and characterization. In addition, the Port met with the RWQCB on several occasions after the sampling results were collected and prior to the submittal of the Report of Waste Discharge to ensure that the application was complete and accurate. The Report of Waste Discharge was deemed complete and the sampling methods were previously accepted by RWQCB staff.

4.20.4 BIOLOGICAL RESOURCES

Impact 5.4.8c identifies effects from change in hydraulic residence time and dissolved oxygen on the migration and movement of Chinook salmon, steelhead, delta smelt, and splittail, and concludes the impact would be less-than-significant. Several comments addressed this finding. Comments related to dissolved oxygen are discussed above. Those responses explain that project effects on dissolved oxygen would not be perceptible and that aeration by the Port will significantly enhance dissolved oxygen conditions.

The area that is being dredged from an average depth of 25 feet to a depth of 36 feet in front of docks 14 through 20 is not currently suitable habitat for most species and it is clearly not habitat for federally listed species including steelhead and Chinook salmon. The depth is not preferable for those species during

migration and the presence of contamination and naval debris makes the area unsuitable as habitat for these species.

As explained in the Draft EIR, San Joaquin River flow and weather conditions are the primary factors driving water temperature and dissolved oxygen conditions that support migration of fall-run Chinook salmon. It would be incorrect to assume, as one commenter does, that weather is not an important factor. The weather is in fact the controlling factor for temperature in the DWSC. Granted, the amount of water in the channel and the residence time of that water are also significant factors. Nevertheless, long, hot days will result in warmer water and short, cold days will result in cooler water. Because this project will not make a perceptible change the quantity of water in the channel or the residence time of the water it will have no impact on water temperature.

Likewise, dredging at any time of year will not have an impact to fisheries as a result of introducing toxic substances and/or reducing oxygen concentrations due to resuspension of oxygen demanding substances in the sediment. As previously described, the dredging operations will not release sediments and pour water in quantities large enough to affect DO or to harm fish populations. The document describes the methodologies, measurements, and direct observation from decades of identical projects at this location, none of which has had any measurable impacts to water quality and fish populations. Mortality due to contact with toxic substances resuspended by dredging would have to occur at concentrations that cannot result though use of this type of dredging equipment. Potential impacts that may result from decant water return flows are discussed above. However, to restate the conclusion – No decant water will be returned to the river if it does not meet water quality objectives as outlined in the Basin Plan or if it does not meet toxicity standards described in this document. Moreover, the DO Mitigation Measure 5.6.1 will directly benefit fish in perpetuity. This action will provide aeration that will directly remove up to 25% of the total oxygen deficit in any given year. If this measure had been in place for the past year, the aeration would have prevented DO concentrations from plummeting in winter months and possibly significantly reduced mortality to fish due to *existing* low dissolved oxygen conditions.

The Port will attempt to complete all of the dredging within the window of June 1 to October 30. As explained on pages 5-10, for the 2001 dredging project for docks K through I, the National Marine Fisheries Service requested that in-water work and dredging be limited to June 1 through October 30. However, due to the fact that dissolved oxygen concentrations in the DWSC are higher in the late fall and winter, when temperature is lower, than at other times of the year. In addition, water quality is also generally better and flows in the River are higher. Finally, the deep water where dredging occurred is not considered important habitat for the sensitive fish species of concern. For these reasons, the NMFS and USFWS concluded that extending the dredging period beyond October 30 would not have an adverse impact and gave the Port and extension of the dredging period for docks K through I through December 2001. It is expected that the proposed dredging project will be completed within the 4 months from June 1 through October 30. As noted in the Draft EIR on page 5-11, if a need to extend the dredging period beyond October 30 arises, the Port will seek authorization from the relevant regulatory agencies for such an extension. If such an authorization is sought, it would only be granted if the NMFS concludes that no significant adverse impacts fish species of concern will occur.

It should also be noted that dredging projects in this area, and throughout the DWSC, have typically extended into the winter months. The regulatory agencies, California Department of Fish & Game and the U.S. Fish and Wildlife Service and the National Marine Fisheries Service, that establish the guidelines for fisheries in this region have approved continuation of dredging operations into the winter months. As previously described, the use of this equipment and extensive sampling during previous dredging operations have determined that there are no impacts to fisheries and water quality regardless of extending operations into the winter months. No contaminants will be released in quantities / concentrations high enough to result in toxicity to any fish. This project will in fact result in a net benefit to listed species as a result of removing contaminated sediments from the river bed, removing the source of contaminants by extracting naval debris, and supplying thousands of pounds of dissolved oxygen into the water column to significantly improving dissolved oxygen conditions.

In regards to the potential impacts to benthic invertebrates, the existing community will indeed be removed with the sediment as a result of the project, as described in Impact 5.4.8h. However, it is a well-documented fact that these species re-colonize disturbed areas almost immediately. The source of species that will re-colonize the disturbed area is all of the upstream sections of the river. The argument that the removal of sediments in this project and during future maintenance dredging may have a significant impact to benthic invertebrates at this location is inherently incorrect as the existing condition was actually created as a result of dredging the channel to the current depths and by implementing periodic maintenance dredging. In every case, the benthic invertebrate community returned afterwards and there is no evidence to suggest that this would not be the case again.

In regards to impacts to mature riparian vegetation, this project is located in a designated industrial location and the land has been utilized for this purpose for more than 50 years. The project area has been intentionally kept devoid of this type of vegetation for the purposes of maintaining open channels for shipping and transfer of materials to- and from ships. The habitat value of the DWSC in this location is already low and will continue to remain low. This project does not exacerbate this situation, but rather remains consistent with the existing condition.

4.20.5 VISUAL RESOURCES – LIGHT AND GLARE

One commenter expresses concern about increased light and glare from the dredging equipment during dredging operations. Light and Glare from dredging equipment would be similar to the affects of light and glare discussed in the setting section of the Visual resources chapter of the Draft EIR (page 4.10-10) and analyzed in Impact 4.10.4. However, unlike the impact described for vessels docked at the West complex, the light sources associated with dredging equipment would be short term and transitory in nature. The dredging project is anticipated to last for a maximum of 90 days with a typical completion time for the entire project estimated at 60 days. During dredging operations, the equipment will move up the DWSC and will not be adjacent to one location or residential receptor for more than 2 to 3 days. Therefore, because of the short term and infrequent nature of the exposure, the impact is considered less than significant. Mitigation measures 4.10.4a and 4.10.4b would reduce the light and glare emanating from the project area and dredging equipment would not increase the effect beyond that anticipated for Port operations. The Dredging equipment employs lighting necessary to ensure the safety of the barge and crew and identify potential problems or malfunctions of the dredge cutter head. The safe operation of

the equipment is the primary concern of the dredge operator and lighting must be appropriate to maintain safe operations.

4.21 MCCLOY AVENUE, DAGGETT ROAD, AND DAGGETT ROAD BRIDGE PROJECT

LAND USE

A portion of the proposed specific project lies within the Delta Primary Zone, as defined by §29728 of the Delta Protection Act (Public Resources Code §29700 et seq.). The Delta Primary Zone, which extends south from the center of the Burns Cut-Off, includes the southerly approach to the Daggett Road Bridge on Middle Roberts Island and a portion of the bridge span. A discussion of the Land Use and Resource Management Plan for the Primary Zone of the Delta has been added to Section 6.3.2. In addition, the Delta Protection Act (§29711) contains language specific to the Port of Stockton:

The Legislature further finds and declares that the inland ports of Sacramento and Stockton constitute economic and water dependent resources of statewide significance, fulfill essential functions in the maritime industry, and have long been dedicated to transportation, agricultural, commercial, industrial, manufacturing, and navigation uses consistent with federal, state, and local regulations, and that those uses should be maintained and enhanced.

The Proposed Project is consistent with the goals, findings and policies of the Management Act, as discussed in revised Section 6.3.2a. Impact 6.3.2a has been revised to reflect this finding. Please refer to **Chapter 5.0, Minor Changes and Edits to the Draft Environmental Impact Report**.

AGRICULTURE

The impact of road and bridge improvements on agricultural land is discussed in Impact 6.3.2b. The amount of additional right-of-way necessary to construct the new bridge and approach ramp is relatively small, and represents a less-than-significant impact.

FUTURE IMPROVEMENTS TO DAGGETT ROAD

Improvement of Daggett Road between the Burns Cut-Off and SR4 will occur as part of a future improvement project. Mitigation Measure 6.3.3aii specifies that these improvements will be phased to keep pace with the increased traffic volumes. Specific cross section features, such as drainage and fencing, will be designed at that time. It is believed that by maintaining adequate roadway capacity, the effects of traffic on adjacent agricultural operations will not pose a potentially significant impact.

CHAPTER 5.0

MINOR CHANGES AND EDITS TO
THE DRAFT ENVIRONMENTAL
IMPACT REPORT

CHAPTER 5.0

MINOR CHANGES AND EDITS TO THE DRAFT ENVIRONMENTAL IMPACT REPORT

5.1 OVERVIEW

Changes to the text of the Draft EIR have been identified in the responses to comments (**Chapter 4.0, Responses to Comments on the Draft Environmental Impact Report**) and are identified here with strikeout and underline revision marks. None of these changes constitute new significant information or result in any new significant impacts of the Proposed Project.

5.2 MINOR CHANGES AND EDITS TO THE DRAFT EIR

This chapter contains the revisions to the draft EIR for the Port of Stockton West Complex Development Plan, dated November 2003. New text is indicated by underline. Deletions are shown in ~~strikethrough~~. Revisions are presented by draft EIR sections where revisions where considered necessary.

CHAPTER 3.0 PROJECT DESCRIPTION

Section 3.2 Overview

- Figure 3-3 of the Draft EIR has been revised to eliminate the four cranes incorrectly shown.

- On page 3-7, the last paragraph under Project Objectives is revised as follows:

To ensure that development within the Project Area fulfills the requirements of and is consistent with the special Congressional legislation (Public Law 104-106, Section 2871) by ~~allowing enhanced and continued~~ improving maritime operations which create economic opportunities that benefit the public.

- On page 3-17, the first bullet point is revised as follows:

Sanitary Sewer System. The existing sanitary sewer system has infiltration issues. An investigation and major renovations will need to be performed. New lines will be required to serve the proposed commercial development site. The investigation shall be performed prior to any major new connections to the existing system.

- On page 3-21, the second paragraph is revised as follows:

Pursuant to Section 21090 of the Public Resources Code, this EIR will serve as a program EIR for the Rough and Ready Island Redevelopment Plan. ~~As set forth in Section15180 of the CEQA Guidelines,~~

~~"all public and private activities or undertakings pursuant to, or in furtherance of, a redevelopment plan shall be deemed to be a single project."~~ Thus, evaluation of the potential environmental effects of the Rough and Ready Island Redevelopment Plan has taken this list of potential future projects in combination with the uses proposed under the West Complex Development Plan into consideration as a reasonable scenario under the Proposed Project if the Rough and Ready Island Redevelopment Plan is adopted.

Section 3.3 Regulatory Requirements, Permits and Approval

- On page 3-24, the "Proposed Project" is revised as follows:

Several future actions are anticipated for the Proposed Project. Subsequent to the implementation of the Port's Development Plan, the land use diagram of the City's General Plan may be amended to show an Industrial land use designation for the Project Area. In addition, the Project Area may be subject to a rezone from the P-L zoning district to the proposed PT zoning district. In the event that the proposed PT zoning district is not adopted into the City's Planning and Zoning Code, the City may initiate a rezoning of the Project Area to the M-2 zoning district. The Proposed Project is consistent with any of these zoning designations. It is anticipated that the City will use this document for the possible general plan amendment and rezone actions. The Stockton Redevelopment Agency will also use information from the Development Plan to designate the Project Area as a redevelopment area and intends to use this EIR as the required environmental documentation for the designation of a redevelopment area and approval of a redevelopment plan. <u>In addition, future off-site transportation improvements covered under the Development Plan may require an encroachment permit from the California Department of Transportation. The Department of Transportation will use this document (and any future project-level environmental document) in their role as a Responsible Agency.</u>

- On page 3-25, a fifth bullet point is added to Dredging Placement and Operations Project:

  – <u>A lease may be required from the California State Lands Commission for activities involving the bed of the Deep Water Ship Canal. The Port will coordinate with the CSLC.</u>

- On page 3-25, a fifth bullet point is added to McCloy Avenue, Daggett Road, and Daggett Road Bridge Project:

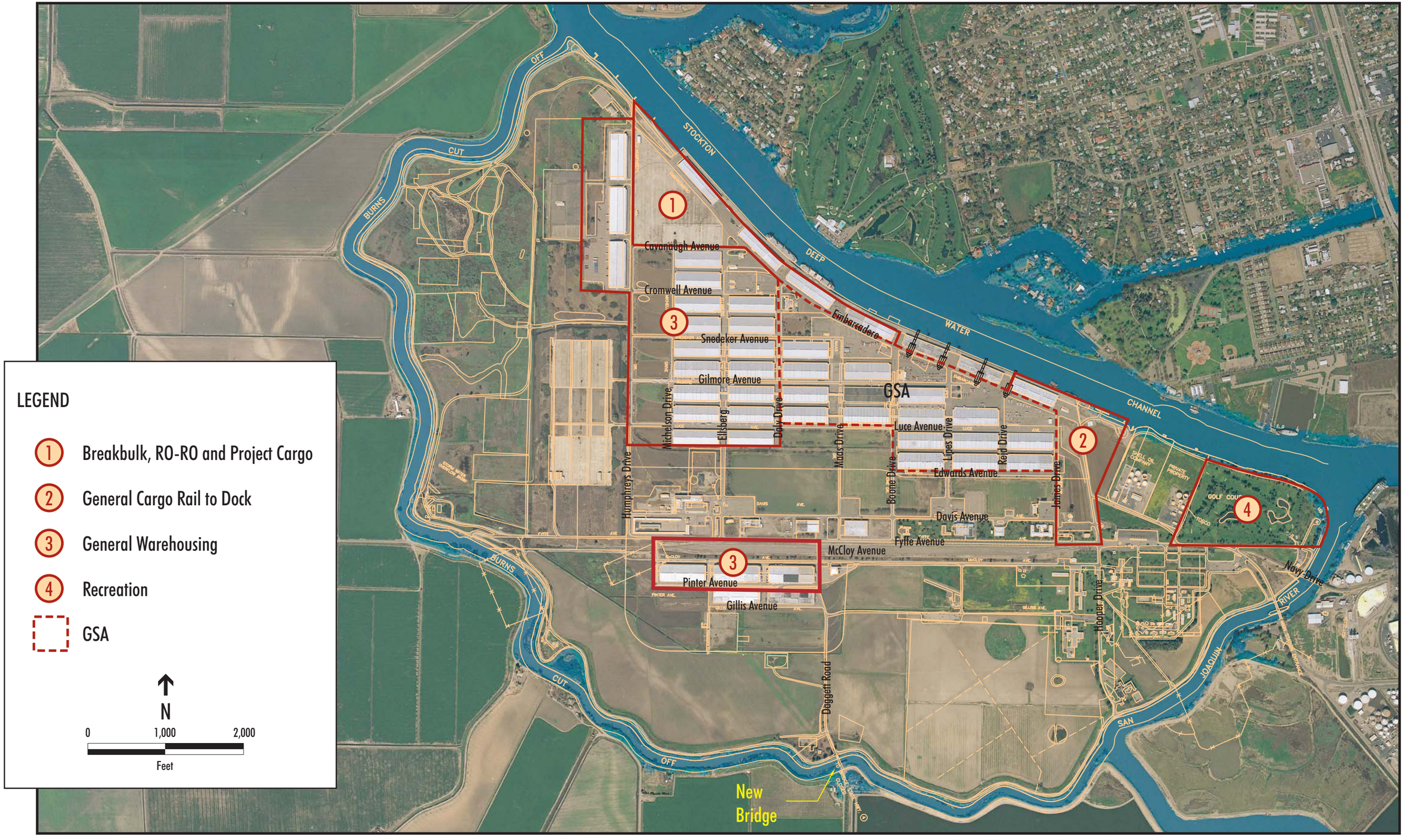
  – <u>The construction of the Daggett Road Bridge may require a lease from the California State Lands Commission for activities involving the bed of the Burns Cut-Off. The Port will coordinate with the CSLC.</u>

CHAPTER 4.0 ENVIRONMENTAL ANALYSIS

Section 4.2 Land Use and Agriculture

- On page 4.2-7, the last paragraph is revised as follows:

The ~~SJMCP~~ <u>SJMSCP</u> was designed to assist in the implementation of the resource management and open space management goals and policies of local general plans (including the City of Stockton).



SOURCE: JBF/Entranco, 2001; and Environmental Science Associates, 2002

Port of Stockton / 200621 ■

Figure 3-3
West Complex Existing Uses

On page 4.2-11, the first paragraph (which starts on page 4.2-8) is revised as follows:

Pursuant to City Resolution 00-0069 (**Appendix C**), implementation of the Port's Development Plan may be followed by a subsequent rezone of the Project Area from the current P-L zoning district to the proposed Port (PT) zoning district or possibly the M-2 zoning district. The PT zoning district is a new zoning district being proposed by the City of Stockton for incorporation into the City's Planning and Zoning Code. Upon formal adoption, the PT zoning district applies to areas of the City that are operated by "port districts" as formed under the Harbors and Navigation Code (Section 6210 et seq.) for the operation of port facilities, including wharves, dockage, warehousing, and related port facilities. The PT zoning district allows for a full range of industrial, maritime and commercial activities and provides consistency with the industrial land use designation of the City's General Plan. The creation of the PT zoning district is part of a proposed comprehensive revision of the City's Planning and Zoning Code (which would be renamed the "Development Code").

- On page 4.2-11, first full paragraph is revised as follows:

It should be noted that a rezone would not be required in order for the Port to implement the proposed Development Plan, all of the proposed uses could be implemented under the existing P-L zoning district. As discussed above, the P-L District expressly permits any use, which a public agency requires for operation, and any use compatible to public agency operations and under control of a public agency. The Port, a public agency, as defined by the California Harbors and Navigation Code (Section 6210 et seq.) may use the Project Area for any use, which is, required for its operation or for any use compatible to Port operations. The Harbors and ~~navigation~~ Navigation Code specifically allows the Port to conduct the Proposed Project uses within the Project Area and the Stockton Municipal Code P-L District permits the use of public land by a public agency in any manner which the public agency requires for its operation. Therefore, the Proposed Project is compatible with the existing P-L Zoning District.

- On page 4.2-11, second full paragraph, last line, is revised as follows:

In the event that the PT zoning district is not adopted into the City's Planning and Zoning Code the City may initiate a rezoning of the Project Area to the M-2 zoning district. It should also be noted that the Proposed Project is consistent with the M-2 zoning designation. It is anticipated that the City of Stockton will utilize this EIR as ~~they move~~ it moves forward with the rezoning action.

- On page 4.2-14, second full paragraph is revised as follows:

The land use analysis presented below evaluates the compatibility of the Proposed Project with the type and intensities of the existing and planned land uses surrounding the project site. Potential land use conflicts or incompatibility with adjacent areas are usually the result of other environmental effects, such as the generation of noise or objectionable odors. Potential land use conflicts to adjacent areas resulting from the effects of the Development Project are discussed below. Noise, traffic, and public service-related effects of the Proposed Project to nearby areas in the City of Stockton are discussed in detail in other relevant sections of the EIR.

Section 4.3 Transportation and Circulation

- On page 4.3-20, Table 4.3-10 is revised as follows:

TABLE 4.3-10
EXISTING INTERSECTION LEVEL OF SERVICE WITH SUGGESTED IMPROVEMENTS

			Existing Conditions					
			AM Peak Hour			PM Peak Hour		
Intersection	Type of Control	LOS Analysis Method	V/C Ratio	Vehicle Delay	LOS	V/C Ratio	Vehicle Delay	LOS
Charter Way & I-5 SB Ramps	Sig	2000 HCM	- -	19.7	B	- -	33.7	C
Charter Way & Fresno Avenue	Sig	Circ 212	0.76	- -	C	0.90	- -	E
Charter Way & Navy Drive	Sig	Circ 212	0.62	- -	B	0.98	- -	E

Notes: Sig = signalized, controlled by signal light. LOS = level of service. V/C ratio = volume to capacity ratio. Vehicle delay is measured in seconds per vehicle.

2000 HCM = 2000 Highway Capacity Manual. Circ 212 = Transportation Research Circular 212. SB = southbound.

- Figures 4.3-2 and 4.3-5 of the Draft EIR have been revised to show an eastbound through lane at Intersection 14 on Charter Way.

- On page 4.3-29, Mitigation Measure 4.3.2 is revised as follows:

4.3.2 Develop and Implement Truck Travel Control Plan

Until such time that the City, County, SJCOG, and Caltrans approve and implement an alternative access plan for the Port that reduces potential conflicts with adjacent residential uses, the Port shall develop and implement a truck travel control plan to reduce the effects of project-related truck traffic on local roadways within the vicinity of the Project Area. The plan shall identify feasible methods ~~(including signage, suggested travel routes, etc.)~~ to manage truck traffic accessing the Project Area, including the following:

- **As alternative access becomes available from the West Complex (i.e., Daggett and McCloy Roads), the Port will direct truck traffic, in coordination with Caltrans and to the extent capacity of Highway 4 allows, to that route;**

- **Additional signage will be provided to direct trucks to only designated truck routes;**

- **Additional signage will be provided to limit truck speeds in residential areas or other areas of potential conflict with pedestrians and/or passenger vehicle traffic;**

The Port will continue to work with the City, County and Caltrans on studies of alternative access routes and will coordinate with all agencies in the implementation of the Truck Travel Control Plan.

SOURCE: CCS Planning and Engineering, Inc.; and Environmental Science Associates, 2004

Port of Stockton / 200621 ■

Figure 4.3-2
Existing Peak Hour Volumes

Port of Stockton / 200621 ■

SOURCE: CCS Planning and Engineering, Inc.; and Environmental Science Associates, 2004

Figure 4.3-5
Cumulative 2020 Plus Project Peak Hour Volumes

Section 4.4 Air Quality

- On page 4.4-5, "Odors," fourth full paragraph is revised as follows:

Though offensive~~;~~, odors from stationary sources rarely cause any physical harm~~,~~. ~~they~~ They still remain unpleasant and can lead to citizen complaints to local governments. The occurrence and severity of odor impacts depend on the nature, frequency and intensity of the source~~;~~, wind speed and direction~~;~~, and the sensitivity of receptors. The *CEQA Guidelines* recommend that odor impacts be considered for any proposed new odor sources located near existing receptors, as well as any new sensitive receptors located near existing odor sources. Generally, increasing the distance between the receptor and the source will mitigate odor impacts.

- On page 4.4-7, third full paragraph is revised as follows:

As noted above, federal and state air quality laws require regions designated as nonattainment to prepare plans that either ~~demonstrates~~ demonstrate how the region will attain the standard or that demonstrate reasonable improvements in air quality conditions. A series of air quality plans has been developed for the SJVAB. The following describes the most current federal and state air quality plans as they apply to the project site:

- On page 4.4-9 second full paragraph is revised as follows:

As proposed, the new engine standards for onroad trucks would take effect in ~~the~~ 2008. The U.S. EPA estimates that PM would be reduced 95 percent, NO_x would be reduced 90 percent, and SO_x would be virtually eliminated as an emission from these sources. Sulfur in nonroad diesel fuel would be reduced 99 percent from existing levels. In June of 2007, the interim cap of sulfur content for fuel for nonroad sources would be 500 ppm. In June of 2010, sulfur would be limited to 15 ppm (ultra low sulfur fuel). The Tier 1 emission standards for nonroad diesel engines were set in 1994 and affect engines greater than 50 horsepower (hp). The Tier 2 and Tier 3 standards were set in 1998 and affected engines less than and greater than 50 hp. The new standards would affect engines ranging from 3 to 3,000 hp. Again, the U.S. EPA is proposing a "tiered" method of implementing the standard based on the engine capacity of the equipment.

- On page 4.4-12 and 4.4-14, "Existing Air Quality Conditions," paragraphs two and three are revised as follows:

~~The number of days during which ozone concentrations violated the state standard in Stockton is noticeably higher in 1999 than the most recent years~~. Based on the data from 1996 through ~~2001~~2003, ozone concentrations in the City violated the state ozone standard an average of approximately five days per year. Major sources of ROG emissions (a precursor to ozone formation) in the San Joaquin Valley are mobile sources, solvents, and oil and gas production. On-road motor vehicles and fuel combustion account for roughly 34 and 70 percent of the San Joaquin Valley's total ROG and NOx emissions, respectively (CARB, 2001). Based on the additional monitoring data (compiled for 2002 and 2003), the number of days during which ozone concentrations violated the state standard in Stockton peaked in 1998 (9 days at the E. Mariposa Road station and 10 days at the Hazelton Street station).

Table 4.4-2 indicates that background PM10 concentrations in Stockton have exceeded state 24-hour-average standards in each year between 1996 and ~~2001~~2003. Major sources of PM10 in the region include motor vehicles, power generation, industrial processes, wood burning, construction and farming activities (CARB, 2001). Fugitive windblown dust also represents a significant source of airborne dust. Based on data reflecting the highest 24-hour average concentrations recorded for PM10, monitoring data indicates that state standard violations peaked during the years 1999 to 2001. Exceedances of the state standards have declined since 2001.

- On page 4.4-13, Table 4.4-2 is revised as follows:

TABLE 4.4-2
SUMMARY OF MONITORING DATA FOR THE STOCKTON AREA, 1996–2003

Pollutant	State Standard	National Standard	Pollutant Concentration by Year [a]							
			1996	1997	1998	1999	2000	2001	2002	2003
Ozone (Hazelton Street)										
Highest 1-hour average, ppm [b]	0.09	0.12	**0.12**	**0.10**	**0.13**	**0.14**	**0.11**	**0.10**	**0.10**	**0.10**
Days over State Standard			4	1	10	6	4	5	2	3
Days over National Standard			0	0	1	2	0	0	0	0
Highest 8-hour average, ppm	NA	0.08	**0.09**	**0.08**	**0.1**	**0.11**	0.08	**0.09**	0.08	**0.09**
Days over National Standard			2	0	4	4	0	1	0	1
Ozone (E Mariposa Road)										
Highest 1-hour average, ppm [b]	0.09	0.12	**0.11**	**0.10**	**0.12**	**0.14**	**0.11**	**0.11**	**0.11**	NA
Days over State Standard			4	3	9	4	4	5	5	NA
Days over National Standard			0	0	0	1	0	0	0	NA
Highest 8-hour average, ppm	NA	0.08	0.08	0.08	**0.10**	**0.09**	0.08	NA	NA	NA
Days over National Standard			0	0	2	4	0	1	1	NA
Carbon Monoxide										
Highest 8-hour average, ppm	9.0	9	6.4	3.6	7.2	5.3	3.6	6.0	NA	NA
Days over Standard			0	0	0	0	0	0	NA	NA
Respirable Particulate Matter (PM10)										
Highest 24-hour average, $\mu g/m^3$ [b]	50	150	**127**	**98**	**106**	**150**	**91**	**140**	**87**	**88**
Number of samples [c]			61	61	60	61	57	18		
Calculated Days > State Standard			19	30	50	67	52	64	58	17
Calculated Days > National Standard			0	0	0	0	0	0	0	0
Annual average, National, $\mu g/m^3$	20	50	**27**	**30**	**29**	**36**	**32**	**35**	**36**	**28**

NOTE: **Bold** values are in excess of state or federal standard. NA = Not Applicable or Not Available.

a Data was collected at the Hazelton Street monitoring station unless otherwise noted. The East Mariposa Road station monitors for ozone only.

b ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter.

c PM10 is measured for 24 hours every sixth day of the year. The term, *number of samples* refers to the number of 24-hour-average PM10 samples collected in a given year at the Hazelton Street monitoring station.

SOURCE: California Air Resources Board, *Summary of Air Quality Data, Gaseous and Particulate Pollutants*, www.arb.ca.gov/adam, 2003.

- On page 4.4-20 mitigation measure 4.4.1 is renumbered as follows:

4.4.1a Retain an Air Quality Monitor during periods of Construction-Related Activity

- On page 4.4-20 the following new mitigation measure 4.4.1b is added:

4.4.1b Further reduction of emissions of construction-related fugitive dust

When the Port approves a project component implementing the West Complex Development Plan, the Port will require compliance with any feasible and appropriate SJVAPCD Enhanced and Additional Control Measures applicable to the particular project component.

- On page 4.4-20 mitigation measure 4.4.2 is renumbered as follows:

~~4.4.2~~ 4.4.1c Minimization of Construction Equipment Emissions

- On page 4.4-20 the following new mitigation measure 4.4.1d is added:

4.4.1d. Further reduction of exhaust emissions from construction equipment

When the Port approves a project component implementing the West Complex Development Plan, the Port will consider the Construction Equipment Mitigation Measures identified by the SJVAPCD, and will implement those Construction Equipment Mitigation Measures that the Port determines are feasible and appropriate for the specific project-component.

- On page 4.4-22 the following new mitigation measures are added:

4.4.2c At each time that the Port evaluates a project-specific proposal expected to result in a substantial increase in truck trips, the Port will evaluate the feasibility of adopting a mitigation measure for that project that would implement a program to provide incentives to truck owners to retrofit, repair, or replace diesel engines in trucks which would primarily serve activities within the Port. In addition, on an ongoing basis Port staff will work with regional transportation planning agencies, local governments, and regional and state air quality agencies to determine whether grant money would be available to the Port to fund an incentive program pertaining to diesel truck mitigation, to attempt to obtain such grant money to the extent that it is available and feasibly could be applied to Port-related trucking operations, and to use such grant money to reduce emissions from Port-related trucking operations.

4.4.2d Reduction in Emissions from All Off Road Equipment

The Port will require that all off-road and portable diesel powered equipment, including harbor craft, to use ARB-certified diesel fuel (non-taxed version suitable for use off-road)

4.4.2e Heavy Duty Vehicle Education Program

The Port will provide all port heavy duty vehicle users information regarding the SJVAPCD Heavy Duty Engine incentive (Carl Moyer) programs.

Section 4.5 Noise

- On page 4.5-6, the last paragraph is revised as follows:

Policy 2 states, "The compatibility of proposed projects with existing and future noise levels due to traffic on public roadways, railroad line operations and aircraft in flight shall be evaluated by comparison to **Figure 4.5-2**," a matrix entitled "Land Use Compatibility for Community Noise Environments," which sets a 60 dBA Ldn/CNEL standard as "normally acceptable" for residential uses and a 70 dBA Ldn/CNEL standard as "conditionally acceptable" for such uses. Policy 2 restricts residential and many other types of proposed projects near transportation noise sources. For noise due to traffic on public roadways, railroad line operations and aircraft in flight, Policy 3 forbids new residential development unless noise levels remain at or below 60 to 65 dBA Ldn/CNEL exterior and 45 dBA Ldn/CNEL interior. None of these three policies applies directly to the Proposed Project, which does not include any new residential development.

- On page 4.5-12, the last paragraph is revised as follows:

The only provision of the City of Stockton General Plan or noise ordinance that applies directly to the Proposed Project is General Plan Noise Policy ~~8~~ 7. (See "Local Regulations" section above.) This Policy limits industrial noise sources to a noise level of 80 dBA Ldn/CNEL at the nearest property line. The existing and proposed uses at the Port, and particularly at the portions of the Project site that are nearest to sensitive receptors, are industrial (see Chapter 4.2, Land Use); thus, Noise Policy ~~8~~ 7 applies.

- On page 4.5-15, first paragraph is revised as follows:

Future operational noise impacts would also result from increased maritime activities at the West Complex. Noise levels resulting from maritime activities would be similar to those of the East Complex and existing berths located at the West Complex. Noise sources at the terminal would include noise from tugs and support vehicles used to maneuver the ships into the Port and noise from the ships' generators themselves while the ships are in port. Additionally, the loading and unloading of different types of cargo and the operation of equipment such as cranes, forklifts, conveyers and hoppers would incrementally add to the ambient noise environment. Other less frequent noise sources may include fog horns, channel bells, warning alarms and sirens.

- On page 4.5-23, the last paragraph is revised as follows:

It is important to note that the Proposed Project would have no effect on recreational boating, which ~~is~~ as previously noted tends to generate loud noise peaks over short time periods that may affect average noise levels. The recreational boating Proposed Project does not include facilities for, nor would its operation directly or indirectly induce increases in recreational boating activity.

- On page 4.5-45, the first paragraph under item 4 is revised as follows:

Although the CEQA Guidelines refer only to ground-borne vibration, this EIR also treats airborne vibration as a potential impact. To assess the significance of groundborne vibration and airborne sound-induced vibration, criteria recommended by the U.S. Department of Transportation and ASHRAE

discussed above have been considered. For airborne sound-induced vibration a threshold of 70 dB~~A~~ has been used because this level is midway between a slight possibility of rattles in light fixtures, doors, windows, etc. (at 65 dB~~A~~) and a high probability of such effects (at 75 dB~~A~~). A 3 dB~~A~~ change relative to existing conditions and exceedance of the 70 dB~~A~~ threshold are used to assess significance.

- On page 4.5-19, Mitigation Measure 4.5.1a is revised as follows:

4.5.1a Construction activities shall be limited to between ~~6:00~~ 7:00 a.m. and ~~9:00~~ 7:00 p.m. If nighttime construction were required, spot noise monitoring would be required to assure that noise levels from construction activities do not exceed 65 Lmax at the property line of the nearest residence. Measures to reduce nighttime construction noise levels may include using noise barriers or reducing the amount of construction activity until noise levels are below the nighttime significance criterion.

- On page 4.5-29, Mitigation Measure 4.5.2b is revised as follows:

4.5.2b Implement Noise-Reducing Measures at Sensitive Receptor Locations.

At the request of any homeowner where noise from Port operations exceeds 60 DNL, the Port will retain a qualified acoustical consultant to evaluate interior noise levels to determine if Port operations are resulting in interior noise that exceeds 45 DNL. Residences with air-conditioning will be evaluated with windows closed; residences with no air conditioning will be evaluated with windows open if that is the normal operating condition. If it is determined that Port operations are resulting in interior noise levels exceeding 45 DNL, the Port will identify building treatments to reduce interior noise resulting from Port operations to 45 DNL or less. Treatments may include installation of air-conditioning, upgrading windows and doors, and eliminating noise flanking paths. The Port will provide construction drawings and specifications for the treatments to the homeowner. The homeowner will then be responsible for receiving 3 bids from qualified contractors to implement the treatments. ~~The Port will reimburse the homeowner for the cost of the lowest bid after treatments are completed. The Port will not implement the treatments unless wall systems are generally in compliance with building codes.~~

The Port will promptly pay the homeowner for the cost of the lowest bid after treatments are completed and accepted by the homeowner. The Port will pay for normal installation of the treatments but will not pay for any additional work necessary to allow installation of the treatments (e.g., repair of dry rot or termite damage). Although significant ship noise impacts will not occur until the Proposed Project becomes operational, the treatment program for these residences will begin upon issuance of the last permit required for the dredging project to proceed.

Depending on the number of requests received for monitoring and the number of residences qualifying for treatment, the Port reserves the right to spread monitoring and treatment over 10 years, using a priority system that addresses the most impacted residences first. Once the program begins, the owner of each impacted residence may select the time at which noise monitoring and, if necessary, treatment, will occur, but the Port will treat each residence no more than once.

- On page 4.5-29, Mitigation Measure 4.5.2c is added:

4.5.2c Stationary land based generators within the marine terminal shall be baffled to the extent feasible in order to minimize increases in the ambient noise level.

- On page 4.5-31, Mitigation Measure 4.5.3a is modified as follows:

4.5.3a Build a Sound Wall Adjacent to Fresno Avenue for ~~Marshall Middle~~ San Joaquin Elementary School.

Unfortunately, most of the residences affected by traffic noise are not located where sound walls could be built to reduce traffic noise. There are too many driveways (cutouts) that would reduce the effectiveness of sound walls. Mitigation Measure 4.5-3b provides potential mitigation for these receptors.

At the time that the project results in a doubling of traffic on Fresno Avenue adjacent to ~~Marshall Middle~~ San Joaquin Elementary School, the project shall construct a sound wall to mitigate traffic noise at the school. The sound wall shall be designed to provide at least a 5 dBA noise reduction and constructed with the concurrence of the school. Should the school prefer not to have the sound wall built, noise-reduction measures identified in Mitigation Measure 4.5.3b shall be offered to the school.

Doubling of traffic shall mean a 100% increase in the AM peak hour volume on Fresno Ave adjacent to San Joaquin Elementary School compared to pre-project conditions. For the purposes of this measure, pre-project conditions shall be determined by a traffic count conducted by the Port prior to operation implementation of the first project within the scope of the West Complex Development Plan. After the determination establishment of the pre-project conditions, the Port shall conduct a traffic count at least every two years, or according to another schedule developed in consultation with the City of Stockton or County of San Joaquin, until the earliest of the following dates: the year 2020, or the year when it is determined that a 100% increase over pre-project conditions has occurred. The Port may use traffic counts conducted by another public agency on this road segment including, but not limited to, the City of Stockton, San Joaquin County, SJCOG, or the California Department of Transportation, in place of conducting its own traffic counts.

- On page 4.5-31, Mitigation Measure 4.5.3b is modified as follows:

4.5.3b Implement Noise-Reducing Measures at Sensitive Receptor Locations

At the time that the project results in a doubling of traffic for the sensitive receptors identified in this impact, the Port will retain a qualified acoustical consultant to evaluate interior noise levels to determine if Port operations are resulting in interior noise that exceeds 45 DNL. Residences with air-conditioning will be evaluated with windows closed; residences with no air conditioning will be evaluated with windows open if that is the normal operating condition. If it is determined that Port operations are resulting in interior noise levels exceeding 45 DNL, the Port will identify building treatments to reduce interior noise resulting from Port operations to 45 DNL or less. Treatments may include installation of air-conditioning, upgrading windows and doors, and eliminating noise flanking paths. The Port will provide construction drawings and specifications

for the treatments to the homeowner. The homeowner will then be responsible for receiving 3 bids from qualified contractors to implement the treatments. ~~The Port will reimburse the homeowner for the cost of the lowest bid after treatments are completed. The Port will not implement the treatments unless wall systems are generally in compliance with building codes.~~

The Port will promptly pay the homeowner for the cost of the lowest bid after treatments are completed and accepted by the homeowner. The Port will pay for normal installation of the treatments but will not pay for any additional work necessary to allow installation of the treatments (e.g., repair of dry rot or termite damage).

Depending on the number of requests received for monitoring and the number of residences qualifying for treatment, the Port reserves the right to spread monitoring and treatment over 10 years, using a priority system that addresses the most impacted residences first. Once the program begins, the owner of each impacted residence may select the time at which noise monitoring and, if necessary, treatment, will occur, but the Port will treat each residence no more than once.

Doubling of traffic shall mean a 100% increase in the AM peak hour volume on the road segments identified in Impact 4.5.3 compared to pre-project conditions. For purposes of this measure, pre-project conditions shall be determined by a traffic count conducted by the Port prior to implementation of the first project within the scope of the West Complex Development Plan. After the determination establishment of the pre-project conditions, the Port shall conduct a traffic counts once at least every two years, or according to another schedule developed in consultation with the City of Stockton or County of San Joaquin, until the earliest of the following dates: the year 2020, or the year when it is determined that a 100% increase over pre-project conditions has occurred. The Port may use traffic counts conducted by another public agency on those road segments including, but not limited to, the City of Stockton, San Joaquin County, SJCOG, or the California Department of Transportation, in place of conducting its own traffic counts.

- On page 4.5-32, the Impact 4.5.4 is revised as follows:

4.5.4 Project operations would generate increased levels of low-frequency noise that would likely produce vibrations in lightweight structures. This impact is considered potentially significant.

As discussed above the levels of low frequency noise and infrasound measured for most ships analyzed was in the range of about 65 to 70 dB~~A~~ at residential receptors. As previously described, this EIR uses a significance threshold of 70 dB~~A~~ at low frequencies and a change of 3 dB~~A~~. When levels of low-frequency noise and/or infrasound exceed 75 decibels, studies indicate that there is a high probability that noise-induced vibration in lightweight wall and ceiling construction would be clearly felt and that audible rattles in light fixtures, doors, and windows are to be anticipated. While low frequency project-related noise is not expected to exceed 75 dB~~As~~, there is a reasonable probability that increased ship activity at the port would result in low frequency noise exceeding 70 dB~~A~~ and at least a 3 dB~~A~~ increase in low frequency noise. (A 3 dB~~A~~ change corresponds to a doubling of energy or in this case a doubling of shipping activity). This impact is therefore considered to be **significant**.

Section 4.6 Geology

- On page 4.6-22, first line is revised as follows:

Joaquin River ~~as~~ is a significant issue. A Boat Wake Wave Analysis prepared by Moffat and Nichol Engineers (provided in Appendix H) indicates that improvements to the waterfront may increase the frequency of the ships; however, the magnitude of large vessel boat wake waves would likely be similar to that currently experienced. The analysis confirms that for shoreline segments that are adequately protected under existing wave conditions and not currently eroding, the potential for increased levee erosion due to larger and more frequent ships navigating the channel is negligible.

- On page 4.6-22, for Impact 4.6.4, the following mitigation measure is added:

4.6.4 The annual levee-monitoring and inspection program referred to in mitigation measure 4.6.3 shall include inspection, monitoring, and, where necessary, reinforcement of any segments of shoreline on the north side of the DWSC, across from the West Complex, between the Calaveras River and the eastern leg of the Burns Cut-off that is either inadequately protected, unprotected or eroding in order to protect against levee erosion due to increased tug boat traffic during the lifetime of the Development Plan. A licensed geotechnical or civil engineer shall prepare levee treatments proposed under the program in accordance with applicable local, state and federal requirements.

Where there is an existing levee or shoreline maintenance program in place, such as a Reclamation District levee maintenance program, the Port of Stockton shall work with the existing program.

- On page 4.6-22, the reference to Mitigation Measure 4.11.3a is changed to Mitigation Measure 4.11.3 and the reference to Mitigation Measure 4.11.3b is deleted.

Section 4.7 Hydrology and Water Quality

- On page 4.7-4, last line of first full paragraph is revised as follows:

Within the Project Area, twelve locations with surface water contamination have been discovered as a result of military and other historic land uses. These sites include storm drainage lines, aboveground storage tanks, potential spill areas, pits, construction yards, and storage and maintenance areas (Tetra Tech, 1998). Contaminants include volatile organic compounds (VOCs), metals, and pesticides. Remediation activities have been ongoing and are discussed further in **Section 4.11, Hazardous Materials and Public Health**.~~.~~

- On page 4.7-5, paragraph two is revised as follows:

In addition to the ~~currently listed~~ impaired waterbodies listed above, the SWRCB has recently updated the 303(d) list ~~is in the process of being updated~~. ~~Proposed~~The amendments to the list include adding the Lower Calaveras River, which suffers from low dissolved oxygen (resulting from urban runoff and storm sewers) and pathogens (urban runoff, recreation), and amending the Lower San Joaquin River to include an impairment from mercury (abandoned mines), and the DWSC to include an impairment from

pathogens (urban runoff and recreation) (SWRCB, 2002). ~~The SWRCB plans to consider adoption of the revised CWA section 303(d) list in January 2003.~~ The USEPA approved these amendments in July 2003 (SWRCB, 2003).

- On page 4.7-15, the reference to Mitigation Measure 4.11.3a is changed to Mitigation Measure 4.11.3:

- On page 4.7-16, the reference to Mitigation Measure 4.11.3b is deleted.

- On page 4.7-21, the reference to Mitigation Measure 4.11.3a is changed to Mitigation Measure 4.11.3 and the reference to Mitigation Measure 4.11.3b is deleted.

- On pages 2-31 and 4.7-23, the Impact header 4.7.8 is revised as follows:

4.7.8 Groundwater – As discussed in Section 4.12, Public Services and Utilities, at buildout, the Proposed Project is anticipated to generate a domestic water demand impact of approximately 1633 af/year. Because the water supplier, Cal Water, relies in part on groundwater to support demand, this water demand has potential to substantially deplete groundwater supplies in a basin that is already in overdraft. This is a potentially significant impact.

- On page 4.7-23, the Mitigation Measure 4.12.7b is revised as follows:

4.12.7~~b~~ Please refer to Section 4.12, Public Services and Utilities for a complete description of this measure that provides for water system upgrades.

- On page 4.7-24, the Mitigation Measure discussion for Impact 4.7.10 is corrected as follows:

Mitigation Measure

~~With implementation of the mitigation measure listed above, this potential impact would be reduced to a les-than-significant level.~~ No mitigation required.

Section 4.11 Hazardous Materials and Public Health

- On page 4.11-11, the last sentence of the fourth paragraph is revised as follows:

In addition, the Stockton Fire Department has a hazardous materials response team at ~~their station located near the Project Area at 1818 Fresno Avenue~~ Station No. 10, 2903 West March Lane.

- On page 4.11-30, Impact 4.11.6 is revised and Mitigation Measure 4.11.6 is added:

4.11.6 Implementation of the Proposed Project could result in exposure of individuals to asbestos-containing dust and lead-based paint. This is a potentially significant impact.

Removal or disturbance of asbestos-containing material during renovation or demolition of existing structures within the Project Area has the potential for exposing construction workers and the general public to friable asbestos. Indiscriminate and unmitigated demolition of structures containing asbestos and lead-based paint could create asbestos dust, lead paint chips and lead dust that could travel offsite and present an inhalation hazard for the surrounding public.

In addition, collection and disposal of asbestos and lead paint debris by untrained personnel could similarly result in asbestos and lead paint dust emissions offsite. This is a **potentially significant** impact.

~~All renovation or demolition of existing structures will be done in compliance with the requirements and regulations promulgated through the SJVUAPCD and NESHAP regarding the handling and disposal of asbestos-containing materials. These provisions focus on limiting the emission of asbestos to the atmosphere and require an appropriate waste disposal procedure. In addition, the California Department of Health Services recommendations and Cal/OSHA requirements regarding lead-related construction work will be complied with by all construction contractors and workers. Compliance with all existing requirements and regulations will ensure a **less-than-significant** impact regarding asbestos and lead-based paint dust emissions.~~

Mitigation Measure

~~No mitigation required.~~

4.11.6 The Port shall ensure through its construction permitting process or through enforcement of contractual obligation for its own projects, that all SJVAPCD and NESHAP regulations for the handling and disposal of asbestos-containing materials, and all DHS and Cal/OSHA requirements for lead-related construction will be implemented.

All renovation or demolition of existing structures will be done in compliance with the requirements and regulations promulgated through the SJVUAPCD and NESHAP regarding the handling and disposal of asbestos-containing materials. These provisions focus on limiting the emission of asbestos to the atmosphere and require an appropriate waste disposal procedure. In addition, the California Department of Health Services recommendations and Cal/OSHA requirements regarding lead-related construction work will be complied with by all construction contractors and workers.

Significance after Mitigation

With implementation of the mitigation measure listed above, this potential impact would be reduced to a **less-than-significant** level.

Section 4.12 Public Services and Utilities

- On page 4.12-1, the fourth paragraph is revised as follows:

The City of Stockton Fire Department maintains a hazardous materials unit, which is equipped with a hazmat response van. ~~The Port also owns and maintains fireboat staffed with Stockton Fire Department personnel.~~ The Stockton Fire Department's Water Rescue Team, located at Paramedic Engine Company, provides rescue services to citizens who have been hurt or trapped in the waterways surrounding the city, responding to an average of 30 water rescue calls annually. The Dive Team possessed advanced cardiac life support capability.

- On page 4.12-3, the first paragraph ("Parks and Recreation") is revised as follows:

The City of Stockton's Parks and Recreation Department manages Stockton's parks and recreation centers. The City contains 54 parks consisting of 528 acres of land (City of Stockton 2001). ~~According to the City of Stockton General Plan - Parks and Recreation Element Evaluation and Update (City of Stockton, 1996a), neighborhood parks provide 1 acre of parkland per 1,000 residents, community parks provide 2 acres of parkland per 1,000 residents, and regional parks provide 7 acres of parkland per 1,000 residents.~~ Neighborhood and regional parks meet or exceed the City's standard of 0.75 acres and 7 acres per 1,000 residents, respectively; however, community parks fail to meet the City standard of 2.25 acres per 1,000 residents (City of Stockton, 1998).

- On page 4.12-3, the fourth and fifth paragraphs ("Wastewater") are revised as follows:

The sanitary sewer collection system on Rough and Ready island is owned and operated by the Port of Stockton and is connected to the City of Stockton MUD wastewater system. ~~Sanitary sewer service is supplied to the project site by the City of Stockton MUD.~~ MUD maintains 900 miles of sanitary lines and over 38,000 sewer connections in the City. Wastewater from the Project Area is conveyed by gravity to a lift station, where it is pumped across the San Joaquin River to the City of Stockton's Regional Wastewater Control Facility (RWCF) through a City-owned12-inch force main. The system on the island is in poor condition and suffers from ~~I&I~~ inflow and infiltration (I&I) problems. Studies have found that wastewater discharge exceeds on-site domestic water consumption by more than three times (JBF/Enrtanco Associates, 2001). The Development Plan indicates that the existing system would be subject to inspection prior to any major new connections, and that major remediation work may be necessary to alleviate the I&I problem.

The RWCF is located on Navy Drive, approximately ¼ mile south-southeast of the Project Area. The facility provides secondary and tertiary treatment of wastewater, and following treatment, effluent is discharged into the San Joaquin River in accordance with the terms of a NPDES Permit issued by the Regional Water Quality Control Board. A renewed, but still tentative, NPDES Permit issued on April 9, 2001 allows an average dry weather discharge flow of up to ~~55~~ 42 million gallons per day (mgd), with a peak wet weather flows of up to 67 mgd.

- On page 4.12-11, Goal 3, Policy 3 is revised as follows:

Policy

3. Governmental and semi-public agencies shall provide facilities that ~~area~~ are attractive and complementary with their environment.

- On page 4.12-14, Mitigation Measure 4.12.1a is revised as follows:

Mitigation Measures

4.12.1a Prior to major project-specific development, the Port shall perform an assessment of the non-potable water system, and if deemed necessary complete any needed upgrades to the

system. This may be performed on a project-by-project basis or as part of a Master Plan for development of the entire Project Area.

The assessment will test for leaks in the non-potable water system, establish the ability of the system to provide sufficient flow for fire-fighting throughout the island, and identify any areas where upgrades, replacement, and/or rehabilitation is necessary to provide ~~sufficient~~ fire flows which conform to adopted Building Code Fire Safety Standards and support the City of Stockton's existing Class 1 ISO rating. ~~and to~~ All system improvements shall conform ~~with~~ to the City of Stockton Department of Public Works Standard Specifications ~~(current edition)~~ and the Stockton Municipal Code.

The assessment shall include, and the Port shall implement, a schedule that performs system improvements prior to or concurrent with new development and/or increased intensity of land use such that it does not exceed the capacity of the on-site system, and adequate fire protection flows continue to be provided.

- On page 4.12-18, Mitigation Measure 4.12.8 is revised as follows:

Mitigation Measure

4.12.8 In compliance with the California Integrated Waste Management Act (AB 939), the Proposed Project shall implement specific source reduction measures that require mandatory pre-processing of all solid waste generated within the Project Area. Pre-processing methods would include one or more of the following source reduction measures: on-site recycling or reuse programs, composting, and/or funding off-site sorting activities by a private waste management company. Source reduction measures shall be coordinated with the City of Stockton Public Works Department, Division of Solid Waste.

Section 4.13 Population, Employment, and Housing

- On page 4.13-7, the second paragraph under "Jobs/Housing Balance" is revised as follows:

A simple numerical balance in the jobs/housing ratio does not necessarily indicate that local residents have adequate opportunity to work in their community. Other factors, such as the match between local resident employee skills and the skills required for local jobs, and the match between local compensation levels and local housing process, also influence a community's actual jobs/housing relationship. ~~Nevertheless, where~~ Where a sub-region jobs/housing ratio is balanced it does not necessarily indicate that local residents have adequate opportunity to work in their community. ~~Other factors, such as the match between local resident employee skills and the skills required for local jobs, and the match between local compensation levels and local housing process, also influence a community's actual jobs/housing relationship.~~ Nevertheless, where a subregion jobs/housing ratio is substantially lower than the region ratio, a higher tendency toward out-commuting is indicated.

CHAPTER 5.0 DREDGING AND PLACEMENT OPERATIONS PROJECT

- On page 5-23, the paragraph under **Sensitive Receptors** is revised as follows:

Noise sensitive receptors are land uses such as residences, schools, and hospitals where noise can adversely affect use. There are no sensitive noise receptors within the Port of Stockton's boundaries. The nearest noise-sensitive land uses are residential zones north of the Project Area across the DWSC. The residential zones are primarily aggregated across from docks 14 and 20, with residences located approximately 900 feet from dock 14, and 650 feet from dock 20. Actual dredging is anticipated to occur within 600 feet of the residences across from dock 14, and 500 feet of the residences across from dock 20. In addition, the golf course at the Stockton Golf and Country Club is approximately 500 feet directly north of docks 16 through 20. ~~The DPS is located near mixed residential and commercial uses as well as parks and open space.~~ The DPS is located in an undeveloped area with no adjacent noise sensitive land uses. Figure 5-4 indicates the project location and nearest noise-sensitive land uses.

- On page 5-44, Mitigation Measure 5.4.7i is revised as follows:

Mitigation Measure

5.4.7i The Port will hold all decant water until it has been determined through analysis that the water will meet all water quality objectives and will not pose a threat to aquatic biota.

The Port will hold all decant water until it has been determined through analysis that the water will meet all water quality objectives and will not pose a threat to aquatic biota. The bioassay testing method will be adopted as part of the Port's sampling plan. However, because this is an impaired water, the Port suggests that the survival criteria should be established in consideration of the survival rate at a regional reference site using the MSD method. Decant water that has a survival rate within 20% of that at the reference site would be considered to meet water quality objectives. Based on the recommended bioassay tests, decant water will be sampled prior to discharge and held if samples do not meet the water quality requirements.

In addition to the bioassay testing described, additional sampling will include specific analysis for arsenic, barium, cadmium, copper, lead, mercury, nickel, organochlorine pesticide "Endosulfan II", and polyaromatic hydrocarbons. Decant water containing unacceptable concentrations of any of these constituents will not be discharged.

Decant water that meets the requirements would be discharged at an approximate rate of 2 mgd.

CHAPTER 6.0 ENVIRONMENTAL ANALYSIS – PROJECT SPECIFIC COMPONENTS – MCCLOY AVENUE, DAGGET ROAD, AND DAGGETT ROAD BRIDGE PROJECT

Section 6.3.2 Land Use and Agriculture

- The following section is added at the end of page 6-9:

A portion of the proposed specific project lies within the Delta Primary Zone, as defined by §29728 of the Delta Protection Act (Public Resources Code §29700 et seq). The Delta Primary Zone, which extends south from the center of the Burns Cut-Off, includes the southerly approach to the Daggett Road Bridge on Middle Roberts Island and a portion of the bridge span. The Delta Protection Act specifically discusses the Port of Stockton in §29711:

> The Legislature further finds and declares that the inland ports of Sacramento and Stockton constitute economic and water dependent resources of statewide significance, fulfill essential functions in the maritime industry, and have long been dedicated to transportation, agricultural, commercial, industrial, manufacturing, and navigation uses consistent with federal, state, and local regulations, and that those uses should be maintained and enhanced.

Development within the Primary Zone is subject to the Land Use and Resource Management Plan for the Primary Zone of the Delta ("Management Plan"). The Management Plan was adopted by the Delta Protection Commission on February 23, 1995, per the requirements of the Delta Protection Act. The goals, findings, and policies of the Management Plan which relate to the proposed specific project are described below.

Utilities and Infrastructure

Goal: Protect the Delta from excessive construction of utilities and infrastructure facilities, including those that support uses and development outside the Delta. Where construction of new utility and infrastructure facilities is appropriate, ensure the impacts of such new construction on the integrity of levees, wildlife, and agriculture are minimized.

Findings

> F-8. Surface transportation in the Delta serves the agricultural operations, transporting products out of the Delta to markets, and allows import of supplies and equipment. Other users of the Delta transportation network include regional trucking, regional commuters, recreational visitors, and local traffic within the Delta. Many existing Delta roads are historic, narrow, and nonconforming to present design standards. Drivers need to be aware of hazards and unique challenges that these roads pose.
>
> F-10. Bridges and ferries are key links for surface transportation in the Delta. Bridges impact vessel traffic on the waterways; some bridges rarely open requiring boats to travel alternate waterways. Some bridges open regularly, impacting surface traffic and creating possible delays in emergency response. The few remaining ferries are expensive to maintain and operate, and may be affected by cuts in State and local government budgets.
>
> F-11. Bridges and ferries are key links for surface transportation in the Delta. Bridges impact vessel traffic on the waterways; some bridges rarely open requiring boats to travel alternate waterways. Some bridges open regularly, impacting surface traffic and creating possible delays in emergency response. The few remaining ferries are expensive to maintain and operate, and may be affected by cuts in State and local government budgets.

Policies

P-5. Surface transportation in the Delta can be dangerous and congested. Roads within the Delta shall be maintained to serve the existing agricultural uses and supporting commercial uses, recreational users, and Delta residents. Where possible, commuter traffic and through traffic should be directed to surrounding highways and freeways, or minimized through programs which promote carpools, buses or trains.

P-7. Operation of draw and swing bridges shall balance needs of land and water traffic. Commercial vessels and emergency road traffic shall have right-of-way over other traffic.

- On page 6-10, Impact 6.3.2a has been modified as follows:

6.3.2a Consistency with applicable land use designations and policies. This is a less-than significant impact.

The proposed specific project is consistent with the City of Stockton General Plan and the City of Stockton Planning and Zoning Code. The project also is consistent with the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. See **Section 4.8, Biological Resources,"** for the program-level discussion of impacts of development on federal- and state-listed species. The project is consistent with the Delta Protection Act and the Land Use and Resource Management Plan for the Primary Zone of the Delta. This impact is considered **less-than-significant**.

Section 6.3.4 Air Quality

- On page 6-18, delete the last sentence:

~~[**Note: Update consistent with changes to Section 4.4.**]~~

- On page 6-19, Impact 6.3.4a is revised as follows:

Impact

6.3.4a Fugitive dust generated during future project construction activities could be substantial and would contribute to intermittent ambient respirable particulate matter concentrations that could violate state PM10 standards. ~~The SJVUAPCD requires that all construction activities implement fugitive dust control measures in accordance with Regulation VIII. With the implementation of these measures for project-specific activities, a less-than-significant impact is expected.~~ This is a potentially significant impact.

- On page 6-20, the following measures are added:

  - Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent

- Install gravel pads as needed to control track out onto public roads from dump trucks and delivery trucks. Clean all other construction equipment before leaving the construction site.

- On page 6-21, the following measures have been incorporated into the discussion for impact 6.3.4a:

To further reduce less-than-significant emissions from construction equipment, the Port will require implementation of the following measures:

- **Fuel off-road and portable diesel powered equipment, including but not limited to bulldozers, graders, cranes, loaders, scrapers, backhoes, generator sets, compressors, auxiliary power units, with ARB-certified diesel fuel (non-taxed version suitable for use off-road)**
- **Maximize to the extent feasible, the use of diesel construction equipment meeting the CARB's 1996 or newer certification standard for off-road heavy-duty diesel engines**
- **To the extent feasible, use CARB-certified engines in the construction fleet**
- **The engine size of construction equipment shall be the minimum practical size**
- **Construction equipment operating on-site shall be equipped with two to four degree engine timing retard or precombustion chamber engines**
- **Use electricity from power poles rather than temporary diesel power generators and electrify equipment where feasible**
- **Post a sign at the nearest public access point to the construction area advertising a telephone number to report gross-emitting vehicles**

- On page 6-21, for Impact 6.3.4a, Mitigation Measure 4.4.1 is added, and Significance after Mitigation is added:

Mitigation Measure

4.4.1 ~~No mitigation is required.~~ **The port shall comply with the SJVUAPCD's Regulation VIII control measures, as discussed in Section 4.4.**

Significance after Mitigation

With implementation of the program-level mitigation measure listed above, this impact would be reduced to a **less-than-significant** level.

- On page 6-24, for impact 6.3.6c, Mitigation Measure 4.6.3 and Significance after Mitigation is added:

Mitigation Measure

4.6.3 ~~No impact beyond that identified and mitigated in the program-level analysis is anticipated. Therefore, no further mitigation is required.~~ **Please refer to Section 4.6 for a discussion of this program-level mitigation measure.**

Significance after Mitigation

With implementation of the program-level mitigation measure listed above, this impact would be reduced to a **less-than significant** level.

- On page 6-24, Impact 6.3.6d is revised as follows:

6.3.6d Implementation of the Proposed Project has the potential to result in levee bank and surface erosion. This is a potentially significant impact.

Construction associated with each phase of the Development Plan, including the specific road and bridge improvement project, could expose bare soil to precipitation and subsequent entrainment in surface runoff. Construction activities involving soil disturbance, excavation, cutting/filling, and grading could result in increased erosion and sedimentation to surface waters. During construction and grading, erosion and sediment control measures will be conducted in accordance with the City of Stockton's stormwater management requirements and BMPs for the reduction of pollutants in runoff (refer to **Section 4.7, Hydrology and Water Quality**). The components of the Development Plan, including the proposed specific project, will be subject to NPDES requirements and would require the acquisition of an NPDES general construction permit. Following construction, the Port would also be required to implement postconstruction BMPs as part of each phase's design, per City of Stockton Code 7-859. Erosion of soil materials is further discussed in **Section 4.7, Hydrology and Water Quality.** ~~Implementation of Mitigation Measures 4.7.1 and 4.7.3b, from the program-level analysis, would reduce the impact of soil erosion and sedimentation of surface waters to a **less-than-significant** level.~~

Mitigation Measure

~~No impact beyond that identified and mitigated in the program-level analysis is anticipated. Therefore, no further mitigation is required.~~

4.7.1 Please refer to Section 4.7 for a discussion of this program-level mitigation measure.

4.7.3b Please refer to Section 4.7 for a discussion of this program-level mitigation measure.

Significance after Mitigation

With implementation of the program-level mitigation measures listed above, this impact would be reduced to a **less-than significant** level.

- On page 6-25, Impact 6.3.7a is revised as follows:

Impact

6.3.7a Water quality — Construction of the project facilities could result in increased erosion and sedimentation, with subsequent impacts on water quality and/or storm drain capacity during construction. Additionally, release of fuels or other hazardous materials associated with construction equipment could impact water quality. This is a ~~less-than-significant~~ potentially significant impact.

During the site grading and construction activities, large areas of bare soil would be exposed to erosive forces for long periods of time. Bare soils are much more likely to erode than vegetated areas; covering vegetation improves the dispersion, infiltration, and retention of water. Construction activities involving soil disturbance, excavation, cutting/filling, stockpiling, and grading activities could result in increased erosion and sedimentation to surface waters. If precautions are not taken to contain contaminants, construction could produce contaminated stormwater runoff (nonpoint source pollution), a major contributor to the degradation of water quality. In addition, hazardous materials associated with construction equipment could adversely affect water quality if spilled or stored improperly.

Temporary BMP's are employed during construction to reduce sediment and pollutes emanating from the project site. These measures included earthen ditches with check dams at regular intervals, straw bales providing containment around storm water outfall points, construction vehicle wash stations and other BMP's required by City and County reviewing agencies regulating grading permits.

For permanent BMP's, sediment from bare slopes will be vegetated, by special hydro-seed mix, to reduce erosion, road deck pollutants will be contained in the vegetative filters strips (the roadway shoulders) that drain into earthen ditches and convey storm waters to the Island's pumping station headwaters. Storm waters emanating from Daggett Road Bridge will be collected and conveyed to earthen ditches on-island, not allowing to drain directly into Burns Cut-off. ~~In addition, hazardous materials associated with construction equipment could adversely affect water quality if spilled or stored improperly. Implementation of Mitigation Measures 4.7.1, and 4.11.3a, and 4.11.3b, identified in **Sections 4.7 and 4.11** of the program-level analysis, would reduce this impact to a **less-than-significant** level.~~

Mitigation Measures

~~No impact beyond that identified and mitigated in the program-level analysis is anticipated. Therefore, no further mitigation is required.~~

4.7.1 Please refer to Section 4.7 for a discussion of this program-level mitigation measure.

4.11.3 Please refer to Section 4.11 for a discussion of this program-level mitigation measure.

Significance after Mitigation

With implementation of the program-level mitigation measures listed above, this impact would be reduced to a **less-than significant** level.

- On page 6-26, Impact 6.3.7b is revised as follows:

Impact

6.3.7b Water quality—The Proposed Project could increase both non-storm and stormwater runoff, transporting contaminants to adjacent receiving waters. This is a ~~less-than-significant~~ potentially significant impact.

Expansion of the amount of impermeable road surfaces due to the Project will increase runoff which can contain pollutants such as oil and grease and metals. ~~Implementation of Mitigation Measures 4.7.3a and 4.7.3b will reduce this impact to a **less-than-significant** level.~~ This is a potentially significant impact.

Mitigation Measure

~~No impact beyond that identified and mitigated in the program-level analysis is anticipated. Therefore, no further mitigation is required.~~

4.7.3a Please refer to Section 4.7 for a discussion of this program-level mitigation measure.

4.7.3b Please refer to Section 4.7 for a discussion of this program-level mitigation measure.

Significance after Mitigation

With implementation of the program-level mitigation measures listed above, this impact would be reduced to a **less-than significant** level.

- On page 6-28, Impact 6.3.9b is revised as follows:

Impact

6.3.9b Implementation of the proposed specific project may affect unknown, potentially significant prehistoric and historic resources. This is a potentially significant impact.

Development that consists of subsurface excavations could result in a significant impact on previously unidentified cultural resources. Cultural resources, whether prehistoric or historic, are physical manifestations of cultural activity. As such, they constitute an important nonrenewable resource that has the potential to increase our understanding of older or extinct cultures. ~~Implementation of Mitigation Measure 4.9.1, identified in **Section 4.9** of the program-level analysis, would reduce this impact to a **less-than-significant** level.~~

Mitigation Measure

~~No impact beyond that identified and mitigated in the program-level analysis is anticipated. Therefore, no further mitigation is required.~~

4.9.1 Please refer to Section 4.9 for a discussion of this program-level mitigation measure.

Significance after Mitigation

With implementation of the program-level mitigation measure listed above, this impact would be reduced to a **less-than significant** level.

- On page 6-29, Impact 6.3.11a is revised as follows:

Impact

6.3.11a Construction and renovation activities would involve the use and storage of hazardous materials, such as gasoline and diesel fuels, oils, and solvents. This is a ~~less-than-significant~~ potentially significant impact.

During grading and construction, it is anticipated that limited quantities of miscellaneous hazardous substances, such as gasoline, diesel fuel, oils, solvents, and hydraulic fluid, would be brought onto the site. Various contractors could use temporary bulk aboveground storage tanks for fueling and maintenance purposes, as well as sheds/trailers. The risk of an accidental release is highest during handling and transfer of materials from one container to another. Depending on the relative hazard of the material, if a spill of significant quantity were to occur, the accidental release could pose a hazard to both construction employees and the environment. Although typical construction management practices limit and often eliminate the impact of such accidental releases, the potential exists that a significant release could occur. ~~Implementation of Mitigation Measures 4.11.3a and 4.11.3b, identified in **Section 4.11** of the program-level analysis, would reduce this impact to a **less-than-significant** level.~~

Mitigation Measure

~~No impact beyond that identified and mitigated in the program-level analysis is anticipated. Therefore, no further mitigation is required.~~

4.11.3 Please refer to Section 4.11 for a discussion of this program-level mitigation measure.

Significance after Mitigation

With implementation of the program-level mitigation measures listed above, this impact would be reduced to a **less-than significant** level.

- On pages 6-29 and 6-30, Impact 6.3.11b is revised as follows:

Impact

6.3.11b Risk of damage to overhead and underground utilities. This is a ~~less-than-significant~~ potentially significant impact.

Overhead or underground utilities may be located in the Project Area. Working in areas with overhead utilities or digging in areas with underground utilities could damage those utilities and may cause an explosion, risks to the health and safety of workers or other people in the area, a release of untreated wastewater, or a disruption of essential public services. ~~Implementation of~~

~~Mitigation Measures 4.11.4a and 4.11.4b, identified in **Section 4.11** of the program-level analysis, would reduce this impact to a **less-than-significant** level.~~

Mitigation Measure

~~No impact beyond that identified and mitigated in the program-level analysis is anticipated. Therefore, no further mitigation is required.~~

4.11.4a Please refer to Section 4.11 for a discussion of this program-level mitigation measure.

4.11.4b Please refer to Section 4.11 for a discussion of this program-level mitigation measure.

Significance after Mitigation

With implementation of the program-level mitigation measures listed above, this impact would be reduced to a **less-than significant** level.

CHAPTER 7.0 ALTERNATIVES TO THE PROPOSED PROJECT

- On page 7-21, the first paragraph is revised as follows:

… berths it is anticipated that there would be a reduction in ship traffic at the Port compared to the Proposed Project.~~.~~ The Proposed Project would be revised to reflect this change in maritime activities. Under this alternative, the adoption of the Rough and Ready Island Redevelopment Plan and the establishment of the Project Area as a Redevelopment Area would still occur. Also, the McCloy Avenue, Daggett Road, and the Daggett Road Bridge would all be improved and or constructed.

- On page 7-24, the third full paragraph is revised as follows:

This alternative would increase planned maritime, commercial and industrial uses at the project site. Therefore, it would increase noise impacts compared to the Proposed Project. This alternative would not be expected to significantly increase construction noise impacts, however, because most of the intensified construction activities would occur in the commercial and industrial area of the project site, which is not near sensitive receptors.

CHAPTER 8.0 ADDITIONAL STATUTORY CONSIDERATIONS

- On page 8-4, the third full paragraph is revised as follows:

The cumulative regional emissions impact for the project was evaluated using SJVAPCD's GAMAQI. According to SJVAPCD, any Proposed Project that would individually have a significant air quality impact would also be considered to have a significant cumulative air quality impact. Impacts of local pollutants (e.g., ROG, NO_X, and TACs) are cumulatively significant when modeling shows that the combined emissions from the project and other existing and planned projects in the area will exceed air quality standards. The air quality analysis contained in **Section 4.4, Air Quality** is also based ~~on a~~ in

large part ~~to~~ on the traffic analysis and therefore inherently cumulative. The analysis concludes that a **significant and unavoidable** impact from on-road motor vehicle, maritime ship activity, and stationary sources associated with industrial activity (operation-related) would result from implementation of the Proposed Project. Therefore, the project's incremental contribution to cumulative air quality impacts is considered **significant and unavoidable**.

- On page 8-7, the first full paragraph is revised as follows:

In December 1996, the SHPO concurred with the Navy that a historic district, referred to as the Navy Supply Annex Stockton Historic District, exists on Rough and Ready Island and that this district appears eligible for listing in the NRHP. However, the Navy, after seeking input from the local historic preservation organizations of the greater Stockton area, agreed in consultation with the SHPO and the ACHP pursuant to the regulations implementing Section 106 of the NHPA, to accept the potential loss of the historic properties and executed a MOA on actions to be taken by the Navy to mitigate this potential loss. The Navy has completed HABS documentation that was accepted by the National Park Service on February 10, 1998. According to the Navy, implementation of the MOA reduced the significant impact of the proposed transfer to a not significant level under NEPA. However, the recordation of historic properties does not adequately mitigation ~~for~~ the impact to significant historic resources under CEQA. Therefore, the project is considered to result in significant and unavoidable impacts to cultural resources.

CHAPTER 6.0

AUTHORS AND CONSULTANTS

CHAPTER 6.0

AUTHORS AND CONSULTANTS

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esa.sac@esassoc.com

In cooperation with:

Jones and Stokes Associates
2600 V Street
Sacramento, CA 95818
(916) 737-3000
(916) 737-3030
www.jonesandstokes.com

Project Director:	Laurie Warner, ESA
Project Manager:	Ray Weiss, ESA
Deputy Project Manager:	Brian Grattidge, ESA
Response Coordinator/CEQA Specialist:	Brian Grattidge, ESA
Air Quality:	Bob Vranka, ESA
Noise:	Dave Buehler, Jones and Stokes
	Paul Miller, ESA
Hydrology & Water Quality:	Michael J. Stevenson, Jones and Stokes
Biological Resources:	Thomas Leeman, ESA
Hazardous Materials/Public Safety:	Crystal Spurr, ESA
Other Environmental Resource Topics:	Sarah K. Yackel, ESA
Dredging Project Analysis:	Tom Trexler, Jones and Stokes
McCloy Road, Daggett Road, and Daggett Road Bridge Project Level Analysis:	Sally Zeff, Jones and Stokes

APPENDIX A

EXTENSION REQUESTS

RECEIVED

JAN 2 0 2004

PORT OF STOCKTON

I would like to request an extension to the comment period to offer Brookside Residents more time to review the impacts on our Neighborhood.

I also at this time reject the Port of Stockton's DEIR because it is not compatible with residential properties because of noise, vibration, light, water and air pollution. We recognize the Port but in turn they cannot deteriorate our quality of living and property values.

Name: Ed Belcher

Address: 6030 Huntingdale Cr

Phone: 946-3034

Signature: [illegible] **Date:** 1-29-04

RECEIVED

JAN 2 0 2004

PORT OF STOCKTON

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Name: Meg Boulw

Address: 5468 St Andrews

Phone: 477 9532

Signature: Margaret A Boulw **Date:** 1/17/04

RECEIVED

JAN 2 0 2004

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Name: MARY A. BROWN

Address: 4996 St. Andrews

Phone: 366-1990 W 478-4447 - W

Signature: [illegible] **Date:** 1/18/04

RECEIVED

JAN 2 0 2004

PORT OF STOCKTON

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Name: CARMELO CAMERO

Address: 5490 St. Andrews Dr.

Phone: 473-3429

Signature: [illegible] **Date:** 1-17-04

RECEIVED

JAN 2 0 2004

PORT OF STOCKTON

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Name: George Chen

Address: 4177 Pebble Beach Dr

Phone: 957-6362

Signature: George Chen **Date:** 1/18/2004

RECEIVED

JAN 2 0 2004

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Name: Helena Chi

Address: 5573 St. Andrews Dr. Stk 95219.

Phone: 956-1840

Signature: [illegible] **Date:** Jan 17/04

RECEIVED

JAN 2 0 2004

PORT OF STOCKTON

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Name: PETER CHZ M.D

Address: 5573 ST ANDREWS DR

Phone: 956-1840

Signature: [illegible] **Date:** 1/16/2004

RECEIVED

JAN 2 0 2004

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Name: Esther Chipley

Address: 4434 Spyglass Dr

Phone: 477·3372

Signature: Esther Chipley **Date:** 1-15-04

RECEIVED
JAN 2 0 2004
PORT OF STOCKTON

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Name: Luzanne Conrad

Address: 4990 Saint Andrews Dr.

Phone: 607-1318

Signature: Luzan Conrad **Date:** 1-17-03

RECEIVED
JAN 2 0 2004
PORT OF STOCKTON

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Name: Mike Conrad

Address: 4990 St. Andrews Dr.

Phone: 957-8271

Signature: **Date:** 1-17-04

RECEIVED

JAN 2 0 2004

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Name: Chris Davis

Address: 4193 Pebble Beach Drive

Phone: 474 9262

Signature: Chris Davis **Date:** 1-16-04

RECEIVED

JAN 2 0 2004

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Name: Robert Davis

Address: 4193 Pebble Beach Dr.

Phone: 474-9262

Signature: [illegible] **Date:** 1/17/04

RECEIVED

JAN 2 0 2004

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Name: Yvonne Dell'Aringa

Address: 3311 Gleneagles Dr.

Phone: 478-3621

Signature: Yvonne Dell'Aringa **Date:** 1-18-04

RECEIVED

JAN 2 0 2004

PORT OF STOCKTON

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Name: Franklin Dela Rosa

Address: 5776 ST. ANDREWS Drive

Phone: 475-9242

Signature: [illegible] **Date:** 1/18/04

RECEIVED

JAN 2 0 2004

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Name: Gail Drzewiecki

Address: 5561 ST Andrews Dr.

Phone: 474-1048

Signature: Gail Drzewiecki **Date:** 1/16/04

RECEIVED

JAN 2 0 2004

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Name: SCOTT DRZEWIECKI

Address: 5561 ST. ANDREWS DR.

Phone: 209-474-0868

Signature: [illegible] **Date:** 1-16-04

RECEIVED
JAN 2 0 2004
PORT OF STOCKTON

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Name: William & CAROL Fagundes

Address: 4169 Pebble Beach DR.

Phone: 477-0934

Signature: Carol Fagundes **Date:** 1-18-04

RECEIVED
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PORT OF STOCKTON

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Name: Peter B Fagundes

Address: 5513 St Andrews Dr.

Phone: 472-1488

Signature: [illegible] **Date:** 1/17/04

RECEIVED

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Name: Dennis Goldstrand

Address: 4162 Pebble Beach Dr.

Phone: 957-0107

Signature: [illegible] **Date:** 1-18-04

RECEIVED

JAN 2 0 2004

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Name: CAROL A GRANT

Address: 5549 ST ANDREWS DR

Phone: 209 957 0895

Signature: Carol A Grant **Date:** 011604

RECEIVED
JAN 2 0 2004
PORT OF STOCKTON

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Name: LAWRENCE R GRANT

Address: 5549 ST. ANDREWS DR.

Phone: (209) 957-0825

Signature: L R Grant **Date:** 01/16/04

RECEIVED
JAN 2 0 2004
PORT OF STOCKTON

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Name: MICHAEL GREGG

Address: 5880 ST ANDREWS DRIVE, STOCKTON, CA 95219

Phone: 609-2150

Signature: [illegible] **Date:** 1-17-04

RECEIVED
JAN 2 0 2004
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Name: Jan Hastings

Address: 5964 St. Andrews Drive

Phone: 957 9740

Signature: Jan Hastings **Date:** 1/17/04

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Name: Louis Hon / Susan Hon

Address: 5477 St. Andrews Dr

Phone: 209-474-0568

Signature: Susan Hon **Date:** 01/18/04

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Name: Hsin-C. Huang

Address: 4249 Pebble Beach

Phone: 9526805

Signature: [illegible] **Date:** 1/18/2004

RECEIVED
JAN 2 0 2004
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Name: Cynthia Hushaw

Address: 5895 Saint Andrews Drive

Phone: 951-4874

Signature: Cynthia Hushaw **Date:** 1/17/04

RECEIVED

JAN 2 0 2004

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Name: Craig Hushaw

Address: 5895 Saint Andrews Drive

Phone: 951-4874

Signature: Craig Hushaw **Date:** 1/17/2004

RECEIVED

JAN 2 0 2004

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Name: Shamiya Hussain

Address: 4150 Pebble Beach Dr.

Phone: 209 483-1240

Signature: Shamiya Hussain **Date:** 1/18/04

RECEIVED

JAN 2 0 2004

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Name: Doug Johnson

Address: 4204 Pebble Beach Dr.

Phone: 952-3384

Signature: [illegible] **Date:** 1/18/04

RECEIVED

JAN 2 0 2004

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Name: George J Johnson

Address: 5526 St. Andrews Drive, Stockton CA 95219

Phone: 209-477-5444

Signature: [illegible] **Date:** 1/17/2004

RECEIVED

JAN 2 0 2004

PORT OF STOCKTON

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Name: Gina Jones

Address: 4649 Pine Valley CR.

Phone: 477-3316

Signature: Gina Jones **Date:** 1-16-04

RECEIVED

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Name: KEVIN KENNEDY

Address: 4190 PEBBLE BEACH DR

Phone: 478-7207

Signature: [illegible] **Date:** 1/18/4

RECEIVED

JAN 2 0 2004

PORT OF STOCKTON

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Name: Jean Kittock

Address: 4634 Pine Valley Circle

Phone: 957-7313

Signature: Jean Kittock **Date:** 1-16-04

RECEIVED

JAN 2 0 2004

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Name: John Kittock JOHN KITTOCK

Address: 4634 PINE VALLEY

Phone: 957-7313

Signature: **Date:** 1/16/04

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Name: Joe Labash

Address: 4107 Spyglass Dr. Stockton

Phone: 209-478-1448

Signature: Joe Labash **Date:** 1-17-05

RECEIVED

JAN 2 0 2004

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Name: ZHONG LING / Meimei HU

Address: 5253, Poppy Hills Circle

Phone: 209-951-6888

Signature: [illegible] **Date:** 1/18/2004

RECEIVED

JAN 2 0 2004

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Name: MARK LUCAS

Address: 4233 PEBBLE BEACH DR.

Phone: 957-2459

Signature: M. Lucas **Date:** 1/17/04

RECEIVED

JAN 2 0 2004

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Name: Nancy Lucas

Address: 4233 Pebble Beach

Phone: 957-2459

Signature: Nancy Lucas **Date:** 1-17-04

RECEIVED

JAN 2 0 2004

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Name: CHARM MATTHIS

Address: 4157 PEBBLE BEACH DR

Phone: 473-2061

Signature: Charm Matthis **Date:** 1/18/04

RECEIVED

JAN 2 0 2004

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Name: Anita McBride

Address: 5509 Vintage Ct.

Phone: 476-8232

Signature: Anita **Date:** 1-16-04

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Name: Mr + Mrs. Michael W Paul

Address: 5934 St. Andrews Dr.

Phone: (209) 952-6472

Signature: Michael Paul **Date:** 1/17/04

RECEIVED
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Name: JOHN J RADEC

Address: 5926 St. Andrews Dr

Phone: 209-956-2624

Signature: [illegible] **Date:** 1/17/04

RECEIVED

JAN 2 0 2004

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Name: SHONI RADEC

Address: 5926 St. Andrews Dr

Phone: 209-956-2624

Signature: Shoni Radec **Date:** 1/17/04

RECEIVED

JAN 2 0 2004

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Name: ALAN RANDLE

Address: 4114 PEBBLE BRACH DR.

Phone: 957-2335

Signature: Alan Randle **Date:** 1/17/03

RECEIVED

JAN 2 0 2004

PORT OF STOCKTON

Please !!

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Name: Clifford H. Russell

Address: 4246 Pebble Beach Dr

Phone: 478-0553

Signature: Clifford H Russell **Date:** 1/18/04

RECEIVED

JAN 2 0 2004

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Name: Robert Schingler

Address: 4996 St. Andrews Dr

Phone: 478-4997

Signature: [illegible] **Date:** 1/18/04

RECEIVED

JAN 2 0 2004

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Name: SANJEEV SHARMA

Address: 4119 Pebble Beach

Phone: 477-5534

Signature: [signature] **Date:** 1/17/04

RECEIVED

JAN 2 0 2004

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Name: Ravy So

Address: 5036 Spanish Bay Cir.

Phone: 474-3882

Signature: Ravy So **Date:** _____

RECEIVED
JAN 2 0 2004
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Name: Helen Spanos

Address: ~~1344 W Robi~~ 5725 St. Andrews

Phone: 473-7657

Signature: Helen Spanos **Date:** 1/18/04

RECEIVED
JAN 2 0 2004
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Name: Diane Staska

Address: 4161 Pebble Beach Drive, Stockton CA

Phone: 209 475 9553

Signature: Diane R Staska **Date:** 1-16-04

RECEIVED
JAN 2 0 2004
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Name: Donald Staska

Address: 4161 Pebble Beach Drive, Stockton CA

Phone: 209 475-9553

Signature: [illegible] **Date:** 1-16-04

RECEIVED
JAN 2 0 2004
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Name: Jonathan Staska

Address: 4161 Pebble Beach Drive, Stockton CA

Phone: 209 475-9553

Signature: [illegible] **Date:** 1-16-04

RECEIVED
JAN 2 0 2004
PORT OF STOCKTON

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I also at this time reject the Port of Stockton's DEIR because it is not compatible with residential properties because of noise, vibration, light, water and air pollution. We recognize the Port but in turn they cannot deteriorate our quality of living and property values.

Name: Serey Tan & STEVEN TAING

Address: 5474 St. Andrew's Dr.

Phone: 951-7818

Signature: Serey Tan **Date:** 1/18/04

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Name: Somaly Tan

Address: 5028 Spanish Bay Cir.

Phone: 956-5573

Signature: Somaly Tan **Date:** 1/17/04

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Name: Patrick Teng (PATRICK TENG)

Address: 5520 ST ANDREWS DR.

Phone: 209-957-7310

Signature: [illegible] **Date:** 1-16-04

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Name: Yvonne Teng

Address: 5520 Saint Andrew Dr

Phone: 209 957 7310

Signature: [illegible] **Date:** 01 16 04

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Name: Chris Wake

Address: 4974 St. Andrews Dr

Phone: 956-5262

Signature: [illegible] **Date:** 1/17/04

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Name: SHERIE & JOHN WONG

Address: 5135 SPANISH BAY CIRCLE

Phone: 209-477-8939

Signature: [illegible] **Date:** Jan. 19, 2004

RECEIVED
JAN 22 2004
ENVIRONMENTAL SCIENCE ASSOCIATES

I would like to request an extension to the comment period to offer Brookside Residents more time to review the impacts on our Neighborhood.

RECEIVED
JAN 2 2 2004
PORT OF STOCKTON

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Name: ZILIN WANG / MIAO ZHAO

Address: 5269 Poppy Hills circle, Stockton, CA 95219

Phone: 952-8458

Signature: [signature] **Date:** 1/19/04

I would like to request an extension to the comment period to offer Brookside Residents more time to review the impacts on our Neighborhood.

RECEIVED
JAN 22 2004
ENVIRONMENTAL SCIENCE ASSOCIATES

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JAN 2 2 2004
PORT OF STOCKTON

Name: MICHAEL G. BORELLI

Address: 5468 St. Andrews Dr.

Phone: 477-9532

Signature: [signature] **Date:** 1/20/04

RECEIVED

JAN 2 2 2004

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Name: VERA PULAS

Address: 5820 ST ANDREWS DRIVE

Phone: 209 4777768

Signature: Vera K. Pulas **Date:** 1-20-04

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JAN 2 2 2004

PORT OF STOCKTON

ATTN: RAY WIESS
PROJECT MANAGER

I would like to request an extension to the comment period to offer Brookside Residents more time to review the impacts on our Neighborhood.

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Name: GREGORY PULAS

Address: 5820 ST ANDREWS DRIVE

Phone: 209 4777768

Signature: [illegible] **Date:** 1-20-04

RECEIVED
JAN 2 0 2004
PORT OF STOCKTON

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Name: Ronald E Wood

Address: 560 C St Andrews

Phone: 951-5258

Signature: Ronald E Wood **Date:** 18 Jan 2004

Sheree Cox

Coldwell Banker Grupe
3428 Brookside Road
Stockton CA 95219
Phone:(209)955-5522
Fax:(209)955-5510

RECEIVED
JAN 2 0 2004
PORT OF STOCKTON

To:	From:	
Gordon Palmer	*Sheree Cox*	Date: Jan 20, 04 Number of Pages: (Including Cover Page) Fax #: (916) 564-4501 + (209) 463-2362

RE: Expansion Project

Thank You,

Sheree Cox

COLDWELL BANKER
GRUPE

3428 BROOKSIDE ROAD
STOCKTON, CA 95219
BUS. (209) 955-5500
FAX (209) 955-5510
cbgrupe.com

RECEIVED

JAN 2 0 2004

PORT OF STOCKTON

We are requesting an extension to the comment deadline of the Draft Environmental Impact Report in order to more thoroughly review it's content on how it impacts all of Brookside.

Sheree Cox
Jerry Abbott
Jeanne Biddle
Beverly Smith
Nadia Orosco
Kerry Vera
Sandy Ball
Vanda Martin
Fred Wu
Peter Phan
Queen Nguyen
Jennifer Mueller
Terrie Green
Bill Schumacher
Billie Kinder
Lucille Olivas

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APPENDIX B

CONSTRUCTION EMISSIONS

APPENDIX B

CONCEPTUAL CONSTRUCTION SCHEDULE FOR THE PORT'S WEST COMPLEX DEVELOPMENT PLAN

This appendix provides an overview of the construction schedule for the West Complex Development Plan. The schedule was derived from discussions with Port of Stockton staff on February 5, 2004. Because implementation of the development plan is market driven and based on existing/future economic conditions, the actual phasing of specific construction projects or activities could differ slightly. However, regardless of which components are constructed at any particular time, construction activities would be phased over time due to practical logistics and funding. Overall, it is unlikely that additional or a greater number of construction activities would occur simultaneously than those described in the schedule.

This conceptual construction schedule is based on current forecasts/information and has been created to form the basis for estimating daily and annual average construction emissions associated with projects proposed under the West Complex Development Plan. The initial projects proposed would likely involve berth dredging, road and bridge construction, and a limited amount of maintenance work on existing facilities and infrastructure. Overtime, later projects would include the construction of additional pavement areas, warehouses, industrial facilities, and utility systems to serve private development on the southerly portion of the West Complex.

ROAD CONSTRUCTION

The following steps would be implemented for a typical roadway construction project: (1) Road construction will proceed incrementally. Construction would occur sequentially for each of the phased projects. Exposed earth would be subject to Caltrans specification practices and Best Management Practices, including various dust suppression and street cleaning measures. Roadway surfaces would be covered by a rock sub-base and then by asphaltic concrete. (2) Limited clearing and grubbing activity would occur. Generally, new roadways will be constructed over or near existing roadways, so extensive clearing and grubbing will not be needed. (3) Moist soil will be imported to the site to create graded, raised roadway beds and earthen embankments. The topography of the West Complex is generally flat and road construction will be above-ground. With the exception of small amounts of trenching for utilities, no significant excavation operations are anticipated. Soil imported to the project sites would be moist, and would be kept moist until it is covered. It is anticipated that six to ten dump trucks and one or two graders or scrapers would be in operation at any one time as work proceeds. A trackhoe and/or bulldozer would be used to create earthen embankments. (4) Soil would be compacted using compaction equipment. (5) A layer of gravel rocks would be placed over the roadway bed. Dump trucks and spreaders would be used for this step. (6) Asphaltic concrete will be laid over the rock layer using paving machines. As previously described, the following construction steps for roadway projects would occur

sequentially. Therefore all of the above equipment would not be used simultaneously except for paving activities, which may occur more continuously.

Several of the initial roadway projects planned for construction are described below.

1. Construction of Daggett Road (on the Island) and the Daggett Road Bridge

This roadway project involves the construction of a paved roadway along Daggett Road from McCloy Avenue south to the Burns Cut-Off. The roadway would be constructed within a 100 foot wide right of way and would be approximately 4,000 feet long. The total land area within the construction zone would be approximately 11 acres and the roadway segment would generally follow the existing roadway alignment, deviating to the west as it approaches Burns Cut-Off. An earthen embankment would be constructed in order to create ramps on either side for the proposed bridge spanning Burns Cut- Off. The earthen embankments would require about 30,000 cubic yards (cy) of fill.

In addition to the construction of a paved roadway, a new bridge is proposed for the Burns Cut-Off. The Daggett Road Bridge would be constructed to clear-span the Burns Cut-Off, with no anticipated construction activity to occur within the waterway. The new bridge would be approximately 320 feet long and 76 feet wide (over Burns Cut-Off). Bridge construction would include drilled large diameter piers, with no pile driving activities. Concrete bridge segments would likely be constructed offsite and delivered ready for assembly. Electricity for construction work would be provided at the site through Port-owned transmission lines or by generators. Two cranes would be employed to erect the mid-span precast concrete elements. This first road and bridge project would take approximately ten months to complete and would occur in 2004 and into 2005.

2. Construction of McCloy Avenue to the west of Daggett Road, improvements to the McCloy Avenue ramp to the Navy Drive Bridge

The project calls for the construction of a new roadway (McCloy Avenue), which would provide a connection to the newly proposed Daggett Road and Bridge. As part of this project, the Port would construct a new roadway from Hooper Drive east to the new Navy Drive Bridge. This roadway would be approximately 1,000 feet in length and construction would occur within a 100-foot right of way.

The Navy Drive Bridge replacement project consists of a 360 foot long precast concrete bridge together with ramp embankments on either side totaling about 800 feet in length. The earthen embankment would require about 40,000 to 50,000 cy of fill based on early concept studies. The embankments would be constructed according to Caltrans specifications and Best Management Practices, including dust suppression and street cleaning. The earth would be covered by a layer of crushed rock and then by asphaltic concrete.

Road construction would occur as described above; however, it is possible that two construction crews would be operating simultaneously—one at the Daggett Road portion on-Island, and one at the portion of McCloy Road nearest the Navy Drive Bridge.

The Navy Drive Bridge project would take approximately ten months to complete and is expected to break ground in mid-2005.

3. Construction of the remainder of McCloy Avenue

Construction of the remainder of McCloy Avenue, between Hooper and Daggett Road and west to Humphries, would be carried out well after the completion of the other two roadway projects. This phase would involve the restoration, realignment, widening and re-paving of McCloy Avenue. The roadway segment would be approximately 5,200 feet long and construction would occur within a 100-foot wide right of way. Construction of the roadway would follow the same construction steps. Construction would occur after completion of the other segments of McCloy Avenue and would last from six to eight months.

4. Off-Island Construction at Daggett Road

This roadway phase would occur during 2004/2005 and involves the rehabilitation of the existing two lane road and ultimately realigning and widening of the off-island portion of Daggett Road to four lanes. Approximately 4,000 feet of the roadway would be widened. The project is expected to be completed in two months, and it is anticipated that the ultimate roadway project would be completed within a year, commencing after 2007. If a grade-separation structure is required for the ultimate roadway over the BNSF tracks, the work would be done during the same timeframe.

5. Miscellaneous Road Improvements

At various times, maintenance and repair work could be undertaken on existing roadways. For purposes of this analysis, it is assumed that this ongoing maintenance work could overlap with construction of the roadway projects described above.

NONROAD CONSTRUCTION

1. Development of an Automobile Import Facility

In the spring or summer of 2004, the Port would rehabilitate an existing 35 acre concrete pad. Construction activities would primarily consist of filling of potholes and striping. Rehabilitation of the 35 acre concrete pad would take approximately one month.

In 2005, over a four month period, the Port would pave an area of approximately 140 acres for use as an Automobile Import Facility. The project site consists of areas that are both currently paved and raw land. For areas currently paved, the project would call for light grading activities, with only a small amount of cutting and filling. The site is fairly level so substantial cut and fill would not be required. One to two graders would likely be operating on the site. Exposed soils would be watered to prevent dust exposure. A rock base would be laid over the graded area using one to two dump trucks and one to two spreaders. Asphalt would be laid over the rock base using one to two asphalt spreaders. As with the road components, work on the site would be limited to one or two acres at any particular time. Furthermore, grading operations, preparation of the rock base, and asphalt work would not be done simultaneously. During that same period, an approximately 100,000 square foot tilt-up style structure would be erected in the auto processing area. Buildings constructed on this site would have off-white or light gray roofs. The structures will come prefabricated and painting would not be required.

Depending on economic conditions and market demand, the Port would pave an additional approximately 75 acre site in the western area of the West Complex during 2006 to 2008. This paved area would also likely be used for automobile processing. This project would take approximately two months and work would occur as outlined above.

Subsequently, the Port would pave additional acreage for Automobile Import Facilities. The Port currently anticipates that pavement components would be limited to approximately 75 to 150 acre increments.

2. Construction of Commercial/Industrial Buildings

Beginning in 2006, construction of pavement and commercial/industrial buildings would occur in the southern portion of the West Complex. Initially, the Port anticipates that an approximately 150 acre area would be developed with landscaping, parking areas, warehouses and light manufacturing facilities. This area would be expanded over time, with expansion areas anticipated to be constructed in 75 to 150-acre increments, eventually totaling approximately 436 acres. The southern portion of the West Complex is currently comprised of active agricultural lands. As each portion of commercial/industrial construction is undertaken, agricultural operations would cease on the corresponding acreage of agricultural lands. Construction activities would include clearing, light grading, paving, and the erection of buildings.

3. Construction of Maritime Port Facilities- (draft EIR Figure 3-4, Areas 2, 9, 8, 6 and 1)

With the exception of the Automobile Import Facility, no significant construction is anticipated in the Berth area over the course of the next five years. There would be no demolition or erection of additional buildings. Only minor repairs would take place at the wharfs. Some pavement sealing may take place, along with rehabilitation of the existing transit sheds and rail facilities.

In the long term, the existing transit sheds may be demolished to make room for processing areas and structures. The maritime facility areas of the Port are paved areas; thus, no grading or soil work is expected in order to construct break-bulk or container facilities. Demolition and construction of new buildings would likely occur after 2005, with construction occurring incrementally over the course of several years.

4. Dredging

Dredging of sediments from Docks 14 through 20 along the waterfront at the West Complex would occur over a 2.5 month period. The total distance of dredging would be 6,230 linear feet. Dredging operations would result in approximately 20 hours per day of actual dredging activity. The dredger does not run constantly due to required start-up procedures, anticipated work stoppages, and shut-down procedures. Dredged material would be pumped from the dredging area via a pipe and would be discharged to land on the Roberts Island No. 1 DPS. It is expected that the dredged slurry would comprise primarily river water with approximately 10–15% solids. See pages 5-22 and 5-23 of the Draft EIR for the steps that would be taken by the Port to minimize wind erosion of dried dredged slurry material. The dredging activity could be concurrent with the rehabilitation of the 35 acre pad described above.

EMISSION ESTIMATES FOR CONSTRUCTION SCENARIOS

Daily emissions of PM10 and other criteria pollutants for road construction were calculated using a spreadsheet model released by Sacramento Metropolitan Air Quality Management District. This model has been used to quantify construction emissions for many projects and it uses emission factors published by U.S. EPA, California ARB, and several air districts in the state. The spreadsheet model calculates maximum daily emissions for construction activities by type of activity at a site and the emission

calculations for various scenarios on this project are given in Attachment A. Emissions for road construction, for site preparation and building erection and for dredging were calculated.

SJVUAPCD does not have emission thresholds for construction activities. However, Sacramento Metro Air Quality Management District (SMAQMD) recommends that lead agencies use criteria of 85 pounds per day of ozone precursors (ROG or NOx, respectively) and 275 pounds per day of PM10 to identify significant increases in emissions.

ROAD CONSTRUCTION

Daggett Road

The construction of Daggett Road represents the scenario with the greatest daily total emissions, mainly because this scenario requires the greatest amount of equipment operation and surface disturbance. The daily emission scenarios assume that up to two acres would be actively disturbed, and, for days in which fill is transported to the site, about 1,200 cubic yards/day would be brought in by 20 cubic yard dump trucks.

Construction of Daggett Road would consist of four main activities: (1) grubbing/land clearing, (2) grading/excavation, (3) drainage/utilities sub grade, and (4) paving. Of these activities, the greatest emissions are from grading/excavation, with daily emissions of criteria pollutants of:

ROG	11 lbs/day
CO	70 lbs/day
NOx	79 lbs/day
PM10	14 lbs/day

These daily emissions are much lower than those reported in the comment, mainly because there would be much less activity on a given day than assumed in the comment. The Daggett Road construction scenario would be below all of these thresholds. The calculations assume worst-case emission factors and do not factor in all of the mitigation measures identified in the DEIR.

Total emissions from this construction scenario are estimated to be:

ROG	1 ton
CO	5 tons
NOx	8 tons
PM10	1 ton

These emissions are less than the significance thresholds for annual emissions, as recommended by other air districts for construction projects.

McCloy Road

Another road construction project that might overlap with the Daggett Road Project is the construction of McCloy Road. This project requires slightly less land disturbance and daily activity than does the

Daggett Road Project. The spreadsheet calculations show that peak daily emissions occur during grading/excavation, which are:

ROG	11 lbs/day
CO	66 lbs/day
NOx	73 lbs/day
PM10	7 lbs/day

Peak daily emissions for this scenario are less than the recommended significance threshold.

If the construction of McCloy Road were to take place at the same time that Daggett Road construction, there is the chance that the combined emissions could exceed the recommended significance thresholds, especially for NOx emissions. This can be mitigated by adopting some of the measures identified in the DEIR, such as reducing the overlap of activities that generate NOx emissions, and/or replacing one or more pieces of construction equipment with newer models that have lower NOx emissions Additional mitigation measures found in the *Guide for Assessing and Mitigating Air Quality Impacts* (SJVAPCD, January 10, 2002) can also be used.

Total emissions to complete the McCloy Road Project, as calculated in the spreadsheet, are:

ROG	1 ton
CO	3 tons
NOx	4 tons
PM10	0.2 ton

These emissions are well below annual significance thresholds recommended by other air districts. Also, the combined annual emissions of the Daggett Road construction project and the McCloy Road Construction Project would not exceed significance thresholds recommended by other air districts. Therefore, the two projects could be carried out in the same year, but the overlap of peak daily activities should be reduced, in order to keep the maximum daily emissions below the recommended significance thresholds.

PARKING LOT AND BUILDING CONSTRUCTION

Development of an Automobile Import Facility in Areas 7, 5, and Part of 10

After road construction is complete, additional parking would be constructed and buildings would be erected. Daily construction activities that would occur for this part of the Project would include clearing and grading of land, the construction of paved areas to be used for parking lots, and the erection of buildings.

For an Automobile Import Facility, 140 acres of open flat land would be cleared, graded and paved. Two graders would be working on the site clearing and grading the land and two dump trucks would bring in crushed rock to form a layer upon which asphalt paving would be applied. On a given day, about two acres would be subject to soil disturbance from clearing and grading operations.

The SMAQMD spreadsheet was used to calculate daily emissions for each scenario, and the scenario with the highest emissions, after implementation of mitigation identified in the DEIR, would be the clearing and grading scenario. These daily mitigated emissions, which are less than the recommended daily significance thresholds, are:

ROG	1 lb/day
NOx	4 lbs/day
PM10	53 lbs/day

After site preparation, paving of the site and erection of buildings would occur. The principal emissions, on days with these activities, would be ROG emissions from the asphalt paving. The spreadsheet model estimates daily ROG emissions to be 35 lbs/day, including 2 lbs/day from vehicle exhaust. For PM10 and NOx, daily emissions are estimated to be 1 and 7 lbs/day, respectively. These emissions are less than the significance thresholds recommended by other air districts.

For annual emissions, the pollutant with the greatest emissions would be PM10 from fugitive dust during various activities, such as clearing and grading operations. Assuming, as a worst case, that activities involving soil disturbance would occur during the first two months of the project, the total annual PM10 emissions would be about 1.1 tons. This amount is well below the significance threshold recommended from construction activities by other air districts.

Construction of Commercial/Industrial Buildings in Area 4

This construction, which would occur later in the Project (around 2006), would not overlap with construction of the Automobile Import Facility. The facilities in Area 4 would require similar construction activities as for the Automobile Import Facility and daily emissions would be about the same. Part of this land presently constitutes active agricultural lands, and agricultural activities would cease as the land is developed for commercial sites.

Agricultural activities generate emissions of criteria pollutants, mainly PM10 emissions. Since these emissions would cease as operations cease, the emission reductions would offset those emissions generated by the Project, both the construction part of the Project and the operation part. A recent study published by California ARB estimates PM10 emissions for various agricultural activities (CARB, 2003). The study reported that agricultural activities can generate PM10 emissions ranging from 1.2 to 12.5 lbs/acre-pass, depending on the activity.

If two acres of agricultural land are disturbed in a day, PM10 emissions could be as high as 25 lbs/day. These emissions, which usually occur each year as the land is being farmed, would cease as the land is used by the Project, and could offset the construction and operations emissions of the project. Thus net construction emissions in the area as a result of the Project would be less than those reported in the EIR.

Dredging

While construction of the Project is occurring, part of the channel will be undergoing dredging activities. CARB has issued a permit for the dredger, allowing it to operate in California Waters. A portion of the

emissions associated with the statewide registered dredge fleet has been allocated to the Air Basin. Since the diesel-powered dredge to be used during the early project phases is a California registered source, any associated air emissions have already been analyzed as part of the environmental clearance for the statewide dredge source registration program. Use of a dredge that has a valid state operating permit will thus not cause "new" emissions in excess of the suggested significance threshold.

Emissions from dredging can only be estimated, because the actual dredger that may be used for the Port project has not been selected yet. A generic diesel dredger was chosen for the calculations. The assumptions in estimating emissions are that the dredger would operate 20 hours per day for about 2.5 months (75 days). A typical engine on a dredger would be rated at about 2,000 HP, and it was assumed that the dredger would operate at an average load factor of 70% over the 20 hour period. Emission factors for the diesel engine were obtained from the EPA Emission factor document AP-42, Section 3.4. These emission factors, along with the operating hours, and average load factor were used to calculate daily and total emissions of each pollutant over the entire 75 days. These estimates are provided in Table 1.

TABLE 1
ESTIMATED DREDGING EMISSIONS

Pollutant	Emission factor* (lb/hp-hr)	Emissions (lbs./day)	Emissions Total (tons)
NOx	0.024	672	25
CO	0.0055	154	5.8
PM-10	0.0007	20	0.75
ROG	0.0006	17	0.63

Source: U.S. EPA, 1996.

CONCLUSIONS

The SJVUAPCD does not identify significance thresholds for construction. SJVAPCD's approach to limiting emissions during construction is to adopt a list of mitigation measures. However, the SMAQMD does recommend significance thresholds for construction activities. Emission calculations for the various construction scenarios within the Project indicate that maximum daily ROG, NOx, and PM10 emissions would not exceed the significance threshold recommended by other air districts in the State (such as SMAQMD).

If several projects are carried out simultaneously, there may be times when the maximum daily emissions would exceed the significance thresholds, especially for NOx emissions. These daily emissions can be reduced by limiting activities involving sources with high NOx emitters, such as heavy duty diesel equipment, or other mitigation measures recommended by the SJVAPCD that are contained in the DEIR.

With regard to annual emissions from construction, calculations show that total emissions from all of the projects are well below annual significance thresholds recommended by other air districts. Therefore, annual construction emissions would not be significant.

REFERENCES

California ARB, Emission Inventory/Farming Operations, January 2003, http://www.arb.ca.gov/emisinv/areasrc/fullpdf/full7-4.pdf

U.S. EPA, Compilation of Air Pollutant Emission Factors AP-42, Section 3.4 Heavy Duty Diesel Engines, October 1996.

Land Clearing - Phase 1 2/26/2004

Table 1. Short-Term Grading Emissions

Source	Pounds per Day ROG	NOx	PM-10
1. Grading Equipment (Table 1a)	0.50	3.20	0.56
2. Dust (PM-10) (Table 1b)			121.40
3. Demolition Emissions (Table 1c)			0.00
5 Transportation of Materials (T 1e)	0.09	1.09	0.03
6. Total Emissions	0.59	4.29	121.99
7. Significance Threshold	85	85	275
8. Significant Emissions	-84.41	-80.71	-153.01
(If less than zero, enter zero)	0		0

Table 1a. Grading Equipment Emissions

Pollutant	Acres*	Emission Factor** (lbs/acre/day)	Total (lbs/day)
ROG	2	0.25	1
NOx	2	1.6	3
PM10	2	0.28	1

Assumptions: 1 Grader, 1 Wheeled and 1 Tracked Loader/Grader per 10 acres. All equipment diesel powered; equipment used 6 hours per day.

* Not to exceed 50 acres (gross)

** EPA AP-42

Table 1b. Grading Dust (PM-10) Emissions

Gross Acres*	Emission Factor (pounds/acre/day)	Total PM-10 (lbs/day)
2	60.7	121

* Not to Exceed 50 acres

Assumptions: 1 storage pile on 1/5 acre/10 acres

3 Heavy equipment used 6 hrs/day/10 acres

Table 1d

Transportation of Imported Material			(cubic yards = cy)			Total Daily Emissions		
Total Imported material	667	cy	Miles/Round Trip	4				
Load Capacity	20	cy	Round Trips/day	11	# of trucks = 2			
Total Import Trips	33.35	cy			*6 trips/day per vehicle			
Trips per day	11.1167		Total Miles	44				
						NOx	1.0876	lbs/day
Emission Rates						PM-10	0.033	lbs/day
(Diesel) ROG emission factor	0.96	grams/mile				ROG	0.0931	lbs/day
(Diesel) NOx emission factor	11.21	grams/mile						
(Diesel) PM-10 emission factor	0.34	grams/mile						

Source: Emfac2002 (Emission factors)

*Notes:

(1) Building pad = 100,000 square feet with 2 inches of coverage = 667 cy

(2) Under a worst-case assumption, it will take approximately three days for two trucks to transport 667 cubic yards of imported materials.

Land Clearing Phase 1 - Mitigated Case 2/26/2004

Table 2. Phase I Construction Mitigation Summary

Source	Pounds per Day ROG	NOx	PM-10
1. Total Emission (line 3, Table 1)	1	4	122
2. Grading Equipment (Table 2a)	0	0	0
3. Dust (PM-10) (Table 2b)			69
4. Total Mitigation	0	0	69
5. Emissions After Mitigation	**1**	**4**	**53**
6. Significance Threshold	85	85	275
7. Significant Emissions	0	0	-222
(If less than zero, enter zero)			

Table 2a. Construction Equipment Emissions Mitigation

	ROG	NOx	PM-10
Grading Equipment	1	3	1
Reduction Factor	0.05	0.05	0.05
Mitigated Emissions	0	0	0

Table 2b. Dust Emissions Reduction

Source	Mitigation Measure	Factor*	
	1. Total Estimate Dust Emissions		121
Soil Piles	2. Enclose, cover or water twice daily all soil piles	0.016	2
	3. Automatic sprinkler system installed on all soil piles	0.039	
Exposed Surface/ Grading	4. Water all exposed soil twice daily	0.37	
	5. Water exposed soil with adequate frequency to keep moist at all times	0.5	61
Truck Hauling Road	6. Water all haul roads twice daily	0.03	4
	7. Pave all haul roads	0.07	
Truck Hauling Load	8. Maintain at least two feet of freeboard	0.01	
	9. Cover load of all haul/dump trucks securely	0.02	2
	10. Total PM-10 Reduction		69
	Percent Reduction		56.60%

* SMAQMD, Weighted for percentage contribution of PM-10 emissions

Building Construction - Phase 2 2/26/2004

Table 3. Short-Term Phase II Emissions

Source	Pounds Per Day ROG	NOx	PM-10
1. Employee Trips (Table 3a)	1	0	0
2. Asphalt Paving (Table 3b)	33		
3. Stationary Equipment (Table 3c)	1	1	0
4. Mobile Equipment (Table 3d)	1	6	0
5. Architectural Coatings (Table 3e)	0		
6. Total Emissions	35	7	1
7. Significance Threshold	85	85	275
8. Significant Emissions	0	-78	0
(If less than zero, enter zero)		0	

Table 3a. Construction Employee Trip Generation

Land Use	Units/ 1,000 sf*	Trip Factor** trips/unit/day		Trips
Multi-Family	0	0.36	/unit	0
Single-Family	0	0.72	/unit	0
Commercial/Retail	0	0.32	/1,000 sf	0
Office/Employment	100	0.42	/1,000 sf	42
Total Daily Trips				42

* Units for Residential Land Uses, Square Feet for Non-Residential

** SCAQMD, CEQA Planners Handbook, 1993

Table 3b. Asphalt Paving Emissions

1. Gross Acres	140
2. Net Acres	126
3. Acres Paved	126
4. Emissions Factor* (lbs/acre)	2.62
5. Total ROG (lbs)	330
6. Paving Days**	10
7. Daily ROG (lbs/day)	33

* SCAQMD, CEQA Planners handbook, 1993

** If known, use known number, otherwise use 10.
Assume net acres are 10% less than gross.

Table D-3. Vehicle Emissions Calculation

Year of Analysis	2004	Emissions Rates/Vehicle ROG	NOx	PM-10
Total Daily Vehicle Trips (Table 3a)	26	0.0249	0.0188	0.0023
		Emissions (Pounds/day)		
		1	0	0

Initial project construction (by 2006) would include 100,000 square feet for the Proposed Porject.

Table 3c. Stationary Equipment Emissions

Pollutant	Units/Ksf*	Emission Factor**	Total (lbs/day)
ROG	4	0.168	1
NOx	4	0.137	1
PM-10	4	0.008	0

* Not to exceed 50 units or 50,000 Square Feet
** SCAQMD, CEQA Planners Handbook
Gasoline powered equipment; 2 pieces equipmen
per 10 units or 10,000 sf. Equipment used 6 hours
per day; Equipment average-10 horsepower.

Table 3d. Mobile Equipment Emissions

Pollutant	Units/Ksf*	Emission Factor**	Total (lbs/day)
ROG	4	0.16	1
NOx	4	1.61	6
PM-10	4	0.12	0

* Not to exceed 50 units or 50,000 Square Feet
** SCAQMD, CEQA Planners Handbook
Gasoline powered equipment; 2 pieces equipmen
per 10 units or 10,000 sf. Equipment used 6 hours
per day; Equipment average-10 horsepower.

Table 3e. Non-Residential Architectural Coating Emissions

1. Gross SF	0
2. Square Root of GSF	0
3. Emissions Factor*	1.63
4. Total ROG (lbs)	0
5. Number of Painting Days**	0
6. Daily ROG (lbs/day)	#DIV/0!

* Factor based upon coating compliant to SMAQMD Rule 442
** If known, use number +3, otherwise, use 20

Table 3c. Stationary Equipment Emissions

Pollutant	Units/Ksf*	Emission Factor**	Total (lbs/day)
ROG	4	0.168	1
NOx	4	0.137	1
PM-10	4	0.008	0

* Not to exceed 50 units or 50,000 Square Feet
** SCAQMD, CEQA Planners Handbook
Gasoline powered equipment; 2 pieces equipment per 10 units or 10,000 sf. Equipment used 6 hours per day; Equipment average-10 horsepower.

Table 3d. Mobile Equipment Emissions

Pollutant	Units/Ksf*	Emission Factor**	Total (lbs/day)
ROG	4	0.16	1
NOx	4	1.61	6
PM-10	4	0.12	0

* Not to exceed 50 units or 50,000 Square Feet
** SCAQMD, CEQA Planners Handbook
Gasoline powered equipment; 2 pieces equipment per 10 units or 10,000 sf. Equipment used 6 hours per day; Equipment average-10 horsepower.

Table 3e. Non-Residential Architectural Coating Emissions	
1. Gross SF	0
2. Square Root of GSF	0
3. Emissions Factor*	1.63
4. Total ROG (lbs)	0
5. Number of Painting Days**	0
6. Daily ROG (lbs/day)	#DIV/0!

* Factor based upon coating compliant to SMAQMD Rule 442

** If known, use number +3, otherwise, use 20.

Building Construction - Phase 2 / Mitigated Case

2/26/2004

Table 4. Phase II Construction Mitigation Summary

Source	Pounds Per Day ROG	NOx	PM-10
1. Total Emissions (line 6, Table 3)	35	7	1
2. Employee Trips	0	0	0
3. Asphalt Paving	0		
4. Stationary Equipment	0	0	0
5. Mobile Equipment (Table 4b)	0	0	0
6. Architectural Coatings	0		
7. Total Mitigation	0	0	0
8. Emissions After Mitigation	**35**	**7**	**1**
9. Significance Threshold	85	85	275
10. Significant Emissions	-50	-78	-274

Table 4a. Stationary Equipment Mitigation

	ROG	NOx	PM-10
Stationary Equipment Emissions	1	1	0
Multiply By	0.05	0.05	0.05
Emissions Reduction	0	0	0

Table 4b. Mobile Equipment Mitigation

	ROG	NOx	PM-10
Mobile Equipment Emissions	1	6	0
Multiply By	0.05	0.05	0.05
Emissions Reduction	0	0	0.024

Welcome to the Road Construction Emissions Model, Version 5.1

User Instructions

This spreadsheet system contains the following individual worksheets:

1. This worksheet of User Instructions
2. Emission estimates
3. Data Entry
4. Emfac7f worksheet
5. Emfac7g worksheet
6. Emfac2001 worksheet
7. Emfac2002 worksheet
8. Appendix D worksheet
9. Appendix B worksheet

Changes from previous version of Road Construction Emissions Model (Version 4.1)

1) EMFAC2002 emission rates included.

2) Off-Road equipment emission estimates stratified by horsepower.

3) Water trucks reclassified as on-road emissions.

4) PM10 dust assumed reduced by 50% if water trucks are specified as part of project.

The Emission Estimates worksheet summarizes a project's emissions in pounds per day (and kilograms per day) by project phase.
The Emission Estimates worksheet also shows total emissions in tons (and megagrams) over the construction period.
The worksheet can be used to estimate emissions for both vehicle exhaust and fugitive dust. The methodology used to estimate fugitive dust emissions is a simplified methodology involving estimates of the maximum area (acreage) of land disturbed daily. Detailed fugitive dust emission estimates associated with individual materials handling operations and/or activity/vehicle types cannot be conducted with this version of the model.
The Emission Estimates worksheet cannot be modified directly, it is a protected worksheet. It can only be modified indirectly by entering information for the project in selected areas of the Data Entry worksheet.
The last six of these worksheets - Emfac7f, Emfac7g, Emfac2001, Emfac2002, Appendix D, and Appendix B - cannot be modified by the user. They are protected worksheets. Even though all or portions of several worksheets are protected, the individual formulas used in the calculations can be seen by the user.
The Data Entry worksheet includes several areas that can be modified by the user.
User instructions in the Data Entry worksheet are highlighted in red.
On the Data Entry worksheet, the user has two options for entering project data: required data and optional data. Required data is entered in the data input section (yellow cells). That required data is then used by the worksheet to calculate default values for the project.
The user can override the default values (blue cells) calculated for a project and is encouraged to do so if project specific information is available. Due to the difficulty in developing reliable default values for road construction projects, the user is encouraged to enter as much site specific information as is available for the project being analyzed.
The Data Entry Worksheet also includes a button that allows the user to clear previously entered data. This button is found just at the top of and to the right of the data entry portion of the worksheet.
When projects are discontinuous, the user must make adjustments to the spreadsheet manually, since the program cannot be setup to anticpate unexpected project delays.

#VALUE! <- This error message may occur during use of the spreadsheets. This occurs whenever the user enters a non numeric value, including a space character, into a cell that is used to calculate a numeric value. Consequently, to erase values entered into the spreadsheets, use the delete key instead of the space bar!

Note: Information in this worksheet is based on conversations with knowledgeable individuals at the Sacramento Metropolitan Air Quality Management District, the California Department of Transportation, the California Air Resources Board, the U.S. EPA, and private industry involved in road construction.
Also, the 26th edition of Walker's Building Estimator's Reference Book (1999) was used in the development of this spreadsheet.
This spreadsheet was prepared by CCS Planning & Engineering under the financial support and direction of the Sacramento Metropolitan Air Quality Management District.

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916/646-5650

Road Construction Emissions Model, Version 5.1

Emission Estimates for -> Daggett Road					Exhaust	Fugitive Dust	
Project Phases (English Units)	**ROG (lbs/day)**	**CO (lbs/day)**	**NOx (lbs/day)**	**PM10 (lbs/day)**	**PM10 (lbs/day)**	**PM10 (lbs/day)**	
Grubbing/Land Clearing	7	42	57	13	3	10	
Grading/Excavation	9	55	70	13	3	10	
Drainage/Utilities/Sub-Grade	11	70	79	14	4	10	
Paving	4	17	28	2	2	0	
Maximum (pounds/day)	11	70	79	14	4	10	
Total (tons/construction project)	1	5	8	1	0	1	<-tons

Notes:		
	Project Start Year ->	2004
	Project Length (months) ->	10
	Total Project Area (acres) ->	11
	Maximum Area Disturbed/Day (acres) ->	2
	Total Soil Imported/Exported (yd^3/day)->	1200

PM10 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I.

Emission Estimates for -> Daggett Road					Exhaust	Fugitive Dust	
Project Phases (Metric Units)	**ROG (kgs/day)**	**CO (kgs/day)**	**NOx (kgs/day)**	**PM10 (kgs/day)**	**PM10 (kgs/day)**	**PM10 (kgs/day)**	
Grubbing/Land Clearing	3	19	26	6	1	5	
Grading/Excavation	4	25	32	6	2	5	
Drainage/Utilities/Sub-Grade	5	32	36	7	2	5	
Paving	2	8	13	1	1	0	
Maximum (kilograms/day)	5	32	36	7	2	5	
Total (megagrams/construction project)	1	5	7	1	0	1	<-megagrams

Notes:		
	Project Start Year ->	2004
	Project Length (months) ->	10
	Total Project Area (hectares) ->	4
	Maximum Area Disturbed/Day (hectares) ->	1
	Total Soil Imported/Exported ($meters^3$/day)->	917

PM10 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I.

Grubbing/Land Clearing	Number of Vehicles		ROG	CO	NOx	PM10
Override of Default Number of Vehicles	*Program-estimate*	Type	pounds/day	pounds/day	pounds/day	pounds/day
		Backhoes	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00
		Compactor	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00
	1	Dozer	3.58	18.42	29.87	1.49
		Excavator	0.00	0.00	0.00	0.00
		Forklifts, Rough Terrain	0.00	0.00	0.00	0.00
		Grader	0.00	0.00	0.00	0.00
		Loaders, Rubber Tired	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00
		Other Construction Equip.	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00
1	1	Scrapper	3.59	19.64	25.58	1.30
0	2	Signal Boards	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00
		Tractors	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00

Light Duty Truck @ 30 mph

	Running Exhaust (g/mi)							
Model Year	ROG	Weighted	NOx	Weighted	CO	Weighted	PM10	
2000	0.58	0.00	0.82	0.00	6.83	0.00	0.01	
2001	0.54	0.00	0.78	0.00	6.33	0.00	0.01	
2002	0.49	0.00	0.75	0.00	5.83	0.00	0.01	
2003	0.45	0.00	0.71	0.00	5.33	0.00	0.01	
2004	0.40	0.40	0.68	0.68	4.83	4.83	0.01	
2005	0.36	0.00	0.64	0.00	4.33	0.00	0.01	
2006	0.33	0.00	0.61	0.00	4.20	0.00	0.01	
2007	0.30	0.00	0.58	0.00	4.06	0.00	0.01	
2008	0.27	0.00	0.56	0.00	3.93	0.00	0.01	
2009	0.24	0.00	0.53	0.00	3.79	0.00	0.01	
2010	0.21	0.00	0.50	0.00	3.66	0.00	0.01	
		0.40		0.68		4.83		0.01

ROG emissions include exhaust plus running loss evaporatives.
ROG emissions do not include single or multiday diurnal evaporative emissions nor single or multiday resting loss evaporatives emissions.

Heavy Duty Truck @ 30 mph

	Running Exhaust (g/mi)							
Model Year	ROG	Weighted	NOx	Weighted	CO	Weighted	PM10	Weighted
2000	1.96	0.00	10.32	0.00	7.67	0.00	1.45	0.00
2001	1.94	0.00	10.22	0.00	7.64	0.00	1.39	0.00
2002	1.93	0.00	10.13	0.00	7.60	0.00	1.33	0.00
2003	1.91	0.00	10.03	0.00	7.57	0.00	1.27	0.00
2004	1.90	1.90	9.94	9.94	7.53	7.53	1.21	1.21
2005	1.88	0.00	9.84	0.00	7.50	0.00	1.15	0.00
2006	1.87	0.00	9.81	0.00	7.48	0.00	1.13	0.00
2007	1.86	0.00	9.78	0.00	7.47	0.00	1.10	0.00
2008	1.86	0.00	9.76	0.00	7.45	0.00	1.08	0.00
2009	1.85	0.00	9.73	0.00	7.44	0.00	1.05	0.00
2010	1.84	0.00	9.70	0.00	7.42	0.00	1.03	0.00
		1.90		9.94		7.53		1.21

Light Duty Truck @ 30 mph

	Running Exhaust (g/mi)						Tire Wear (g/mi)	Break Wear (g/mi)	Start Emission Rate @ 480 min (g/trip)						Hot Soak (g/trip)		Evaporative Running Loss (g/mi)	
Model Year	ROG	Weighted	NOx	Weighted	CO	Weighted	PM10	PM10	ROG	Weighted	NOx	Weighted	CO	Weighted	ROG	Weighted	ROG	Weighted
2000	0.32	0.00	0.72	0.00	4.26	0.00	0.01	0.01	3.74	0.00	2.67	0.00	39.71	0.00	0.62	0.00	0.06	0.00
2001	0.27	0.00	0.66	0.00	3.92	0.00	0.01	0.01	3.37	0.00	2.50	0.00	36.27	0.00	0.56	0.00	0.05	0.00
2002	0.24	0.00	0.60	0.00	3.61	0.00	0.01	0.01	3.03	0.00	2.33	0.00	32.94	0.00	0.51	0.00	0.05	0.00
2003	0.20	0.00	0.55	0.00	3.32	0.00	0.01	0.01	2.71	0.00	2.18	0.00	29.62	0.00	0.45	0.00	0.05	0.00
2004	0.17	0.17	0.51	0.51	3.05	3.05	0.01	0.01	2.42	2.42	2.04	2.04	26.47	26.47	0.39	0.39	0.04	0.04
2005	0.15	0.00	0.47	0.00	2.73	0.00	0.01	0.01	2.16	0.00	1.92	0.00	22.86	0.00	0.36	0.00	0.04	0.00
2006	0.12	0.00	0.43	0.00	2.57	0.00	0.01	0.01	1.90	0.00	1.79	0.00	20.69	0.00	0.34	0.00	0.04	0.00
2007	0.10	0.00	0.39	0.00	2.44	0.00	0.01	0.01	1.66	0.00	1.67	0.00	18.77	0.00	0.31	0.00	0.03	0.00
2008	0.09	0.00	0.36	0.00	2.38	0.00	0.01	0.01	1.47	0.00	1.57	0.00	17.45	0.00	0.29	0.00	0.03	0.00
2009	0.07	0.00	0.34	0.00	2.32	0.00	0.01	0.01	1.30	0.00	1.48	0.00	16.29	0.00	0.26	0.00	0.03	0.00
2010	0.06	0.00	0.32	0.00	2.27	0.00	0.01	0.01	1.15	0.00	1.40	0.00	15.31	0.00	0.24	0.00	0.03	0.00
		0.17		0.51		3.05				2.42		2.04		26.47		0.39		0.04

Heavy Duty Truck @ 30 mph

	Running Exhaust (g/mi)						Tire Wear (g/mi)		Break Wear (g/mi)	
Model Year	ROG	Weighted	NOx	Weighted	CO	Weighted	PM10	Weighted	PM10	Weighted
2000	1.39	0.00	9.28	0.00	8.32	0.00	0.67	0.00	0.04	0.00	0.01	0.00
2001	1.30	0.00	8.85	0.00	8.26	0.00	0.59	0.00	0.04	0.00	0.01	0.00
2002	1.22	0.00	8.45	0.00	8.20	0.00	0.53	0.00	0.04	0.00	0.01	0.00
2003	1.15	0.00	8.11	0.00	8.16	0.00	0.48	0.00	0.04	0.00	0.01	0.00
2004	1.09	1.09	7.80	7.80	8.12	8.12	0.43	0.43	0.04	0.04	0.01	0.01
2005	1.05	0.00	7.55	0.00	8.09	0.00	0.40	0.00	0.04	0.00	0.01	0.00
2006	1.01	0.00	7.33	0.00	8.06	0.00	0.37	0.00	0.04	0.00	0.01	0.00
2007	0.98	0.00	7.16	0.00	8.04	0.00	0.35	0.00	0.04	0.00	0.01	0.00
2008	0.95	0.00	7.03	0.00	8.02	0.00	0.33	0.00	0.04	0.00	0.01	0.00
2009	0.94	0.00	6.94	0.00	8.01	0.00	0.31	0.00	0.04	0.00	0.01	0.00
2010	0.92	0.00	6.88	0.00	8.00	0.00	0.30	0.00	0.04	0.00	0.01	0.00
		1.09		7.80		8.12		0.43		0.04		0.01

Light Duty Truck @ 30 mph

	Running Exhaust (g/mi)								Tire Wear (g/mi)		Break Wear (g/mi)		Start Emission Rate @ 480 min (g/trip)								Hot Soak (g/trip)		Evaporative Running Loss (g/mi)	
Model Year	ROG	Weighted	NOx	Weighted	CO	Weighted	PM10	Weighted	PM10	Weighted	PM10	Weighted	ROG	Weighted	NOx	Weighted	CO	Weighted	PM10	Weighted	ROG	Weighted	ROG	Weighted
2000	0.47	0.00	1.31	0.00	14.46	0.00	0.01	0.00	0.01	0.01	2.59	0.00	1.18	0.00	32.94	0.00	0.02	0.00	0.32	0.00	0.12	0.00
2001	0.41	0.00	1.16	0.00	12.95	0.00	0.01	0.00	0.01	0.01	2.37	0.00	1.10	0.00	30.14	0.00	0.02	0.00	0.29	0.00	0.11	0.00
2002	0.34	0.00	0.97	0.00	11.25	0.00	0.01	0.00	0.01	0.01	2.11	0.00	0.97	0.00	26.88	0.00	0.02	0.00	0.26	0.00	0.10	0.00
2003	0.29	0.00	0.85	0.00	10.13	0.00	0.01	0.00	0.01	0.01	1.94	0.00	0.90	0.00	24.67	0.00	0.02	0.00	0.24	0.00	0.10	0.00
2004	0.26	0.26	0.76	0.76	9.23	9.23	0.01	0.01	0.01	0.01	1.80	1.80	0.84	0.84	22.88	22.88	0.02	0.02	0.22	0.22	0.09	0.09
2005	0.23	0.00	0.67	0.00	8.27	0.00	0.01	0.00	0.01	0.01	1.64	0.00	0.78	0.00	20.95	0.00	0.02	0.00	0.21	0.00	0.08	0.00
2006	0.21	0.00	0.62	0.00	7.77	0.00	0.01	0.00	0.01	0.01	1.55	0.00	0.74	0.00	19.80	0.00	0.02	0.00	0.20	0.00	0.08	0.00
2007	0.19	0.00	0.56	0.00	7.20	0.00	0.01	0.00	0.01	0.01	1.44	0.00	0.69	0.00	18.55	0.00	0.02	0.00	0.19	0.00	0.08	0.00
2008	0.17	0.00	0.51	0.00	6.62	0.00	0.01	0.00	0.01	0.01	1.33	0.00	0.64	0.00	17.27	0.00	0.02	0.00	0.18	0.00	0.07	0.00
2009	0.16	0.00	0.46	0.00	6.02	0.00	0.01	0.00	0.01	0.01	1.22	0.00	0.59	0.00	15.91	0.00	0.02	0.00	0.17	0.00	0.07	0.00
2010	0.14	0.00	0.41	0.00	5.45	0.00	0.01	0.00	0.01	0.01	1.11	0.00	0.54	0.00	14.56	0.00	0.02	0.00	0.16	0.00	0.06	0.00
		0.26		0.76		9.23		0.01				1.80		0.84		22.88		0.02		0.22		0.09

Heavy Duty Truck @ 30 mph

	Running Exhaust (g/mi)								Tire Wear (g/mi)		Break Wear (g/mi)	
Model Year	ROG	Weighted	NOx	Weighted	CO	Weighted	PM10	Weighted	PM10	Weighted	PM10	Weighted
2000	1.01	0.00	15.96	0.00	4.12	0.00	0.54	0.00	0.04	0.00	0.01	0.00
2001	0.98	0.00	15.55	0.00	3.92	0.00	0.50	0.00	0.04	0.00	0.01	0.00
2002	0.95	0.00	15.15	0.00	3.70	0.00	0.46	0.00	0.04	0.00	0.01	0.00
2003	0.90	0.00	14.33	0.00	3.50	0.00	0.43	0.00	0.04	0.00	0.01	0.00
2004	0.86	0.86	13.49	13.49	3.29	3.29	0.40	0.40	0.04	0.04	0.01	0.01
2005	0.81	0.00	12.68	0.00	3.09	0.00	0.37	0.00	0.04	0.00	0.01	0.00
2006	0.76	0.00	11.91	0.00	2.89	0.00	0.33	0.00	0.04	0.00	0.01	0.00
2007	0.71	0.00	10.93	0.00	2.68	0.00	0.31	0.00	0.04	0.00	0.01	0.00
2008	0.66	0.00	10.00	0.00	2.47	0.00	0.30	0.00	0.04	0.00	0.01	0.00
2009	0.61	0.00	9.11	0.00	2.28	0.00	0.28	0.00	0.04	0.00	0.01	0.00
2010	0.55	0.00	8.05	0.00	2.08	0.00	0.27	0.00	0.04	0.00	0.01	0.00
		0.86		13.49		3.29		0.40		0.04		0.01

Light Duty Truck @ 30 mph

	Running Exhaust (g/mi)								Tire Wear (g/mi)		Break Wear (g/mi)		Start Emission Rate @ 480 min (g/trip)								20 minutes Hot Soak (g/trip)		20 minutes Evaporative Running Loss (g/mi)	
Model Year	ROG	Weighted	NOx	Weighted	CO	Weighted	PM10	Weighted	PM10	Weighted	PM10	Weighted	ROG	Weighted	NOx	Weighted	CO	Weighted	PM10	Weighted	ROG	Weighted	ROG	Weighted
2000	0.52	0.00	1.27	0.00	13.10	0.00	0.02	0.00	0.01	0.01	2.37	0.00	1.18	0.00	29.73	0.00	0.02	0.00	0.57	0.00	0.13	0.00
2001	0.47	0.00	1.16	0.00	11.89	0.00	0.02	0.00	0.01	0.01	2.20	0.00	1.12	0.00	27.37	0.00	0.02	0.00	0.53	0.00	0.12	0.00
2002	0.40	0.00	1.01	0.00	10.58	0.00	0.02	0.00	0.01	0.01	1.99	0.00	1.03	0.00	24.78	0.00	0.02	0.00	0.49	0.00	0.12	0.00
2003	0.36	0.00	0.90	0.00	9.67	0.00	0.02	0.00	0.01	0.01	1.84	0.00	0.97	0.00	22.95	0.00	0.02	0.00	0.46	0.00	0.11	0.00
2004	0.32	0.32	0.81	0.81	8.77	8.77	0.02	0.02	0.01	0.01	1.69	1.69	0.91	0.91	21.20	21.20	0.02	0.02	0.44	0.44	0.11	0.11
2005	0.28	0.00	0.72	0.00	7.94	0.00	0.02	0.00	0.01	0.01	1.56	0.00	0.86	0.00	19.60	0.00	0.02	0.00	0.41	0.00	0.10	0.00
2006	0.26	0.00	0.67	0.00	7.41	0.00	0.02	0.00	0.01	0.01	1.46	0.00	0.82	0.00	18.48	0.00	0.02	0.00	0.40	0.00	0.10	0.00
2007	0.29	0.00	0.61	0.00	6.83	0.00	0.02	0.00	0.01	0.01	1.45	0.00	0.77	0.00	17.32	0.00	0.02	0.00	0.38	0.00	0.09	0.00
2008	0.21	0.00	0.55	0.00	6.25	0.00	0.02	0.00	0.01	0.01	1.25	0.00	0.72	0.00	16.13	0.00	0.02	0.00	0.37	0.00	0.09	0.00
2009	0.18	0.00	0.49	0.00	5.66	0.00	0.02	0.00	0.01	0.01	1.14	0.00	0.67	0.00	14.88	0.00	0.02	0.00	0.35	0.00	0.09	0.00
2010	0.16	0.00	0.44	0.00	5.10	0.00	0.02	0.00	0.01	0.01	1.04	0.00	0.62	0.00	13.67	0.00	0.02	0.00	0.33	0.00	0.08	0.00
		0.32		0.81		8.77		0.02				1.69		0.91		21.20		0.02		0.44		0.11

Heavy Duty Truck @ 30 mph

	Running Exhaust (g/mi)								Tire Wear (g/mi)		Break Wear (g/mi)		Start Emission Rate @ 480 min (g/trip)								20 minutes Hot Soak (g/trip)		20 minutes Evaporative Running Loss (g/mi)	
Model Year	ROG	Weighted	NOx	Weighted	CO	Weighted	PM10	Weighted	PM10	Weighted	PM10	Weighted	ROG	Weighted	NOx	Weighted	CO	Weighted	PM10	Weighted	ROG	Weighted	ROG	Weighted
2000	1.12	0.00	13.23	0.00	14.06	0.00	0.38	0.00	0.03	0.00	0.01	0.00	7.72	0.00	4.32	0.00	124.87	0.00	0.01	0.00	0.25	0.00	0.06	0.00
2001	1.07	0.00	12.88	0.00	12.94	0.00	0.36	0.00	0.03	0.00	0.01	0.00	7.36	0.00	4.27	0.00	118.03	0.00	0.01	0.00	0.23	0.00	0.06	0.00
2002	1.01	0.00	12.53	0.00	11.90	0.00	0.33	0.00	0.03	0.00	0.01	0.00	7.00	0.00	4.15	0.00	111.63	0.00	0.01	0.00	0.22	0.00	0.05	0.00
2003	0.96	0.00	11.86	0.00	11.00	0.00	0.32	0.00	0.03	0.00	0.01	0.00	6.67	0.00	4.03	0.00	105.71	0.00	0.01	0.00	0.21	0.00	0.05	0.00
2004	0.91	0.91	11.21	11.21	10.15	10.15	0.30	0.30	0.03	0.03	0.01	0.01	6.32	6.32	3.93	3.93	99.68	99.68	0.01	0.01	0.19	0.19	0.05	0.05
2005	0.85	0.00	10.58	0.00	9.30	0.00	0.29	0.00	0.03	0.00	0.01	0.00	5.93	0.00	3.82	0.00	93.40	0.00	0.01	0.00	0.18	0.00	0.05	0.00
2006	0.80	0.00	10.00	0.00	8.59	0.00	0.26	0.00	0.03	0.00	0.01	0.00	5.58	0.00	3.70	0.00	87.83	0.00	0.01	0.00	0.17	0.00	0.05	0.00
2007	0.84	0.00	9.30	0.00	7.90	0.00	0.25	0.00	0.03	0.00	0.01	0.00	5.60	0.00	3.58	0.00	82.12	0.00	0.01	0.00	0.16	0.00	0.05	0.00
2008	0.70	0.00	8.63	0.00	7.25	0.00	0.23	0.00	0.03	0.00	0.01	0.00	4.90	0.00	3.44	0.00	77.18	0.00	0.01	0.00	0.14	0.00	0.05	0.00
2009	0.65	0.00	7.99	0.00	6.67	0.00	0.22	0.00	0.03	0.00	0.01	0.00	4.57	0.00	3.31	0.00	72.34	0.00	0.01	0.00	0.13	0.00	0.05	0.00
2010	0.60	0.00	7.23	0.00	6.11	0.00	0.20	0.00	0.03	0.00	0.01	0.00	4.27	0.00	3.16	0.00	67.83	0.00	0.01	0.00	0.12	0.00	0.05	0.00
		0.91		11.21		10.15		0.30		0.03		0.01		6.32		3.93		99.68		0.01		0.19		0.05

Offroad Appendix B

				Data		(yr)		(lb/hp-hr)	(hr/yr)		Total	Average
category	equipment	hp	P/N	1990 pop	2010 pop	Use Life	Avg Hp	BSFC	Activity	Load	Horsepower	Horsepowe
Construction	Bore/Drill Rigs	120	P	371	433	3	82	0.49	726	0.75	35,506	
		175	P	86	100	3	150	0.47	726	0.75	15,000	
		250	N	74	86	3	200	0.47	726	0.75	17,200	
		500	N	164	191	3	331	0.41	726	0.75	63,221	
		750	N	79	104	3	654	0.42	726	0.75	68,016	
	Bore/Drill Rigs Sum			774	914	15	1417	2.26	3630	3.75	198,943	217.7
	Concrete/Industrial Saws	120	P	58	67	16	81	0.49	580	0.73	5,427	
		175	P	2	2	16	175	0.47	580	0.73	350	
	Concrete/Industrial Saws Sum			60	69	32	256	0.96	1160	1.46	5,777	83.7
	Cranes	120	P	429	501	9	93	0.49	1464	0.43	46,593	
		175	P	785	917	9	149	0.47	1464	0.43	136,633	
		250	N	720	841	9	208	0.47	1464	0.43	174,928	
		500	N	268	313	9	334	0.41	1464	0.43	104,542	
		750	N	55	73	9	562	0.42	1464	0.43	41,026	
	Cranes Sum			2257	2645	45	1346	2.26	7320	2.15	503,722	190.4
	Crawler Tractors	120	P	13150	15362	16	82	0.49	936	0.64	1,259,684	
		175	P	4450	5198	16	151	0.47	936	0.64	784,898	
		250	N	3825	4468	16	207	0.47	936	0.64	924,876	
		500	N	2620	3060	16	323	0.41	936	0.64	988,380	
		750	N	121	160	16	579	0.42	936	0.64	92,640	
	Crawler Tractors Sum			24166	28248	80	1342	2.26	4680	3.2	4,050,478	143.4
	Crushing/Proc. Equipment	120	P	431	503	16	85	0.49	955	0.78	42,755	
		175	P	182	212	16	171	0.47	955	0.78	36,252	
		250	N	18	21	16	250	0.47	955	0.78	5,250	
		500	N	102	119	16	382	0.41	955	0.78	45,458	
		750	N	4	5	16	602	0.42	955	0.78	3,010	
	Crushing/Proc. Equipment Sum			737	860	80	1490	2.26	4775	3.9	132,725	154.3
	Excavators	120	P	2781	3248	7	103	0.49	1162	0.57	334,544	
		175	P	5365	6267	7	157	0.47	1162	0.57	983,919	
		250	N	2186	2553	7	222	0.47	1162	0.57	566,766	
		500	N	1589	1856	7	327	0.41	1162	0.57	606,912	
		750	N	31	42	7	542	0.42	1162	0.57	22,764	
	Excavators Sum			11952	13966	35	1351	2.26	5810	2.85	2,514,905	180.1
	Graders	120	P	940	1098	10	98	0.49	965	0.61	107,604	
		175	P	3211	3751	10	162	0.47	965	0.61	607,662	
		250	N	1992	2327	10	225	0.47	965	0.61	523,575	
		500	N	56	65	10	300	0.41	965	0.61	19,500	
		750	N	3	3	10	635	0.42	965	0.61	1,905	
	Graders Sum			6202	7244	50	1420	2.26	4825	3.05	1,260,246	174.0
	Off-Highway Tractors	120	P	1	1	16	115	0.49	855	0.65	115	
		175	P	1168	1364	16	160	0.47	855	0.65	218,240	
		250	N	1104	1289	16	160	0.47	855	0.65	206,240	
		750	N	433	571	16	697	0.42	855	0.65	397,987	
	Off-Highway Tractors Sum			2706	3225	64	1132	1.85	3420	2.6	822,582	255.1
	Off-Highway Trucks	175	P	62	72	10	175	0.47	1641	0.57	12,600	
		250	N	458	535	10	233	0.47	1641	0.57	124,655	
		500	N	648	757	10	381	0.41	1641	0.57	288,417	
		750	N	543	714	10	618	0.42	1641	0.57	441,252	
	Off-Highway Trucks Sum			1711	2078	40	1407	1.77	6564	2.28	866,924	417.2
	Other Construction Equipment	120	P	136	158	16	104	0.49	606	0.62	16,432	
		175	P	187	218	16	137	0.47	606	0.62	29,866	
		500	N	435	508	16	327	0.41	606	0.62	166,116	
	Other Construction Equipment Sum			758	884	48	568	1.37	1818	1.86	212,414	240.3
	Pavers	120	P	947	1106	8	89	0.49	828	0.62	98,434	
		175	P	589	688	8	165	0.47	828	0.62	113,520	
		250	N	71	82	8	250	0.47	828	0.62	20,500	
		500	N	73	85	8	300	0.41	828	0.62	25,500	
	Pavers Sum			1680	1961	32	804	1.84	3312	2.48	257,954	131.5
	Paving Equipment	120	P	2100	2453	16	82	0.49	622	0.53	201,146	
		175	P	985	1150	16	152	0.47	622	0.53	174,800	
		250	N	279	325	16	184	0.47	622	0.53	59,800	
	Paving Equipment Sum			3364	3928	48	418	1.43	1866	1.59	435,746	110.9
	Rollers	120	P	4035	4713	8	84	0.49	748	0.56	395,892	
		175	P	1622	1894	8	154	0.47	748	0.56	291,676	
		250	N	230	268	8	218	0.47	748	0.56	58,424	
		500	N	161	188	8	312	0.41	748	0.56	58,656	
	Rollers Sum			6048	7063	32	768	1.84	2992	2.24	804,648	113.9
	Rough Terrain Forklifts	120	P	4755	5554	8	83	0.49	1198	0.6	460,982	
		175	P	609	711	8	166	0.47	1198	0.6	118,026	
		250	N	34	39	8	227	0.47	1198	0.6	8,853	
		500	N	22	25	8	341	0.41	1198	0.6	8,525	
	Rough Terrain Forklifts Sum			5420	6329	32	817	1.84	4792	2.4	596,386	94.2
	Rubber Tired Dozers	175	P	10	11	16	175	0.47	899	0.59	1,925	
		250	N	234	273	16	248	0.47	899	0.59	67,704	
		500	N	360	420	16	358	0.41	899	0.59	150,360	
		750	N	114	151	16	539	0.42	899	0.59	81,389	
	Rubber Tired Dozers Sum			718	855	64	1320	1.77	3596	2.36	301,378	352.5
	Rubber Tired Loaders	120	P	6988	8163	8	87	0.49	1346	0.54	710,181	
		175	P	3938	4600	8	157	0.47	1346	0.54	722,200	
		250	N	3917	4575	8	220	0.47	1346	0.54	1,006,500	
		500	N	1630	1904	8	350	0.41	1346	0.54	666,400	
		750	N	105	138	8	717	0.42	1346	0.54	98,946	
	Rubber Tired Loaders Sum			16578	19380	40	1531	2.26	6730	2.7	3,204,227	165.3
	Scrapers	120	P	37	43	12	104	0.49	1090	0.72	4,472	
		175	P	341	398	12	164	0.47	1090	0.72	65,272	
		250	N	332	387	12	232	0.47	1090	0.72	89,784	
		500	N	915	1068	12	356	0.41	1090	0.72	380,208	
		750	N	135	179	12	615	0.42	1090	0.72	110,085	
	Scrapers Sum			1760	2075	60	1471	2.26	5450	3.6	649,821	313.2
	Signal Boards	120	P	219	255	16	82	0.49	535	0.78	20,910	
		175	P	136	158	16	158	0.47	535	0.78	24,964	
		250	N	29	33	16	216	0.47	535	0.78	7,128	
	Signal Boards Sum			384	446	48	456	1.43	1605	2.34	53,002	118.8
	Skid Steer Loaders	120	P	7964	9303	5	62	0.49	811	0.55	576,786	
	Skid Steer Loaders Sum			7964	9303	5	62	0.49	811	0.55	576,786	62.0
	Surfacing Equipment	120	P	4	4	16	113	0.49	561	0.45	452	
		175	P	3	3	16	152	0.47	561	0.45	456	
		250	N	6	7	16	239	0.47	561	0.45	1,673	
		500	N	48	56	16	392	0.41	561	0.45	21,952	
		750	N	26	34	16	615	0.42	561	0.45	20,910	
	Surfacing Equipment Sum			87	104	80	1511	2.26	2805	2.25	45,443	437.0
	Tractors/Loaders/Backhoes	120	P	28552	33355	16	75	0.49	1135	0.55	2,501,625	
		175	P	1885	2202	16	147	0.47	1135	0.55	323,694	
		250	N	6	7	16	249	0.47	1135	0.55	1,743	
	Tractors/Loaders/Backhoes Sum			30443	35564	48	471	1.43	3405	1.65	2,827,062	79.5
	Trenchers	120	P	3620	4229	7	69	0.49	620	0.75	291,801	
		175	P	396	462	7	153	0.47	620	0.75	70,686	
		250	N	35	40	7	237	0.47	620	0.75	9,480	
		500	N	45	52	7	331	0.41	620	0.75	17,212	
		750	N	3	5	7	624	0.42	620	0.75	3,120	
	Trenchers Sum			4099	4788	35	1414	2.26	3100	3.75	392,299	81.9
Grand Total				129868	151929	1013	22772	40.62	84466	55.01		

OFFROAD APPENDIX D

	B	C	D	E	F	G	H	I	J	K
1	Offroad Appendix D									
2			(g/hp-hr)	(g/hp-hr2)	(g/hp-hr)	(g/hp-hr2)	(g/hp-hr)	(g/hp-hr2)	(g/hp-hr)	(g/hp-hr2)
3	**HP**	**Year**	**ROG**	**ROG det**	**CO**	**CO det**	**Nox**	**Nox det**	**PM**	**PM det**
4	50	1987	1.84	2.35E-04	5.00	5.13E-04	6.90	1.04E-04	0.76	5.89E-05
5	50	1998	1.80	2.30E-04	5.00	5.13E-04	6.90	1.04E-04	0.76	5.89E-05
6	50	2003	1.45	1.85E-04	4.10	4.20E-04	5.55	1.03E-04	0.60	4.65E-05
7	50	2004	0.64	9.80E-05	3.27	3.34E-04	5.10	9.33E-05	0.43	3.36E-05
8	50	2005	0.37	6.90E-05	3.00	3.05E-04	4.95	9.67E-05	0.38	2.93E-05
9	50	2007	0.24	5.45E-05	2.86	2.90E-04	4.88	9.83E-05	0.35	2.72E-05
10	50	2020	0.10	4.00E-05	2.72	2.76E-04	4.80	1.00E-04	0.32	2.50E-05
11	120	1987	1.44	6.66E-05	4.80	1.27E-04	13.00	3.01E-04	0.84	6.11E-05
12	120	1997	0.99	4.58E-05	3.49	9.23E-05	8.75	2.02E-04	0.69	5.02E-05
13	120	2003	0.99	4.58E-05	3.49	9.23E-05	6.90	1.60E-04	0.69	5.02E-05
14	120	2004	0.46	3.33E-05	3.23	8.55E-05	5.64	1.03E-04	0.39	2.85E-05
15	120	2005	0.28	2.92E-05	3.14	8.33E-05	5.22	8.40E-05	0.29	2.12E-05
16	120	2007	0.19	2.71E-05	3.09	8.21E-05	5.01	7.45E-05	0.24	1.76E-05
17	120	2020	0.10	2.50E-05	3.05	8.10E-05	2.89	3.80E-05	0.19	1.40E-05
18	175	1969	1.32	6.11E-05	4.40	1.16E-04	14.00	3.24E-04	0.77	5.60E-05
19	175	1971	1.10	5.09E-05	4.40	1.16E-04	13.00	3.01E-04	0.66	4.80E-05
20	175	1979	1.00	4.63E-05	4.40	1.16E-04	12.00	2.78E-04	0.55	4.00E-05
21	175	1984	0.94	4.35E-05	4.30	1.14E-04	11.00	2.54E-04	0.55	4.00E-05
22	175	1987	0.88	4.07E-05	4.20	1.11E-04	11.00	2.54E-04	0.55	4.00E-05
23	175	1996	0.68	3.15E-05	2.70	7.14E-05	8.17	1.89E-04	0.38	2.76E-05
24	175	2002	0.68	3.15E-05	2.70	7.14E-05	6.90	1.60E-04	0.38	2.76E-05
25	175	2003	0.33	2.79E-05	2.70	7.14E-05	5.26	9.64E-05	0.24	1.70E-05
26	175	2004	0.22	2.63E-05	2.70	7.14E-05	4.72	7.52E-05	0.19	1.35E-05
27	175	2006	0.16	2.57E-05	2.70	7.14E-05	4.44	6.46E-05	0.16	1.18E-05
28	175	2020	0.10	2.50E-05	2.70	7.14E-05	2.45	2.45E-05	0.14	1.00E-05
29	250	1969	1.32	6.11E-05	4.40	1.16E-04	14.00	3.24E-04	0.77	5.60E-05
30	250	1971	1.10	5.09E-05	4.40	1.16E-04	13.00	3.01E-04	0.66	4.80E-05
31	250	1979	1.00	4.63E-05	4.40	1.16E-04	12.00	2.78E-04	0.55	4.00E-05
32	250	1984	0.94	4.35E-05	4.30	1.14E-04	11.00	2.54E-04	0.55	4.00E-05
33	250	1987	0.88	4.07E-05	4.20	1.11E-04	11.00	2.54E-04	0.55	4.00E-05
34	250	1995	0.68	3.15E-05	2.70	7.14E-05	8.17	1.89E-04	0.38	2.76E-05
35	250	2002	0.32	1.48E-05	0.92	2.43E-05	6.25	1.45E-04	0.15	7.96E-06
36	250	2003	0.19	2.09E-05	0.92	2.43E-05	5.00	9.05E-05	0.12	6.51E-06
37	250	2004	0.14	2.30E-05	0.92	2.43E-05	4.58	7.23E-05	0.11	6.03E-06
38	250	2006	0.12	2.40E-05	0.92	2.43E-05	4.38	6.33E-05	0.11	5.79E-06
39	250	2020	0.10	2.50E-05	0.92	2.43E-05	2.45	3.18E-05	0.11	5.59E-06
40	500	1969	1.26	4.39E-05	4.20	8.32E-05	14.00	2.33E-04	0.74	3.93E-05
41	500	1971	1.05	3.66E-05	4.20	8.32E-05	13.00	2.16E-04	0.63	3.34E-05
42	500	1979	0.95	3.31E-05	4.20	8.32E-05	12.00	2.00E-04	0.53	2.81E-05
43	500	1984	0.90	3.14E-05	4.20	8.32E-05	11.00	1.83E-04	0.53	2.81E-05
44	500	1987	0.84	2.93E-05	4.10	8.12E-05	11.00	1.83E-04	0.53	2.81E-05
45	500	1995	0.68	2.37E-05	2.70	5.35E-05	8.17	1.36E-04	0.38	2.02E-05
46	500	2000	0.32	1.12E-05	0.92	1.82E-05	6.25	1.04E-04	0.15	7.96E-06
47	500	2001	0.19	1.95E-05	0.92	1.82E-05	4.95	7.34E-05	0.12	6.51E-06
48	500	2002	0.14	2.22E-05	0.92	1.82E-05	4.51	6.32E-05	0.11	6.03E-06
49	500	2004	0.12	2.36E-05	0.92	1.82E-05	4.29	5.81E-05	0.11	5.79E-06
50	500	2005	0.10	2.50E-05	0.92	1.82E-05	4.00	5.30E-05	0.11	5.55E-06
51	500	2020	0.10	2.50E-05	0.92	1.82E-05	2.45	3.18E-05	0.11	5.55E-06
52	750	1969	1.26	4.39E-05	4.20	8.32E-05	14.00	2.33E-04	0.74	3.93E-05
53	750	1971	1.05	3.66E-05	4.20	8.32E-05	13.00	2.16E-04	0.63	3.34E-05
54	750	1979	0.95	3.31E-05	4.20	8.32E-05	12.00	2.00E-04	0.53	2.81E-05
55	750	1984	0.90	3.14E-05	4.20	8.32E-05	11.00	1.83E-04	0.53	2.81E-05
56	750	1987	0.84	2.93E-05	4.10	8.12E-05	11.00	1.83E-04	0.53	2.81E-05
57	750	1995	0.68	2.37E-05	2.70	5.35E-05	8.17	1.36E-04	0.38	2.02E-05
58	750	2001	0.32	1.12E-05	0.92	1.82E-05	6.25	1.04E-04	0.15	7.96E-06
59	750	2002	0.19	1.95E-05	0.92	1.82E-05	4.95	7.34E-05	0.12	6.51E-06
60	750	2003	0.14	2.22E-05	0.92	1.82E-05	4.51	6.32E-05	0.11	6.03E-06
61	750	2005	0.12	2.36E-05	0.92	1.82E-05	4.29	5.81E-05	0.11	5.79E-06
62	750	2020	0.10	2.50E-05	0.92	1.82E-05	2.45	3.18E-05	0.11	5.55E-06
63	9999	1969	1.26	4.39E-05	4.20	8.32E-05	14.00	2.33E-04	0.74	3.93E-05
64	9999	1971	1.05	3.66E-05	4.20	8.32E-05	13.00	2.16E-04	0.63	3.34E-05
65	9999	1979	0.95	3.31E-05	4.20	8.32E-05	12.00	2.00E-04	0.53	2.81E-05
66	9999	1984	0.90	3.14E-05	4.20	8.32E-05	11.00	1.83E-04	0.53	2.81E-05
67	9999	1987	0.84	2.93E-05	4.10	8.12E-05	11.00	1.83E-04	0.53	2.81E-05
68	9999	1999	0.68	2.37E-05	2.70	5.35E-05	8.17	1.36E-04	0.38	2.02E-06
69	9999	2005	0.32	1.12E-05	0.92	1.82E-05	6.25	1.04E-04	0.15	7.96E-06
70	9999	2006	0.19	1.95E-05	0.92	1.82E-05	4.95	7.34E-05	0.12	6.51E-06
71	9999	2007	0.14	2.22E-05	0.92	1.82E-05	4.51	6.32E-05	0.11	6.03E-06
72	9999	2009	0.12	2.36E-05	0.92	1.82E-05	4.29	5.81E-05	0.11	5.79E-06
73	9999	2020	0.10	2.50E-05	0.92	1.82E-05	4.08	5.30E-05	0.11	5.55E-06
74										
75		*NOTE:	50	- Implies 25-50 hp		250	- Implies 176-250 hp		999	- Implies >751 hp
76			120	- Implies 51-120 hp		500	- Implies 251-500 hp			
77			175	- Implies 121-175 hp		750	- Implies 501-750 hp			
78			1	2	3.00	4				

	A	B	C	D	E	F	G
79		grams/brake-hp-hr		ROG	CO	NOx	PM10
80	1	25-50 hp	pre -1996	1.82	5.00	6.90	0.76
81	2	51-120 hp	pre -1996	1.22	4.15	10.88	0.77
82	3	121-175 hp	pre -1996	1.05	4.34	12.20	0.62
83	4	176-250 hp	pre -1996	0.99	4.07	11.53	0.58
84	5	251-500 hp	pre -1996	0.95	3.93	11.53	0.56
85	6	501-750 hp	pre -1996	0.95	3.93	11.53	0.56
86	7	>751 hp	pre -1996	1.00	4.18	12.20	0.59
87	1	25-49	1996	1.80	5.00	6.90	0.76
88	2	50-99	1996	0.99	3.49	6.90	0.69
89	3	100-174	1996	0.68	2.70	6.90	0.38
90	4	175-299	1996	1.00	8.50	6.90	0.40
91	5	300-599	1996	1.00	8.50	6.90	0.40
92	6	600-749	1996	1.00	8.50	6.90	0.40
93	7	750+	1996	1.00	8.50	6.90	0.40
94	1	25-49	1997	1.80	5.00	6.90	0.76
95	2	50-99	1997	0.99	3.49	6.90	0.69
96	3	100-174	1997	0.68	2.70	6.90	0.38
97	4	175-299	1997	1.00	8.50	6.90	0.40
98	5	300-599	1997	1.00	8.50	6.90	0.40
99	6	600-749	1997	1.00	8.50	6.90	0.40
100	7	750+	1997	1.00	8.50	6.90	0.40
101	1	25-49	1998	1.80	5.00	6.90	0.76
102	2	50-99	1998	0.99	3.49	6.90	0.69
103	3	100-174	1998	0.68	2.70	6.90	0.38
104	4	175-299	1998	1.00	8.50	6.90	0.40
105	5	300-599	1998	1.00	8.50	6.90	0.40
106	6	600-749	1998	1.00	8.50	6.90	0.40
107	7	750+	1998	1.00	8.50	6.90	0.40
108	1	25-49	1999	1.80	4.10	7.10	0.60
109	2	50-99	1999	0.99	3.49	6.90	0.69
110	3	100-174	1999	0.68	2.70	6.90	0.38
111	4	175-299	1999	1.00	8.50	6.90	0.40
112	5	300-599	1999	1.00	8.50	6.90	0.40
113	6	600-749	1999	1.00	8.50	6.90	0.40
114	7	750+	1999	1.00	8.50	6.90	0.40
115	1	25-49	2000	1.80	4.10	7.10	0.60
116	2	50-99	2000	0.99	3.49	6.90	0.69
117	3	100-174	2000	0.68	2.70	6.90	0.38
118	4	175-299	2000	1.00	8.50	6.90	0.40
119	5	300-599	2000	1.00	8.50	6.90	0.40
120	6	600-749	2000	1.00	8.50	6.90	0.40
121	7	750+	2000	1.00	8.50	6.90	0.40
122	1	25-49	2001	1.80	4.10	7.10	0.60
123	2	50-99	2001	0.99	3.49	6.90	0.69
124	3	100-174	2001	0.68	2.70	6.90	0.38
125	4	175-299	2001	1.00	8.50	6.90	0.40
126	5	300-599	2001	1.00	2.60	3.80	0.15
127	6	600-749	2001	1.00	8.50	6.90	0.40
128	7	750+	2001	1.00	8.50	6.90	0.40
129	1	25-49	2002	1.80	4.10	7.10	0.60
130	2	50-99	2002	0.99	3.49	6.90	0.69
131	3	100-174	2002	0.68	2.70	6.90	0.38
132	4	175-299	2002	1.00	8.50	6.90	0.40
133	5	300-599	2002	1.00	2.60	3.80	0.15
134	6	600-749	2002	1.00	2.60	3.80	0.15
135	7	750+	2002	1.00	8.50	6.90	0.40
136	1	25-49	2003	1.80	4.10	7.10	0.60
137	2	50-99	2003	0.99	3.49	6.90	0.69
138	3	100-174	2003	0.68	2.70	6.90	0.38
139	4	175-299	2003	1.00	2.60	3.90	0.15
140	5	300-599	2003	1.00	2.60	3.80	0.15
141	6	600-749	2003	1.00	2.60	3.80	0.15
142	7	750+	2003	1.00	8.50	6.90	0.40
143	1	25-49	2004	1.80	4.10	5.60	0.45
144	2	50-99	2004	0.99	3.70	5.60	0.30
145	3	100-174	2004	0.68	3.70	4.90	0.22
146	4	175-299	2004	1.00	2.60	3.90	0.15
147	5	300-599	2004	1.00	2.60	3.80	0.15
148	6	600-749	2004	1.00	2.60	3.80	0.15
149	7	750+	2004	1.00	8.50	6.90	0.40
150	1	25-49	2005	1.80	4.10	5.60	0.45
151	2	50-99	2005	0.99	3.70	5.60	0.30
152	3	100-174	2005	0.68	3.70	4.90	0.22
153	4	175-299	2005	1.00	2.60	3.90	0.15
154	5	300-599	2005	1.00	2.60	3.80	0.15
155	6	600-749	2005	1.00	2.60	3.80	0.15
156	7	750+	2005	1.00	8.50	6.90	0.40
157	1	25-49	2006	1.80	4.10	5.60	0.45
158	2	50-99	2006	0.99	3.70	5.60	0.30
159	3	100-174	2006	0.68	3.70	4.90	0.22
160	4	175-299	2006	1.00	2.60	2.00	0.15
161	5	300-599	2006	1.00	2.60	2.00	0.15
162	6	600-749	2006	1.00	2.60	2.00	0.15
163	7	750+	2006	1.00	2.60	3.80	0.15
164	1	25-49	2007	1.80	4.10	5.60	0.45
165	2	50-99	2007	0.99	3.70	5.60	0.30
166	3	100-174	2007	0.68	3.70	3.00	0.22
167	4	175-299	2007	1.00	2.60	2.00	0.15
168	5	300-599	2007	1.00	2.60	2.00	0.15
169	6	600-749	2007	1.00	2.60	2.00	0.15
170	7	750+	2007	1.00	2.60	3.80	0.15
171	1	25-49	2008	1.80	4.10	5.60	0.45
172	2	50-99	2008	0.99	3.70	3.50	0.30
173	3	100-174	2008	0.68	3.70	3.00	0.22
174	4	175-299	2008	1.00	2.60	2.00	0.15
175	5	300-599	2008	1.00	2.60	2.00	0.15
176	6	600-749	2008	1.00	2.60	2.00	0.15
177	7	750+	2008	1.00	2.60	3.80	0.15
178	1	25-49	2009	1.80	4.10	5.60	0.45
179	2	50-99	2009	0.99	3.70	3.50	0.30
180	3	100-174	2009	0.68	3.70	3.00	0.22
181	4	175-299	2009	1.00	2.60	2.00	0.15
182	5	300-599	2009	1.00	2.60	2.00	0.15
183	6	600-749	2009	1.00	2.60	2.00	0.15
184	7	750+	2009	1.00	2.60	3.80	0.15
185	1	25-49	2010	1.80	4.10	5.60	0.45
186	2	50-99	2010	0.99	3.70	3.50	0.30
187	3	100-174	2010	0.68	3.70	3.00	0.22
188	4	175-299	2010	1.00	2.60	2.00	0.15
189	5	300-599	2010	1.00	2.60	2.00	0.15
190	6	600-749	2010	1.00	2.60	2.00	0.15
191	7	750+	2010	1.00	2.60	3.80	0.15
192							
193		Replacement rate calculations					
194							
195			Life ->	3 Bore/Drill Rigs			
196			% Turnover/yr ->	33.3			

OFFROAD APPENDIX D

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
198	Year	% Pre-1996	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
199	1995	100	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
200	1996	67	33	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
201	1997	33	33	33	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
202	1998	0	33	33	33	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
203	1999	0	0	33	33	33	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
204	2000	0	0	0	33	33	33	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
205	2001	0	0	0	0	33	33	33	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
206	2002	0	0	0	0	0	33	33	33	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
207	2003	0	0	0	0	0	0	33	33	33	0	N/A	N/A	N/A	N/A	N/A	N/A
208	2004	0	0	0	0	0	0	0	33	33	33	0	N/A	N/A	N/A	N/A	N/A
209	2005	0	0	0	0	0	0	0	0	33	33	33	0	N/A	N/A	N/A	N/A
210	2006	0	0	0	0	0	0	0	0	0	33	33	33	0	N/A	N/A	N/A
211	2007	0	0	0	0	0	0	0	0	0	0	33	33	33	0	N/A	N/A
212	2008	0	0	0	0	0	0	0	0	0	0	0	33	33	33	0	N/A
213	2009	0	0	0	0	0	0	0	0	0	0	0	0	33	33	33	0
214	2010	0	0	0	0	0	0	0	0	0	0	0	0	0	33	33	33

OFFROAD APPENDIX D

	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ
198	Year	% Pre-1996	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
199	1995	100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
200	1996	80	20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
201	1997	60	20	20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
202	1998	40	20	20	20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
203	1999	20	20	20	20	20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
204	2000	0	20	20	20	20	20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
205	2001	0	0	20	20	20	20	20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
206	2002	0	0	0	20	20	20	20	20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
207	2003	0	0	0	0	20	20	20	20	20	N/A	N/A	N/A	N/A	N/A	N/A	N/A
208	2004	0	0	0	0	0	20	20	20	20	20	N/A	N/A	N/A	N/A	N/A	N/A
209	2005	0	0	0	0	0	0	20	20	20	20	20	N/A	N/A	N/A	N/A	N/A
210	2006	0	0	0	0	0	0	0	20	20	20	20	20	N/A	N/A	N/A	N/A
211	2007	0	0	0	0	0	0	0	0	20	20	20	20	20	N/A	N/A	N/A
212	2008	0	0	0	0	0	0	0	0	0	20	20	20	20	20	N/A	N/A
213	2009	0	0	0	0	0	0	0	0	0	0	20	20	20	20	20	N/A
214	2010	0	0	0	0	0	0	0	0	0	0	0	20	20	20	20	20

OFFROAD APPENDIX D

	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB
198	Year	% Pre-1996	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
199	1995	100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
200	1996	86	14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
201	1997	71	14	14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
202	1998	57	14	14	14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
203	1999	43	14	14	14	14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
204	2000	29	14	14	14	14	14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
205	2001	14	14	14	14	14	14	14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
206	2002	0	14	14	14	14	14	14	14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
207	2003	0	0	14	14	14	14	14	14	14	N/A	N/A	N/A	N/A	N/A	N/A	N/A
208	2004	0	0	0	14	14	14	14	14	14	14	N/A	N/A	N/A	N/A	N/A	N/A
209	2005	0	0	0	0	14	14	14	14	14	14	14	N/A	N/A	N/A	N/A	N/A
210	2006	0	0	0	0	0	14	14	14	14	14	14	14	N/A	N/A	N/A	N/A
211	2007	0	0	0	0	0	0	14	14	14	14	14	14	14	N/A	N/A	N/A
212	2008	0	0	0	0	0	0	0	14	14	14	14	14	14	14	N/A	N/A
213	2009	0	0	0	0	0	0	0	0	14	14	14	14	14	14	14	N/A
214	2010	0	0	0	0	0	0	0	0	0	14	14	14	14	14	14	14

OFFROAD APPENDIX D

	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT
198	Year	% Pre-1996	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
199	1995	100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
200	1996	88	13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
201	1997	75	13	13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
202	1998	63	13	13	13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
203	1999	50	13	13	13	13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
204	2000	38	13	13	13	13	13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
205	2001	25	13	13	13	13	13	13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
206	2002	13	13	13	13	13	13	13	13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
207	2003	0	13	13	13	13	13	13	13	13	N/A	N/A	N/A	N/A	N/A	N/A	N/A
208	2004	0	0	13	13	13	13	13	13	13	13	N/A	N/A	N/A	N/A	N/A	N/A
209	2005	0	0	0	13	13	13	13	13	13	13	13	N/A	N/A	N/A	N/A	N/A
210	2006	0	0	0	0	13	13	13	13	13	13	13	13	N/A	N/A	N/A	N/A
211	2007	0	0	0	0	0	13	13	13	13	13	13	13	13	N/A	N/A	N/A
212	2008	0	0	0	0	0	0	13	13	13	13	13	13	13	13	N/A	N/A
213	2009	0	0	0	0	0	0	0	13	13	13	13	13	13	13	13	N/A
214	2010	0	0	0	0	0	0	0	0	13	13	13	13	13	13	13	13

OFFROAD APPENDIX D

	BV	BW	BX	BY	BZ	CA	CB	CC	CD	CE	CF	CG	CH	CI	CJ	CK	CL
198	Year	% Pre-1996	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
199	1995	100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
200	1996	89	11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
201	1997	78	11	11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
202	1998	67	11	11	11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
203	1999	56	11	11	11	11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
204	2000	44	11	11	11	11	11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
205	2001	33	11	11	11	11	11	11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
206	2002	22	11	11	11	11	11	11	11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
207	2003	11	11	11	11	11	11	11	11	11	N/A	N/A	N/A	N/A	N/A	N/A	N/A
208	2004	0	11	11	11	11	11	11	11	11	11	N/A	N/A	N/A	N/A	N/A	N/A
209	2005	0	0	11	11	11	11	11	11	11	11	11	N/A	N/A	N/A	N/A	N/A
210	2006	0	0	0	11	11	11	11	11	11	11	11	11	N/A	N/A	N/A	N/A
211	2007	0	0	0	0	11	11	11	11	11	11	11	11	11	N/A	N/A	N/A
212	2008	0	0	0	0	0	11	11	11	11	11	11	11	11	11	N/A	N/A
213	2009	0	0	0	0	0	0	11	11	11	11	11	11	11	11	11	N/A
214	2010	0	0	0	0	0	0	0	11	11	11	11	11	11	11	11	11

OFFROAD APPENDIX D

	CN	CO	CP	CQ	CR	CS	CT	CU	CV	CW	CX	CY	CZ	DA	DB	DC	DD
198	Year	% Pre-1996	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
199	1995	100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
200	1996	90	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
201	1997	80	10	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
202	1998	70	10	10	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
203	1999	60	10	10	10	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
204	2000	50	10	10	10	10	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
205	2001	40	10	10	10	10	10	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
206	2002	30	10	10	10	10	10	10	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
207	2003	20	10	10	10	10	10	10	10	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
208	2004	10	10	10	10	10	10	10	10	10	10	N/A	N/A	N/A	N/A	N/A	N/A
209	2005	0	10	10	10	10	10	10	10	10	10	10	N/A	N/A	N/A	N/A	N/A
210	2006	0	0	10	10	10	10	10	10	10	10	10	10	N/A	N/A	N/A	N/A
211	2007	0	0	0	10	10	10	10	10	10	10	10	10	10	N/A	N/A	N/A
212	2008	0	0	0	0	10	10	10	10	10	10	10	10	10	10	N/A	N/A
213	2009	0	0	0	0	0	10	10	10	10	10	10	10	10	10	10	N/A
214	2010	0	0	0	0	0	0	10	10	10	10	10	10	10	10	10	10

OFFROAD APPENDIX D

	DF	DG	DH	DI	DJ	DK	DL	DM	DN	DO	DP	DQ	DR	DS	DT	DU	DV
198	Year	% Pre-1996	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
199	1995	100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
200	1996	92	8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
201	1997	83	8	8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
202	1998	75	8	8	8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
203	1999	67	8	8	8	8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
204	2000	58	8	8	8	8	8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
205	2001	50	8	8	8	8	8	8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
206	2002	42	8	8	8	8	8	8	8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
207	2003	33	8	8	8	8	8	8	8	8	N/A	N/A	N/A	N/A	N/A	N/A	N/A
208	2004	25	8	8	8	8	8	8	8	8	8	N/A	N/A	N/A	N/A	N/A	N/A
209	2005	17	8	8	8	8	8	8	8	8	8	8	N/A	N/A	N/A	N/A	N/A
210	2006	8	8	8	8	8	8	8	8	8	8	8	8	N/A	N/A	N/A	N/A
211	2007	0	8	8	8	8	8	8	8	8	8	8	8	8	N/A	N/A	N/A
212	2008	0	0	8	8	8	8	8	8	8	8	8	8	8	8	N/A	N/A
213	2009	0	0	0	8	8	8	8	8	8	8	8	8	8	8	8	N/A
214	2010	0	0	0	0	8	8	8	8	8	8	8	8	8	8	8	8

OFFROAD APPENDIX D

	DX	DY	DZ	EA	EB	EC	ED	EE	EF	EG	EH	EI	EJ	EK	EL	EM	EN
198	Year	% Pre-1996	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
199	1995	100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
200	1996	94	6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
201	1997	88	6	6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
202	1998	81	6	6	6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
203	1999	75	6	6	6	6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
204	2000	69	6	6	6	6	6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
205	2001	63	6	6	6	6	6	6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
206	2002	56	6	6	6	6	6	6	6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
207	2003	50	6	6	6	6	6	6	6	6	N/A	N/A	N/A	N/A	N/A	N/A	N/A
208	2004	44	6	6	6	6	6	6	6	6	6	N/A	N/A	N/A	N/A	N/A	N/A
209	2005	38	6	6	6	6	6	6	6	6	6	6	N/A	N/A	N/A	N/A	N/A
210	2006	31	6	6	6	6	6	6	6	6	6	6	6	N/A	N/A	N/A	N/A
211	2007	25	6	6	6	6	6	6	6	6	6	6	6	6	N/A	N/A	N/A
212	2008	19	6	6	6	6	6	6	6	6	6	6	6	6	6	N/A	N/A
213	2009	13	6	6	6	6	6	6	6	6	6	6	6	6	6	6	N/A
214	2010	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6

OFFROAD APPENDIX D

Emissions by Equipment Type (grams per brake-horsepower hour)

25-49 hp	Bore Rig, 3 year life: Year	ROG	CO	NOx	PM10	5 year life, Skid Steer Loaders: Year	ROG	CO	NOx	PM10	7 year life, Trenchers: Year	ROG	CO	NOx	PM10	8 year life, pavers, rollers, rough terrain forklifts, rubber tired loaders: Year	ROG	CO	NOx	PM10	9 year life, Cranes: Year	ROG	CO	NOx	PM10	10 year life, Graders, Off-highway Trucks: Year	ROG	CO	NOx	PM10	12 year life, scrapers: Year	ROG	CO	NOx	PM10	16 year life, paving equipment, rubber tired dozers, signal boards, surfacing equipment, tra crushing equip., off-highway tractors, other construction equipment: Year	ROG	CO	NOx	PM10
1	2000	1.8	4.4	7.0	0.7	2000	1.8	4.6	7.0	0.7	2000	1.8	4.7	7.0	0.7	2000	1.8	4.8	7.0	0.7	2000	1.8	4.8	6.9	0.7	2000	1.8	4.8	6.9	0.7	2000	1.8	4.9	6.9	0.7	2000	1.8	4.9	6.9	0.7
1	2001	1.8	4.1	7.1	0.6	2001	1.8	4.5	7.0	0.7	2001	1.8	4.6	7.0	0.7	2001	1.8	4.7	7.0	0.7	2001	1.8	4.7	7.0	0.7	2001	1.8	4.7	7.0	0.7	2001	1.8	4.8	7.0	0.7	2001	1.8	4.8	6.9	0.7
1	2002	1.8	4.1	7.1	0.6	2002	1.8	4.3	7.1	0.6	2002	1.8	4.5	7.0	0.7	2002	1.8	4.6	7.0	0.7	2002	1.8	4.6	7.0	0.7	2002	1.8	4.6	7.0	0.7	2002	1.8	4.7	7.0	0.7	2002	1.8	4.8	7.0	0.7
1	2003	1.8	4.1	7.1	0.6	2003	1.8	4.1	7.1	0.6	2003	1.8	4.4	7.0	0.6	2003	1.8	4.4	7.0	0.7	2003	1.8	4.5	7.0	0.7	2003	1.8	4.6	7.0	0.7	2003	1.8	4.6	7.0	0.7	2003	1.8	4.7	7.0	0.7
1	2004	1.8	4.1	6.6	0.5	2004	1.8	4.1	6.8	0.6	2004	1.8	4.2	6.9	0.6	2004	1.8	4.3	6.9	0.6	2004	1.8	4.4	6.9	0.6	2004	1.8	4.5	6.9	0.6	2004	1.8	4.6	6.9	0.7	2004	1.8	4.7	6.9	0.7
1	2005	1.8	4.1	6.1	0.5	2005	1.8	4.1	6.5	0.5	2005	1.8	4.1	6.7	0.6	2005	1.8	4.2	6.7	0.6	2005	1.8	4.3	6.7	0.6	2005	1.8	4.4	6.7	0.6	2005	1.8	4.5	6.8	0.6	2005	1.8	4.6	6.8	0.7
1	2006	1.8	4.1	6.1	0.5	2006	1.8	4.1	6.2	0.5	2006	1.8	4.1	6.5	0.5	2006	1.8	4.1	6.5	0.5	2006	1.8	4.2	6.6	0.6	2006	1.8	4.3	6.6	0.6	2006	1.8	4.4	6.7	0.6	2006	1.8	4.6	6.7	0.7
1	2007	1.8	4.1	5.6	0.4	2007	1.8	4.1	5.9	0.5	2007	1.8	4.1	6.2	0.5	2007	1.8	4.1	6.4	0.5	2007	1.8	4.1	6.4	0.5	2007	1.8	4.2	6.5	0.6	2007	1.8	4.3	6.6	0.6	2007	1.8	4.5	6.6	0.6
1	2008	1.8	4.1	5.6	0.4	2008	1.8	4.1	5.6	0.5	2008	1.8	4.1	6.0	0.5	2008	1.8	4.1	6.2	0.5	2008	1.8	4.1	6.3	0.5	2008	1.8	4.1	6.4	0.5	2008	1.8	4.3	6.4	0.6	2008	1.8	4.4	6.6	0.6
1	2009	1.8	4.1	5.6	0.4	2009	1.8	4.1	5.6	0.5	2009	1.8	4.1	5.8	0.5	2009	1.8	4.1	6.0	0.5	2009	1.8	4.1	6.1	0.5	2009	1.8	4.1	6.2	0.5	2009	1.8	4.3	6.3	0.6	2009	1.8	4.4	6.5	0.6
1	2010	1.8	4.1	5.6	0.4	2010	1.8	4.1	5.6	0.5	2010	1.8	4.1	5.6	0.5	2010	1.8	4.1	5.6	0.5	2010	1.8	4.1	5.8	0.5	2010	1.8	4.1	6.1	0.5	2010	1.8	4.1	6.2	0.5	2010	1.8	4.3	6.4	0.6

Emissions by Equipment Type (grams per brake-horsepower hour)

50-99 hp	Bore Rig, 3 year life: Year	ROG	CO	NOx	PM10	5 year life, Skid Steer Loaders: Year	ROG	CO	NOx	PM10	7 year life, Trenchers: Year	ROG	CO	NOx	PM10	8 year life, pavers, rollers, rough terrain forklifts, rubber tired loaders: Year	ROG	CO	NOx	PM10	9 year life, Cranes: Year	ROG	CO	NOx	PM10	10 year life, Graders, Off-highway Trucks: Year	ROG	CO	NOx	PM10	12 year life, scrapers: Year	ROG	CO	NOx	PM10	16 year life, concrete/industrial saws, crawler tractors, paving equipment, rubber tired dozers, signal boards, surfacing equipment, tra crushing equip., off-highway tractors, other construction equipment: Year	ROG	CO	NOx	PM10
2	2000	1.0	3.5	6.9	0.7	2000	1.0	3.5	6.9	0.7	2000	1.1	3.7	8.0	0.7	2000	1.1	3.7	8.4	0.7	2000	1.1	3.8	8.7	0.7	2000	1.1	3.8	8.9	0.7	2000	1.1	3.9	9.2	0.7	2000	1.1	3.9	9.6	0.7
2	2001	1.0	3.5	6.9	0.7	2001	1.0	3.5	6.9	0.7	2001	1.0	3.6	7.5	0.7	2001	1.0	3.7	7.9	0.7	2001	1.1	3.7	8.2	0.7	2001	1.1	3.8	8.5	0.7	2001	1.1	3.8	8.9	0.7	2001	1.1	3.9	9.4	0.7
2	2002	1.0	3.5	6.9	0.7	2002	1.0	3.5	6.9	0.7	2002	1.0	3.5	6.9	0.7	2002	1.0	3.6	7.4	0.7	2002	1.0	3.6	7.8	0.7	2002	1.1	3.7	8.1	0.7	2002	1.1	3.8	8.6	0.7	2002	1.1	3.9	9.1	0.7
2	2003	1.0	3.5	6.9	0.7	2003	1.0	3.5	6.9	0.7	2003	1.0	3.5	6.9	0.7	2003	1.0	3.5	6.9	0.7	2003	1.0	3.6	7.3	0.7	2003	1.0	3.6	7.7	0.7	2003	1.1	3.7	8.2	0.7	2003	1.1	3.8	8.9	0.7
2	2004	1.0	3.6	6.5	0.6	2004	1.0	3.5	6.6	0.6	2004	1.0	3.5	6.7	0.6	2004	1.0	3.5	6.7	0.6	2004	1.0	3.5	6.8	0.6	2004	1.0	3.6	7.2	0.7	2004	1.0	3.7	7.8	0.7	2004	1.1	3.8	8.6	0.7
2	2005	1.0	3.6	6.0	0.4	2005	1.0	3.6	6.4	0.5	2005	1.0	3.6	6.5	0.6	2005	1.0	3.5	6.6	0.6	2005	1.0	3.5	6.6	0.6	2005	1.0	3.5	6.6	0.6	2005	1.0	3.6	7.3	0.6	2005	1.1	3.8	8.2	0.7
2	2006	1.0	3.6	6.0	0.4	2006	1.0	3.6	6.1	0.5	2006	1.0	3.6	6.3	0.5	2006	1.0	3.6	6.4	0.5	2006	1.0	3.6	6.5	0.6	2006	1.0	3.6	6.5	0.6	2006	1.0	3.6	6.9	0.6	2006	1.1	3.7	7.9	0.6
2	2007	1.0	3.7	5.6	0.3	2007	1.0	3.7	5.9	0.4	2007	1.0	3.6	6.2	0.5	2007	1.0	3.6	6.3	0.5	2007	1.0	3.6	6.3	0.5	2007	1.0	3.6	6.2	0.5	2007	1.0	3.6	6.3	0.6	2007	1.0	3.7	7.4	0.6
2	2008	1.0	3.7	4.9	0.3	2008	1.0	3.7	5.2	0.3	2008	1.0	3.6	5.7	0.4	2008	1.0	3.6	5.8	0.4	2008	1.0	3.6	5.9	0.5	2008	1.0	3.6	5.8	0.5	2008	1.0	3.6	6.0	0.5	2008	1.0	3.7	7.0	0.6
2	2009	1.0	3.7	4.2	0.3	2009	1.0	3.7	4.8	0.3	2009	1.0	3.7	5.2	0.4	2009	1.0	3.6	5.4	0.4	2009	1.0	3.6	5.6	0.4	2009	1.0	3.6	5.5	0.5	2009	1.0	3.6	5.7	0.5	2009	1.0	3.7	6.5	0.6
2	2010	1.0	3.7	3.5	0.3	2010	1.0	3.7	4.3	0.3	2010	1.0	3.7	4.7	0.3	2010	1.0	3.7	4.7	0.3	2010	1.0	3.7	5.0	0.3	2010	1.0	3.6	5.2	0.4	2010	1.0	3.6	5.4	0.5	2010	1.0	3.6	6.1	0.5

Emissions by Equipment Type (grams per brake-horsepower hour)

100-174 hp	Bore Rig, 3 year life: Year	ROG	CO	NOx	PM10	5 year life, Skid Steer Loaders: Year	ROG	CO	NOx	PM10	7 year life, Trenchers: Year	ROG	CO	NOx	PM10	8 year life, pavers, rollers, rough terrain forklifts, rubber tired loaders: Year	ROG	CO	NOx	PM10	9 year life, Cranes: Year	ROG	CO	NOx	PM10	10 year life, Graders, Off-highway Trucks: Year	ROG	CO	NOx	PM10	12 year life, scrapers: Year	ROG	CO	NOx	PM10	16 year life, concrete/industrial saws, crawler tractors, paving equipment, rubber tired dozers, signal boards, surfacing equipment, tra crushing equip., off-highway tractors, other construction equipment: Year	ROG	CO	NOx	PM10
3	2000	0.7	2.7	6.9	0.4	2000	0.7	2.7	6.9	0.4	2000	0.8	3.2	8.4	0.4	2000	0.8	3.3	8.9	0.5	2000	0.8	3.4	9.3	0.5	2000	0.9	3.5	9.6	0.5	2000	0.9	3.7	10.0	0.5	2000	0.9	3.8	10.5	0.5
3	2001	0.7	2.7	6.9	0.4	2001	0.7	2.7	6.9	0.4	2001	0.7	2.9	7.7	0.4	2001	0.8	3.1	8.2	0.4	2001	0.8	3.2	8.7	0.5	2001	0.8	3.4	9.0	0.5	2001	0.9	3.5	9.6	0.5	2001	0.9	3.7	10.2	0.5
3	2002	0.7	2.7	6.9	0.4	2002	0.7	2.7	6.9	0.4	2002	0.7	2.7	6.9	0.4	2002	0.7	2.9	7.6	0.4	2002	0.8	3.1	8.1	0.4	2002	0.8	3.2	8.5	0.5	2002	0.8	3.4	9.1	0.5	2002	0.9	3.6	9.9	0.5
3	2003	0.7	2.7	6.9	0.4	2003	0.7	2.7	6.9	0.4	2003	0.7	2.7	6.9	0.4	2003	0.7	2.7	6.9	0.4	2003	0.7	2.9	7.5	0.4	2003	0.8	3.0	8.0	0.4	2003	0.8	3.2	8.7	0.5	2003	0.9	3.5	9.6	0.5
3	2004	0.7	3.0	6.2	0.3	2004	0.7	2.9	6.5	0.3	2004	0.7	2.8	6.6	0.4	2004	0.7	2.8	6.7	0.4	2004	0.7	2.8	6.7	0.4	2004	0.7	3.0	7.2	0.4	2004	0.8	3.2	8.1	0.4	2004	0.8	3.5	9.1	0.5
3	2005	0.7	3.4	5.6	0.3	2005	0.7	3.1	6.1	0.3	2005	0.7	3.0	6.3	0.3	2005	0.7	3.0	6.4	0.3	2005	0.7	2.9	6.5	0.3	2005	0.7	2.9	6.5	0.3	2005	0.7	3.1	7.5	0.4	2005	0.8	3.4	8.6	0.4
3	2006	0.7	3.4	5.6	0.3	2006	0.7	3.3	5.7	0.3	2006	0.7	3.1	6.0	0.3	2006	0.7	3.1	6.2	0.3	2006	0.7	3.0	6.2	0.3	2006	0.7	3.0	6.3	0.3	2006	0.7	3.1	6.8	0.4	2006	0.8	3.4	8.2	0.4
3	2007	0.7	3.7	4.3	0.2	2007	0.7	3.5	4.9	0.3	2007	0.7	3.3	5.5	0.3	2007	0.7	3.2	5.7	0.3	2007	0.7	3.1	5.8	0.3	2007	0.7	3.1	5.9	0.3	2007	0.7	3.0	6.1	0.3	2007	0.8	3.4	7.6	0.4
3	2008	0.7	3.7	3.6	0.2	2008	0.7	3.7	4.1	0.2	2008	0.7	3.4	4.9	0.3	2008	0.7	3.3	5.2	0.3	2008	0.7	3.3	5.4	0.3	2008	0.7	3.2	5.5	0.3	2008	0.7	3.1	5.8	0.3	2008	0.7	3.3	7.0	0.4
3	2009	0.7	3.7	3.0	0.2	2009	0.7	3.7	3.8	0.2	2009	0.7	3.6	4.4	0.2	2009	0.7	3.5	4.7	0.3	2009	0.7	3.4	4.9	0.3	2009	0.7	3.3	5.1	0.3	2009	0.7	3.2	5.4	0.3	2009	0.7	3.3	6.5	0.3
3	2010	0.7	3.7	3.0	0.2	2010	0.7	3.7	3.4	0.2	2010	0.7	3.7	3.8	0.2	2010	0.7	3.7	3.8	0.2	2010	0.7	3.6	4.3	0.2	2010	0.7	3.4	4.7	0.3	2010	0.7	3.3	5.1	0.3	2010	0.7	3.2	5.9	0.3

Emissions by Equipment Type (grams per brake-horsepower hour)

175-299 hp	Bore Rig, 3 year life: Year	ROG	CO	NOx	PM10	5 year life, Skid Steer Loaders: Year	ROG	CO	NOx	PM10	7 year life, Trenchers: Year	ROG	CO	NOx	PM10	8 year life, pavers, rollers, rough terrain forklifts, rubber tired loaders: Year	ROG	CO	NOx	PM10	9 year life, Cranes: Year	ROG	CO	NOx	PM10	10 year life, Graders, Off-highway Trucks: Year	ROG	CO	NOx	PM10	12 year life, scrapers: Year	ROG	CO	NOx	PM10	16 year life, concrete/industrial saws, crawler tractors, paving equipment, rubber tired dozers, signal boards, surfacing equipment, tra crushing equip., off-highway tractors, other construction equipment: Year	ROG	CO	NOx	PM10
4	2000	1.0	8.5	6.9	0.4	2000	1.0	8.5	6.9	0.4	2000	1.0	7.2	8.2	0.5	2000	1.0	6.8	8.6	0.5	2000	1.0	6.5	9.0	0.5	2000	1.0	6.3	9.2	0.5	2000	1.0	5.9	9.6	0.5	2000	1.0	5.5	10.1	0.5
4	2001	1.0	8.5	6.9	0.4	2001	1.0	8.5	6.9	0.4	2001	1.0	7.9	7.6	0.4	2001	1.0	7.4	8.1	0.4	2001	1.0	7.0	8.4	0.5	2001	1.0	6.7	8.8	0.5	2001	1.0	6.3	9.2	0.5	2001	1.0	5.7	9.8	0.5
4	2002	1.0	8.5	6.9	0.4	2002	1.0	8.5	6.9	0.4	2002	1.0	8.5	6.9	0.4	2002	1.0	7.9	7.5	0.4	2002	1.0	7.5	7.9	0.4	2002	1.0	7.2	8.3	0.5	2002	1.0	6.7	8.8	0.5	2002	1.0	6.0	9.5	0.5
4	2003	1.0	6.5	5.9	0.3	2003	1.0	7.3	6.3	0.4	2003	1.0	7.7	6.5	0.4	2003	1.0	7.8	6.5	0.4	2003	1.0	7.4	7.1	0.4	2003	1.0	7.0	7.5	0.4	2003	1.0	6.5	8.2	0.4	2003	1.0	5.9	9.0	0.5
4	2004	1.0	4.6	4.9	0.2	2004	1.0	6.1	5.7	0.3	2004	1.0	6.8	6.0	0.3	2004	1.0	7.0	6.2	0.3	2004	1.0	7.2	6.2	0.3	2004	1.0	6.9	6.8	0.4	2004	1.0	6.4	7.6	0.4	2004	1.0	5.8	8.5	0.4
4	2005	1.0	2.6	3.9	0.1	2005	1.0	5.0	5.1	0.3	2005	1.0	6.0	5.6	0.3	2005	1.0	6.3	5.8	0.3	2005	1.0	6.5	5.9	0.3	2005	1.0	6.7	6.0	0.3	2005	1.0	6.3	6.9	0.4	2005	1.0	5.7	8.1	0.4
4	2006	1.0	2.6	3.3	0.1	2006	1.0	3.8	4.1	0.2	2006	1.0	5.1	4.9	0.3	2006	1.0	5.6	5.2	0.3	2006	1.0	5.9	5.4	0.3	2006	1.0	6.1	5.5	0.3	2006	1.0	6.2	6.1	0.3	2006	1.0	5.6	7.5	0.4
4	2007	1.0	2.6	2.6	0.1	2007	1.0	2.6	3.1	0.2	2007	1.0	4.3	4.2	0.2	2007	1.0	4.8	4.6	0.2	2007	1.0	5.2	4.8	0.3	2007	1.0	5.6	5.0	0.3	2007	1.0	6.0	5.3	0.3	2007	1.0	5.5	6.9	0.4
4	2008	1.0	2.6	2.0	0.1	2008	1.0	2.6	2.8	0.2	2008	1.0	3.4	3.5	0.2	2008	1.0	4.1	3.9	0.2	2008	1.0	4.6	4.3	0.2	2008	1.0	5.0	4.5	0.3	2008	1.0	5.6	4.9	0.3	2008	1.0	5.5	6.3	0.3
4	2009	1.0	2.6	2.0	0.1	2009	1.0	2.6	2.4	0.2	2009	1.0	2.6	2.8	0.2	2009	1.0	3.3	3.3	0.2	2009	1.0	3.9	3.7	0.2	2009	1.0	4.4	4.0	0.2	2009	1.0	5.1	4.5	0.3	2009	1.0	5.4	5.7	0.3
4	2010	1.0	2.6	2.0	0.1	2010	1.0	2.6	2.0	0.2	2010	1.0	2.6	2.5	0.2	2010	1.0	2.6	2.5	0.2	2010	1.0	2.6	2.8	0.2	2010	1.0	3.8	3.6	0.2	2010	1.0	4.6	4.1	0.2	2010	1.0	5.3	5.1	0.3

Emissions by Equipment Type (grams per brake-horsepower hour)

300-599 hp	Bore Rig, 3 year life: Year	ROG	CO	NOx	PM10	5 year life, Skid Steer Loaders: Year	ROG	CO	NOx	PM10	7 year life, Trenchers: Year	ROG	CO	NOx	PM10	8 year life, pavers, rollers, rough terrain forklifts, rubber tired loaders: Year	ROG	CO	NOx	PM10	9 year life, Cranes: Year	ROG	CO	NOx	PM10	10 year life, Graders, Off-highway Trucks: Year	ROG	CO	NOx	PM10	12 year life, scrapers: Year	ROG	CO	NOx	PM10	16 year life, concrete/industrial saws, crawler tractors, paving equipment, rubber tired dozers, signal boards, surfacing equipment, tra crushing equip., off-highway tractors, other construction equipment: Year	ROG	CO	NOx	PM10
5	2000	1.0	8.5	6.9	0.4	2000	1.0	8.5	6.9	0.4	2000	1.0	7.2	8.2	0.4	2000	1.0	6.8	8.6	0.5	2000	1.0	6.5	9.0	0.5	2000	1.0	6.2	9.2	0.5	2000	1.0	5.8	9.6	0.5	2000	1.0	5.4	10.1	0.5
5	2001	1.0	6.5	5.9	0.3	2001	1.0	7.3	6.3	0.4	2001	1.0	7.0	7.1	0.4	2001	1.0	6.6	7.7	0.4	2001	1.0	6.3	8.1	0.4	2001	1.0	6.1	8.4	0.4	2001	1.0	5.7	9.0	0.5	2001	1.0	5.3	9.6	0.5
5	2002	1.0	4.6	4.8	0.2	2002	1.0	6.1	5.7	0.3	2002	1.0	6.8	6.0	0.3	2002	1.0	6.5	6.7	0.4	2002	1.0	6.2	7.2	0.4	2002	1.0	6.0	7.7	0.4	2002	1.0	5.6	8.3	0.4	2002	1.0	5.2	9.1	0.5
5	2003	1.0	2.6	3.8	0.1	2003	1.0	5.0	5.0	0.3	2003	1.0	6.0	5.6	0.3	2003	1.0	6.3	5.7	0.3	2003	1.0	6.0	6.4	0.3	2003	1.0	5.8	6.9	0.4	2003	1.0	5.5	7.7	0.4	2003	1.0	5.1	8.6	0.4
5	2004	1.0	2.6	3.8	0.1	2004	1.0	3.8	4.4	0.2	2004	1.0	5.1	5.1	0.3	2004	1.0	5.6	5.4	0.3	2004	1.0	5.9	5.5	0.3	2004	1.0	5.7	6.1	0.3	2004	1.0	5.4	7.0	0.4	2004	1.0	5.0	8.1	0.4
5	2005	1.0	2.6	3.8	0.1	2005	1.0	2.6	3.8	0.2	2005	1.0	4.3	4.7	0.2	2005	1.0	4.8	5.0	0.2	2005	1.0	5.2	5.2	0.3	2005	1.0	5.6	5.4	0.3	2005	1.0	5.3	6.4	0.3	2005	1.0	4.9	7.7	0.4
5	2006	1.0	2.6	3.2	0.1	2006	1.0	2.6	3.4	0.2	2006	1.0	3.4	4.0	0.2	2006	1.0	4.1	4.4	0.2	2006	1.0	4.6	4.6	0.2	2006	1.0	5.0	4.9	0.3	2006	1.0	5.2	5.6	0.3	2006	1.0	4.9	7.1	0.4
5	2007	1.0	2.6	2.6	0.1	2007	1.0	2.6	3.1	0.2	2007	1.0	2.6	3.3	0.2	2007	1.0	3.3	3.7	0.2	2007	1.0	3.9	4.1	0.2	2007	1.0	4.4	4.4	0.2	2007	1.0	5.1	4.8	0.3	2007	1.0	4.8	6.5	0.3
5	2008	1.0	2.6	2.0	0.1	2008	1.0	2.6	2.7	0.2	2008	1.0	2.6	3.0	0.2	2008	1.0	2.6	3.1	0.2	2008	1.0	3.3	3.5	0.2	2008	1.0	3.8	3.9	0.2	2008	1.0	4.6	4.4	0.2	2008	1.0	4.7	5.9	0.3
5	2009	1.0	2.6	2.0	0.1	2009	1.0	2.6	2.4	0.2	2009	1.0	2.6	2.8	0.2	2009	1.0	2.6	2.9	0.2	2009	1.0	2.6	3.0	0.2	2009	1.0	3.2	3.4	0.2	2009	1.0	4.1	4.0	0.2	2009	1.0	4.6	5.3	0.3
5	2010	1.0	2.6	2.0	0.1	2010	1.0	2.6	2.0	0.2	2010	1.0	2.6	2.5	0.2	2010	1.0	2.6	2.5	0.2	2010	1.0	2.6	2.8	0.2	2010	1.0	2.6	2.9	0.2	2010	1.0	3.6	3.6	0.2	2010	1.0	4.5	4.7	0.3

Emissions by Equipment Type (grams per brake-horsepower hour)

600-749 hp	Bore Rig, 3 year life: Year	ROG	CO	NOx	PM10	5 year life, Skid Steer Loaders: Year	ROG	CO	NOx	PM10	7 year life, Trenchers: Year	ROG	CO	NOx	PM10	8 year life, pavers, rollers, rough terrain forklifts, rubber tired loaders: Year	ROG	CO	NOx	PM10	9 year life, Cranes: Year	ROG	CO	NOx	PM10	10 year life, Graders, Off-highway Trucks: Year	ROG	CO	NOx	PM10	12 year life, scrapers: Year	ROG	CO	NOx	PM10	16 year life, concrete/industrial saws, crawler tractors, paving equipment, rubber tired dozers, signal boards, surfacing equipment, tra crushing equip., off-highway tractors, other construction equipment: Year	ROG	CO	NOx	PM10
6	2000	1.0	8.5	6.9	0.4	2000	1.0	8.5	6.9	0.4	2000	1.0	7.2	8.2	0.4	2000	1.0	6.8	8.6	0.5	2000	1.0	6.5	9.0	0.5	2000	1.0	6.2	9.2	0.5	2000	1.0	5.8	9.6	0.5	2000	1.0	5.4	10.1	0.5
6	2001	1.0	8.5	6.9	0.4	2001	1.0	8.5	6.9	0.4	2001	1.0	7.8	7.6	0.4	2001	1.0	7.4	8.1	0.4	2001	1.0	7.0	8.4	0.5	2001	1.0	6.7	8.8	0.5	2001	1.0	6.2	9.2	0.5	2001	1.0	5.6	9.8	0.5
6	2002	1.0	6.5	5.9	0.3	2002	1.0	7.3	6.3	0.4	2002	1.0	7.7	6.5	0.4	2002	1.0	7.2	7.1	0.4	2002	1.0	6.8	7.6	0.4	2002	1.0	6.5	8.0	0.4	2002	1.0	6.1	8.6	0.4	2002	1.0	5.6	9.3	0.5
6	2003	1.0	4.6	4.8	0.2	2003	1.0	6.1	5.7	0.3	2003	1.0	6.8	6.0	0.3	2003	1.0	7.0	6.1	0.3	2003	1.0	6.7	6.7	0.4	2003	1.0	6.4	7.2	0.4	2003	1.0	6.0	7.9	0.4	2003	1.0	5.5	8.8	0.4
6	2004	1.0	2.6	3.8	0.1	2004	1.0	5.0	5.0	0.3	2004	1.0	6.0	5.6	0.3	2004	1.0	6.3	5.7	0.3	2004	1.0	6.5	5.9	0.3	2004	1.0	6.3	6.4	0.3	2004	1.0	5.9	7.3	0.4	2004	1.0	5.4	8.3	0.4
6	2005	1.0	2.6	3.8	0.1	2005	1.0	3.8	4.4	0.2	2005	1.0	5.1	5.1	0.3	2005	1.0	5.6	5.4	0.3	2005	1.0	5.9	5.5	0.3	2005	1.0	6.1	5.7	0.3	2005	1.0	5.8	6.6	0.3	2005	1.0	5.3	7.9	0.4
6	2006	1.0	2.6	3.2	0.1	2006	1.0	2.6	3.4	0.2	2006	1.0	4.3	4.4	0.2	2006	1.0	4.8	4.7	0.2	2006	1.0	5.2	5.0	0.3	2006	1.0	5.6	5.2	0.3	2006	1.0	5.7	5.8	0.3	2006	1.0	5.2	7.3	0.4
6	2007	1.0	2.6	2.6	0.1	2007	1.0	2.6	3.1	0.2	2007	1.0	3.4	3.7	0.2	2007	1.0	4.1	4.1	0.2	2007	1.0	4.6	4.4	0.2	2007	1.0	5.0	4.7	0.3	2007	1.0	5.6	5.1	0.3	2007	1.0	5.1	6.7	0.3
6	2008	1.0	2.6	2.0	0.1	2008	1.0	2.6	2.7	0.2	2008	1.0	2.6	3.0	0.2	2008	1.0	3.3	3.5	0.2	2008	1.0	3.9	3.9	0.2	2008	1.0	4.4	4.2	0.2	2008	1.0	5.1	4.6	0.3	2008	1.0	5.1	6.1	0.3
6	2009	1.0	2.6	2.0	0.1	2009	1.0	2.6	2.4	0.2	2009	1.0	2.6	2.8	0.2	2009	1.0	2.6	2.9	0.2	2009	1.0	3.3	3.3	0.2	2009	1.0	3.8	3.7	0.2	2009	1.0	4.6	4.2	0.2	2009	1.0	5.0	5.5	0.3
6	2010	1.0	2.6	2.0	0.1	2010	1.0	2.6	2.0	0.2	2010	1.0	2.6	2.5	0.2	2010	1.0	2.6	2.5	0.2	2010	1.0	2.6	2.8	0.2	2010	1.0	3.2	3.2	0.2	2010	1.0	4.1	3.8	0.2	2010	1.0	4.9	4.9	0.3

Emissions by Equipment Type (grams per brake-horsepower hour)

750+ hp	Bore Rig, 3 year life: Year	ROG	CO	NOx	PM10	5 year life, Skid Steer Loaders: Year	ROG	CO	NOx	PM10	7 year life, Trenchers Excavators: Year	ROG	CO	NOx	PM10	8 year life, pavers, rollers, rough terrain forklifts, rubber tired loaders: Year	ROG	CO	NOx	PM10	9 year life, Cranes: Year	ROG	CO	NOx	PM10	10 year life, Graders, Off-highway Trucks: Year	ROG	CO	NOx	PM10	12 year life, scrapers: Year	ROG	CO	NOx	PM10	16 year life, concrete/industrial saws, crawler tractors, paving equipment, rubber tired dozers, signal boards, surfacing equipment, tra crushing equip., off-highway tractors, other construction equipment: Year	ROG	CO	NOx	PM10
7	2000	1.0	8.5	6.9	0.4	2000	1.0	8.5	6.9	0.4	2000	1.0	7.3	8.4	0.5	2000	1.0	6.9	8.9	0.5	2000	1.0	6.6	9.3	0.5	2000	1.0	6.3	9.6	0.5	2000	1.0	6.0	10.0	0.5	2000	1.0	5.5	10.5	0.5
7	2001	1.0	8.5	6.9	0.4	2001	1.0	8.5	6.9	0.4	2001	1.0	7.9	7.7	0.4	2001	1.0	7.4	8.2	0.4	2001	1.0	7.1	8.7	0.5	2001	1.0	6.8	9.0	0.5	2001	1.0	6.3	9.6	0.5	2001	1.0	5.8	10.2	0.5
7	2002	1.0	8.5	6.9	0.4	2002	1.0	8.5	6.9	0.4	2002	1.0	8.5	6.9	0.4	2002	1.0	8.0	7.6	0.4	2002	1.0	7.5	8.1	0.4	2002	1.0	7.2	8.5	0.5	2002	1.0	6.7	9.1	0.5	2002	1.0	6.1	9.9	0.5
7	2003	1.0	8.5	6.9	0.4	2003	1.0	8.5	6.9	0.4	2003	1.0	8.5	6.9	0.4	2003	1.0	8.5	6.9	0.4	2003	1.0	8.0	7.5	0.4	2003	1.0	7.6	8.0	0.4	2003	1.0	7.1	8.7	0.5	2003	1.0	6.3	9.6	0.5
7	2004	1.0	8.5	6.9	0.4	2004	1.0	8.5	6.9	0.4	2004	1.0	8.5	6.9	0.4	2004	1.0	8.5	6.9	0.4	2004	1.0	8.5	6.9	0.4	2004	1.0	8.1	7.4	0.4	2004	1.0	7.4	8.2	0.4	2004	1.0	6.6	9.2	0.5
7	2005	1.0	8.5	6.9	0.4	2005	1.0	8.5	6.9	0.4	2005	1.0	8.5	6.9	0.4	2005	1.0	8.5	6.9	0.4	2005	1.0	8.5	6.9	0.4	2005	1.0	8.5	6.9	0.4	2005	1.0	7.8	7.8	0.4	2005	1.0	6.9	8.9	0.5
7	2006	1.0	6.5	5.9	0.3	2006	1.0	7.3	6.3	0.4	2006	1.0	7.7	6.5	0.4	2006	1.0	7.8	6.5	0.4	2006	1.0	7.8	6.6	0.4	2006	1.0	7.9	6.6	0.4	2006	1.0	7.6	7.1	0.4	2006	1.0	6.8	8.4	0.4
7	2007	1.0	4.6	4.8	0.2	2007	1.0	6.1	5.7	0.3	2007	1.0	6.8	6.0	0.3	2007	1.0	7.0	6.1	0.3	2007	1.0	7.2	6.2	0.3	2007	1.0	7.3	6.3	0.4	2007	1.0	7.5	6.4	0.4	2007	1.0	6.7	7.8	0.4
7	2008	1.0	2.6	3.8	0.1	2008	1.0	5.0	5.0	0.3	2008	1.0	6.0	5.6	0.3	2008	1.0	6.3	5.7	0.3	2008	1.0	6.5	5.9	0.3	2008	1.0	6.7	6.0	0.3	2008	1.0	7.0	6.1	0.3	2008	1.0	6.6	7.3	0.4
7	2009	1.0	2.6	3.8	0.1	2009	1.0	3.8	4.4	0.2	2009	1.0	5.1	5.1	0.3	2009	1.0	5.6	5.4	0.3	2009	1.0	5.9	5.5	0.3	2009	1.0	6.1	5.7	0.3	2009	1.0	6.5	5.9	0.3	2009	1.0	6.5	6.8	0.4
7	2010	1.0	2.6	3.8	0.1	2010	1.0	2.6	3.8	0.2	2010	1.0	4.3	4.7	0.2	2010	1.0	4.3	4.7	0.2	2010	1.0	5.2	5.2	0.3	2010	1.0	5.6	5.4	0.3	2010	1.0	6.0	5.6	0.3	2010	1.0	6.4	6.3	0.3

OFFROAD APPENDIX D

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
330	The following emission rates by equipment type and year cannot be directly edited. The rates shown below,																				
331	however, will change when changes are made to the default values for horsepower, load factor, and/or hours																				
332																					
333	Emissions (pounds / day)		ROG	ROG	ROG	ROG		CO	CO	CO	CO		NOx	NOx	NOx	NOx		PM10	PM10	PM10	PM10
334	Bore/Drill Rigs		Weighted	Weighted	Weighted	Weighted	3 year life	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
335		ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Land	Grading	Drainage	Paving
336	2000	2.87	0.00	0.00	0.00	0.00	24.43	0.00	0.00	0.00	0.00	19.83	0.00	0.00	0.00	0.00	1.15	0.00	0.00	0.00	0.00
337	2001	2.87	0.00	0.00	0.00	0.00	24.43	0.00	0.00	0.00	0.00	19.83	0.00	0.00	0.00	0.00	1.15	0.00	0.00	0.00	0.00
338	2002	2.87	0.00	0.00	0.00	0.00	24.43	0.00	0.00	0.00	0.00	19.83	0.00	0.00	0.00	0.00	1.15	0.00	0.00	0.00	0.00
339	2003	2.87	0.00	0.00	0.00	0.00	18.77	0.00	0.00	0.00	0.00	16.95	0.00	0.00	0.00	0.00	0.91	0.00	0.00	0.00	0.00
340	2004	2.87	2.87	2.87	2.87	2.87	13.12	13.12	13.12	13.12	13.12	14.08	14.08	14.08	14.08	14.08	0.67	0.67	0.67	0.67	0.67
341	2005	2.87	0.00	0.00	0.00	0.00	7.47	0.00	0.00	0.00	0.00	11.21	0.00	0.00	0.00	0.00	0.43	0.00	0.00	0.00	0.00
342	2006	2.87	0.00	0.00	0.00	0.00	7.47	0.00	0.00	0.00	0.00	9.39	0.00	0.00	0.00	0.00	0.43	0.00	0.00	0.00	0.00
343	2007	2.87	0.00	0.00	0.00	0.00	7.47	0.00	0.00	0.00	0.00	7.57	0.00	0.00	0.00	0.00	0.43	0.00	0.00	0.00	0.00
344	2008	2.87	0.00	0.00	0.00	0.00	7.47	0.00	0.00	0.00	0.00	5.75	0.00	0.00	0.00	0.00	0.43	0.00	0.00	0.00	0.00
345	2009	2.87	0.00	0.00	0.00	0.00	7.47	0.00	0.00	0.00	0.00	5.75	0.00	0.00	0.00	0.00	0.43	0.00	0.00	0.00	0.00
346	2010	2.87	0.00	0.00	0.00	0.00	7.47	0.00	0.00	0.00	0.00	5.75	0.00	0.00	0.00	0.00	0.43	0.00	0.00	0.00	0.00
347			2.87	2.87	2.87	2.87		13.12	13.12	13.12	13.12		14.08	14.08	14.08	14.08		0.67	0.67	0.67	0.67
348	Concrete/Industrial Saws		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
349		ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Land	Grading	Drainage	Paving
350	2000	1.23	0.00	0.00	0.00	0.00	4.24	0.00	0.00	0.00	0.00	10.37	0.00	0.00	0.00	0.00	0.80	0.00	0.00	0.00	0.00
351	2001	1.22	0.00	0.00	0.00	0.00	4.20	0.00	0.00	0.00	0.00	10.11	0.00	0.00	0.00	0.00	0.79	0.00	0.00	0.00	0.00
352	2002	1.20	0.00	0.00	0.00	0.00	4.16	0.00	0.00	0.00	0.00	9.84	0.00	0.00	0.00	0.00	0.79	0.00	0.00	0.00	0.00
353	2003	1.19	0.00	0.00	0.00	0.00	4.11	0.00	0.00	0.00	0.00	9.57	0.00	0.00	0.00	0.00	0.78	0.00	0.00	0.00	0.00
354	2004	1.17	1.17	1.17	1.17	1.17	4.08	4.08	4.08	4.08	4.08	9.22	9.22	9.22	9.22	9.22	0.75	0.75	0.75	0.75	0.75
355	2005	1.16	0.00	0.00	0.00	0.00	4.05	0.00	0.00	0.00	0.00	8.86	0.00	0.00	0.00	0.00	0.72	0.00	0.00	0.00	0.00
356	2006	1.14	0.00	0.00	0.00	0.00	4.02	0.00	0.00	0.00	0.00	8.51	0.00	0.00	0.00	0.00	0.69	0.00	0.00	0.00	0.00
357	2007	1.13	0.00	0.00	0.00	0.00	3.99	0.00	0.00	0.00	0.00	8.01	0.00	0.00	0.00	0.00	0.66	0.00	0.00	0.00	0.00
358	2008	1.11	0.00	0.00	0.00	0.00	3.96	0.00	0.00	0.00	0.00	7.51	0.00	0.00	0.00	0.00	0.63	0.00	0.00	0.00	0.00
359	2009	1.10	0.00	0.00	0.00	0.00	3.93	0.00	0.00	0.00	0.00	7.02	0.00	0.00	0.00	0.00	0.60	0.00	0.00	0.00	0.00
360	2010	1.08	0.00	0.00	0.00	0.00	3.90	0.00	0.00	0.00	0.00	6.52	0.00	0.00	0.00	0.00	0.56	0.00	0.00	0.00	0.00
361			1.17	1.17	1.17	1.17		4.08	4.08	4.08	4.08		9.22	9.22	9.22	9.22		0.75	0.75	0.75	0.75
362	Cranes		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
363		ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Land	Grading	Drainage	Paving
364	2000	1.43	0.00	0.00	0.00	0.00	9.42	0.00	0.00	0.00	0.00	12.93	0.00	0.00	0.00	0.00	0.69	0.00	0.00	0.00	0.00
365	2001	1.44	0.00	0.00	0.00	0.00	10.13	0.00	0.00	0.00	0.00	12.18	0.00	0.00	0.00	0.00	0.66	0.00	0.00	0.00	0.00
366	2002	1.44	0.00	0.00	0.00	0.00	10.84	0.00	0.00	0.00	0.00	11.44	0.00	0.00	0.00	0.00	0.63	0.00	0.00	0.00	0.00
367	2003	1.44	0.00	0.00	0.00	0.00	10.61	0.00	0.00	0.00	0.00	10.22	0.00	0.00	0.00	0.00	0.57	0.00	0.00	0.00	0.00
368	2004	1.44	1.44	1.44	1.44	1.44	10.37	10.37	10.37	10.37	10.37	8.99	8.99	8.99	8.99	8.99	0.50	0.50	0.50	0.50	0.50
369	2005	1.44	0.00	0.00	0.00	0.00	9.43	0.00	0.00	0.00	0.00	8.51	0.00	0.00	0.00	0.00	0.46	0.00	0.00	0.00	0.00
370	2006	1.44	0.00	0.00	0.00	0.00	8.48	0.00	0.00	0.00	0.00	7.73	0.00	0.00	0.00	0.00	0.42	0.00	0.00	0.00	0.00
371	2007	1.44	0.00	0.00	0.00	0.00	7.54	0.00	0.00	0.00	0.00	6.94	0.00	0.00	0.00	0.00	0.38	0.00	0.00	0.00	0.00
372	2008	1.44	0.00	0.00	0.00	0.00	6.59	0.00	0.00	0.00	0.00	6.16	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.00	0.00
373	2009	1.44	0.00	0.00	0.00	0.00	5.64	0.00	0.00	0.00	0.00	5.37	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00
374	2010	1.44	0.00	0.00	0.00	0.00	3.75	0.00	0.00	0.00	0.00	4.10	0.00	0.00	0.00	0.00	0.22	0.00	0.00	0.00	0.00
375			1.44	1.44	1.44	1.44		10.37	10.37	10.37	10.37		8.99	8.99	8.99	8.99		0.50	0.50	0.50	0.50
376	Crawler Tractors		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
377		ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Land	Grading	Drainage	Paving
378	2000	1.36	0.00	0.00	0.00	0.00	5.56	0.00	0.00	0.00	0.00	15.32	0.00	0.00	0.00	0.00	0.79	0.00	0.00	0.00	0.00
379	2001	1.32	0.00	0.00	0.00	0.00	5.41	0.00	0.00	0.00	0.00	14.84	0.00	0.00	0.00	0.00	0.77	0.00	0.00	0.00	0.00
380	2002	1.29	0.00	0.00	0.00	0.00	5.26	0.00	0.00	0.00	0.00	14.36	0.00	0.00	0.00	0.00	0.74	0.00	0.00	0.00	0.00
381	2003	1.26	0.00	0.00	0.00	0.00	5.11	0.00	0.00	0.00	0.00	13.87	0.00	0.00	0.00	0.00	0.72	0.00	0.00	0.00	0.00
382	2004	1.22	1.22	1.22	1.22	1.22	5.06	5.06	5.06	5.06	5.06	13.21	13.21	13.21	13.21	13.21	0.69	0.69	0.69	0.69	0.69
383	2005	1.19	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	12.55	0.00	0.00	0.00	0.00	0.65	0.00	0.00	0.00	0.00
384	2006	1.16	0.00	0.00	0.00	0.00	4.94	0.00	0.00	0.00	0.00	11.89	0.00	0.00	0.00	0.00	0.62	0.00	0.00	0.00	0.00
385	2007	1.12	0.00	0.00	0.00	0.00	4.88	0.00	0.00	0.00	0.00	11.05	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00	0.00
386	2008	1.09	0.00	0.00	0.00	0.00	4.82	0.00	0.00	0.00	0.00	10.22	0.00	0.00	0.00	0.00	0.54	0.00	0.00	0.00	0.00
387	2009	1.05	0.00	0.00	0.00	0.00	4.77	0.00	0.00	0.00	0.00	9.38	0.00	0.00	0.00	0.00	0.51	0.00	0.00	0.00	0.00
388	2010	1.02	0.00	0.00	0.00	0.00	4.71	0.00	0.00	0.00	0.00	8.54	0.00	0.00	0.00	0.00	0.47	0.00	0.00	0.00	0.00
389			1.22	1.22	1.22	1.22		5.06	5.06	5.06	5.06		13.21	13.21	13.21	13.21		0.69	0.69	0.69	0.69
390	Crushing/Proc. Equipment		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
391		ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Land	Grading	Drainage	Paving
392	2000	1.98	0.00	0.00	0.00	0.00	8.12	0.00	0.00	0.00	0.00	22.37	0.00	0.00	0.00	0.00	1.15	0.00	0.00	0.00	0.00
393	2001	1.93	0.00	0.00	0.00	0.00	7.90	0.00	0.00	0.00	0.00	21.66	0.00	0.00	0.00	0.00	1.12	0.00	0.00	0.00	0.00
394	2002	1.88	0.00	0.00	0.00	0.00	7.68	0.00	0.00	0.00	0.00	20.96	0.00	0.00	0.00	0.00	1.09	0.00	0.00	0.00	0.00
395	2003	1.83	0.00	0.00	0.00	0.00	7.47	0.00	0.00	0.00	0.00	20.26	0.00	0.00	0.00	0.00	1.06	0.00	0.00	0.00	0.00
396	2004	1.78	1.78	1.78	1.78	1.78	7.38	7.38	7.38	7.38	7.38	19.29	19.29	19.29	19.29	19.29	1.00	1.00	1.00	1.00	1.00
397	2005	1.74	0.00	0.00	0.00	0.00	7.30	0.00	0.00	0.00	0.00	18.32	0.00	0.00	0.00	0.00	0.95	0.00	0.00	0.00	0.00
398	2006	1.69	0.00	0.00	0.00	0.00	7.21	0.00	0.00	0.00	0.00	17.35	0.00	0.00	0.00	0.00	0.90	0.00	0.00	0.00	0.00
399	2007	1.64	0.00	0.00	0.00	0.00	7.13	0.00	0.00	0.00	0.00	16.13	0.00	0.00	0.00	0.00	0.85	0.00	0.00	0.00	0.00
400	2008	1.59	0.00	0.00	0.00	0.00	7.04	0.00	0.00	0.00	0.00	14.91	0.00	0.00	0.00	0.00	0.79	0.00	0.00	0.00	0.00
401	2009	1.54	0.00	0.00	0.00	0.00	6.96	0.00	0.00	0.00	0.00	13.70	0.00	0.00	0.00	0.00	0.74	0.00	0.00	0.00	0.00
402	2010	1.49	0.00	0.00	0.00	0.00	6.87	0.00	0.00	0.00	0.00	12.48	0.00	0.00	0.00	0.00	0.69	0.00	0.00	0.00	0.00
403			1.78	1.78	1.78	1.78		7.38	7.38	7.38	7.38		19.29	19.29	19.29	19.29		1.00	1.00	1.00	1.00
404	Excavators	1	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
405		ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Land	Grading	Drainage	Paving
406	2000	1.83	0.00	0.00	0.00	0.00	13.31	0.00	0.00	0.00	0.00	15.13	0.00	0.00	0.00	0.00	0.83	0.00	0.00	0.00	0.00
407	2001	1.84	0.00	0.00	0.00	0.00	14.48	0.00	0.00	0.00	0.00	13.92	0.00	0.00	0.00	0.00	0.78	0.00	0.00	0.00	0.00
408	2002	1.84	0.00	0.00	0.00	0.00	15.64	0.00	0.00	0.00	0.00	12.70	0.00	0.00	0.00	0.00	0.74	0.00	0.00	0.00	0.00
409	2003	1.84	0.00	0.00	0.00	0.00	14.09	0.00	0.00	0.00	0.00	11.91	0.00	0.00	0.00	0.00	0.67	0.00	0.00	0.00	0.00
410	2004	1.84	1.84	1.84	1.84	1.84	12.54	12.54	12.54	12.54	12.54	11.12	11.12	11.12	11.12	11.12	0.60	0.60	0.60	0.60	0.60
411	2005	1.84	0.00	0.00	0.00	0.00	10.99	0.00	0.00	0.00	0.00	10.33	0.00	0.00	0.00	0.00	0.54	0.00	0.00	0.00	0.00
412	2006	1.84	0.00	0.00	0.00	0.00	9.44	0.00	0.00	0.00	0.00	9.04	0.00	0.00	0.00	0.00	0.47	0.00	0.00	0.00	0.00
413	2007	1.84	0.00	0.00	0.00	0.00	7.89	0.00	0.00	0.00	0.00	7.76	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.00	0.00
414	2008	1.84	0.00	0.00	0.00	0.00	6.34	0.00	0.00	0.00	0.00	6.47	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.00	0.00
415	2009	1.84	0.00	0.00	0.00	0.00	4.79	0.00	0.00	0.00	0.00	5.18	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00
416	2010	1.84	0.00	0.00	0.00	0.00	4.79	0.00	0.00	0.00	0.00	4.68	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00
417			1.84	1.84	1.84	1.84		12.54	12.54	12.54	12.54		11.12	11.12	11.12	11.12		0.60	0.60	0.60	0.60
418	Graders		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
419		ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Land	Grading	Drainage	Paving
420	2000	1.52	0.00	0.00	0.00	0.00	6.20	0.00	0.00	0.00	0.00	16.83	0.00	0.00	0.00	0.00	0.88	0.00	0.00	0.00	0.00
421	2001	1.46	0.00	0.00	0.00	0.00	5.92	0.00	0.00	0.00	0.00	15.90	0.00	0.00	0.00	0.00	0.84	0.00	0.00	0.00	0.00
422	2002	1.39	0.00	0.00	0.00	0.00	5.63	0.00	0.00	0.00	0.00	14.97	0.00	0.00	0.00	0.00	0.79	0.00	0.00	0.00	0.00
423	2003	1.33	0.00	0.00	0.00	0.00	5.34	0.00	0.00	0.00	0.00	14.03	0.00	0.00	0.00	0.00	0.75	0.00	0.00	0.00	0.00
424	2004	1.26	1.26	1.26	1.26	1.26	5.22	5.22	5.22	5.22	5.22	12.74	12.74	12.74	12.74	12.74	0.68	0.68	0.68	0.68	0.68
425	2005	1.20	0.00	0.00	0.00	0.00	5.11	0.00	0.00	0.00	0.00	11.46	0.00	0.00	0.00	0.00	0.61	0.00	0.00	0.00	0.00
426	2006	1.20	0.00	0.00	0.00	0.00	5.29	0.00	0.00	0.00	0.00	11.11	0.00	0.00	0.00	0.00	0.59	0.00	0.00	0.00	0.00
427	2007	1.20	0.00	0.00	0.00	0.00	5.46	0.00	0.00	0.00	0.00	10.42	0.00	0.00	0.00	0.00	0.56	0.00	0.00	0.00	0.00
428	2008	1.20	0.00	0.00	0.00	0.00	5.64	0.00	0.00	0.00	0.00	9.73	0.00	0.00	0.00	0.00	0.53	0.00	0.00	0.00	0.00
429	2009	1.20	0.00	0.00	0.00	0.00	5.82	0.00	0.00	0.00	0.00	9.04	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00
430	2010	1.20	0.00	0.00	0.00	0.00	5.99	0.00	0.00	0.00	0.00	8.36	0.00	0.00	0.00	0.00	0.47	0.00	0.00	0.00	0.00
431			1.26	1.26	1.26	1.26		5.22	5.22	5.22	5.22		12.74	12.74	12.74	12.74		0.68	0.68	0.68	0.68
432	Off-Highway Tractors	255 hp	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
433		ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Land	Grading	Drainage	Paving
434	2000	1.83	0.00	0.00	0.00	0.00	10.05	0.00	0.00	0.00	0.00	18.58	0.00	0.00	0.00	0.00	0.96	0.00	0.00	0.00	0.00
435	2001	1.83	0.00	0.00	0.00	0.00	10.56	0.00	0.00	0.00	0.00	18.05	0.00	0.00	0.00	0.00	0.94	0.00	0.00	0.00	0.00
436	2002	1.83	0.00	0.00	0.00	0.00	11.07	0.00	0.00	0.00	0.00	17.51	0.00	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00
437	2003	1.83	0.00	0.00	0.00	0.00	10.90	0.00	0.00	0.00	0.00	16.63	0.00	0.00	0.00	0.00	0.87	0.00	0.00	0.00	0.00
438	2004	1.83	1.83	1.83	1.83	1.83	10.73	10.73	10.73	10.73	10.73	15.76	15.76	15.76	15.76	15.76	0.82	0.82	0.82	0.82	0.82
439	2005	1.83	0.00	0.00	0.00	0.00	10.56	0.00	0.00	0.00	0.00	14.88	0.00	0.00	0.00	0.00	0.77	0.00	0.00	0.00	0.00
440	2006	1.84	0.00	0.00	0.00	0.00	10.39	0.00	0.00	0.00	0.00	13.78	0.00	0.00	0.00	0.00	0.72	0.00	0.00	0.00	0.00
441	2007	1.84	0.00	0.00	0.00	0.00	10.22	0.00	0.00	0.00	0.00	12.68	0.00	0.00	0.00	0.00	0.67	0.00	0.00	0.00	0.00
442	2008	1.84	0.00	0.00	0.00	0.00	10.05	0.00	0.00	0.00	0.00	11.58	0.00	0.00	0.00	0.00	0.63	0.00	0.00	0.00	0.00
443	2009	1.84	0.00	0.00	0.00	0.00	9.89	0.00	0.00	0.00	0.00	10.49	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00	0.00
444	2010	1.84	0.00	0.00	0.00	0.00	9.72	0.00	0.00	0.00	0.00	9.39	0.00	0.00	0.00	0.00	0.53	0.00	0.00	0.00	0.00
445			1.83	1.83	1.83	1.83		10.73	10.73	10.73	10.73		15.76	15.76	15.76	15.76		0.82	0.82	0.82	0.82
446	Off-Highway Trucks	417 hp	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
447		ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Land	Grading	Drainage	Paving
448	2000	3.51	0.00	0.00	0.00	0.00	22.39	0.00	0.00	0.00	0.00	33.19	0.00	0.00	0.00	0.00	1.72	0.00	0.00	0.00	0.00
449	2001	3.53	0.00	0.00	0.00	0.00	21.91	0.00	0.00	0.00	0.00	30.41	0.00	0.00	0.00	0.00	1.58	0.00	0.00	0.00	0.00
450	2002	3.54	0.00	0.00	0.00	0.00	21.43	0.00	0.00	0.00	0.00	27.62	0.00	0.00	0.00	0.00	1.43	0.00	0.00	0.00	0.00
451	2003	3.56	0.00	0.00	0.00	0.00	20.95	0.00	0.00	0.00	0.00	24.84	0.00	0.00	0.00	0.00	1.28	0.00	0.00	0.00	0.00
452	2004	3.58	3.58	3.58	3.58	3.58	20.47	20.47	20.47	20.47	20.47	22.06	22.06	22.06	22.06	22.06	1.14	1.14	1.14	1.14	1.14
453	2005	3.60	0.00	0.00	0.00	0.00	19.99	0.00	0.00	0.00	0.00	19.27	0.00	0.00	0.00	0.00	0.99	0.00	0.00	0.00	0.00
454	2006	3.60	0.00	0.00	0.00	0.00	17.87	0.00	0.00	0.00	0.00	17.51	0.00	0.00	0.00	0.00	0.90	0.00	0.00	0.00	0.00
455	2007	3.60	0.00	0.00	0.00	0.00	15.74	0.00	0.00	0.00	0.00	15.74	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00	0.00
456	2008	3.60	0.00	0.00	0.00	0.00	13.62	0.00	0.00	0.00	0.00	13.98	0.00	0.00	0.00	0.00	0.72	0.00	0.00	0.00	0.00
457	2009	3.60	0.00	0.00	0.00	0.00	11.49	0.00	0.00	0.00	0.00	12.21	0.00	0.00	0.00	0.00	0.63	0.00	0.00	0.00	0.00
458	2010	3.60	0.00	0.00	0.00	0.00	9.37	0.00	0.00	0.00	0.00	10.45	0.00	0.00	0.00	0.00	0.54	0.00	0.00	0.00	0.00
459			3.58	3.58	3.58	3.58		20.47	20.47	20.47	20.47		22.06	22.06	22.06	22.06		1.14	1.14	1.14	1.14
460	Other Construction Equipment		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
461		ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Land	Grading	Drainage	Paving
462	2000	2.07	0.00	0.00	0.00	0.00	13.07	0.00	0.00	0.00	0.00	19.17	0.00	0.00	0.00	0.00	1.02	0.00	0.00	0.00	0.00
463	2001	2.07	0.00	0.00	0.00	0.00	14.00	0.00	0.00	0.00	0.00	18.21	0.00	0.00	0.00	0.00	0.98	0.00	0.00	0.00	0.00
464	2002	2.07	0.00	0.00	0.00	0.00	14.92	0.00	0.00	0.00	0.00	17.25	0.00	0.00	0.00	0.00	0.94	0.00	0.00	0.00	0.00
465	2003	2.08	0.00	0.00	0.00	0.00	14.61	0.00	0.00	0.00	0.00	15.66	0.00	0.00	0.00	0.00	0.85	0.00	0.00	0.00	0.00
466	2004	2.08	2.08	2.08	2.08	2.08	14.31	14.31	14.31	14.31	14.31	14.07	14.07	14.07	14.07	14.07	0.76	0.76	0.76	0.76	0.76
467	2005	2.08	0.00	0.00	0.00	0.00	14.00	0.00	0.00	0.00	0.00	12.48	0.00	0.00	0.00	0.00	0.68	0.00	0.00	0.00	0.00
468	2006	2.08	0.00	0.00	0.00	0.00	12.77	0.00	0.00	0.00	0.00	11.46	0.00	0.00	0.00	0.00	0.62	0.00	0.00	0.00	0.00
469	2007	2.08	0.00	0.00	0.00	0.00	11.55	0.00	0.00	0.00	0.00	10.44	0.00	0.00	0.00	0.00	0.57	0.00	0.00	0.00	0.00
470	2008	2.08	0.00	0.00	0.00	0.00	10.32	0.00	0.00	0.00	0.00	9.43	0.00	0.00	0.00	0.00	0.52	0.00	0.00	0.00	0.00
471	2009	2.08	0.00	0.00	0.00	0.00	9.09	0.00	0.00	0.00	0.00	8.41	0.00	0.00	0.00	0.00	0.47	0.00	0.00	0.00	0.00
472	2010	2.08	0.00	0.00	0.00	0.00	7.86	0.00	0.00	0.00	0.00	7.39	0.00	0.00	0.00	0.00	0.42	0.00	0.00	0.00	0.00
473			2.08	2.08	2.08	2.08		14.31	14.31	14.31	14.31		14.07	14.07	14.07	14.07		0.76	0.76	0.76	0.76
474	Pavers		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
475		ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Land	Grading	Drainage	Paving
476	2000	1.12	0.00	0.00	0.00	0.00	4.53	0.00	0.00	0.00	0.00	12.15	0.00	0.00	0.00	0.00	0.64	0.00	0.00	0.00	0.00
477	2001	1.06	0.00	0.00	0.00	0.00	4.25	0.00	0.00	0.00	0.00	11.25	0.00	0.00	0.00	0.00	0.60	0.00	0.00	0.00	0.00
478	2002	0.99	0.00	0.00	0.00	0.00	3.97	0.00	0.00	0.00	0.00	10.34	0.00	0.00	0.00	0.00	0.56	0.00	0.00	0.00	0.00
479	2003	0.93	0.00	0.00	0.00	0.00	3.69	0.00	0.00	0.00	0.00	9.44	0.00	0.00	0.00	0.00	0.52	0.00	0.00	0.00	0.00
480	2004	0.93	0.93	0.93	0.93	0.93	3.86	3.86	3.86	3.86	3.86	9.09	9.09	9.09	9.09	9.09	0.49	0.49	0.49	0.49	0.49
481	2005	0.93	0.00	0.00	0.00	0.00	4.03	0.00	0.00	0.00	0.00	8.75	0.00	0.00	0.00	0.00	0.46	0.00	0.00	0.00	0.00
482	2006	0.93	0.00	0.00	0.00	0.00	4.21	0.00	0.00	0.00	0.00	8.41	0.00	0.00	0.00	0.00	0.44	0.00	0.00	0.00	0.00
483	2007	0.93	0.00	0.00	0.00	0.00	4.38	0.00	0.00	0.00	0.00	7.74	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.00	0.00
484	2008	0.93	0.00	0.00	0.00	0.00	4.55	0.00	0.00	0.00	0.00	7.08	0.00	0.00	0.00	0.00	0.38	0.00	0.00	0.00	0.00
485	2009	0.93	0.00	0.00	0.00	0.00	4.72	0.00	0.00	0.00	0.00	6.41	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.00	0.00
486	2010	0.93	0.00	0.00	0.00	0.00	5.06	0.00	0.00	0.00	0.00	5.22	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00
487			0.93	0.93	0.93	0.93		3.86	3.86	3.86	3.86		9.09	9.09	9.09	9.09		0.49	0.49	0.49	0.49
488	Paving Equipment		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
489		ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Land	Grading	Drainage	Paving
490	2000	0.97	0.00	0.00	0.00	0.00	3.97	0.00	0.00	0.00	0.00	10.92	0.00	0.00	0.00	0.00	0.56	0.00	0.00	0.00	0.00
491	2001	0.94	0.00	0.00	0.00	0.00	3.86	0.00	0.00	0.00	0.00	10.58	0.00	0.00	0.00	0.00	0.55	0.00	0.00	0.00	0.00
492	2002	0.92	0.00	0.00	0.00	0.00	3.75	0.00	0.00	0.00	0.00	10.24	0.00	0.00	0.00	0.00	0.53	0.00	0.00	0.00	0.00
493	2003	0.90	0.00	0.00	0.00	0.00	3.65	0.00	0.00	0.00	0.00	9.89	0.00	0.00	0.00	0.00	0.52	0.00	0.00	0.00	0.00
494	2004	0.87	0.87	0.87	0.87	0.87	3.61	3.61	3.61	3.61	3.61	9.42	9.42	9.42	9.42	9.42	0.49	0.49	0.49	0.49	0.49
495	2005	0.85	0.00	0.00	0.00	0.00	3.56	0.00	0.00	0.00	0.00	8.95	0.00	0.00	0.00	0.00	0.46	0.00	0.00	0.00	0.00
496	2006	0.82	0.00	0.00	0.00	0.00	3.52	0.00	0.00	0.00	0.00	8.48	0.00	0.00	0.00	0.00	0.44	0.00	0.00	0.00	0.00
497	2007	0.80	0.00	0.00	0.00	0.00	3.48	0.00	0.00	0.00	0.00	7.88	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.00	0.00
498	2008	0.78	0.00	0.00	0.00	0.00	3.44	0.00	0.00	0.00	0.00	7.28	0.00	0.00	0.00	0.00	0.39	0.00	0.00	0.00	0.00
499	2009	0.75	0.00	0.00	0.00	0.00	3.40	0.00	0.00	0.00	0.00	6.69	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.00	0.00
500	2010	0.73	0.00	0.00	0.00	0.00	3.36	0.00	0.00	0.00	0.00	6.09	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.00	0.00
501			0.87	0.87	0.87	0.87		3.61	3.61	3.61	3.61		9.42	9.42	9.42	9.42		0.49	0.49	0.49	0.49
502	Rollers		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
503		ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Land	Grading	Drainage	Paving
504	2000	0.71	0.00	0.00	0.00	0.00	2.86	0.00	0.00	0.00	0.00	7.67	0.00	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.00
505	2001	0.67	0.00	0.00	0.00	0.00	2.68	0.00	0.00	0.00	0.00	7.10	0.00	0.00	0.00	0.00	0.38	0.00	0.00	0.00	0.00
506	2002	0.63	0.00	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00	6.53	0.00	0.00	0.00	0.00	0.35	0.00	0.00	0.00	0.00
507	2003	0.59	0.00	0.00	0.00	0.00	2.33	0.00	0.00	0.00	0.00	5.96	0.00	0.00	0.00	0.00	0.33	0.00	0.00	0.00	0.00

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
508	2004	0.59	0.59	0.59	0.59	0.59	2.44	2.44	2.44	2.44	2.44	5.74	5.74	5.74	5.74	5.74	0.31	0.31	0.31	0.31	0.31
509	2005	0.59	0.00	0.00	0.00	0.00	2.55	0.00	0.00	0.00	0.00	5.52	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00
510	2006	0.59	0.00	0.00	0.00	0.00	2.65	0.00	0.00	0.00	0.00	5.31	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00
511	2007	0.59	0.00	0.00	0.00	0.00	2.76	0.00	0.00	0.00	0.00	4.89	0.00	0.00	0.00	0.00	0.26	0.00	0.00	0.00	0.00
512	2008	0.59	0.00	0.00	0.00	0.00	2.87	0.00	0.00	0.00	0.00	4.47	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.00	0.00
513	2009	0.59	0.00	0.00	0.00	0.00	2.98	0.00	0.00	0.00	0.00	4.05	0.00	0.00	0.00	0.00	0.22	0.00	0.00	0.00	0.00
514	2010	0.59	0.00	0.00	0.00	0.00	3.19	0.00	0.00	0.00	0.00	3.29	0.00	0.00	0.00	0.00	0.19	0.00	0.00	0.00	0.00
515			0.59	0.59	0.59	0.59		2.44	2.44	2.44	2.44		5.74	5.74	5.74	5.74		0.31	0.31	0.31	0.31
516	Rough Terrain Forklifts		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
517		ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Lanc	Grading	Drainage	Paving
518	2000	0.85	0.00	0.00	0.00	0.00	2.95	0.00	0.00	0.00	0.00	6.62	0.00	0.00	0.00	0.00	0.57	0.00	0.00	0.00	0.00
519	2001	0.83	0.00	0.00	0.00	0.00	2.88	0.00	0.00	0.00	0.00	6.23	0.00	0.00	0.00	0.00	0.56	0.00	0.00	0.00	0.00
520	2002	0.80	0.00	0.00	0.00	0.00	2.82	0.00	0.00	0.00	0.00	5.83	0.00	0.00	0.00	0.00	0.55	0.00	0.00	0.00	0.00
521	2003	0.78	0.00	0.00	0.00	0.00	2.75	0.00	0.00	0.00	0.00	5.44	0.00	0.00	0.00	0.00	0.54	0.00	0.00	0.00	0.00
522	2004	0.78	0.78	0.78	0.78	0.78	2.77	2.77	2.77	2.77	2.77	5.31	5.31	5.31	5.31	5.31	0.51	0.51	0.51	0.51	0.51
523	2005	0.78	0.00	0.00	0.00	0.00	2.79	0.00	0.00	0.00	0.00	5.19	0.00	0.00	0.00	0.00	0.47	0.00	0.00	0.00	0.00
524	2006	0.78	0.00	0.00	0.00	0.00	2.81	0.00	0.00	0.00	0.00	5.06	0.00	0.00	0.00	0.00	0.43	0.00	0.00	0.00	0.00
525	2007	0.78	0.00	0.00	0.00	0.00	2.84	0.00	0.00	0.00	0.00	4.93	0.00	0.00	0.00	0.00	0.39	0.00	0.00	0.00	0.00
526	2008	0.78	0.00	0.00	0.00	0.00	2.86	0.00	0.00	0.00	0.00	4.59	0.00	0.00	0.00	0.00	0.35	0.00	0.00	0.00	0.00
527	2009	0.78	0.00	0.00	0.00	0.00	2.88	0.00	0.00	0.00	0.00	4.26	0.00	0.00	0.00	0.00	0.31	0.00	0.00	0.00	0.00
528	2010	0.78	0.00	0.00	0.00	0.00	2.92	0.00	0.00	0.00	0.00	3.71	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.00	0.00
529			0.78	0.78	0.78	0.78		2.77	2.77	2.77	2.77		5.31	5.31	5.31	5.31		0.51	0.51	0.51	0.51
530	Rubber Tired Dozers		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
531		ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Lanc	Grading	Drainage	Paving
532	2000	3.53	0.00	0.00	0.00	0.00	19.64	0.00	0.00	0.00	0.00	36.95	0.00	0.00	0.00	0.00	1.86	0.00	0.00	0.00	0.00
533	2001	3.54	0.00	0.00	0.00	0.00	19.34	0.00	0.00	0.00	0.00	35.18	0.00	0.00	0.00	0.00	1.77	0.00	0.00	0.00	0.00
534	2002	3.55	0.00	0.00	0.00	0.00	19.03	0.00	0.00	0.00	0.00	33.41	0.00	0.00	0.00	0.00	1.67	0.00	0.00	0.00	0.00
535	2003	3.57	0.00	0.00	0.00	0.00	18.73	0.00	0.00	0.00	0.00	31.64	0.00	0.00	0.00	0.00	1.58	0.00	0.00	0.00	0.00
536	2004	3.58	3.58	3.58	3.58	3.58	18.42	18.42	18.42	18.42	18.42	29.87	29.87	29.87	29.87	29.87	1.49	1.49	1.49	1.49	1.49
537	2005	3.59	0.00	0.00	0.00	0.00	18.12	0.00	0.00	0.00	0.00	28.10	0.00	0.00	0.00	0.00	1.39	0.00	0.00	0.00	0.00
538	2006	3.60	0.00	0.00	0.00	0.00	17.81	0.00	0.00	0.00	0.00	25.91	0.00	0.00	0.00	0.00	1.30	0.00	0.00	0.00	0.00
539	2007	3.62	0.00	0.00	0.00	0.00	17.51	0.00	0.00	0.00	0.00	23.73	0.00	0.00	0.00	0.00	1.21	0.00	0.00	0.00	0.00
540	2008	3.63	0.00	0.00	0.00	0.00	17.20	0.00	0.00	0.00	0.00	21.55	0.00	0.00	0.00	0.00	1.12	0.00	0.00	0.00	0.00
541	2009	3.64	0.00	0.00	0.00	0.00	16.90	0.00	0.00	0.00	0.00	19.37	0.00	0.00	0.00	0.00	1.02	0.00	0.00	0.00	0.00
542	2010	3.65	0.00	0.00	0.00	0.00	16.59	0.00	0.00	0.00	0.00	17.18	0.00	0.00	0.00	0.00	0.93	0.00	0.00	0.00	0.00
543			3.58	3.58	3.58	3.58		18.42	18.42	18.42	18.42		29.87	29.87	29.87	29.87		1.49	1.49	1.49	1.49
544	Rubber Tired Loaders		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
545		ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Lanc	Grading	Drainage	Paving
546	2000	1.11	0.00	0.00	0.00	0.00	4.49	0.00	0.00	0.00	0.00	12.04	0.00	0.00	0.00	0.00	0.63	0.00	0.00	0.00	0.00
547	2001	1.05	0.00	0.00	0.00	0.00	4.21	0.00	0.00	0.00	0.00	11.14	0.00	0.00	0.00	0.00	0.59	0.00	0.00	0.00	0.00
548	2002	0.98	0.00	0.00	0.00	0.00	3.94	0.00	0.00	0.00	0.00	10.25	0.00	0.00	0.00	0.00	0.55	0.00	0.00	0.00	0.00
549	2003	0.92	0.00	0.00	0.00	0.00	3.66	0.00	0.00	0.00	0.00	9.35	0.00	0.00	0.00	0.00	0.51	0.00	0.00	0.00	0.00
550	2004	0.92	0.92	0.92	0.92	0.92	3.83	3.83	3.83	3.83	3.83	9.01	9.01	9.01	9.01	9.01	0.49	0.49	0.49	0.49	0.49
551	2005	0.92	0.00	0.00	0.00	0.00	4.00	0.00	0.00	0.00	0.00	8.67	0.00	0.00	0.00	0.00	0.46	0.00	0.00	0.00	0.00
552	2006	0.92	0.00	0.00	0.00	0.00	4.17	0.00	0.00	0.00	0.00	8.33	0.00	0.00	0.00	0.00	0.43	0.00	0.00	0.00	0.00
553	2007	0.92	0.00	0.00	0.00	0.00	4.34	0.00	0.00	0.00	0.00	7.67	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.00	0.00
554	2008	0.92	0.00	0.00	0.00	0.00	4.50	0.00	0.00	0.00	0.00	7.01	0.00	0.00	0.00	0.00	0.38	0.00	0.00	0.00	0.00
555	2009	0.92	0.00	0.00	0.00	0.00	4.67	0.00	0.00	0.00	0.00	6.35	0.00	0.00	0.00	0.00	0.35	0.00	0.00	0.00	0.00
556	2010	0.92	0.00	0.00	0.00	0.00	5.01	0.00	0.00	0.00	0.00	5.17	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00
557			0.92	0.92	0.92	0.92		3.83	3.83	3.83	3.83		9.01	9.01	9.01	9.01		0.49	0.49	0.49	0.49
558			Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
559	Scrapers	ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Lanc	Grading	Drainage	Paving
560	2000	3.53	0.00	0.00	0.00	0.00	21.26	0.00	0.00	0.00	0.00	34.96	0.00	0.00	0.00	0.00	1.79	0.00	0.00	0.00	0.00
561	2001	3.54	0.00	0.00	0.00	0.00	20.85	0.00	0.00	0.00	0.00	32.62	0.00	0.00	0.00	0.00	1.67	0.00	0.00	0.00	0.00
562	2002	3.56	0.00	0.00	0.00	0.00	20.45	0.00	0.00	0.00	0.00	30.27	0.00	0.00	0.00	0.00	1.54	0.00	0.00	0.00	0.00
563	2003	3.58	0.00	0.00	0.00	0.00	20.04	0.00	0.00	0.00	0.00	27.93	0.00	0.00	0.00	0.00	1.42	0.00	0.00	0.00	0.00
564	2004	3.59	3.59	3.59	3.59	3.59	19.64	19.64	19.64	19.64	19.64	25.58	25.58	25.58	25.58	25.58	1.30	1.30	1.30	1.30	1.30
565	2005	3.61	0.00	0.00	0.00	0.00	19.23	0.00	0.00	0.00	0.00	23.24	0.00	0.00	0.00	0.00	1.17	0.00	0.00	0.00	0.00
566	2006	3.63	0.00	0.00	0.00	0.00	18.83	0.00	0.00	0.00	0.00	20.34	0.00	0.00	0.00	0.00	1.05	0.00	0.00	0.00	0.00
567	2007	3.64	0.00	0.00	0.00	0.00	18.42	0.00	0.00	0.00	0.00	17.45	0.00	0.00	0.00	0.00	0.93	0.00	0.00	0.00	0.00
568	2008	3.64	0.00	0.00	0.00	0.00	16.63	0.00	0.00	0.00	0.00	15.96	0.00	0.00	0.00	0.00	0.85	0.00	0.00	0.00	0.00
569	2009	3.64	0.00	0.00	0.00	0.00	14.84	0.00	0.00	0.00	0.00	14.48	0.00	0.00	0.00	0.00	0.77	0.00	0.00	0.00	0.00
570	2010	3.64	0.00	0.00	0.00	0.00	13.05	0.00	0.00	0.00	0.00	12.99	0.00	0.00	0.00	0.00	0.70	0.00	0.00	0.00	0.00
571			3.59	3.59	3.59	3.59		19.64	19.64	19.64	19.64		25.58	25.58	25.58	25.58		1.30	1.30	1.30	1.30
572	Signal Boards		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
573		ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Lanc	Grading	Drainage	Paving
574	2000	0.66	0.00	0.00	0.00	0.00	1.77	0.00	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.00	0.00
575	2001	0.65	0.00	0.00	0.00	0.00	1.75	0.00	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00	0.26	0.00	0.00	0.00	0.00
576	2002	0.65	0.00	0.00	0.00	0.00	1.72	0.00	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00	0.26	0.00	0.00	0.00	0.00
577	2003	0.65	0.00	0.00	0.00	0.00	1.70	0.00	0.00	0.00	0.00	2.52	0.00	0.00	0.00	0.00	0.26	0.00	0.00	0.00	0.00
578	2004	0.65	0.65	0.65	0.65	0.65	1.68	1.68	1.68	1.68	1.68	2.49	2.49	2.49	2.49	2.49	0.25	0.25	0.25	0.25	0.25
579	2005	0.65	0.00	0.00	0.00	0.00	1.66	0.00	0.00	0.00	0.00	2.46	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.00	0.00
580	2006	0.65	0.00	0.00	0.00	0.00	1.64	0.00	0.00	0.00	0.00	2.43	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.00	0.00
581	2007	0.65	0.00	0.00	0.00	0.00	1.62	0.00	0.00	0.00	0.00	2.40	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.00	0.00
582	2008	0.65	0.00	0.00	0.00	0.00	1.60	0.00	0.00	0.00	0.00	2.37	0.00	0.00	0.00	0.00	0.22	0.00	0.00	0.00	0.00
583	2009	0.65	0.00	0.00	0.00	0.00	1.58	0.00	0.00	0.00	0.00	2.34	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00
584	2010	0.65	0.00	0.00	0.00	0.00	1.56	0.00	0.00	0.00	0.00	2.31	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00
585			0.65	0.65	0.65	0.65		1.68	1.68	1.68	1.68		2.49	2.49	2.49	2.49		0.25	0.25	0.25	0.25
586	Skid Steer Loaders		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
587		ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Lanc	Grading	Drainage	Paving
588	2000	0.56	0.00	0.00	0.00	0.00	1.96	0.00	0.00	0.00	0.00	3.88	0.00	0.00	0.00	0.00	0.39	0.00	0.00	0.00	0.00
589	2001	0.56	0.00	0.00	0.00	0.00	1.96	0.00	0.00	0.00	0.00	3.88	0.00	0.00	0.00	0.00	0.39	0.00	0.00	0.00	0.00
590	2002	0.56	0.00	0.00	0.00	0.00	1.96	0.00	0.00	0.00	0.00	3.88	0.00	0.00	0.00	0.00	0.39	0.00	0.00	0.00	0.00
591	2003	0.56	0.00	0.00	0.00	0.00	1.96	0.00	0.00	0.00	0.00	3.88	0.00	0.00	0.00	0.00	0.39	0.00	0.00	0.00	0.00
592	2004	0.56	0.56	0.56	0.56	0.56	1.99	1.99	1.99	1.99	1.99	3.74	3.74	3.74	3.74	3.74	0.34	0.34	0.34	0.34	0.34
593	2005	0.56	0.00	0.00	0.00	0.00	2.01	0.00	0.00	0.00	0.00	3.59	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00
594	2006	0.56	0.00	0.00	0.00	0.00	2.03	0.00	0.00	0.00	0.00	3.44	0.00	0.00	0.00	0.00	0.26	0.00	0.00	0.00	0.00
595	2007	0.56	0.00	0.00	0.00	0.00	2.06	0.00	0.00	0.00	0.00	3.30	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00
596	2008	0.56	0.00	0.00	0.00	0.00	2.08	0.00	0.00	0.00	0.00	2.91	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00
597	2009	0.56	0.00	0.00	0.00	0.00	2.08	0.00	0.00	0.00	0.00	2.68	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00
598	2010	0.56	0.00	0.00	0.00	0.00	2.08	0.00	0.00	0.00	0.00	2.44	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00
599			0.56	0.56	0.56	0.56		1.99	1.99	1.99	1.99		3.74	3.74	3.74	3.74		0.34	0.34	0.34	0.34
600	Surfacing Equipment		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
601		ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Lanc	Grading	Drainage	Paving
602	2000	3.63	0.00	0.00	0.00	0.00	20.22	0.00	0.00	0.00	0.00	38.04	0.00	0.00	0.00	0.00	1.92	0.00	0.00	0.00	0.00
603	2001	3.65	0.00	0.00	0.00	0.00	19.91	0.00	0.00	0.00	0.00	36.21	0.00	0.00	0.00	0.00	1.82	0.00	0.00	0.00	0.00
604	2002	3.66	0.00	0.00	0.00	0.00	19.59	0.00	0.00	0.00	0.00	34.39	0.00	0.00	0.00	0.00	1.72	0.00	0.00	0.00	0.00
605	2003	3.67	0.00	0.00	0.00	0.00	19.28	0.00	0.00	0.00	0.00	32.57	0.00	0.00	0.00	0.00	1.63	0.00	0.00	0.00	0.00
606	2004	3.68	3.68	3.68	3.68	3.68	18.97	18.97	18.97	18.97	18.97	30.75	30.75	30.75	30.75	30.75	1.53	1.53	1.53	1.53	1.53
607	2005	3.70	0.00	0.00	0.00	0.00	18.65	0.00	0.00	0.00	0.00	28.93	0.00	0.00	0.00	0.00	1.44	0.00	0.00	0.00	0.00
608	2006	3.71	0.00	0.00	0.00	0.00	18.34	0.00	0.00	0.00	0.00	26.68	0.00	0.00	0.00	0.00	1.34	0.00	0.00	0.00	0.00
609	2007	3.72	0.00	0.00	0.00	0.00	18.02	0.00	0.00	0.00	0.00	24.43	0.00	0.00	0.00	0.00	1.24	0.00	0.00	0.00	0.00
610	2008	3.74	0.00	0.00	0.00	0.00	17.71	0.00	0.00	0.00	0.00	22.19	0.00	0.00	0.00	0.00	1.15	0.00	0.00	0.00	0.00
611	2009	3.75	0.00	0.00	0.00	0.00	17.39	0.00	0.00	0.00	0.00	19.94	0.00	0.00	0.00	0.00	1.05	0.00	0.00	0.00	0.00
612	2010	3.76	0.00	0.00	0.00	0.00	17.08	0.00	0.00	0.00	0.00	17.69	0.00	0.00	0.00	0.00	0.96	0.00	0.00	0.00	0.00
613			3.68	3.68	3.68	3.68		18.97	18.97	18.97	18.97		30.75	30.75	30.75	30.75		1.53	1.53	1.53	1.53
614	Tractors/Loaders/Backhoes		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
615		ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Lanc	Grading	Drainage	Paving
616	2000	0.75	0.00	0.00	0.00	0.00	2.57	0.00	0.00	0.00	0.00	6.27	0.00	0.00	0.00	0.00	0.48	0.00	0.00	0.00	0.00
617	2001	0.74	0.00	0.00	0.00	0.00	2.54	0.00	0.00	0.00	0.00	6.11	0.00	0.00	0.00	0.00	0.48	0.00	0.00	0.00	0.00
618	2002	0.73	0.00	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00	5.95	0.00	0.00	0.00	0.00	0.48	0.00	0.00	0.00	0.00
619	2003	0.72	0.00	0.00	0.00	0.00	2.49	0.00	0.00	0.00	0.00	5.79	0.00	0.00	0.00	0.00	0.47	0.00	0.00	0.00	0.00
620	2004	0.71	0.71	0.71	0.71	0.71	2.47	2.47	2.47	2.47	2.47	5.57	5.57	5.57	5.57	5.57	0.45	0.45	0.45	0.45	0.45
621	2005	0.70	0.00	0.00	0.00	0.00	2.45	0.00	0.00	0.00	0.00	5.36	0.00	0.00	0.00	0.00	0.44	0.00	0.00	0.00	0.00
622	2006	0.69	0.00	0.00	0.00	0.00	2.43	0.00	0.00	0.00	0.00	5.14	0.00	0.00	0.00	0.00	0.42	0.00	0.00	0.00	0.00
623	2007	0.68	0.00	0.00	0.00	0.00	2.41	0.00	0.00	0.00	0.00	4.84	0.00	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.00
624	2008	0.67	0.00	0.00	0.00	0.00	2.40	0.00	0.00	0.00	0.00	4.54	0.00	0.00	0.00	0.00	0.38	0.00	0.00	0.00	0.00
625	2009	0.66	0.00	0.00	0.00	0.00	2.38	0.00	0.00	0.00	0.00	4.24	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.00	0.00
626	2010	0.65	0.00	0.00	0.00	0.00	2.36	0.00	0.00	0.00	0.00	3.94	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.00	0.00
627			0.71	0.71	0.71	0.71		2.47	2.47	2.47	2.47		5.57	5.57	5.57	5.57		0.45	0.45	0.45	0.45
628	Trenchers		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
629		ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Lanc	Grading	Drainage	Paving
630	2000	1.06	0.00	0.00	0.00	0.00	3.69	0.00	0.00	0.00	0.00	8.06	0.00	0.00	0.00	0.00	0.71	0.00	0.00	0.00	0.00
631	2001	1.03	0.00	0.00	0.00	0.00	3.60	0.00	0.00	0.00	0.00	7.49	0.00	0.00	0.00	0.00	0.70	0.00	0.00	0.00	0.00
632	2002	0.99	0.00	0.00	0.00	0.00	3.50	0.00	0.00	0.00	0.00	6.92	0.00	0.00	0.00	0.00	0.69	0.00	0.00	0.00	0.00
633	2003	0.99	0.00	0.00	0.00	0.00	3.50	0.00	0.00	0.00	0.00	6.92	0.00	0.00	0.00	0.00	0.69	0.00	0.00	0.00	0.00
634	2004	0.99	0.99	0.99	0.99	0.99	3.53	3.53	3.53	3.53	3.53	6.74	6.74	6.74	6.74	6.74	0.64	0.64	0.64	0.64	0.64
635	2005	0.99	0.00	0.00	0.00	0.00	3.56	0.00	0.00	0.00	0.00	6.55	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00	0.00
636	2006	0.99	0.00	0.00	0.00	0.00	3.59	0.00	0.00	0.00	0.00	6.36	0.00	0.00	0.00	0.00	0.52	0.00	0.00	0.00	0.00
637	2007	0.99	0.00	0.00	0.00	0.00	3.62	0.00	0.00	0.00	0.00	6.18	0.00	0.00	0.00	0.00	0.47	0.00	0.00	0.00	0.00
638	2008	0.99	0.00	0.00	0.00	0.00	3.65	0.00	0.00	0.00	0.00	5.69	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.00	0.00
639	2009	0.99	0.00	0.00	0.00	0.00	3.68	0.00	0.00	0.00	0.00	5.20	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.00	0.00
640	2010	0.99	0.00	0.00	0.00	0.00	3.71	0.00	0.00	0.00	0.00	4.72	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00
641			0.99	0.99	0.99	0.99		3.53	3.53	3.53	3.53		6.74	6.74	6.74	6.74		0.64	0.64	0.64	0.64

Welcome to the Road Construction Emissions Model, Version 5.1

User Instructions

This spreadsheet system contains the following individual worksheets:

1. This worksheet of User Instructions
2. Emission estimates
3. Data Entry
4. Emfac7f worksheet
5. Emfac7g worksheet
6. Emfac2001 worksheet
7. Emfac2002 worksheet
8. Appendix D worksheet
9. Appendix B worksheet

Changes from previous version of Road Construction Emissions Model (Version 4.1)

1) EMFAC2002 emission rates included.

2) Off-Road equipment emission estimates stratified by horsepower.

3) Water trucks reclassified as on-road emissions.

4) PM10 dust assumed reduced by 50% if water trucks are specified as part of project.

The Emission Estimates worksheet summarizes a project's emissions in pounds per day (and kilograms per day) by project phase.
The Emission Estimates worksheet also shows total emissions in tons (and megagrams) over the construction period.
The worksheet can be used to estimate emissions for both vehicle exhaust and fugitive dust. The methodology used to estimate fugitive dust emissions is a simplified methodology involving estimates of the maximum area (acreage) of land disturbed daily. Detailed fugitive dust emission estimates associated with individual materials handling operations and/or activity/vehicle types cannot be conducted with this version of the model.
The Emission Estimates worksheet cannot be modified directly, it is a protected worksheet. It can only be modified indirectly by entering information for the project in selected areas of the Data Entry worksheet.
The last six of these worksheets - Emfac7f, Emfac7g, Emfac2001, Emfac2002, Appendix D, and Appendix B - cannot be modified by the user. They are protected worksheets. Even though all or portions of several worksheets are protected, the individual formulas used in the calculations can be seen by the user.
The Data Entry worksheet includes several areas that can be modified by the user.
User instructions in the Data Entry worksheet are highlighted in red.
On the Data Entry worksheet, the user has two options for entering project data: required data and optional data. Required data is entered in the data input section (yellow cells). That required data is then used by the worksheet to calculate default values for the project.
The user can override the default values (blue cells) calculated for a project and is encouraged to do so if project specific information is available. Due to the difficulty in developing reliable default values for road construction projects, the user is encouraged to enter as much site specific information as is available for the project being analyzed.
The Data Entry Worksheet also includes a button that allows the user to clear previously entered data. This button is found just at the top of and to the right of the data entry portion of the worksheet.
When projects are discontinuous, the user must make adjustments to the spreadsheet manually, since the program cannot be setup to anticpate unexpected project delays.

#VALUE! <- This error message may occur during use of the spreadsheets. This occurs whenever the user enters a non numeric value, including a space character, into a cell that is used to calculate a numeric value. Consequently, to erase values entered into the spreadsheets, use the delete key instead of the space bar!

Note: Information in this worksheet is based on conversations with knowledgeable individuals at the Sacramento Metropolitan Air Quality Management District, the California Department of Transportation, the California Air Resources Board, the U.S. EPA, and private industry involved in road construction.
Also, the 26th edition of Walker's Building Estimator's Reference Book (1999) was used in the development of this spreadsheet.
This spreadsheet was prepared by CCS Planning & Engineering under the financial support and direction of the Sacramento Metropolitan Air Quality Management District.

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Road Construction Emissions Model, Version 5.1

Emission Estimates for -> McCloy Road					Exhaust	Fugitive Dust	
Project Phases (English Units)	**ROG (lbs/day)**	**CO (lbs/day)**	**NOx (lbs/day)**	**PM10 (lbs/day)**	**PM10 (lbs/day)**	**PM10 (lbs/day)**	
Grubbing/Land Clearing	8	41	53	5	3	3	
Grading/Excavation	10	60	70	6	4	3	
Drainage/Utilities/Sub-Grade	11	66	73	7	4	3	
Paving	3	14	24	1	1	0	
Maximum (pounds/day)	11	66	73	7	4	3	
Total (tons/construction project)	1	3	4	0	0	0	<-tons

Notes:		
	Project Start Year ->	2005
	Project Length (months) ->	5
	Total Project Area (acres) ->	2
	Maximum Area Disturbed/Day (acres) ->	1
	Total Soil Imported/Exported (yd^3/day)->	800

PM10 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I.

Emission Estimates for -> McCloy Road					Exhaust	Fugitive Dust	
Project Phases (Metric Units)	**ROG (kgs/day)**	**CO (kgs/day)**	**NOx (kgs/day)**	**PM10 (kgs/day)**	**PM10 (kgs/day)**	**PM10 (kgs/day)**	
Grubbing/Land Clearing	3	19	24	2	1	1	
Grading/Excavation	5	27	32	3	2	1	
Drainage/Utilities/Sub-Grade	5	30	33	3	2	1	
Paving	1	6	11	1	1	0	
Maximum (kilograms/day)	5	30	33	3	2	1	
Total (megagrams/construction project)	0	3	3	0	0	0	<-megagrams

Notes:		
	Project Start Year ->	2005
	Project Length (months) ->	5
	Total Project Area (hectares) ->	1
	Maximum Area Disturbed/Day (hectares) ->	0
	Total Soil Imported/Exported ($meters^3$/day)->	612

PM10 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I.

Grubbing/Land Clearing	Number of Vehicles		ROG	CO	NOx	PM10
Override of Default Number of Vehicles	*Program-estimate*	Type	pounds/day	pounds/day	pounds/day	pounds/day
		Backhoes	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00
		Compactor	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00
	1	Dozer	3.59	18.12	28.10	1.39
		Excavator	0.00	0.00	0.00	0.00
		Forklifts, Rough Terrain	0.00	0.00	0.00	0.00
		Grader	0.00	0.00	0.00	0.00
		Loaders, Rubber Tired	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00
		Other Construction Equip.	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00
	1	Scrapper	3.61	19.23	23.24	1.17
	0	Signal Boards	0.25	0.63	0.93	0.09
		Skid Steer Loaders	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00
		Tractors	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00

Light Duty Truck @ 30 mph

	Running Exhaust (g/mi)							
Model Year	ROG	Weighted	NOx	Weighted	CO	Weighted	PM10	
2000	0.58	0.00	0.82	0.00	6.83	0.00	0.01	
2001	0.54	0.00	0.78	0.00	6.33	0.00	0.01	
2002	0.49	0.00	0.75	0.00	5.83	0.00	0.01	
2003	0.45	0.00	0.71	0.00	5.33	0.00	0.01	
2004	0.40	0.00	0.68	0.00	4.83	0.00	0.01	
2005	0.36	0.36	0.64	0.64	4.33	4.33	0.01	
2006	0.33	0.00	0.61	0.00	4.20	0.00	0.01	
2007	0.30	0.00	0.58	0.00	4.06	0.00	0.01	
2008	0.27	0.00	0.56	0.00	3.93	0.00	0.01	
2009	0.24	0.00	0.53	0.00	3.79	0.00	0.01	
2010	0.21	0.00	0.50	0.00	3.66	0.00	0.01	
		0.36		0.64		4.33		0.01

ROG emissions include exhaust plus running loss evaporatives.
ROG emissions do not include single or multiday diurnal evaporative emissions nor single or multiday resting loss evaporatives emissions.

Heavy Duty Truck @ 30 mph

	Running Exhaust (g/mi)							
Model Year	ROG	Weighted	NOx	Weighted	CO	Weighted	PM10	Weighted
2000	1.96	0.00	10.32	0.00	7.67	0.00	1.45	0.00
2001	1.94	0.00	10.22	0.00	7.64	0.00	1.39	0.00
2002	1.93	0.00	10.13	0.00	7.60	0.00	1.33	0.00
2003	1.91	0.00	10.03	0.00	7.57	0.00	1.27	0.00
2004	1.90	0.00	9.94	0.00	7.53	0.00	1.21	0.00
2005	1.88	1.88	9.84	9.84	7.50	7.50	1.15	1.15
2006	1.87	0.00	9.81	0.00	7.48	0.00	1.13	0.00
2007	1.86	0.00	9.78	0.00	7.47	0.00	1.10	0.00
2008	1.86	0.00	9.76	0.00	7.45	0.00	1.08	0.00
2009	1.85	0.00	9.73	0.00	7.44	0.00	1.05	0.00
2010	1.84	0.00	9.70	0.00	7.42	0.00	1.03	0.00
		1.88		9.84		7.50		1.15

Light Duty Truck @ 30 mph

	Running Exhaust (g/mi)						Tire Wear (g/mi)	Break Wear (g/mi)	Start Emission Rate @ 480 min (g/trip)						Hot Soak (g/trip)		Evaporative Running Loss (g/mi)	
Model Year	ROG	Weighted	NOx	Weighted	CO	Weighted	PM10	PM10	ROG	Weighted	NOx	Weighted	CO	Weighted	ROG	Weighted	ROG	Weighted
2000	0.32	0.00	0.72	0.00	4.26	0.00	0.01	0.01	3.74	0.00	2.67	0.00	39.71	0.00	0.62	0.00	0.06	0.00
2001	0.27	0.00	0.66	0.00	3.92	0.00	0.01	0.01	3.37	0.00	2.50	0.00	36.27	0.00	0.56	0.00	0.05	0.00
2002	0.24	0.00	0.60	0.00	3.61	0.00	0.01	0.01	3.03	0.00	2.33	0.00	32.94	0.00	0.51	0.00	0.05	0.00
2003	0.20	0.00	0.55	0.00	3.32	0.00	0.01	0.01	2.71	0.00	2.18	0.00	29.62	0.00	0.45	0.00	0.05	0.00
2004	0.17	0.00	0.51	0.00	3.05	0.00	0.01	0.01	2.42	0.00	2.04	0.00	26.47	0.00	0.39	0.00	0.04	0.00
2005	0.15	0.15	0.47	0.47	2.73	2.73	0.01	0.01	2.16	2.16	1.92	1.92	22.86	22.86	0.36	0.36	0.04	0.04
2006	0.12	0.00	0.43	0.00	2.57	0.00	0.01	0.01	1.90	0.00	1.79	0.00	20.69	0.00	0.34	0.00	0.04	0.00
2007	0.10	0.00	0.39	0.00	2.44	0.00	0.01	0.01	1.66	0.00	1.67	0.00	18.77	0.00	0.31	0.00	0.03	0.00
2008	0.09	0.00	0.36	0.00	2.38	0.00	0.01	0.01	1.47	0.00	1.57	0.00	17.45	0.00	0.29	0.00	0.03	0.00
2009	0.07	0.00	0.34	0.00	2.32	0.00	0.01	0.01	1.30	0.00	1.48	0.00	16.29	0.00	0.26	0.00	0.03	0.00
2010	0.06	0.00	0.32	0.00	2.27	0.00	0.01	0.01	1.15	0.00	1.40	0.00	15.31	0.00	0.24	0.00	0.03	0.00
		0.15		0.47		2.73				2.16		1.92		22.86		0.36		0.04

Heavy Duty Truck @ 30 mph

	Running Exhaust (g/mi)								Tire Wear (g/mi)		Break Wear (g/mi)	
Model Year	ROG	Weighted	NOx	Weighted	CO	Weighted	PM10	Weighted	PM10	Weighted	PM10	Weighted
2000	1.39	0.00	9.28	0.00	8.32	0.00	0.67	0.00	0.04	0.00	0.01	0.00
2001	1.30	0.00	8.85	0.00	8.26	0.00	0.59	0.00	0.04	0.00	0.01	0.00
2002	1.22	0.00	8.45	0.00	8.20	0.00	0.53	0.00	0.04	0.00	0.01	0.00
2003	1.15	0.00	8.11	0.00	8.16	0.00	0.48	0.00	0.04	0.00	0.01	0.00
2004	1.09	0.00	7.80	0.00	8.12	0.00	0.43	0.00	0.04	0.00	0.01	0.00
2005	1.05	1.05	7.55	7.55	8.09	8.09	0.40	0.40	0.04	0.04	0.01	0.01
2006	1.01	0.00	7.33	0.00	8.06	0.00	0.37	0.00	0.04	0.00	0.01	0.00
2007	0.98	0.00	7.16	0.00	8.04	0.00	0.35	0.00	0.04	0.00	0.01	0.00
2008	0.95	0.00	7.03	0.00	8.02	0.00	0.33	0.00	0.04	0.00	0.01	0.00
2009	0.94	0.00	6.94	0.00	8.01	0.00	0.31	0.00	0.04	0.00	0.01	0.00
2010	0.92	0.00	6.88	0.00	8.00	0.00	0.30	0.00	0.04	0.00	0.01	0.00
		1.05		7.55		8.09		0.40		0.04		0.01

Light Duty Truck @ 30 mph

	Running Exhaust (g/mi)								Tire Wear (g/mi)	Break Wear (g/mi)	Start Emission Rate @ 480 min (g/trip)								Hot Soak (g/trip)		Evaporative Running Loss (g/mi)	
Model Year	ROG	Weighted	NOx	Weighted	CO	Weighted	PM10	Weighted	PM10	PM10	ROG	Weighted	NOx	Weighted	CO	Weighted	PM10	Weighted	ROG	Weighted	ROG	Weighted
2000	0.47	0.00	1.31	0.00	14.46	0.00	0.01	0.00	0.01	0.01	2.59	0.00	1.18	0.00	32.94	0.00	0.02	0.00	0.32	0.00	0.12	0.00
2001	0.41	0.00	1.16	0.00	12.95	0.00	0.01	0.00	0.01	0.01	2.37	0.00	1.10	0.00	30.14	0.00	0.02	0.00	0.29	0.00	0.11	0.00
2002	0.34	0.00	0.97	0.00	11.25	0.00	0.01	0.00	0.01	0.01	2.11	0.00	0.97	0.00	26.88	0.00	0.02	0.00	0.26	0.00	0.10	0.00
2003	0.29	0.00	0.85	0.00	10.13	0.00	0.01	0.00	0.01	0.01	1.94	0.00	0.90	0.00	24.67	0.00	0.02	0.00	0.24	0.00	0.10	0.00
2004	0.26	0.00	0.76	0.00	9.23	0.00	0.01	0.00	0.01	0.01	1.80	0.00	0.84	0.00	22.88	0.00	0.02	0.00	0.22	0.00	0.09	0.00
2005	0.23	0.23	0.67	0.67	8.27	8.27	0.01	0.01	0.01	0.01	1.64	1.64	0.78	0.78	20.95	20.95	0.02	0.02	0.21	0.21	0.08	0.08
2006	0.21	0.00	0.62	0.00	7.77	0.00	0.01	0.00	0.01	0.01	1.55	0.00	0.74	0.00	19.80	0.00	0.02	0.00	0.20	0.00	0.08	0.00
2007	0.19	0.00	0.56	0.00	7.20	0.00	0.01	0.00	0.01	0.01	1.44	0.00	0.69	0.00	18.55	0.00	0.02	0.00	0.19	0.00	0.08	0.00
2008	0.17	0.00	0.51	0.00	6.62	0.00	0.01	0.00	0.01	0.01	1.33	0.00	0.64	0.00	17.27	0.00	0.02	0.00	0.18	0.00	0.07	0.00
2009	0.16	0.00	0.46	0.00	6.02	0.00	0.01	0.00	0.01	0.01	1.22	0.00	0.59	0.00	15.91	0.00	0.02	0.00	0.17	0.00	0.07	0.00
2010	0.14	0.00	0.41	0.00	5.45	0.00	0.01	0.00	0.01	0.01	1.11	0.00	0.54	0.00	14.56	0.00	0.02	0.00	0.16	0.00	0.06	0.00
		0.23		0.67		8.27		0.01				1.64		0.78		20.95		0.02		0.21		0.08

Heavy Duty Truck @ 30 mph

	Running Exhaust (g/mi)								Tire Wear (g/mi)		Break Wear (g/mi)	
Model Year	ROG	Weighted	NOx	Weighted	CO	Weighted	PM10	Weighted	PM10	Weighted	PM10	Weighted
2000	1.01	0.00	15.96	0.00	4.12	0.00	0.54	0.00	0.04	0.00	0.01	0.00
2001	0.98	0.00	15.55	0.00	3.92	0.00	0.50	0.00	0.04	0.00	0.01	0.00
2002	0.95	0.00	15.15	0.00	3.70	0.00	0.46	0.00	0.04	0.00	0.01	0.00
2003	0.90	0.00	14.33	0.00	3.50	0.00	0.43	0.00	0.04	0.00	0.01	0.00
2004	0.86	0.00	13.49	0.00	3.29	0.00	0.40	0.00	0.04	0.00	0.01	0.00
2005	0.81	0.81	12.68	12.68	3.09	3.09	0.37	0.37	0.04	0.04	0.01	0.01
2006	0.76	0.00	11.91	0.00	2.89	0.00	0.33	0.00	0.04	0.00	0.01	0.00
2007	0.71	0.00	10.93	0.00	2.68	0.00	0.31	0.00	0.04	0.00	0.01	0.00
2008	0.66	0.00	10.00	0.00	2.47	0.00	0.30	0.00	0.04	0.00	0.01	0.00
2009	0.61	0.00	9.11	0.00	2.28	0.00	0.28	0.00	0.04	0.00	0.01	0.00
2010	0.55	0.00	8.05	0.00	2.08	0.00	0.27	0.00	0.04	0.00	0.01	0.00
		0.81		12.68		3.09		0.37		0.04		0.01

Light Duty Truck @ 30 mph

	Running Exhaust (g/mi)								Tire Wear (g/mi)		Break Wear (g/mi)		Start Emission Rate @ 480 min (g/trip)								20 minutes Hot Soak (g/trip)		20 minutes Evaporative Running Loss (g/mi)	
Model Year	ROG	Weighted	NOx	Weighted	CO	Weighted	PM10	Weighted	PM10	Weighted	PM10	Weighted	ROG	Weighted	NOx	Weighted	CO	Weighted	PM10	Weighted	ROG	Weighted	ROG	Weighted
2000	0.52	0.00	1.27	0.00	13.10	0.00	0.02	0.00	0.01	0.01	2.37	0.00	1.18	0.00	29.73	0.00	0.02	0.00	0.57	0.00	0.13	0.00
2001	0.47	0.00	1.16	0.00	11.89	0.00	0.02	0.00	0.01	0.01	2.20	0.00	1.12	0.00	27.37	0.00	0.02	0.00	0.53	0.00	0.12	0.00
2002	0.40	0.00	1.01	0.00	10.58	0.00	0.02	0.00	0.01	0.01	1.99	0.00	1.03	0.00	24.78	0.00	0.02	0.00	0.49	0.00	0.12	0.00
2003	0.36	0.00	0.90	0.00	9.67	0.00	0.02	0.00	0.01	0.01	1.84	0.00	0.97	0.00	22.95	0.00	0.02	0.00	0.46	0.00	0.11	0.00
2004	0.32	0.00	0.81	0.00	8.77	0.00	0.02	0.00	0.01	0.01	1.69	0.00	0.91	0.00	21.20	0.00	0.02	0.00	0.44	0.00	0.11	0.00
2005	0.28	0.28	0.72	0.72	7.94	7.94	0.02	0.02	0.01	0.01	1.56	1.56	0.86	0.86	19.60	19.60	0.02	0.02	0.41	0.41	0.10	0.10
2006	0.26	0.00	0.67	0.00	7.41	0.00	0.02	0.00	0.01	0.01	1.46	0.00	0.82	0.00	18.48	0.00	0.02	0.00	0.40	0.00	0.10	0.00
2007	0.29	0.00	0.61	0.00	6.83	0.00	0.02	0.00	0.01	0.01	1.45	0.00	0.77	0.00	17.32	0.00	0.02	0.00	0.38	0.00	0.09	0.00
2008	0.21	0.00	0.55	0.00	6.25	0.00	0.02	0.00	0.01	0.01	1.25	0.00	0.72	0.00	16.13	0.00	0.02	0.00	0.37	0.00	0.09	0.00
2009	0.18	0.00	0.49	0.00	5.66	0.00	0.02	0.00	0.01	0.01	1.14	0.00	0.67	0.00	14.88	0.00	0.02	0.00	0.35	0.00	0.09	0.00
2010	0.16	0.00	0.44	0.00	5.10	0.00	0.02	0.00	0.01	0.01	1.04	0.00	0.62	0.00	13.67	0.00	0.02	0.00	0.33	0.00	0.08	0.00
		0.28		0.72		7.94		0.02				1.56		0.86		19.60		0.02		0.41		0.10

Heavy Duty Truck @ 30 mph

	Running Exhaust (g/mi)								Tire Wear (g/mi)		Break Wear (g/mi)		Start Emission Rate @ 480 min (g/trip)								20 minutes Hot Soak (g/trip)		20 minutes Evaporative Running Loss (g/mi)	
Model Year	ROG	Weighted	NOx	Weighted	CO	Weighted	PM10	Weighted	PM10	Weighted	PM10	Weighted	ROG	Weighted	NOx	Weighted	CO	Weighted	PM10	Weighted	ROG	Weighted	ROG	Weighted
2000	1.12	0.00	13.23	0.00	14.06	0.00	0.38	0.00	0.03	0.00	0.01	0.00	7.72	0.00	4.32	0.00	124.87	0.00	0.01	0.00	0.25	0.00	0.06	0.00
2001	1.07	0.00	12.88	0.00	12.94	0.00	0.36	0.00	0.03	0.00	0.01	0.00	7.36	0.00	4.27	0.00	118.03	0.00	0.01	0.00	0.23	0.00	0.06	0.00
2002	1.01	0.00	12.53	0.00	11.90	0.00	0.33	0.00	0.03	0.00	0.01	0.00	7.00	0.00	4.15	0.00	111.63	0.00	0.01	0.00	0.22	0.00	0.05	0.00
2003	0.96	0.00	11.86	0.00	11.00	0.00	0.32	0.00	0.03	0.00	0.01	0.00	6.67	0.00	4.03	0.00	105.71	0.00	0.01	0.00	0.21	0.00	0.05	0.00
2004	0.91	0.00	11.21	0.00	10.15	0.00	0.30	0.00	0.03	0.00	0.01	0.00	6.32	0.00	3.93	0.00	99.68	0.00	0.01	0.00	0.19	0.00	0.05	0.00
2005	0.85	0.85	10.58	10.58	9.30	9.30	0.29	0.29	0.03	0.03	0.01	0.01	5.93	5.93	3.82	3.82	93.40	93.40	0.01	0.01	0.18	0.18	0.05	0.05
2006	0.80	0.00	10.00	0.00	8.59	0.00	0.26	0.00	0.03	0.00	0.01	0.00	5.58	0.00	3.70	0.00	87.83	0.00	0.01	0.00	0.17	0.00	0.05	0.00
2007	0.84	0.00	9.30	0.00	7.90	0.00	0.25	0.00	0.03	0.00	0.01	0.00	5.60	0.00	3.58	0.00	82.12	0.00	0.01	0.00	0.16	0.00	0.05	0.00
2008	0.70	0.00	8.63	0.00	7.25	0.00	0.23	0.00	0.03	0.00	0.01	0.00	4.90	0.00	3.44	0.00	77.18	0.00	0.01	0.00	0.14	0.00	0.05	0.00
2009	0.65	0.00	7.99	0.00	6.67	0.00	0.22	0.00	0.03	0.00	0.01	0.00	4.57	0.00	3.31	0.00	72.34	0.00	0.01	0.00	0.13	0.00	0.05	0.00
2010	0.60	0.00	7.23	0.00	6.11	0.00	0.20	0.00	0.03	0.00	0.01	0.00	4.27	0.00	3.16	0.00	67.83	0.00	0.01	0.00	0.12	0.00	0.05	0.00
		0.85		10.58		9.30		0.29		0.03		0.01		5.93		3.82		93.40		0.01		0.18		0.05

Offroad Appendix B

				Data		(yr)		(lb/hp-hr)	(hr/yr)		Total	Average
category	equipment	hp	P/N	1990 pop	2010 pop	Use Life	Avg Hp	BSFC	Activity	Load	Horsepower	Horsepowe
Construction	Bore/Drill Rigs	120	P	371	433	3	82	0.49	726	0.75	35,506	
		175	P	86	100	3	150	0.47	726	0.75	15,000	
		250	N	74	86	3	200	0.47	726	0.75	17,200	
		500	N	164	191	3	331	0.41	726	0.75	63,221	
		750	N	79	104	3	654	0.42	726	0.75	68,016	
	Bore/Drill Rigs Sum			774	914	15	1417	2.26	3630	3.75	198,943	217.7
	Concrete/Industrial Saws	120	P	58	67	16	81	0.49	580	0.73	5,427	
		175	P	2	2	16	175	0.47	580	0.73	350	
	Concrete/Industrial Saws Sum			60	69	32	256	0.96	1160	1.46	5,777	83.7
	Cranes	120	P	429	501	9	93	0.49	1464	0.43	46,593	
		175	P	785	917	9	149	0.47	1464	0.43	136,633	
		250	N	720	841	9	208	0.47	1464	0.43	174,928	
		500	N	268	313	9	334	0.41	1464	0.43	104,542	
		750	N	55	73	9	562	0.42	1464	0.43	41,026	
	Cranes Sum			2257	2645	45	1346	2.26	7320	2.15	503,722	190.4
	Crawler Tractors	120	P	13150	15362	16	82	0.49	936	0.64	1,259,684	
		175	P	4450	5198	16	151	0.47	936	0.64	784,898	
		250	N	3825	4468	16	207	0.47	936	0.64	924,876	
		500	N	2620	3060	16	323	0.41	936	0.64	988,380	
		750	N	121	160	16	579	0.42	936	0.64	92,640	
	Crawler Tractors Sum			24166	28248	80	1342	2.26	4680	3.2	4,050,478	143.4
	Crushing/Proc. Equipment	120	P	431	503	16	85	0.49	955	0.78	42,755	
		175	P	182	212	16	171	0.47	955	0.78	36,252	
		250	N	18	21	16	250	0.47	955	0.78	5,250	
		500	N	102	119	16	382	0.41	955	0.78	45,458	
		750	N	4	5	16	602	0.42	955	0.78	3,010	
	Crushing/Proc. Equipment Sum			737	860	80	1490	2.26	4775	3.9	132,725	154.3
	Excavators	120	P	2781	3248	7	103	0.49	1162	0.57	334,544	
		175	P	5365	6267	7	157	0.47	1162	0.57	983,919	
		250	N	2186	2553	7	222	0.47	1162	0.57	566,766	
		500	N	1589	1856	7	327	0.41	1162	0.57	606,912	
		750	N	31	42	7	542	0.42	1162	0.57	22,764	
	Excavators Sum			11952	13966	35	1351	2.26	5810	2.85	2,514,905	180.1
	Graders	120	P	940	1098	10	98	0.49	965	0.61	107,604	
		175	P	3211	3751	10	162	0.47	965	0.61	607,662	
		250	N	1992	2327	10	225	0.47	965	0.61	523,575	
		500	N	56	65	10	300	0.41	965	0.61	19,500	
		750	N	3	3	10	635	0.42	965	0.61	1,905	
	Graders Sum			6202	7244	50	1420	2.26	4825	3.05	1,260,246	174.0
	Off-Highway Tractors	120	P	1	1	16	115	0.49	855	0.65	115	
		175	P	1168	1364	16	160	0.47	855	0.65	218,240	
		250	N	1104	1289	16	160	0.47	855	0.65	206,240	
		750	N	433	571	16	697	0.42	855	0.65	397,987	
	Off-Highway Tractors Sum			2706	3225	64	1132	1.85	3420	2.6	822,582	255.1
	Off-Highway Trucks	175	P	62	72	10	175	0.47	1641	0.57	12,600	
		250	N	458	535	10	233	0.47	1641	0.57	124,655	
		500	N	648	757	10	381	0.41	1641	0.57	288,417	
		750	N	543	714	10	618	0.42	1641	0.57	441,252	
	Off-Highway Trucks Sum			1711	2078	40	1407	1.77	6564	2.28	866,924	417.2
	Other Construction Equipment	120	P	136	158	16	104	0.49	606	0.62	16,432	
		175	P	187	218	16	137	0.47	606	0.62	29,866	
		500	N	435	508	16	327	0.41	606	0.62	166,116	
	Other Construction Equipment Sum			758	884	48	568	1.37	1818	1.86	212,414	240.3
	Pavers	120	P	947	1106	8	89	0.49	828	0.62	98,434	
		175	P	589	688	8	165	0.47	828	0.62	113,520	
		250	N	71	82	8	250	0.47	828	0.62	20,500	
		500	N	73	85	8	300	0.41	828	0.62	25,500	
	Pavers Sum			1680	1961	32	804	1.84	3312	2.48	257,954	131.5
	Paving Equipment	120	P	2100	2453	16	82	0.49	622	0.53	201,146	
		175	P	985	1150	16	152	0.47	622	0.53	174,800	
		250	N	279	325	16	184	0.47	622	0.53	59,800	
	Paving Equipment Sum			3364	3928	48	418	1.43	1866	1.59	435,746	110.9
	Rollers	120	P	4035	4713	8	84	0.49	748	0.56	395,892	
		175	P	1622	1894	8	154	0.47	748	0.56	291,676	
		250	N	230	268	8	218	0.47	748	0.56	58,424	
		500	N	161	188	8	312	0.41	748	0.56	58,656	
	Rollers Sum			6048	7063	32	768	1.84	2992	2.24	804,648	113.9
	Rough Terrain Forklifts	120	P	4755	5554	8	83	0.49	1198	0.6	460,982	
		175	P	609	711	8	166	0.47	1198	0.6	118,026	
		250	N	34	39	8	227	0.47	1198	0.6	8,853	
		500	N	22	25	8	341	0.41	1198	0.6	8,525	
	Rough Terrain Forklifts Sum			5420	6329	32	817	1.84	4792	2.4	596,386	94.2
	Rubber Tired Dozers	175	P	10	11	16	175	0.47	899	0.59	1,925	
		250	N	234	273	16	248	0.47	899	0.59	67,704	
		500	N	360	420	16	358	0.41	899	0.59	150,360	
		750	N	114	151	16	539	0.42	899	0.59	81,389	
	Rubber Tired Dozers Sum			718	855	64	1320	1.77	3596	2.36	301,378	352.5
	Rubber Tired Loaders	120	P	6988	8163	8	87	0.49	1346	0.54	710,181	
		175	P	3938	4600	8	157	0.47	1346	0.54	722,200	
		250	N	3917	4575	8	220	0.47	1346	0.54	1,006,500	
		500	N	1630	1904	8	350	0.41	1346	0.54	666,400	
		750	N	105	138	8	717	0.42	1346	0.54	98,946	
	Rubber Tired Loaders Sum			16578	19380	40	1531	2.26	6730	2.7	3,204,227	165.3
	Scrapers	120	P	37	43	12	104	0.49	1090	0.72	4,472	
		175	P	341	398	12	164	0.47	1090	0.72	65,272	
		250	N	332	387	12	232	0.47	1090	0.72	89,784	
		500	N	915	1068	12	356	0.41	1090	0.72	380,208	
		750	N	135	179	12	615	0.42	1090	0.72	110,085	
	Scrapers Sum			1760	2075	60	1471	2.26	5450	3.6	649,821	313.2
	Signal Boards	120	P	219	255	16	82	0.49	535	0.78	20,910	
		175	P	136	158	16	158	0.47	535	0.78	24,964	
		250	N	29	33	16	216	0.47	535	0.78	7,128	
	Signal Boards Sum			384	446	48	456	1.43	1605	2.34	53,002	118.8
	Skid Steer Loaders	120	P	7964	9303	5	62	0.49	811	0.55	576,786	
	Skid Steer Loaders Sum			7964	9303	5	62	0.49	811	0.55	576,786	62.0
	Surfacing Equipment	120	P	4	4	16	113	0.49	561	0.45	452	
		175	P	3	3	16	152	0.47	561	0.45	456	
		250	N	6	7	16	239	0.47	561	0.45	1,673	
		500	N	48	56	16	392	0.41	561	0.45	21,952	
		750	N	26	34	16	615	0.42	561	0.45	20,910	
	Surfacing Equipment Sum			87	104	80	1511	2.26	2805	2.25	45,443	437.0
	Tractors/Loaders/Backhoes	120	P	28552	33355	16	75	0.49	1135	0.55	2,501,625	
		175	P	1885	2202	16	147	0.47	1135	0.55	323,694	
		250	N	6	7	16	249	0.47	1135	0.55	1,743	
	Tractors/Loaders/Backhoes Sum			30443	35564	48	471	1.43	3405	1.65	2,827,062	79.5
	Trenchers	120	P	3620	4229	7	69	0.49	620	0.75	291,801	
		175	P	396	462	7	153	0.47	620	0.75	70,686	
		250	N	35	40	7	237	0.47	620	0.75	9,480	
		500	N	45	52	7	331	0.41	620	0.75	17,212	
		750	N	3	5	7	624	0.42	620	0.75	3,120	
	Trenchers Sum			4099	4788	35	1414	2.26	3100	3.75	392,299	81.9
Grand Total				129868	151929	1013	22772	40.62	84466	55.01		

	B	C	D	E	F	G	H	I	J	K
1	Offroad Appendix D									
2			(g/hp-hr)	(g/hp-hr2)	(g/hp-hr)	(g/hp-hr2)	(g/hp-hr)	(g/hp-hr2)	(g/hp-hr)	(g/hp-hr2)
3	**HP**	**Year**	**ROG**	**ROG det**	**CO**	**CO det**	**Nox**	**Nox det**	**PM**	**PM det**
4	50	1987	1.84	2.35E-04	5.00	5.13E-04	6.90	1.04E-04	0.76	5.89E-05
5	50	1998	1.80	2.30E-04	5.00	5.13E-04	6.90	1.04E-04	0.76	5.89E-05
6	50	2003	1.45	1.85E-04	4.10	4.20E-04	5.55	1.03E-04	0.60	4.65E-05
7	50	2004	0.64	9.80E-05	3.27	3.34E-04	5.10	9.33E-05	0.43	3.36E-05
8	50	2005	0.37	6.90E-05	3.00	3.05E-04	4.95	9.67E-05	0.38	2.93E-05
9	50	2007	0.24	5.45E-05	2.86	2.90E-04	4.88	9.83E-05	0.35	2.72E-05
10	50	2020	0.10	4.00E-05	2.72	2.76E-04	4.80	1.00E-04	0.32	2.50E-05
11	120	1987	1.44	6.66E-05	4.80	1.27E-04	13.00	3.01E-04	0.84	6.11E-05
12	120	1997	0.99	4.58E-05	3.49	9.23E-05	8.75	2.02E-04	0.69	5.02E-05
13	120	2003	0.99	4.58E-05	3.49	9.23E-05	6.90	1.60E-04	0.69	5.02E-05
14	120	2004	0.46	3.33E-05	3.23	8.55E-05	5.64	1.03E-04	0.39	2.85E-05
15	120	2005	0.28	2.92E-05	3.14	8.33E-05	5.22	8.40E-05	0.29	2.12E-05
16	120	2007	0.19	2.71E-05	3.09	8.21E-05	5.01	7.45E-05	0.24	1.76E-05
17	120	2020	0.10	2.50E-05	3.05	8.10E-05	2.89	3.80E-05	0.19	1.40E-05
18	175	1969	1.32	6.11E-05	4.40	1.16E-04	14.00	3.24E-04	0.77	5.60E-05
19	175	1971	1.10	5.09E-05	4.40	1.16E-04	13.00	3.01E-04	0.66	4.80E-05
20	175	1979	1.00	4.63E-05	4.40	1.16E-04	12.00	2.78E-04	0.55	4.00E-05
21	175	1984	0.94	4.35E-05	4.30	1.14E-04	11.00	2.54E-04	0.55	4.00E-05
22	175	1987	0.88	4.07E-05	4.20	1.11E-04	11.00	2.54E-04	0.55	4.00E-05
23	175	1996	0.68	3.15E-05	2.70	7.14E-05	8.17	1.89E-04	0.38	2.76E-05
24	175	2002	0.68	3.15E-05	2.70	7.14E-05	6.90	1.60E-04	0.38	2.76E-05
25	175	2003	0.33	2.79E-05	2.70	7.14E-05	5.26	9.64E-05	0.24	1.70E-05
26	175	2004	0.22	2.63E-05	2.70	7.14E-05	4.72	7.52E-05	0.19	1.35E-05
27	175	2006	0.16	2.57E-05	2.70	7.14E-05	4.44	6.46E-05	0.16	1.18E-05
28	175	2020	0.10	2.50E-05	2.70	7.14E-05	2.45	2.45E-05	0.14	1.00E-05
29	250	1969	1.32	6.11E-05	4.40	1.16E-04	14.00	3.24E-04	0.77	5.60E-05
30	250	1971	1.10	5.09E-05	4.40	1.16E-04	13.00	3.01E-04	0.66	4.80E-05
31	250	1979	1.00	4.63E-05	4.40	1.16E-04	12.00	2.78E-04	0.55	4.00E-05
32	250	1984	0.94	4.35E-05	4.30	1.14E-04	11.00	2.54E-04	0.55	4.00E-05
33	250	1987	0.88	4.07E-05	4.20	1.11E-04	11.00	2.54E-04	0.55	4.00E-05
34	250	1995	0.68	3.15E-05	2.70	7.14E-05	8.17	1.89E-04	0.38	2.76E-05
35	250	2002	0.32	1.48E-05	0.92	2.43E-05	6.25	1.45E-04	0.15	7.96E-06
36	250	2003	0.19	2.09E-05	0.92	2.43E-05	5.00	9.05E-05	0.12	6.51E-06
37	250	2004	0.14	2.30E-05	0.92	2.43E-05	4.58	7.23E-05	0.11	6.03E-06
38	250	2006	0.12	2.40E-05	0.92	2.43E-05	4.38	6.33E-05	0.11	5.79E-06
39	250	2020	0.10	2.50E-05	0.92	2.43E-05	2.45	3.18E-05	0.11	5.59E-06
40	500	1969	1.26	4.39E-05	4.20	8.32E-05	14.00	2.33E-04	0.74	3.93E-05
41	500	1971	1.05	3.66E-05	4.20	8.32E-05	13.00	2.16E-04	0.63	3.34E-05
42	500	1979	0.95	3.31E-05	4.20	8.32E-05	12.00	2.00E-04	0.53	2.81E-05
43	500	1984	0.90	3.14E-05	4.20	8.32E-05	11.00	1.83E-04	0.53	2.81E-05
44	500	1987	0.84	2.93E-05	4.10	8.12E-05	11.00	1.83E-04	0.53	2.81E-05
45	500	1995	0.68	2.37E-05	2.70	5.35E-05	8.17	1.36E-04	0.38	2.02E-05
46	500	2000	0.32	1.12E-05	0.92	1.82E-05	6.25	1.04E-04	0.15	7.96E-06
47	500	2001	0.19	1.95E-05	0.92	1.82E-05	4.95	7.34E-05	0.12	6.51E-06
48	500	2002	0.14	2.22E-05	0.92	1.82E-05	4.51	6.32E-05	0.11	6.03E-06
49	500	2004	0.12	2.36E-05	0.92	1.82E-05	4.29	5.81E-05	0.11	5.79E-06
50	500	2005	0.10	2.50E-05	0.92	1.82E-05	4.00	5.30E-05	0.11	5.55E-06
51	500	2020	0.10	2.50E-05	0.92	1.82E-05	2.45	3.18E-05	0.11	5.55E-06
52	750	1969	1.26	4.39E-05	4.20	8.32E-05	14.00	2.33E-04	0.74	3.93E-05
53	750	1971	1.05	3.66E-05	4.20	8.32E-05	13.00	2.16E-04	0.63	3.34E-05
54	750	1979	0.95	3.31E-05	4.20	8.32E-05	12.00	2.00E-04	0.53	2.81E-05
55	750	1984	0.90	3.14E-05	4.20	8.32E-05	11.00	1.83E-04	0.53	2.81E-05
56	750	1987	0.84	2.93E-05	4.10	8.12E-05	11.00	1.83E-04	0.53	2.81E-05
57	750	1995	0.68	2.37E-05	2.70	5.35E-05	8.17	1.36E-04	0.38	2.02E-05
58	750	2001	0.32	1.12E-05	0.92	1.82E-05	6.25	1.04E-04	0.15	7.96E-06
59	750	2002	0.19	1.95E-05	0.92	1.82E-05	4.95	7.34E-05	0.12	6.51E-06
60	750	2003	0.14	2.22E-05	0.92	1.82E-05	4.51	6.32E-05	0.11	6.03E-06
61	750	2005	0.12	2.36E-05	0.92	1.82E-05	4.29	5.81E-05	0.11	5.79E-06
62	750	2020	0.10	2.50E-05	0.92	1.82E-05	2.45	3.18E-05	0.11	5.55E-06
63	9999	1969	1.26	4.39E-05	4.20	8.32E-05	14.00	2.33E-04	0.74	3.93E-05
64	9999	1971	1.05	3.66E-05	4.20	8.32E-05	13.00	2.16E-04	0.63	3.34E-05
65	9999	1979	0.95	3.31E-05	4.20	8.32E-05	12.00	2.00E-04	0.53	2.81E-05
66	9999	1984	0.90	3.14E-05	4.20	8.32E-05	11.00	1.83E-04	0.53	2.81E-05
67	9999	1987	0.84	2.93E-05	4.10	8.12E-05	11.00	1.83E-04	0.53	2.81E-05
68	9999	1999	0.68	2.37E-05	2.70	5.35E-05	8.17	1.36E-04	0.38	2.02E-06
69	9999	2005	0.32	1.12E-05	0.92	1.82E-05	6.25	1.04E-04	0.15	7.96E-06
70	9999	2006	0.19	1.95E-05	0.92	1.82E-05	4.95	7.34E-05	0.12	6.51E-06
71	9999	2007	0.14	2.22E-05	0.92	1.82E-05	4.51	6.32E-05	0.11	6.03E-06
72	9999	2009	0.12	2.36E-05	0.92	1.82E-05	4.29	5.81E-05	0.11	5.79E-06
73	9999	2020	0.10	2.50E-05	0.92	1.82E-05	4.08	5.30E-05	0.11	5.55E-06
74										
75		*NOTE:	50	- Implies 25-50 hp		250	- Implies 176-250 hp		999	- Implies >751 hp
76			120	- Implies 51-120 hp		500	- Implies 251-500 hp			
77			175	- Implies 121-175 hp		750	- Implies 501-750 hp			
78			1	2	3.00	4				

McCloy Road
OFFROAD APPENDIX D

	A	B	C	D	E	F	G
78				1	2	3.00	4
79		grams/brake-hp-hr		ROG	CO	NOx	PM10
80	1	25-50 hp	pre -1996	1.82	5.00	6.90	0.76
81	2	51-120 hp	pre -1996	1.22	4.15	10.88	0.77
82	3	121-175 hp	pre -1996	1.05	4.34	12.20	0.62
83	4	176-250 hp	pre -1996	0.99	4.07	11.53	0.58
84	5	251-500 hp	pre -1996	0.95	3.93	11.53	0.56
85	6	501-750 hp	pre -1996	0.95	3.93	11.53	0.56
86	7	>751 hp	pre -1996	1.00	4.18	12.20	0.59
87	1	25-49	1996	1.80	5.00	6.90	0.76
88	2	50-99	1996	0.99	3.49	6.90	0.69
89	3	100-174	1996	0.68	2.70	6.90	0.38
90	4	175-299	1996	1.00	8.50	6.90	0.40
91	5	300-599	1996	1.00	8.50	6.90	0.40
92	6	600-749	1996	1.00	8.50	6.90	0.40
93	7	750+	1996	1.00	8.50	6.90	0.40
94	1	25-49	1997	1.80	5.00	6.90	0.76
95	2	50-99	1997	0.99	3.49	6.90	0.69
96	3	100-174	1997	0.68	2.70	6.90	0.38
97	4	175-299	1997	1.00	8.50	6.90	0.40
98	5	300-599	1997	1.00	8.50	6.90	0.40
99	6	600-749	1997	1.00	8.50	6.90	0.40
100	7	750+	1997	1.00	8.50	6.90	0.40
101	1	25-49	1998	1.80	5.00	6.90	0.76
102	2	50-99	1998	0.99	3.49	6.90	0.69
103	3	100-174	1998	0.68	2.70	6.90	0.38
104	4	175-299	1998	1.00	8.50	6.90	0.40
105	5	300-599	1998	1.00	8.50	6.90	0.40
106	6	600-749	1998	1.00	8.50	6.90	0.40
107	7	750+	1998	1.00	8.50	6.90	0.40
108	1	25-49	1999	1.80	4.10	7.10	0.60
109	2	50-99	1999	0.99	3.49	6.90	0.69
110	3	100-174	1999	0.68	2.70	6.90	0.38
111	4	175-299	1999	1.00	8.50	6.90	0.40
112	5	300-599	1999	1.00	8.50	6.90	0.40
113	6	600-749	1999	1.00	8.50	6.90	0.40
114	7	750+	1999	1.00	8.50	6.90	0.40
115	1	25-49	2000	1.80	4.10	7.10	0.60
116	2	50-99	2000	0.99	3.49	6.90	0.69
117	3	100-174	2000	0.68	2.70	6.90	0.38
118	4	175-299	2000	1.00	8.50	6.90	0.40
119	5	300-599	2000	1.00	8.50	6.90	0.40
120	6	600-749	2000	1.00	8.50	6.90	0.40
121	7	750+	2000	1.00	8.50	6.90	0.40
122	1	25-49	2001	1.80	4.10	7.10	0.60
123	2	50-99	2001	0.99	3.49	6.90	0.69
124	3	100-174	2001	0.68	2.70	6.90	0.38
125	4	175-299	2001	1.00	8.50	6.90	0.40
126	5	300-599	2001	1.00	2.60	3.80	0.15
127	6	600-749	2001	1.00	8.50	6.90	0.40
128	7	750+	2001	1.00	8.50	6.90	0.40
129	1	25-49	2002	1.80	4.10	7.10	0.60
130	2	50-99	2002	0.99	3.49	6.90	0.69
131	3	100-174	2002	0.68	2.70	6.90	0.38
132	4	175-299	2002	1.00	8.50	6.90	0.40
133	5	300-599	2002	1.00	2.60	3.80	0.15
134	6	600-749	2002	1.00	2.60	3.80	0.15
135	7	750+	2002	1.00	8.50	6.90	0.40
136	1	25-49	2003	1.80	4.10	7.10	0.60
137	2	50-99	2003	0.99	3.49	6.90	0.69
138	3	100-174	2003	0.68	2.70	6.90	0.38
139	4	175-299	2003	1.00	2.60	3.90	0.15
140	5	300-599	2003	1.00	2.60	3.80	0.15
141	6	600-749	2003	1.00	2.60	3.80	0.15
142	7	750+	2003	1.00	8.50	6.90	0.40
143	1	25-49	2004	1.80	4.10	5.60	0.45
144	2	50-99	2004	0.99	3.70	5.60	0.30
145	3	100-174	2004	0.68	3.70	4.90	0.22
146	4	175-299	2004	1.00	2.60	3.90	0.15
147	5	300-599	2004	1.00	2.60	3.80	0.15
148	6	600-749	2004	1.00	2.60	3.80	0.15
149	7	750+	2004	1.00	8.50	6.90	0.40
150	1	25-49	2005	1.80	4.10	5.60	0.45
151	2	50-99	2005	0.99	3.70	5.60	0.30
152	3	100-174	2005	0.68	3.70	4.90	0.22
153	4	175-299	2005	1.00	2.60	3.90	0.15
154	5	300-599	2005	1.00	2.60	3.80	0.15
155	6	600-749	2005	1.00	2.60	3.80	0.15
156	7	750+	2005	1.00	8.50	6.90	0.40
157	1	25-49	2006	1.80	4.10	5.60	0.45
158	2	50-99	2006	0.99	3.70	5.60	0.30
159	3	100-174	2006	0.68	3.70	4.90	0.22
160	4	175-299	2006	1.00	2.60	2.00	0.15
161	5	300-599	2006	1.00	2.60	2.00	0.15
162	6	600-749	2006	1.00	2.60	2.00	0.15
163	7	750+	2006	1.00	2.60	3.80	0.15
164	1	25-49	2007	1.80	4.10	5.60	0.45
165	2	50-99	2007	0.99	3.70	5.60	0.30
166	3	100-174	2007	0.68	3.70	3.00	0.22
167	4	175-299	2007	1.00	2.60	2.00	0.15
168	5	300-599	2007	1.00	2.60	2.00	0.15
169	6	600-749	2007	1.00	2.60	2.00	0.15
170	7	750+	2007	1.00	2.60	3.80	0.15
171	1	25-49	2008	1.80	4.10	5.60	0.45
172	2	50-99	2008	0.99	3.70	3.50	0.30
173	3	100-174	2008	0.68	3.70	3.00	0.22
174	4	175-299	2008	1.00	2.60	2.00	0.15
175	5	300-599	2008	1.00	2.60	2.00	0.15
176	6	600-749	2008	1.00	2.60	2.00	0.15
177	7	750+	2008	1.00	2.60	3.80	0.15
178	1	25-49	2009	1.80	4.10	5.60	0.45
179	2	50-99	2009	0.99	3.70	3.50	0.30
180	3	100-174	2009	0.68	3.70	3.00	0.22
181	4	175-299	2009	1.00	2.60	2.00	0.15
182	5	300-599	2009	1.00	2.60	2.00	0.15
183	6	600-749	2009	1.00	2.60	2.00	0.15
184	7	750+	2009	1.00	2.60	3.80	0.15
185	1	25-49	2010	1.80	4.10	5.60	0.45
186	2	50-99	2010	0.99	3.70	3.50	0.30
187	3	100-174	2010	0.68	3.70	3.00	0.22
188	4	175-299	2010	1.00	2.60	2.00	0.15
189	5	300-599	2010	1.00	2.60	2.00	0.15
190	6	600-749	2010	1.00	2.60	2.00	0.15
191	7	750+	2010	1.00	2.60	3.80	0.15

McCloy Road
OFFROAD APPENDIX D

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
198	Year	% Pre-1996	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
199	1995	100	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
200	1996	67	33	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
201	1997	33	33	33	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
202	1998	0	33	33	33	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
203	1999	0	0	33	33	33	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
204	2000	0	0	0	33	33	33	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
205	2001	0	0	0	0	33	33	33	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
206	2002	0	0	0	0	0	33	33	33	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
207	2003	0	0	0	0	0	0	33	33	33	0	N/A	N/A	N/A	N/A	N/A	N/A
208	2004	0	0	0	0	0	0	0	33	33	33	0	N/A	N/A	N/A	N/A	N/A
209	2005	0	0	0	0	0	0	0	0	33	33	33	0	N/A	N/A	N/A	N/A
210	2006	0	0	0	0	0	0	0	0	0	33	33	33	0	N/A	N/A	N/A
211	2007	0	0	0	0	0	0	0	0	0	0	33	33	33	0	N/A	N/A
212	2008	0	0	0	0	0	0	0	0	0	0	0	33	33	33	0	N/A
213	2009	0	0	0	0	0	0	0	0	0	0	0	0	33	33	33	0
214	2010	0	0	0	0	0	0	0	0	0	0	0	0	0	33	33	33

McCloy Road
OFFROAD APPENDIX D

	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ
198	Year	% Pre-1996	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
199	1995	100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
200	1996	80	20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
201	1997	60	20	20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
202	1998	40	20	20	20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
203	1999	20	20	20	20	20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
204	2000	0	20	20	20	20	20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
205	2001	0	0	20	20	20	20	20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
206	2002	0	0	0	20	20	20	20	20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
207	2003	0	0	0	0	20	20	20	20	20	N/A	N/A	N/A	N/A	N/A	N/A	N/A
208	2004	0	0	0	0	0	20	20	20	20	20	N/A	N/A	N/A	N/A	N/A	N/A
209	2005	0	0	0	0	0	0	20	20	20	20	20	N/A	N/A	N/A	N/A	N/A
210	2006	0	0	0	0	0	0	0	20	20	20	20	20	N/A	N/A	N/A	N/A
211	2007	0	0	0	0	0	0	0	0	20	20	20	20	20	N/A	N/A	N/A
212	2008	0	0	0	0	0	0	0	0	0	20	20	20	20	20	N/A	N/A
213	2009	0	0	0	0	0	0	0	0	0	0	20	20	20	20	20	N/A
214	2010	0	0	0	0	0	0	0	0	0	0	0	20	20	20	20	20
215																	

McCloy Road
OFFROAD APPENDIX D

	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB
198	Year	% Pre-1996	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
199	1995	100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
200	1996	86	14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
201	1997	71	14	14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
202	1998	57	14	14	14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
203	1999	43	14	14	14	14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
204	2000	29	14	14	14	14	14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
205	2001	14	14	14	14	14	14	14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
206	2002	0	14	14	14	14	14	14	14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
207	2003	0	0	14	14	14	14	14	14	14	N/A	N/A	N/A	N/A	N/A	N/A	N/A
208	2004	0	0	0	14	14	14	14	14	14	14	N/A	N/A	N/A	N/A	N/A	N/A
209	2005	0	0	0	0	14	14	14	14	14	14	14	N/A	N/A	N/A	N/A	N/A
210	2006	0	0	0	0	0	14	14	14	14	14	14	14	N/A	N/A	N/A	N/A
211	2007	0	0	0	0	0	0	14	14	14	14	14	14	14	N/A	N/A	N/A
212	2008	0	0	0	0	0	0	0	14	14	14	14	14	14	14	N/A	N/A
213	2009	0	0	0	0	0	0	0	0	14	14	14	14	14	14	14	N/A
214	2010	0	0	0	0	0	0	0	0	0	14	14	14	14	14	14	14

McCloy Road
OFFROAD APPENDIX D

	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT
198	Year	% Pre-1996	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
199	1995	100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
200	1996	88	13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
201	1997	75	13	13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
202	1998	63	13	13	13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
203	1999	50	13	13	13	13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
204	2000	38	13	13	13	13	13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
205	2001	25	13	13	13	13	13	13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
206	2002	13	13	13	13	13	13	13	13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
207	2003	0	13	13	13	13	13	13	13	13	N/A	N/A	N/A	N/A	N/A	N/A	N/A
208	2004	0	0	13	13	13	13	13	13	13	13	N/A	N/A	N/A	N/A	N/A	N/A
209	2005	0	0	0	13	13	13	13	13	13	13	13	N/A	N/A	N/A	N/A	N/A
210	2006	0	0	0	0	13	13	13	13	13	13	13	13	N/A	N/A	N/A	N/A
211	2007	0	0	0	0	0	13	13	13	13	13	13	13	13	N/A	N/A	N/A
212	2008	0	0	0	0	0	0	13	13	13	13	13	13	13	13	N/A	N/A
213	2009	0	0	0	0	0	0	0	13	13	13	13	13	13	13	13	N/A
214	2010	0	0	0	0	0	0	0	0	13	13	13	13	13	13	13	13
215																	

McCloy Road
OFFROAD APPENDIX D

	BV	BW	BX	BY	BZ	CA	CB	CC	CD	CE	CF	CG	CH	CI	CJ	CK	CL
198	Year	% Pre-1996	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
199	1995	100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
200	1996	89	11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
201	1997	78	11	11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
202	1998	67	11	11	11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
203	1999	56	11	11	11	11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
204	2000	44	11	11	11	11	11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
205	2001	33	11	11	11	11	11	11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
206	2002	22	11	11	11	11	11	11	11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
207	2003	11	11	11	11	11	11	11	11	11	N/A	N/A	N/A	N/A	N/A	N/A	N/A
208	2004	0	11	11	11	11	11	11	11	11	11	N/A	N/A	N/A	N/A	N/A	N/A
209	2005	0	0	11	11	11	11	11	11	11	11	11	N/A	N/A	N/A	N/A	N/A
210	2006	0	0	0	11	11	11	11	11	11	11	11	11	N/A	N/A	N/A	N/A
211	2007	0	0	0	0	11	11	11	11	11	11	11	11	11	N/A	N/A	N/A
212	2008	0	0	0	0	0	11	11	11	11	11	11	11	11	11	N/A	N/A
213	2009	0	0	0	0	0	0	11	11	11	11	11	11	11	11	11	N/A
214	2010	0	0	0	0	0	0	0	11	11	11	11	11	11	11	11	11

McCloy Road
OFFROAD APPENDIX D

	CN	CO	CP	CQ	CR	CS	CT	CU	CV	CW	CX	CY	CZ	DA	DB	DC	DD
198	Year	% Pre-1996	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
199	1995	100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
200	1996	90	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
201	1997	80	10	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
202	1998	70	10	10	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
203	1999	60	10	10	10	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
204	2000	50	10	10	10	10	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
205	2001	40	10	10	10	10	10	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
206	2002	30	10	10	10	10	10	10	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
207	2003	20	10	10	10	10	10	10	10	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
208	2004	10	10	10	10	10	10	10	10	10	10	N/A	N/A	N/A	N/A	N/A	N/A
209	2005	0	10	10	10	10	10	10	10	10	10	10	N/A	N/A	N/A	N/A	N/A
210	2006	0	0	10	10	10	10	10	10	10	10	10	10	N/A	N/A	N/A	N/A
211	2007	0	0	0	10	10	10	10	10	10	10	10	10	10	N/A	N/A	N/A
212	2008	0	0	0	0	10	10	10	10	10	10	10	10	10	10	N/A	N/A
213	2009	0	0	0	0	0	10	10	10	10	10	10	10	10	10	10	N/A
214	2010	0	0	0	0	0	0	10	10	10	10	10	10	10	10	10	10

McCloy Road
OFFROAD APPENDIX D

	DF	DG	DH	DI	DJ	DK	DL	DM	DN	DO	DP	DQ	DR	DS	DT	DU	DV
198	Year	% Pre-1996	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
199	1995	100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
200	1996	92	8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
201	1997	83	8	8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
202	1998	75	8	8	8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
203	1999	67	8	8	8	8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
204	2000	58	8	8	8	8	8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
205	2001	50	8	8	8	8	8	8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
206	2002	42	8	8	8	8	8	8	8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
207	2003	33	8	8	8	8	8	8	8	8	N/A	N/A	N/A	N/A	N/A	N/A	N/A
208	2004	25	8	8	8	8	8	8	8	8	8	N/A	N/A	N/A	N/A	N/A	N/A
209	2005	17	8	8	8	8	8	8	8	8	8	8	N/A	N/A	N/A	N/A	N/A
210	2006	8	8	8	8	8	8	8	8	8	8	8	8	N/A	N/A	N/A	N/A
211	2007	0	8	8	8	8	8	8	8	8	8	8	8	8	N/A	N/A	N/A
212	2008	0	0	8	8	8	8	8	8	8	8	8	8	8	8	N/A	N/A
213	2009	0	0	0	8	8	8	8	8	8	8	8	8	8	8	8	N/A
214	2010	0	0	0	0	8	8	8	8	8	8	8	8	8	8	8	8
215																	

McCloy Road
OFFROAD APPENDIX D

	DX	DY	DZ	EA	EB	EC	ED	EE	EF	EG	EH	EI	EJ	EK	EL	EM	EN
198	Year	% Pre-1996	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
199	1995	100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
200	1996	94	6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
201	1997	88	6	6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
202	1998	81	6	6	6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
203	1999	75	6	6	6	6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
204	2000	69	6	6	6	6	6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
205	2001	63	6	6	6	6	6	6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
206	2002	56	6	6	6	6	6	6	6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
207	2003	50	6	6	6	6	6	6	6	6	N/A	N/A	N/A	N/A	N/A	N/A	N/A
208	2004	44	6	6	6	6	6	6	6	6	6	N/A	N/A	N/A	N/A	N/A	N/A
209	2005	38	6	6	6	6	6	6	6	6	6	6	N/A	N/A	N/A	N/A	N/A
210	2006	31	6	6	6	6	6	6	6	6	6	6	6	N/A	N/A	N/A	N/A
211	2007	25	6	6	6	6	6	6	6	6	6	6	6	6	N/A	N/A	N/A
212	2008	19	6	6	6	6	6	6	6	6	6	6	6	6	6	N/A	N/A
213	2009	13	6	6	6	6	6	6	6	6	6	6	6	6	6	6	N/A
214	2010	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6

Emissions by Equipment Type (grams per brake-horsepower hour)

	25-49 hp	Bore Rig, 3 year life				5 year life	Skid Steer Loaders				7 year life	Trenchers				8 year life	pavers, rollers, rough terrain forklifts, rubber tired loaders				9 year life	Cranes				10 year life	Graders, Off-highway Trucks				12 year life	scrapers				16 year life	paving equipment, rubber tired dozers, signal boards, surfacing equipment, tra crushing equip., off-highway tractors, other construction equipment			
		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10
1	2000	1.8	4.4	7.0	0.7	2000	1.8	4.6	7.0	0.7	2000	1.8	4.7	7.0	0.7	2000	1.8	4.8	7.0	0.7	2000	1.8	4.8	6.9	0.7	2000	1.8	4.8	6.9	0.7	2000	1.8	4.9	6.9	0.7	2000	1.8	4.9	6.9	0.7
1	2001	1.8	4.1	7.1	0.6	2001	1.8	4.5	7.0	0.7	2001	1.8	4.6	7.0	0.7	2001	1.8	4.7	7.0	0.7	2001	1.8	4.7	7.0	0.7	2001	1.8	4.7	7.0	0.7	2001	1.8	4.8	7.0	0.7	2001	1.8	4.8	6.9	0.7
1	2002	1.8	4.1	7.1	0.6	2002	1.8	4.3	7.1	0.6	2002	1.8	4.5	7.0	0.7	2002	1.8	4.6	7.0	0.7	2002	1.8	4.6	7.0	0.7	2002	1.8	4.6	7.0	0.7	2002	1.8	4.7	7.0	0.7	2002	1.8	4.8	7.0	0.7
1	2003	1.8	4.1	7.1	0.6	2003	1.8	4.1	7.1	0.6	2003	1.8	4.4	7.0	0.6	2003	1.8	4.4	7.0	0.7	2003	1.8	4.5	7.0	0.7	2003	1.8	4.6	7.0	0.7	2003	1.8	4.6	7.0	0.7	2003	1.8	4.7	7.0	0.7
1	2004	1.8	4.1	6.6	0.5	2004	1.8	4.1	6.8	0.6	2004	1.8	4.2	6.9	0.6	2004	1.8	4.3	6.9	0.6	2004	1.8	4.4	6.9	0.6	2004	1.8	4.5	6.9	0.6	2004	1.8	4.6	6.9	0.7	2004	1.8	4.7	6.9	0.7
1	2005	1.8	4.1	6.1	0.5	2005	1.8	4.1	6.5	0.5	2005	1.8	4.1	6.7	0.6	2005	1.8	4.2	6.7	0.6	2005	1.8	4.3	6.7	0.6	2005	1.8	4.4	6.7	0.6	2005	1.8	4.5	6.8	0.6	2005	1.8	4.6	6.8	0.7
1	2006	1.8	4.1	6.1	0.5	2006	1.8	4.1	6.2	0.5	2006	1.8	4.1	6.5	0.5	2006	1.8	4.1	6.5	0.5	2006	1.8	4.2	6.6	0.6	2006	1.8	4.3	6.6	0.6	2006	1.8	4.4	6.7	0.6	2006	1.8	4.6	6.7	0.7
1	2007	1.8	4.1	5.6	0.4	2007	1.8	4.1	5.9	0.5	2007	1.8	4.1	6.2	0.5	2007	1.8	4.1	6.4	0.5	2007	1.8	4.1	6.4	0.5	2007	1.8	4.2	6.5	0.6	2007	1.8	4.3	6.6	0.6	2007	1.8	4.5	6.6	0.6
1	2008	1.8	4.1	5.6	0.4	2008	1.8	4.1	5.6	0.5	2008	1.8	4.1	6.0	0.5	2008	1.8	4.1	6.2	0.5	2008	1.8	4.1	6.3	0.5	2008	1.8	4.1	6.4	0.5	2008	1.8	4.3	6.4	0.6	2008	1.8	4.4	6.6	0.6
1	2009	1.8	4.1	5.6	0.4	2009	1.8	4.1	5.6	0.5	2009	1.8	4.1	5.8	0.5	2009	1.8	4.1	6.0	0.5	2009	1.8	4.1	6.1	0.5	2009	1.8	4.1	6.2	0.5	2009	1.8	4.3	6.3	0.6	2009	1.8	4.4	6.5	0.6
1	2010	1.8	4.1	5.6	0.4	2010	1.8	4.1	5.6	0.5	2010	1.8	4.1	5.6	0.5	2010	1.8	4.1	5.6	0.5	2010	1.8	4.1	5.8	0.5	2010	1.8	4.1	6.1	0.5	2010	1.8	4.1	6.2	0.5	2010	1.8	4.3	6.4	0.6

Emissions by Equipment Type (grams per brake-horsepower hour)

	50-99 hp	Bore Rig, 3 year life				5 year life	Skid Steer Loaders				7 year life	Trenchers				8 year life	pavers, rollers, rough terrain forklifts, rubber tired loaders				9 year life	Cranes				10 year life	Graders, Off-highway Trucks				12 year life	scrapers				16 year life	concrete/industrial saws, crawler tractors, paving equipment, rubber tired dozers, signal boards, surfacing equipment, tra crushing equip., off-highway tractors, other construction equipment			
		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10
2	2000	1.0	3.5	6.9	0.7	2000	1.0	3.5	6.9	0.7	2000	1.1	3.7	8.0	0.7	2000	1.1	3.7	8.4	0.7	2000	1.1	3.8	8.7	0.7	2000	1.1	3.8	8.9	0.7	2000	1.1	3.9	9.2	0.7	2000	1.1	3.9	9.6	0.7
2	2001	1.0	3.5	6.9	0.7	2001	1.0	3.5	6.9	0.7	2001	1.0	3.6	7.5	0.7	2001	1.0	3.7	7.9	0.7	2001	1.1	3.7	8.2	0.7	2001	1.1	3.8	8.5	0.7	2001	1.1	3.8	8.9	0.7	2001	1.1	3.9	9.4	0.7
2	2002	1.0	3.5	6.9	0.7	2002	1.0	3.5	6.9	0.7	2002	1.0	3.5	6.9	0.7	2002	1.0	3.6	7.4	0.7	2002	1.0	3.6	7.8	0.7	2002	1.1	3.7	8.1	0.7	2002	1.1	3.8	8.6	0.7	2002	1.1	3.9	9.1	0.7
2	2003	1.0	3.5	6.9	0.7	2003	1.0	3.5	6.9	0.7	2003	1.0	3.5	6.9	0.7	2003	1.0	3.5	6.9	0.7	2003	1.0	3.6	7.3	0.7	2003	1.0	3.6	7.7	0.7	2003	1.1	3.7	8.2	0.7	2003	1.1	3.8	8.9	0.7
2	2004	1.0	3.6	6.5	0.6	2004	1.0	3.5	6.6	0.6	2004	1.0	3.5	6.7	0.6	2004	1.0	3.5	6.7	0.6	2004	1.0	3.5	6.8	0.6	2004	1.0	3.6	7.2	0.7	2004	1.0	3.7	7.8	0.7	2004	1.1	3.8	8.6	0.7
2	2005	1.0	3.6	6.0	0.4	2005	1.0	3.6	6.4	0.5	2005	1.0	3.6	6.5	0.6	2005	1.0	3.5	6.6	0.6	2005	1.0	3.5	6.6	0.6	2005	1.0	3.5	6.6	0.6	2005	1.0	3.6	7.3	0.6	2005	1.1	3.8	8.2	0.7
2	2006	1.0	3.6	6.0	0.4	2006	1.0	3.6	6.1	0.5	2006	1.0	3.6	6.3	0.5	2006	1.0	3.6	6.4	0.5	2006	1.0	3.6	6.5	0.6	2006	1.0	3.6	6.5	0.6	2006	1.0	3.6	6.9	0.6	2006	1.1	3.7	7.9	0.6
2	2007	1.0	3.7	5.6	0.3	2007	1.0	3.7	5.9	0.4	2007	1.0	3.6	6.2	0.5	2007	1.0	3.6	6.3	0.5	2007	1.0	3.6	6.3	0.5	2007	1.0	3.6	6.2	0.5	2007	1.0	3.6	6.3	0.6	2007	1.0	3.7	7.4	0.6
2	2008	1.0	3.7	4.9	0.3	2008	1.0	3.7	5.2	0.3	2008	1.0	3.6	5.7	0.4	2008	1.0	3.6	5.8	0.4	2008	1.0	3.6	5.9	0.5	2008	1.0	3.6	5.8	0.5	2008	1.0	3.6	6.0	0.5	2008	1.0	3.7	7.0	0.6
2	2009	1.0	3.7	4.2	0.3	2009	1.0	3.7	4.8	0.3	2009	1.0	3.7	5.2	0.4	2009	1.0	3.6	5.4	0.4	2009	1.0	3.6	5.6	0.4	2009	1.0	3.6	5.5	0.5	2009	1.0	3.6	5.7	0.5	2009	1.0	3.7	6.5	0.6
2	2010	1.0	3.7	3.5	0.3	2010	1.0	3.7	4.3	0.3	2010	1.0	3.7	4.7	0.3	2010	1.0	3.7	4.7	0.3	2010	1.0	3.7	5.0	0.3	2010	1.0	3.6	5.2	0.4	2010	1.0	3.6	5.4	0.5	2010	1.0	3.6	6.1	0.5

Emissions by Equipment Type (grams per brake-horsepower hour)

	100-174 hp	Bore Rig, 3 year life				5 year life	Skid Steer Loaders				7 year life	Trenchers				8 year life	pavers, rollers, rough terrain forklifts, rubber tired loaders				9 year life	Cranes				10 year life	Graders, Off-highway Trucks				12 year life	scrapers				16 year life	concrete/industrial saws, crawler tractors, paving equipment, rubber tired dozers, signal boards, surfacing equipment, tra crushing equip., off-highway tractors, other construction equipment			
		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10
3	2000	0.7	2.7	6.9	0.4	2000	0.7	2.7	6.9	0.4	2000	0.8	3.2	8.4	0.4	2000	0.8	3.3	8.9	0.5	2000	0.8	3.4	9.3	0.5	2000	0.9	3.5	9.6	0.5	2000	0.9	3.7	10.0	0.5	2000	0.9	3.8	10.5	0.5
3	2001	0.7	2.7	6.9	0.4	2001	0.7	2.7	6.9	0.4	2001	0.7	2.9	7.7	0.4	2001	0.8	3.1	8.2	0.4	2001	0.8	3.2	8.7	0.5	2001	0.8	3.4	9.0	0.5	2001	0.9	3.5	9.6	0.5	2001	0.9	3.7	10.2	0.5
3	2002	0.7	2.7	6.9	0.4	2002	0.7	2.7	6.9	0.4	2002	0.7	2.7	6.9	0.4	2002	0.7	2.9	7.6	0.4	2002	0.8	3.1	8.1	0.4	2002	0.8	3.2	8.5	0.5	2002	0.8	3.4	9.1	0.5	2002	0.9	3.6	9.9	0.5
3	2003	0.7	2.7	6.9	0.4	2003	0.7	2.7	6.9	0.4	2003	0.7	2.7	6.9	0.4	2003	0.7	2.7	6.9	0.4	2003	0.7	2.9	7.5	0.4	2003	0.8	3.0	8.0	0.4	2003	0.8	3.2	8.7	0.5	2003	0.9	3.5	9.6	0.5
3	2004	0.7	3.0	6.2	0.3	2004	0.7	2.9	6.5	0.3	2004	0.7	2.8	6.6	0.4	2004	0.7	2.8	6.7	0.4	2004	0.7	2.8	6.7	0.4	2004	0.7	3.0	7.2	0.4	2004	0.8	3.2	8.1	0.4	2004	0.8	3.5	9.1	0.5
3	2005	0.7	3.4	5.6	0.3	2005	0.7	3.1	6.1	0.3	2005	0.7	3.0	6.3	0.3	2005	0.7	3.0	6.4	0.3	2005	0.7	2.9	6.5	0.3	2005	0.7	2.9	6.5	0.3	2005	0.7	3.1	7.5	0.4	2005	0.8	3.4	8.6	0.4
3	2006	0.7	3.4	5.6	0.3	2006	0.7	3.3	5.7	0.3	2006	0.7	3.1	6.0	0.3	2006	0.7	3.1	6.2	0.3	2006	0.7	3.0	6.2	0.3	2006	0.7	3.0	6.3	0.3	2006	0.7	3.1	6.8	0.4	2006	0.8	3.4	8.2	0.4
3	2007	0.7	3.7	4.3	0.2	2007	0.7	3.5	4.9	0.3	2007	0.7	3.3	5.5	0.3	2007	0.7	3.2	5.7	0.3	2007	0.7	3.1	5.8	0.3	2007	0.7	3.1	5.9	0.3	2007	0.7	3.0	6.1	0.3	2007	0.8	3.4	7.6	0.4
3	2008	0.7	3.7	3.6	0.2	2008	0.7	3.7	4.1	0.2	2008	0.7	3.4	4.9	0.3	2008	0.7	3.3	5.2	0.3	2008	0.7	3.3	5.4	0.3	2008	0.7	3.2	5.5	0.3	2008	0.7	3.1	5.8	0.3	2008	0.7	3.3	7.0	0.4
3	2009	0.7	3.7	3.0	0.2	2009	0.7	3.7	3.8	0.2	2009	0.7	3.6	4.4	0.2	2009	0.7	3.5	4.7	0.3	2009	0.7	3.4	4.9	0.3	2009	0.7	3.3	5.1	0.3	2009	0.7	3.2	5.4	0.3	2009	0.7	3.3	6.5	0.3
3	2010	0.7	3.7	3.0	0.2	2010	0.7	3.7	3.4	0.2	2010	0.7	3.7	3.8	0.2	2010	0.7	3.7	3.8	0.2	2010	0.7	3.6	4.3	0.2	2010	0.7	3.4	4.7	0.3	2010	0.7	3.3	5.1	0.3	2010	0.7	3.2	5.9	0.3

Emissions by Equipment Type (grams per brake-horsepower hour)

	175-299 hp	Bore Rig, 3 year life				5 year life	Skid Steer Loaders				7 year life	Trenchers				8 year life	pavers, rollers, rough terrain forklifts, rubber tired loaders				9 year life	Cranes				10 year life	Graders, Off-highway Trucks				12 year life	scrapers				16 year life	concrete/industrial saws, crawler tractors, paving equipment, rubber tired dozers, signal boards, surfacing equipment, tra crushing equip., off-highway tractors, other construction equipment			
		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10
4	2000	1.0	8.5	6.9	0.4	2000	1.0	8.5	6.9	0.4	2000	1.0	7.2	8.2	0.5	2000	1.0	6.8	8.6	0.5	2000	1.0	6.5	9.0	0.5	2000	1.0	6.3	9.2	0.5	2000	1.0	5.9	9.6	0.5	2000	1.0	5.5	10.1	0.5
4	2001	1.0	8.5	6.9	0.4	2001	1.0	8.5	6.9	0.4	2001	1.0	7.9	7.6	0.4	2001	1.0	7.4	8.1	0.4	2001	1.0	7.0	8.4	0.5	2001	1.0	6.7	8.8	0.5	2001	1.0	6.3	9.2	0.5	2001	1.0	5.7	9.8	0.5
4	2002	1.0	8.5	6.9	0.4	2002	1.0	8.5	6.9	0.4	2002	1.0	8.5	6.9	0.4	2002	1.0	7.9	7.5	0.4	2002	1.0	7.5	7.9	0.4	2002	1.0	7.2	8.3	0.5	2002	1.0	6.7	8.8	0.5	2002	1.0	6.0	9.5	0.5
4	2003	1.0	6.5	5.9	0.3	2003	1.0	7.3	6.3	0.4	2003	1.0	7.7	6.5	0.4	2003	1.0	7.8	6.5	0.4	2003	1.0	7.4	7.1	0.4	2003	1.0	7.0	7.5	0.4	2003	1.0	6.5	8.2	0.4	2003	1.0	5.9	9.0	0.5
4	2004	1.0	4.6	4.9	0.2	2004	1.0	6.1	5.7	0.3	2004	1.0	6.8	6.0	0.3	2004	1.0	7.0	6.2	0.3	2004	1.0	7.2	6.2	0.3	2004	1.0	6.9	6.8	0.4	2004	1.0	6.4	7.6	0.4	2004	1.0	5.8	8.5	0.4
4	2005	1.0	2.6	3.9	0.1	2005	1.0	5.0	5.1	0.3	2005	1.0	6.0	5.6	0.3	2005	1.0	6.3	5.8	0.3	2005	1.0	6.5	5.9	0.3	2005	1.0	6.7	6.0	0.3	2005	1.0	6.3	6.9	0.4	2005	1.0	5.7	8.1	0.4
4	2006	1.0	2.6	3.3	0.1	2006	1.0	3.8	4.1	0.2	2006	1.0	5.1	4.9	0.3	2006	1.0	5.6	5.2	0.3	2006	1.0	5.9	5.4	0.3	2006	1.0	6.1	5.5	0.3	2006	1.0	6.2	6.1	0.3	2006	1.0	5.6	7.5	0.4
4	2007	1.0	2.6	2.6	0.1	2007	1.0	2.6	3.1	0.2	2007	1.0	4.3	4.2	0.2	2007	1.0	4.8	4.6	0.2	2007	1.0	5.2	4.8	0.3	2007	1.0	5.6	5.0	0.3	2007	1.0	6.0	5.3	0.3	2007	1.0	5.5	6.9	0.4
4	2008	1.0	2.6	2.0	0.1	2008	1.0	2.6	2.8	0.2	2008	1.0	3.4	3.5	0.2	2008	1.0	4.1	3.9	0.2	2008	1.0	4.6	4.3	0.2	2008	1.0	5.0	4.5	0.3	2008	1.0	5.6	4.9	0.3	2008	1.0	5.5	6.3	0.3
4	2009	1.0	2.6	2.0	0.1	2009	1.0	2.6	2.4	0.2	2009	1.0	2.6	2.8	0.2	2009	1.0	3.3	3.3	0.2	2009	1.0	3.9	3.7	0.2	2009	1.0	4.4	4.0	0.2	2009	1.0	5.1	4.5	0.3	2009	1.0	5.4	5.7	0.3
4	2010	1.0	2.6	2.0	0.1	2010	1.0	2.6	2.0	0.2	2010	1.0	2.6	2.5	0.2	2010	1.0	2.6	2.5	0.2	2010	1.0	2.6	2.8	0.2	2010	1.0	3.8	3.6	0.2	2010	1.0	4.6	4.1	0.2	2010	1.0	5.3	5.1	0.3

Emissions by Equipment Type (grams per brake-horsepower hour)

	300-599 hp	Bore Rig, 3 year life				5 year life	Skid Steer Loaders				7 year life	Trenchers				8 year life	pavers, rollers, rough terrain forklifts, rubber tired loaders				9 year life	Cranes				10 year life	Graders, Off-highway Trucks				12 year life	scrapers				16 year life	concrete/industrial saws, crawler tractors, paving equipment, rubber tired dozers, signal boards, surfacing equipment, tra crushing equip., off-highway tractors, other construction equipment			
		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10
5	2000	1.0	8.5	6.9	0.4	2000	1.0	8.5	6.9	0.4	2000	1.0	7.2	8.2	0.4	2000	1.0	6.8	8.6	0.5	2000	1.0	6.5	9.0	0.5	2000	1.0	6.2	9.2	0.5	2000	1.0	5.8	9.6	0.5	2000	1.0	5.4	10.1	0.5
5	2001	1.0	6.5	5.9	0.3	2001	1.0	7.3	6.3	0.4	2001	1.0	7.0	7.1	0.4	2001	1.0	6.6	7.7	0.4	2001	1.0	6.3	8.1	0.4	2001	1.0	6.1	8.4	0.4	2001	1.0	5.7	9.0	0.5	2001	1.0	5.3	9.6	0.5
5	2002	1.0	4.6	4.8	0.2	2002	1.0	6.1	5.7	0.3	2002	1.0	6.8	6.0	0.3	2002	1.0	6.5	6.7	0.4	2002	1.0	6.2	7.2	0.4	2002	1.0	6.0	7.7	0.4	2002	1.0	5.6	8.3	0.4	2002	1.0	5.2	9.1	0.5
5	2003	1.0	2.6	3.8	0.1	2003	1.0	5.0	5.0	0.3	2003	1.0	6.0	5.6	0.3	2003	1.0	6.3	5.7	0.3	2003	1.0	6.0	6.4	0.3	2003	1.0	5.8	6.9	0.4	2003	1.0	5.5	7.7	0.4	2003	1.0	5.1	8.6	0.4
5	2004	1.0	2.6	3.8	0.1	2004	1.0	3.8	4.4	0.2	2004	1.0	5.1	5.1	0.3	2004	1.0	5.6	5.4	0.3	2004	1.0	5.9	5.5	0.3	2004	1.0	5.7	6.1	0.3	2004	1.0	5.4	7.0	0.4	2004	1.0	5.0	8.1	0.4
5	2005	1.0	2.6	3.8	0.1	2005	1.0	2.6	3.8	0.2	2005	1.0	4.3	4.7	0.2	2005	1.0	4.8	5.0	0.2	2005	1.0	5.2	5.2	0.3	2005	1.0	5.6	5.4	0.3	2005	1.0	5.3	6.4	0.3	2005	1.0	4.9	7.7	0.4
5	2006	1.0	2.6	3.2	0.1	2006	1.0	2.6	3.4	0.2	2006	1.0	3.4	4.0	0.2	2006	1.0	4.1	4.4	0.2	2006	1.0	4.6	4.6	0.2	2006	1.0	5.0	4.9	0.3	2006	1.0	5.2	5.6	0.3	2006	1.0	4.9	7.1	0.4
5	2007	1.0	2.6	2.6	0.1	2007	1.0	2.6	3.1	0.2	2007	1.0	2.6	3.3	0.2	2007	1.0	3.3	3.7	0.2	2007	1.0	3.9	4.1	0.2	2007	1.0	4.4	4.4	0.2	2007	1.0	5.1	4.8	0.3	2007	1.0	4.8	6.5	0.3
5	2008	1.0	2.6	2.0	0.1	2008	1.0	2.6	2.7	0.2	2008	1.0	2.6	3.0	0.2	2008	1.0	2.6	3.1	0.2	2008	1.0	3.3	3.5	0.2	2008	1.0	3.8	3.9	0.2	2008	1.0	4.6	4.4	0.2	2008	1.0	4.7	5.9	0.3
5	2009	1.0	2.6	2.0	0.1	2009	1.0	2.6	2.4	0.2	2009	1.0	2.6	2.8	0.2	2009	1.0	2.6	2.9	0.2	2009	1.0	2.6	3.0	0.2	2009	1.0	3.2	3.4	0.2	2009	1.0	4.1	4.0	0.2	2009	1.0	4.6	5.3	0.3
5	2010	1.0	2.6	2.0	0.1	2010	1.0	2.6	2.0	0.2	2010	1.0	2.6	2.5	0.2	2010	1.0	2.6	2.5	0.2	2010	1.0	2.6	2.8	0.2	2010	1.0	2.6	2.9	0.2	2010	1.0	3.6	3.6	0.2	2010	1.0	4.5	4.7	0.3

Emissions by Equipment Type (grams per brake-horsepower hour)

	600-749 hp	Bore Rig, 3 year life				5 year life	Skid Steer Loaders				7 year life	Trenchers				8 year life	pavers, rollers, rough terrain forklifts, rubber tired loaders				9 year life	Cranes				10 year life	Graders, Off-highway Trucks				12 year life	scrapers				16 year life	concrete/industrial saws, crawler tractors, paving equipment, rubber tired dozers, signal boards, surfacing equipment, tra crushing equip., off-highway tractors, other construction equipment			
		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10
6	2000	1.0	8.5	6.9	0.4	2000	1.0	8.5	6.9	0.4	2000	1.0	7.2	8.2	0.4	2000	1.0	6.8	8.6	0.5	2000	1.0	6.5	9.0	0.5	2000	1.0	6.2	9.2	0.5	2000	1.0	5.8	9.6	0.5	2000	1.0	5.4	10.1	0.5
6	2001	1.0	8.5	6.9	0.4	2001	1.0	8.5	6.9	0.4	2001	1.0	7.8	7.6	0.4	2001	1.0	7.4	8.1	0.4	2001	1.0	7.0	8.4	0.5	2001	1.0	6.7	8.8	0.5	2001	1.0	6.2	9.2	0.5	2001	1.0	5.6	9.8	0.5
6	2002	1.0	6.5	5.9	0.3	2002	1.0	7.3	6.3	0.4	2002	1.0	7.7	6.5	0.4	2002	1.0	7.2	7.1	0.4	2002	1.0	6.8	7.6	0.4	2002	1.0	6.5	8.0	0.4	2002	1.0	6.1	8.6	0.4	2002	1.0	5.6	9.3	0.5
6	2003	1.0	4.6	4.8	0.2	2003	1.0	6.1	5.7	0.3	2003	1.0	6.8	6.0	0.3	2003	1.0	7.0	6.1	0.3	2003	1.0	6.7	6.7	0.4	2003	1.0	6.4	7.2	0.4	2003	1.0	6.0	7.9	0.4	2003	1.0	5.5	8.8	0.4
6	2004	1.0	2.6	3.8	0.1	2004	1.0	5.0	5.0	0.3	2004	1.0	6.0	5.6	0.3	2004	1.0	6.3	5.7	0.3	2004	1.0	6.5	5.9	0.3	2004	1.0	6.3	6.4	0.3	2004	1.0	5.9	7.3	0.4	2004	1.0	5.4	8.3	0.4
6	2005	1.0	2.6	3.8	0.1	2005	1.0	3.8	4.4	0.2	2005	1.0	5.1	5.1	0.3	2005	1.0	5.6	5.4	0.3	2005	1.0	5.9	5.5	0.3	2005	1.0	6.1	5.7	0.3	2005	1.0	5.8	6.6	0.3	2005	1.0	5.3	7.9	0.4
6	2006	1.0	2.6	3.2	0.1	2006	1.0	2.6	3.4	0.2	2006	1.0	4.3	4.4	0.2	2006	1.0	4.8	4.7	0.2	2006	1.0	5.2	5.0	0.3	2006	1.0	5.6	5.2	0.3	2006	1.0	5.7	5.8	0.3	2006	1.0	5.2	7.3	0.4
6	2007	1.0	2.6	2.6	0.1	2007	1.0	2.6	3.1	0.2	2007	1.0	3.4	3.7	0.2	2007	1.0	4.1	4.1	0.2	2007	1.0	4.6	4.4	0.2	2007	1.0	5.0	4.7	0.3	2007	1.0	5.6	5.1	0.3	2007	1.0	5.1	6.7	0.3
6	2008	1.0	2.6	2.0	0.1	2008	1.0	2.6	2.7	0.2	2008	1.0	2.6	3.0	0.2	2008	1.0	3.3	3.5	0.2	2008	1.0	3.9	3.9	0.2	2008	1.0	4.4	4.2	0.2	2008	1.0	5.1	4.6	0.3	2008	1.0	5.1	6.1	0.3
6	2009	1.0	2.6	2.0	0.1	2009	1.0	2.6	2.4	0.2	2009	1.0	2.6	2.8	0.2	2009	1.0	2.6	2.9	0.2	2009	1.0	3.3	3.3	0.2	2009	1.0	3.8	3.7	0.2	2009	1.0	4.6	4.2	0.2	2009	1.0	5.0	5.5	0.3
6	2010	1.0	2.6	2.0	0.1	2010	1.0	2.6	2.0	0.2	2010	1.0	2.6	2.5	0.2	2010	1.0	2.6	2.5	0.2	2010	1.0	2.6	2.8	0.2	2010	1.0	3.2	3.2	0.2	2010	1.0	4.1	3.8	0.2	2010	1.0	4.9	4.9	0.3

Emissions by Equipment Type (grams per brake-horsepower hour)

	750+ hp	Bore Rig, 3 year life				5 year life	Skid Steer Loaders				7 year life	Trenchers Excavators				8 year life	pavers, rollers, rough terrain forklifts, rubber tired loaders				9 year life	Cranes				10 year life	Graders, Off-highway Trucks				12 year life	scrapers				16 year life	concrete/industrial saws, crawler tractors, paving equipment, rubber tired dozers, signal boards, surfacing equipment, tra crushing equip., off-highway tractors, other construction equipment			
		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10		ROG	CO	NOx	PM10
7	2000	1.0	8.5	6.9	0.4	2000	1.0	8.5	6.9	0.4	2000	1.0	7.3	8.4	0.5	2000	1.0	6.9	8.9	0.5	2000	1.0	6.6	9.3	0.5	2000	1.0	6.3	9.6	0.5	2000	1.0	6.0	10.0	0.5	2000	1.0	5.5	10.5	0.5
7	2001	1.0	8.5	6.9	0.4	2001	1.0	8.5	6.9	0.4	2001	1.0	7.9	7.7	0.4	2001	1.0	7.4	8.2	0.4	2001	1.0	7.1	8.7	0.5	2001	1.0	6.8	9.0	0.5	2001	1.0	6.3	9.6	0.5	2001	1.0	5.8	10.2	0.5
7	2002	1.0	8.5	6.9	0.4	2002	1.0	8.5	6.9	0.4	2002	1.0	8.5	6.9	0.4	2002	1.0	8.0	7.6	0.4	2002	1.0	7.5	8.1	0.4	2002	1.0	7.2	8.5	0.5	2002	1.0	6.7	9.1	0.5	2002	1.0	6.1	9.9	0.5
7	2003	1.0	8.5	6.9	0.4	2003	1.0	8.5	6.9	0.4	2003	1.0	8.5	6.9	0.4	2003	1.0	8.5	6.9	0.4	2003	1.0	8.0	7.5	0.4	2003	1.0	7.6	8.0	0.4	2003	1.0	7.1	8.7	0.5	2003	1.0	6.3	9.6	0.5
7	2004	1.0	8.5	6.9	0.4	2004	1.0	8.5	6.9	0.4	2004	1.0	8.5	6.9	0.4	2004	1.0	8.5	6.9	0.4	2004	1.0	8.5	6.9	0.4	2004	1.0	8.1	7.4	0.4	2004	1.0	7.4	8.2	0.4	2004	1.0	6.6	9.2	0.5
7	2005	1.0	8.5	6.9	0.4	2005	1.0	8.5	6.9	0.4	2005	1.0	8.5	6.9	0.4	2005	1.0	8.5	6.9	0.4	2005	1.0	8.5	6.9	0.4	2005	1.0	8.5	6.9	0.4	2005	1.0	7.8	7.8	0.4	2005	1.0	6.9	8.9	0.5
7	2006	1.0	6.5	5.9	0.3	2006	1.0	7.3	6.3	0.4	2006	1.0	7.7	6.5	0.4	2006	1.0	7.8	6.5	0.4	2006	1.0	7.8	6.6	0.4	2006	1.0	7.9	6.6	0.4	2006	1.0	7.6	7.1	0.4	2006	1.0	6.8	8.4	0.4
7	2007	1.0	4.6	4.8	0.2	2007	1.0	6.1	5.7	0.3	2007	1.0	6.8	6.0	0.3	2007	1.0	7.0	6.1	0.3	2007	1.0	7.2	6.2	0.3	2007	1.0	7.3	6.3	0.4	2007	1.0	7.5	6.4	0.4	2007	1.0	6.7	7.8	0.4
7	2008	1.0	2.6	3.8	0.1	2008	1.0	5.0	5.0	0.3	2008	1.0	6.0	5.6	0.3	2008	1.0	6.3	5.7	0.3	2008	1.0	6.5	5.9	0.3	2008	1.0	6.7	6.0	0.3	2008	1.0	7.0	6.1	0.3	2008	1.0	6.6	7.3	0.4
7	2009	1.0	2.6	3.8	0.1	2009	1.0	3.8	4.4	0.2	2009	1.0	5.1	5.1	0.3	2009	1.0	5.6	5.4	0.3	2009	1.0	5.9	5.5	0.3	2009	1.0	6.1	5.7	0.3	2009	1.0	6.5	5.9	0.3	2009	1.0	6.5	6.8	0.4
7	2010	1.0	2.6	3.8	0.1	2010	1.0	2.6	3.8	0.2	2010	1.0	4.3	4.7	0.2	2010	1.0	4.3	4.7	0.2	2010	1.0	5.2	5.2	0.3	2010	1.0	5.6	5.4	0.3	2010	1.0	6.0	5.6	0.3	2010	1.0	6.4	6.3	0.3

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
330		The following emission rates by equipment type and year cannot be directly edited. The rates shown below,																				
331		however, will change when changes are made to the default values for horsepower, load factor, and/or hours																				
332																						
333		Emissions (pounds / day)		ROG	ROG	ROG	ROG		CO	CO	CO	CO		NOx	NOx	NOx	NOx		PM10	PM10	PM10	PM10
334		Bore/Drill Rigs		Weighted	Weighted	Weighted	Weighted	3 year life	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
335			ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Lanc	Grading	Drainage	Paving
336		2000	2.87	0.00	0.00	0.00	0.00	24.43	0.00	0.00	0.00	0.00	19.83	0.00	0.00	0.00	0.00	1.15	0.00	0.00	0.00	0.00
337		2001	2.87	0.00	0.00	0.00	0.00	24.43	0.00	0.00	0.00	0.00	19.83	0.00	0.00	0.00	0.00	1.15	0.00	0.00	0.00	0.00
338		2002	2.87	0.00	0.00	0.00	0.00	24.43	0.00	0.00	0.00	0.00	19.83	0.00	0.00	0.00	0.00	1.15	0.00	0.00	0.00	0.00
339		2003	2.87	0.00	0.00	0.00	0.00	18.77	0.00	0.00	0.00	0.00	16.95	0.00	0.00	0.00	0.00	0.91	0.00	0.00	0.00	0.00
340		2004	2.87	0.00	0.00	0.00	0.00	13.12	0.00	0.00	0.00	0.00	14.08	0.00	0.00	0.00	0.00	0.67	0.00	0.00	0.00	0.00
341		2005	2.87	2.87	2.87	2.87	2.87	7.47	7.47	7.47	7.47	7.47	11.21	11.21	11.21	11.21	11.21	0.43	0.43	0.43	0.43	0.43
342		2006	2.87	0.00	0.00	0.00	0.00	7.47	0.00	0.00	0.00	0.00	9.39	0.00	0.00	0.00	0.00	0.43	0.00	0.00	0.00	0.00
343		2007	2.87	0.00	0.00	0.00	0.00	7.47	0.00	0.00	0.00	0.00	7.57	0.00	0.00	0.00	0.00	0.43	0.00	0.00	0.00	0.00
344		2008	2.87	0.00	0.00	0.00	0.00	7.47	0.00	0.00	0.00	0.00	5.75	0.00	0.00	0.00	0.00	0.43	0.00	0.00	0.00	0.00
345		2009	2.87	0.00	0.00	0.00	0.00	7.47	0.00	0.00	0.00	0.00	5.75	0.00	0.00	0.00	0.00	0.43	0.00	0.00	0.00	0.00
346		2010	2.87	0.00	0.00	0.00	0.00	7.47	0.00	0.00	0.00	0.00	5.75	0.00	0.00	0.00	0.00	0.43	0.00	0.00	0.00	0.00
347				2.87	2.87	2.87	2.87		7.47	7.47	7.47	7.47		11.21	11.21	11.21	11.21		0.43	0.43	0.43	0.43
348		Concrete/Industrial Saws		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
349			ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Lanc	Grading	Drainage	Paving
350		2000	1.23	0.00	0.00	0.00	0.00	4.24	0.00	0.00	0.00	0.00	10.37	0.00	0.00	0.00	0.00	0.80	0.00	0.00	0.00	0.00
351		2001	1.22	0.00	0.00	0.00	0.00	4.20	0.00	0.00	0.00	0.00	10.11	0.00	0.00	0.00	0.00	0.79	0.00	0.00	0.00	0.00
352		2002	1.20	0.00	0.00	0.00	0.00	4.16	0.00	0.00	0.00	0.00	9.84	0.00	0.00	0.00	0.00	0.79	0.00	0.00	0.00	0.00
353		2003	1.19	0.00	0.00	0.00	0.00	4.11	0.00	0.00	0.00	0.00	9.57	0.00	0.00	0.00	0.00	0.78	0.00	0.00	0.00	0.00
354		2004	1.17	0.00	0.00	0.00	0.00	4.08	0.00	0.00	0.00	0.00	9.22	0.00	0.00	0.00	0.00	0.75	0.00	0.00	0.00	0.00
355		2005	1.16	1.16	1.16	1.16	1.16	4.05	4.05	4.05	4.05	4.05	8.86	8.86	8.86	8.86	8.86	0.72	0.72	0.72	0.72	0.72
356		2006	1.14	0.00	0.00	0.00	0.00	4.02	0.00	0.00	0.00	0.00	8.51	0.00	0.00	0.00	0.00	0.69	0.00	0.00	0.00	0.00
357		2007	1.13	0.00	0.00	0.00	0.00	3.99	0.00	0.00	0.00	0.00	8.01	0.00	0.00	0.00	0.00	0.66	0.00	0.00	0.00	0.00
358		2008	1.11	0.00	0.00	0.00	0.00	3.96	0.00	0.00	0.00	0.00	7.51	0.00	0.00	0.00	0.00	0.63	0.00	0.00	0.00	0.00
359		2009	1.10	0.00	0.00	0.00	0.00	3.93	0.00	0.00	0.00	0.00	7.02	0.00	0.00	0.00	0.00	0.60	0.00	0.00	0.00	0.00
360		2010	1.08	0.00	0.00	0.00	0.00	3.90	0.00	0.00	0.00	0.00	6.52	0.00	0.00	0.00	0.00	0.56	0.00	0.00	0.00	0.00
361				1.16	1.16	1.16	1.16		4.05	4.05	4.05	4.05		8.86	8.86	8.86	8.86		0.72	0.72	0.72	0.72
362		Cranes		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
363			ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Lanc	Grading	Drainage	Paving
364		2000	1.43	0.00	0.00	0.00	0.00	9.42	0.00	0.00	0.00	0.00	12.93	0.00	0.00	0.00	0.00	0.69	0.00	0.00	0.00	0.00
365		2001	1.44	0.00	0.00	0.00	0.00	10.13	0.00	0.00	0.00	0.00	12.18	0.00	0.00	0.00	0.00	0.66	0.00	0.00	0.00	0.00
366		2002	1.44	0.00	0.00	0.00	0.00	10.84	0.00	0.00	0.00	0.00	11.44	0.00	0.00	0.00	0.00	0.63	0.00	0.00	0.00	0.00
367		2003	1.44	0.00	0.00	0.00	0.00	10.61	0.00	0.00	0.00	0.00	10.22	0.00	0.00	0.00	0.00	0.57	0.00	0.00	0.00	0.00
368		2004	1.44	0.00	0.00	0.00	0.00	10.37	0.00	0.00	0.00	0.00	8.99	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00
369		2005	1.44	1.44	1.44	1.44	1.44	9.43	9.43	9.43	9.43	9.43	8.51	8.51	8.51	8.51	8.51	0.46	0.46	0.46	0.46	0.46
370		2006	1.44	0.00	0.00	0.00	0.00	8.48	0.00	0.00	0.00	0.00	7.73	0.00	0.00	0.00	0.00	0.42	0.00	0.00	0.00	0.00
371		2007	1.44	0.00	0.00	0.00	0.00	7.54	0.00	0.00	0.00	0.00	6.94	0.00	0.00	0.00	0.00	0.38	0.00	0.00	0.00	0.00
372		2008	1.44	0.00	0.00	0.00	0.00	6.59	0.00	0.00	0.00	0.00	6.16	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.00	0.00
373		2009	1.44	0.00	0.00	0.00	0.00	5.64	0.00	0.00	0.00	0.00	5.37	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00
374		2010	1.44	0.00	0.00	0.00	0.00	3.75	0.00	0.00	0.00	0.00	4.10	0.00	0.00	0.00	0.00	0.22	0.00	0.00	0.00	0.00
375				1.44	1.44	1.44	1.44		9.43	9.43	9.43	9.43		8.51	8.51	8.51	8.51		0.46	0.46	0.46	0.46
376		Crawler Tractors		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
377			ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Lanc	Grading	Drainage	Paving
378		2000	1.36	0.00	0.00	0.00	0.00	5.56	0.00	0.00	0.00	0.00	15.32	0.00	0.00	0.00	0.00	0.79	0.00	0.00	0.00	0.00
379		2001	1.32	0.00	0.00	0.00	0.00	5.41	0.00	0.00	0.00	0.00	14.84	0.00	0.00	0.00	0.00	0.77	0.00	0.00	0.00	0.00
380		2002	1.29	0.00	0.00	0.00	0.00	5.26	0.00	0.00	0.00	0.00	14.36	0.00	0.00	0.00	0.00	0.74	0.00	0.00	0.00	0.00
381		2003	1.26	0.00	0.00	0.00	0.00	5.11	0.00	0.00	0.00	0.00	13.87	0.00	0.00	0.00	0.00	0.72	0.00	0.00	0.00	0.00
382		2004	1.22	0.00	0.00	0.00	0.00	5.06	0.00	0.00	0.00	0.00	13.21	0.00	0.00	0.00	0.00	0.69	0.00	0.00	0.00	0.00
383		2005	1.19	1.19	1.19	1.19	1.19	5.00	5.00	5.00	5.00	5.00	12.55	12.55	12.55	12.55	12.55	0.65	0.65	0.65	0.65	0.65
384		2006	1.16	0.00	0.00	0.00	0.00	4.94	0.00	0.00	0.00	0.00	11.89	0.00	0.00	0.00	0.00	0.62	0.00	0.00	0.00	0.00
385		2007	1.12	0.00	0.00	0.00	0.00	4.88	0.00	0.00	0.00	0.00	11.05	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00	0.00
386		2008	1.09	0.00	0.00	0.00	0.00	4.82	0.00	0.00	0.00	0.00	10.22	0.00	0.00	0.00	0.00	0.54	0.00	0.00	0.00	0.00
387		2009	1.05	0.00	0.00	0.00	0.00	4.77	0.00	0.00	0.00	0.00	9.38	0.00	0.00	0.00	0.00	0.51	0.00	0.00	0.00	0.00
388		2010	1.02	0.00	0.00	0.00	0.00	4.71	0.00	0.00	0.00	0.00	8.54	0.00	0.00	0.00	0.00	0.47	0.00	0.00	0.00	0.00
389				1.19	1.19	1.19	1.19		5.00	5.00	5.00	5.00		12.55	12.55	12.55	12.55		0.65	0.65	0.65	0.65
390		Crushing/Proc. Equipment		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
391			ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Lanc	Grading	Drainage	Paving
392		2000	1.98	0.00	0.00	0.00	0.00	8.12	0.00	0.00	0.00	0.00	22.37	0.00	0.00	0.00	0.00	1.15	0.00	0.00	0.00	0.00
393		2001	1.93	0.00	0.00	0.00	0.00	7.90	0.00	0.00	0.00	0.00	21.66	0.00	0.00	0.00	0.00	1.12	0.00	0.00	0.00	0.00
394		2002	1.88	0.00	0.00	0.00	0.00	7.68	0.00	0.00	0.00	0.00	20.96	0.00	0.00	0.00	0.00	1.09	0.00	0.00	0.00	0.00
395		2003	1.83	0.00	0.00	0.00	0.00	7.47	0.00	0.00	0.00	0.00	20.26	0.00	0.00	0.00	0.00	1.06	0.00	0.00	0.00	0.00
396		2004	1.78	0.00	0.00	0.00	0.00	7.38	0.00	0.00	0.00	0.00	19.29	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
397		2005	1.74	1.74	1.74	1.74	1.74	7.30	7.30	7.30	7.30	7.30	18.32	18.32	18.32	18.32	18.32	0.95	0.95	0.95	0.95	0.95
398		2006	1.69	0.00	0.00	0.00	0.00	7.21	0.00	0.00	0.00	0.00	17.35	0.00	0.00	0.00	0.00	0.90	0.00	0.00	0.00	0.00
399		2007	1.64	0.00	0.00	0.00	0.00	7.13	0.00	0.00	0.00	0.00	16.13	0.00	0.00	0.00	0.00	0.85	0.00	0.00	0.00	0.00
400		2008	1.59	0.00	0.00	0.00	0.00	7.04	0.00	0.00	0.00	0.00	14.91	0.00	0.00	0.00	0.00	0.79	0.00	0.00	0.00	0.00
401		2009	1.54	0.00	0.00	0.00	0.00	6.96	0.00	0.00	0.00	0.00	13.70	0.00	0.00	0.00	0.00	0.74	0.00	0.00	0.00	0.00
402		2010	1.49	0.00	0.00	0.00	0.00	6.87	0.00	0.00	0.00	0.00	12.48	0.00	0.00	0.00	0.00	0.69	0.00	0.00	0.00	0.00
403				1.74	1.74	1.74	1.74		7.30	7.30	7.30	7.30		18.32	18.32	18.32	18.32		0.95	0.95	0.95	0.95
404		Excavators	1	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
405			ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Lanc	Grading	Drainage	Paving
406		2000	1.83	0.00	0.00	0.00	0.00	13.31	0.00	0.00	0.00	0.00	15.13	0.00	0.00	0.00	0.00	0.83	0.00	0.00	0.00	0.00
407		2001	1.84	0.00	0.00	0.00	0.00	14.48	0.00	0.00	0.00	0.00	13.92	0.00	0.00	0.00	0.00	0.78	0.00	0.00	0.00	0.00
408		2002	1.84	0.00	0.00	0.00	0.00	15.64	0.00	0.00	0.00	0.00	12.70	0.00	0.00	0.00	0.00	0.74	0.00	0.00	0.00	0.00
409		2003	1.84	0.00	0.00	0.00	0.00	14.09	0.00	0.00	0.00	0.00	11.91	0.00	0.00	0.00	0.00	0.67	0.00	0.00	0.00	0.00
410		2004	1.84	0.00	0.00	0.00	0.00	12.54	0.00	0.00	0.00	0.00	11.12	0.00	0.00	0.00	0.00	0.60	0.00	0.00	0.00	0.00
411		2005	1.84	1.84	1.84	1.84	1.84	10.99	10.99	10.99	10.99	10.99	10.33	10.33	10.33	10.33	10.33	0.54	0.54	0.54	0.54	0.54
412		2006	1.84	0.00	0.00	0.00	0.00	9.44	0.00	0.00	0.00	0.00	9.04	0.00	0.00	0.00	0.00	0.47	0.00	0.00	0.00	0.00
413		2007	1.84	0.00	0.00	0.00	0.00	7.89	0.00	0.00	0.00	0.00	7.76	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.00	0.00
414		2008	1.84	0.00	0.00	0.00	0.00	6.34	0.00	0.00	0.00	0.00	6.47	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.00	0.00
415		2009	1.84	0.00	0.00	0.00	0.00	4.79	0.00	0.00	0.00	0.00	5.18	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00
416		2010	1.84	0.00	0.00	0.00	0.00	4.79	0.00	0.00	0.00	0.00	4.68	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00
417				1.84	1.84	1.84	1.84		10.99	10.99	10.99	10.99		10.33	10.33	10.33	10.33		0.54	0.54	0.54	0.54
418		Graders		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
419			ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Lanc	Grading	Drainage	Paving
420		2000	1.52	0.00	0.00	0.00	0.00	6.20	0.00	0.00	0.00	0.00	16.83	0.00	0.00	0.00	0.00	0.88	0.00	0.00	0.00	0.00
421		2001	1.46	0.00	0.00	0.00	0.00	5.92	0.00	0.00	0.00	0.00	15.90	0.00	0.00	0.00	0.00	0.84	0.00	0.00	0.00	0.00
422		2002	1.39	0.00	0.00	0.00	0.00	5.63	0.00	0.00	0.00	0.00	14.97	0.00	0.00	0.00	0.00	0.79	0.00	0.00	0.00	0.00
423		2003	1.33	0.00	0.00	0.00	0.00	5.34	0.00	0.00	0.00	0.00	14.03	0.00	0.00	0.00	0.00	0.75	0.00	0.00	0.00	0.00
424		2004	1.26	0.00	0.00	0.00	0.00	5.22	0.00	0.00	0.00	0.00	12.74	0.00	0.00	0.00	0.00	0.68	0.00	0.00	0.00	0.00
425		2005	1.20	1.20	1.20	1.20	1.20	5.11	5.11	5.11	5.11	5.11	11.46	11.46	11.46	11.46	11.46	0.61	0.61	0.61	0.61	0.61
426		2006	1.20	0.00	0.00	0.00	0.00	5.29	0.00	0.00	0.00	0.00	11.11	0.00	0.00	0.00	0.00	0.59	0.00	0.00	0.00	0.00
427		2007	1.20	0.00	0.00	0.00	0.00	5.46	0.00	0.00	0.00	0.00	10.42	0.00	0.00	0.00	0.00	0.56	0.00	0.00	0.00	0.00
428		2008	1.20	0.00	0.00	0.00	0.00	5.64	0.00	0.00	0.00	0.00	9.73	0.00	0.00	0.00	0.00	0.53	0.00	0.00	0.00	0.00
429		2009	1.20	0.00	0.00	0.00	0.00	5.82	0.00	0.00	0.00	0.00	9.04	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00
430		2010	1.20	0.00	0.00	0.00	0.00	5.99	0.00	0.00	0.00	0.00	8.36	0.00	0.00	0.00	0.00	0.47	0.00	0.00	0.00	0.00
431				1.20	1.20	1.20	1.20		5.11	5.11	5.11	5.11		11.46	11.46	11.46	11.46		0.61	0.61	0.61	0.61
432		Off-Highway Tractors	255 hp	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
433			ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Lanc	Grading	Drainage	Paving
434		2000	1.83	0.00	0.00	0.00	0.00	10.05	0.00	0.00	0.00	0.00	18.58	0.00	0.00	0.00	0.00	0.96	0.00	0.00	0.00	0.00
435		2001	1.83	0.00	0.00	0.00	0.00	10.56	0.00	0.00	0.00	0.00	18.05	0.00	0.00	0.00	0.00	0.94	0.00	0.00	0.00	0.00
436		2002	1.83	0.00	0.00	0.00	0.00	11.07	0.00	0.00	0.00	0.00	17.51	0.00	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00
437		2003	1.83	0.00	0.00	0.00	0.00	10.90	0.00	0.00	0.00	0.00	16.63	0.00	0.00	0.00	0.00	0.87	0.00	0.00	0.00	0.00
438		2004	1.83	0.00	0.00	0.00	0.00	10.73	0.00	0.00	0.00	0.00	15.76	0.00	0.00	0.00	0.00	0.82	0.00	0.00	0.00	0.00
439		2005	1.83	1.83	1.83	1.83	1.83	10.56	10.56	10.56	10.56	10.56	14.88	14.88	14.88	14.88	14.88	0.77	0.77	0.77	0.77	0.77
440		2006	1.84	0.00	0.00	0.00	0.00	10.39	0.00	0.00	0.00	0.00	13.78	0.00	0.00	0.00	0.00	0.72	0.00	0.00	0.00	0.00
441		2007	1.84	0.00	0.00	0.00	0.00	10.22	0.00	0.00	0.00	0.00	12.68	0.00	0.00	0.00	0.00	0.67	0.00	0.00	0.00	0.00
442		2008	1.84	0.00	0.00	0.00	0.00	10.05	0.00	0.00	0.00	0.00	11.58	0.00	0.00	0.00	0.00	0.63	0.00	0.00	0.00	0.00
443		2009	1.84	0.00	0.00	0.00	0.00	9.89	0.00	0.00	0.00	0.00	10.49	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00	0.00
444		2010	1.84	0.00	0.00	0.00	0.00	9.72	0.00	0.00	0.00	0.00	9.39	0.00	0.00	0.00	0.00	0.53	0.00	0.00	0.00	0.00
445				1.83	1.83	1.83	1.83		10.56	10.56	10.56	10.56		14.88	14.88	14.88	14.88		0.77	0.77	0.77	0.77
446		Off-Highway Trucks	417 hp	Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
447			ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Lanc	Grading	Drainage	Paving
448		2000	3.51	0.00	0.00	0.00	0.00	22.39	0.00	0.00	0.00	0.00	33.19	0.00	0.00	0.00	0.00	1.72	0.00	0.00	0.00	0.00
449		2001	3.53	0.00	0.00	0.00	0.00	21.91	0.00	0.00	0.00	0.00	30.41	0.00	0.00	0.00	0.00	1.58	0.00	0.00	0.00	0.00
450		2002	3.54	0.00	0.00	0.00	0.00	21.43	0.00	0.00	0.00	0.00	27.62	0.00	0.00	0.00	0.00	1.43	0.00	0.00	0.00	0.00
451		2003	3.56	0.00	0.00	0.00	0.00	20.95	0.00	0.00	0.00	0.00	24.84	0.00	0.00	0.00	0.00	1.28	0.00	0.00	0.00	0.00
452		2004	3.58	0.00	0.00	0.00	0.00	20.47	0.00	0.00	0.00	0.00	22.06	0.00	0.00	0.00	0.00	1.14	0.00	0.00	0.00	0.00
453		2005	3.60	3.60	3.60	3.60	3.60	19.99	19.99	19.99	19.99	19.99	19.27	19.27	19.27	19.27	19.27	0.99	0.99	0.99	0.99	0.99
454		2006	3.60	0.00	0.00	0.00	0.00	17.87	0.00	0.00	0.00	0.00	17.51	0.00	0.00	0.00	0.00	0.90	0.00	0.00	0.00	0.00
455		2007	3.60	0.00	0.00	0.00	0.00	15.74	0.00	0.00	0.00	0.00	15.74	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00	0.00
456		2008	3.60	0.00	0.00	0.00	0.00	13.62	0.00	0.00	0.00	0.00	13.98	0.00	0.00	0.00	0.00	0.72	0.00	0.00	0.00	0.00
457		2009	3.60	0.00	0.00	0.00	0.00	11.49	0.00	0.00	0.00	0.00	12.21	0.00	0.00	0.00	0.00	0.63	0.00	0.00	0.00	0.00
458		2010	3.60	0.00	0.00	0.00	0.00	9.37	0.00	0.00	0.00	0.00	10.45	0.00	0.00	0.00	0.00	0.54	0.00	0.00	0.00	0.00
459				3.60	3.60	3.60	3.60		19.99	19.99	19.99	19.99		19.27	19.27	19.27	19.27		0.99	0.99	0.99	0.99
460		Other Construction Equipment		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
461			ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Lanc	Grading	Drainage	Paving
462		2000	2.07	0.00	0.00	0.00	0.00	13.07	0.00	0.00	0.00	0.00	19.17	0.00	0.00	0.00	0.00	1.02	0.00	0.00	0.00	0.00
463		2001	2.07	0.00	0.00	0.00	0.00	14.00	0.00	0.00	0.00	0.00	18.21	0.00	0.00	0.00	0.00	0.98	0.00	0.00	0.00	0.00
464		2002	2.07	0.00	0.00	0.00	0.00	14.92	0.00	0.00	0.00	0.00	17.25	0.00	0.00	0.00	0.00	0.94	0.00	0.00	0.00	0.00
465		2003	2.08	0.00	0.00	0.00	0.00	14.61	0.00	0.00	0.00	0.00	15.66	0.00	0.00	0.00	0.00	0.85	0.00	0.00	0.00	0.00
466		2004	2.08	0.00	0.00	0.00	0.00	14.31	0.00	0.00	0.00	0.00	14.07	0.00	0.00	0.00	0.00	0.76	0.00	0.00	0.00	0.00
467		2005	2.08	2.08	2.08	2.08	2.08	14.00	14.00	14.00	14.00	14.00	12.48	12.48	12.48	12.48	12.48	0.68	0.68	0.68	0.68	0.68
468		2006	2.08	0.00	0.00	0.00	0.00	12.77	0.00	0.00	0.00	0.00	11.46	0.00	0.00	0.00	0.00	0.62	0.00	0.00	0.00	0.00
469		2007	2.08	0.00	0.00	0.00	0.00	11.55	0.00	0.00	0.00	0.00	10.44	0.00	0.00	0.00	0.00	0.57	0.00	0.00	0.00	0.00
470		2008	2.08	0.00	0.00	0.00	0.00	10.32	0.00	0.00	0.00	0.00	9.43	0.00	0.00	0.00	0.00	0.52	0.00	0.00	0.00	0.00
471		2009	2.08	0.00	0.00	0.00	0.00	9.09	0.00	0.00	0.00	0.00	8.41	0.00	0.00	0.00	0.00	0.47	0.00	0.00	0.00	0.00
472		2010	2.08	0.00	0.00	0.00	0.00	7.86	0.00	0.00	0.00	0.00	7.39	0.00	0.00	0.00	0.00	0.42	0.00	0.00	0.00	0.00
473				2.08	2.08	2.08	2.08		14.00	14.00	14.00	14.00		12.48	12.48	12.48	12.48		0.68	0.68	0.68	0.68
474		Pavers		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
475			ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Lanc	Grading	Drainage	Paving
476		2000	1.12	0.00	0.00	0.00	0.00	4.53	0.00	0.00	0.00	0.00	12.15	0.00	0.00	0.00	0.00	0.64	0.00	0.00	0.00	0.00
477		2001	1.06	0.00	0.00	0.00	0.00	4.25	0.00	0.00	0.00	0.00	11.25	0.00	0.00	0.00	0.00	0.60	0.00	0.00	0.00	0.00
478		2002	0.99	0.00	0.00	0.00	0.00	3.97	0.00	0.00	0.00	0.00	10.34	0.00	0.00	0.00	0.00	0.56	0.00	0.00	0.00	0.00
479		2003	0.93	0.00	0.00	0.00	0.00	3.69	0.00	0.00	0.00	0.00	9.44	0.00	0.00	0.00	0.00	0.52	0.00	0.00	0.00	0.00
480		2004	0.93	0.00	0.00	0.00	0.00	3.86	0.00	0.00	0.00	0.00	9.09	0.00	0.00	0.00	0.00	0.49	0.00	0.00	0.00	0.00
481		2005	0.93	0.93	0.93	0.93	0.93	4.03	4.03	4.03	4.03	4.03	8.75	8.75	8.75	8.75	8.75	0.46	0.46	0.46	0.46	0.46
482		2006	0.93	0.00	0.00	0.00	0.00	4.21	0.00	0.00	0.00	0.00	8.41	0.00	0.00	0.00	0.00	0.44	0.00	0.00	0.00	0.00
483		2007	0.93	0.00	0.00	0.00	0.00	4.38	0.00	0.00	0.00	0.00	7.74	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.00	0.00
484		2008	0.93	0.00	0.00	0.00	0.00	4.55	0.00	0.00	0.00	0.00	7.08	0.00	0.00	0.00	0.00	0.38	0.00	0.00	0.00	0.00
485		2009	0.93	0.00	0.00	0.00	0.00	4.72	0.00	0.00	0.00	0.00	6.41	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.00	0.00
486		2010	0.93	0.00	0.00	0.00	0.00	5.06	0.00	0.00	0.00	0.00	5.22	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00
487				0.93	0.93	0.93	0.93		4.03	4.03	4.03	4.03		8.75	8.75	8.75	8.75		0.46	0.46	0.46	0.46
488		Paving Equipment		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
489			ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Lanc	Grading	Drainage	Paving
490		2000	0.97	0.00	0.00	0.00	0.00	3.97	0.00	0.00	0.00	0.00	10.92	0.00	0.00	0.00	0.00	0.56	0.00	0.00	0.00	0.00
491		2001	0.94	0.00	0.00	0.00	0.00	3.86	0.00	0.00	0.00	0.00	10.58	0.00	0.00	0.00	0.00	0.55	0.00	0.00	0.00	0.00
492		2002	0.92	0.00	0.00	0.00	0.00	3.75	0.00	0.00	0.00	0.00	10.24	0.00	0.00	0.00	0.00	0.53	0.00	0.00	0.00	0.00
493		2003	0.90	0.00	0.00	0.00	0.00	3.65	0.00	0.00	0.00	0.00	9.89	0.00	0.00	0.00	0.00	0.52	0.00	0.00	0.00	0.00
494		2004	0.87	0.00	0.00	0.00	0.00	3.61	0.00	0.00	0.00	0.00	9.42	0.00	0.00	0.00	0.00	0.49	0.00	0.00	0.00	0.00
495		2005	0.85	0.85	0.85	0.85	0.85	3.56	3.56	3.56	3.56	3.56	8.95	8.95	8.95	8.95	8.95	0.46	0.46	0.46	0.46	0.46
496		2006	0.82	0.00	0.00	0.00	0.00	3.52	0.00	0.00	0.00	0.00	8.48	0.00	0.00	0.00	0.00	0.44	0.00	0.00	0.00	0.00
497		2007	0.80	0.00	0.00	0.00	0.00	3.48	0.00	0.00	0.00	0.00	7.88	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.00	0.00
498		2008	0.78	0.00	0.00	0.00	0.00	3.44	0.00	0.00	0.00	0.00	7.28	0.00	0.00	0.00	0.00	0.39	0.00	0.00	0.00	0.00
499		2009	0.75	0.00	0.00	0.00	0.00	3.40	0.00	0.00	0.00	0.00	6.69	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.00	0.00
500		2010	0.73	0.00	0.00	0.00	0.00	3.36	0.00	0.00	0.00	0.00	6.09	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.00	0.00
501				0.85	0.85	0.85	0.85		3.56	3.56	3.56	3.56		8.95	8.95	8.95	8.95		0.46	0.46	0.46	0.46
502		Rollers		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
503			ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Lanc	Grading	Drainage	Paving
504		2000	0.71	0.00	0.00	0.00	0.00	2.86	0.00	0.00	0.00	0.00	7.67	0.00	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.00
505		2001	0.67	0.00	0.00	0.00	0.00	2.68	0.00	0.00	0.00	0.00	7.10	0.00	0.00	0.00	0.00	0.38	0.00	0.00	0.00	0.00
506		2002	0.63	0.00	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00	6.53	0.00	0.00	0.00	0.00	0.35	0.00	0.00	0.00	0.00
507		2003	0.59	0.00	0.00	0.00	0.00	2.33	0.00	0.00	0.00	0.00	5.96	0.00	0.00	0.00	0.00	0.33	0.00	0.00	0.00	0.00
508		2004	0.59	0.00	0.00	0.00	0.00	2.44	0.00	0.00	0.00	0.00	5.74	0.00	0.00	0.00	0.00	0.31	0.00	0.00	0.00	0.00
509		2005	0.59	0.59	0.59	0.59	0.59	2.55	2.55	2.55	2.55	2.55	5.52	5.52	5.52	5.52	5.52	0.29	0.29	0.29	0.29	0.29
510		2006	0.59	0.00	0.00	0.00	0.00	2.65	0.00	0.00	0.00	0.00	5.31	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00
511		2007	0.59	0.00	0.00	0.00	0.00	2.76	0.00	0.00	0.00	0.00	4.89	0.00	0.00	0.00	0.00	0.26	0.00	0.00	0.00	0.00
512		2008	0.59	0.00	0.00	0.00	0.00	2.87	0.00	0.00	0.00	0.00	4.47	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.00	0.00

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
513		2009	0.59	0.00	0.00	0.00	0.00	2.98	0.00	0.00	0.00	0.00	4.05	0.00	0.00	0.00	0.00	0.22	0.00	0.00	0.00	0.00
514		2010	0.59	0.00	0.00	0.00	0.00	3.19	0.00	0.00	0.00	0.00	3.29	0.00	0.00	0.00	0.00	0.19	0.00	0.00	0.00	0.00
515				0.59	0.59	0.59	0.59		2.55	2.55	2.55	2.55		5.52	5.52	5.52	5.52		0.29	0.29	0.29	0.29
516		Rough Terrain Forklifts		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
517			ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Lanc	Grading	Drainage	Paving
518		2000	0.85	0.00	0.00	0.00	0.00	2.95	0.00	0.00	0.00	0.00	6.62	0.00	0.00	0.00	0.00	0.57	0.00	0.00	0.00	0.00
519		2001	0.83	0.00	0.00	0.00	0.00	2.88	0.00	0.00	0.00	0.00	6.23	0.00	0.00	0.00	0.00	0.56	0.00	0.00	0.00	0.00
520		2002	0.80	0.00	0.00	0.00	0.00	2.82	0.00	0.00	0.00	0.00	5.83	0.00	0.00	0.00	0.00	0.55	0.00	0.00	0.00	0.00
521		2003	0.78	0.00	0.00	0.00	0.00	2.75	0.00	0.00	0.00	0.00	5.44	0.00	0.00	0.00	0.00	0.54	0.00	0.00	0.00	0.00
522		2004	0.78	0.00	0.00	0.00	0.00	2.77	0.00	0.00	0.00	0.00	5.31	0.00	0.00	0.00	0.00	0.51	0.00	0.00	0.00	0.00
523		2005	0.78	0.78	0.78	0.78	0.78	2.79	2.79	2.79	2.79	2.79	5.19	5.19	5.19	5.19	5.19	0.47	0.47	0.47	0.47	0.47
524		2006	0.78	0.00	0.00	0.00	0.00	2.81	0.00	0.00	0.00	0.00	5.06	0.00	0.00	0.00	0.00	0.43	0.00	0.00	0.00	0.00
525		2007	0.78	0.00	0.00	0.00	0.00	2.84	0.00	0.00	0.00	0.00	4.93	0.00	0.00	0.00	0.00	0.39	0.00	0.00	0.00	0.00
526		2008	0.78	0.00	0.00	0.00	0.00	2.86	0.00	0.00	0.00	0.00	4.59	0.00	0.00	0.00	0.00	0.35	0.00	0.00	0.00	0.00
527		2009	0.78	0.00	0.00	0.00	0.00	2.88	0.00	0.00	0.00	0.00	4.26	0.00	0.00	0.00	0.00	0.31	0.00	0.00	0.00	0.00
528		2010	0.78	0.00	0.00	0.00	0.00	2.92	0.00	0.00	0.00	0.00	3.71	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.00	0.00
529				0.78	0.78	0.78	0.78		2.79	2.79	2.79	2.79		5.19	5.19	5.19	5.19		0.47	0.47	0.47	0.47
530		Rubber Tired Dozers		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
531			ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Lanc	Grading	Drainage	Paving
532		2000	3.53	0.00	0.00	0.00	0.00	19.64	0.00	0.00	0.00	0.00	36.95	0.00	0.00	0.00	0.00	1.86	0.00	0.00	0.00	0.00
533		2001	3.54	0.00	0.00	0.00	0.00	19.34	0.00	0.00	0.00	0.00	35.18	0.00	0.00	0.00	0.00	1.77	0.00	0.00	0.00	0.00
534		2002	3.55	0.00	0.00	0.00	0.00	19.03	0.00	0.00	0.00	0.00	33.41	0.00	0.00	0.00	0.00	1.67	0.00	0.00	0.00	0.00
535		2003	3.57	0.00	0.00	0.00	0.00	18.73	0.00	0.00	0.00	0.00	31.64	0.00	0.00	0.00	0.00	1.58	0.00	0.00	0.00	0.00
536		2004	3.58	0.00	0.00	0.00	0.00	18.42	0.00	0.00	0.00	0.00	29.87	0.00	0.00	0.00	0.00	1.49	0.00	0.00	0.00	0.00
537		2005	3.59	3.59	3.59	3.59	3.59	18.12	18.12	18.12	18.12	18.12	28.10	28.10	28.10	28.10	28.10	1.39	1.39	1.39	1.39	1.39
538		2006	3.60	0.00	0.00	0.00	0.00	17.81	0.00	0.00	0.00	0.00	25.91	0.00	0.00	0.00	0.00	1.30	0.00	0.00	0.00	0.00
539		2007	3.62	0.00	0.00	0.00	0.00	17.51	0.00	0.00	0.00	0.00	23.73	0.00	0.00	0.00	0.00	1.21	0.00	0.00	0.00	0.00
540		2008	3.63	0.00	0.00	0.00	0.00	17.20	0.00	0.00	0.00	0.00	21.55	0.00	0.00	0.00	0.00	1.12	0.00	0.00	0.00	0.00
541		2009	3.64	0.00	0.00	0.00	0.00	16.90	0.00	0.00	0.00	0.00	19.37	0.00	0.00	0.00	0.00	1.02	0.00	0.00	0.00	0.00
542		2010	3.65	0.00	0.00	0.00	0.00	16.59	0.00	0.00	0.00	0.00	17.18	0.00	0.00	0.00	0.00	0.93	0.00	0.00	0.00	0.00
543				3.59	3.59	3.59	3.59		18.12	18.12	18.12	18.12		28.10	28.10	28.10	28.10		1.39	1.39	1.39	1.39
544		Rubber Tired Loaders		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
545			ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Lanc	Grading	Drainage	Paving
546		2000	1.11	0.00	0.00	0.00	0.00	4.49	0.00	0.00	0.00	0.00	12.04	0.00	0.00	0.00	0.00	0.63	0.00	0.00	0.00	0.00
547		2001	1.05	0.00	0.00	0.00	0.00	4.21	0.00	0.00	0.00	0.00	11.14	0.00	0.00	0.00	0.00	0.59	0.00	0.00	0.00	0.00
548		2002	0.98	0.00	0.00	0.00	0.00	3.94	0.00	0.00	0.00	0.00	10.25	0.00	0.00	0.00	0.00	0.55	0.00	0.00	0.00	0.00
549		2003	0.92	0.00	0.00	0.00	0.00	3.66	0.00	0.00	0.00	0.00	9.35	0.00	0.00	0.00	0.00	0.51	0.00	0.00	0.00	0.00
550		2004	0.92	0.00	0.00	0.00	0.00	3.83	0.00	0.00	0.00	0.00	9.01	0.00	0.00	0.00	0.00	0.49	0.00	0.00	0.00	0.00
551		2005	0.92	0.92	0.92	0.92	0.92	4.00	4.00	4.00	4.00	4.00	8.67	8.67	8.67	8.67	8.67	0.46	0.46	0.46	0.46	0.46
552		2006	0.92	0.00	0.00	0.00	0.00	4.17	0.00	0.00	0.00	0.00	8.33	0.00	0.00	0.00	0.00	0.43	0.00	0.00	0.00	0.00
553		2007	0.92	0.00	0.00	0.00	0.00	4.34	0.00	0.00	0.00	0.00	7.67	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.00	0.00
554		2008	0.92	0.00	0.00	0.00	0.00	4.50	0.00	0.00	0.00	0.00	7.01	0.00	0.00	0.00	0.00	0.38	0.00	0.00	0.00	0.00
555		2009	0.92	0.00	0.00	0.00	0.00	4.67	0.00	0.00	0.00	0.00	6.35	0.00	0.00	0.00	0.00	0.35	0.00	0.00	0.00	0.00
556		2010	0.92	0.00	0.00	0.00	0.00	5.01	0.00	0.00	0.00	0.00	5.17	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00
557				0.92	0.92	0.92	0.92		4.00	4.00	4.00	4.00		8.67	8.67	8.67	8.67		0.46	0.46	0.46	0.46
558				Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
559		Scrapers	ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Lanc	Grading	Drainage	Paving
560		2000	3.53	0.00	0.00	0.00	0.00	21.26	0.00	0.00	0.00	0.00	34.96	0.00	0.00	0.00	0.00	1.79	0.00	0.00	0.00	0.00
561		2001	3.54	0.00	0.00	0.00	0.00	20.85	0.00	0.00	0.00	0.00	32.62	0.00	0.00	0.00	0.00	1.67	0.00	0.00	0.00	0.00
562		2002	3.56	0.00	0.00	0.00	0.00	20.45	0.00	0.00	0.00	0.00	30.27	0.00	0.00	0.00	0.00	1.54	0.00	0.00	0.00	0.00
563		2003	3.58	0.00	0.00	0.00	0.00	20.04	0.00	0.00	0.00	0.00	27.93	0.00	0.00	0.00	0.00	1.42	0.00	0.00	0.00	0.00
564		2004	3.59	0.00	0.00	0.00	0.00	19.64	0.00	0.00	0.00	0.00	25.58	0.00	0.00	0.00	0.00	1.30	0.00	0.00	0.00	0.00
565		2005	3.61	3.61	3.61	3.61	3.61	19.23	19.23	19.23	19.23	19.23	23.24	23.24	23.24	23.24	23.24	1.17	1.17	1.17	1.17	1.17
566		2006	3.63	0.00	0.00	0.00	0.00	18.83	0.00	0.00	0.00	0.00	20.34	0.00	0.00	0.00	0.00	1.05	0.00	0.00	0.00	0.00
567		2007	3.64	0.00	0.00	0.00	0.00	18.42	0.00	0.00	0.00	0.00	17.45	0.00	0.00	0.00	0.00	0.93	0.00	0.00	0.00	0.00
568		2008	3.64	0.00	0.00	0.00	0.00	16.63	0.00	0.00	0.00	0.00	15.96	0.00	0.00	0.00	0.00	0.85	0.00	0.00	0.00	0.00
569		2009	3.64	0.00	0.00	0.00	0.00	14.84	0.00	0.00	0.00	0.00	14.48	0.00	0.00	0.00	0.00	0.77	0.00	0.00	0.00	0.00
570		2010	3.64	0.00	0.00	0.00	0.00	13.05	0.00	0.00	0.00	0.00	12.99	0.00	0.00	0.00	0.00	0.70	0.00	0.00	0.00	0.00
571				3.61	3.61	3.61	3.61		19.23	19.23	19.23	19.23		23.24	23.24	23.24	23.24		1.17	1.17	1.17	1.17
572		Signal Boards		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
573			ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Lanc	Grading	Drainage	Paving
574		2000	0.66	0.00	0.00	0.00	0.00	1.77	0.00	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.00	0.00
575		2001	0.65	0.00	0.00	0.00	0.00	1.75	0.00	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00	0.26	0.00	0.00	0.00	0.00
576		2002	0.65	0.00	0.00	0.00	0.00	1.72	0.00	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00	0.26	0.00	0.00	0.00	0.00
577		2003	0.65	0.00	0.00	0.00	0.00	1.70	0.00	0.00	0.00	0.00	2.52	0.00	0.00	0.00	0.00	0.26	0.00	0.00	0.00	0.00
578		2004	0.65	0.00	0.00	0.00	0.00	1.68	0.00	0.00	0.00	0.00	2.49	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00
579		2005	0.65	0.65	0.65	0.65	0.65	1.66	1.66	1.66	1.66	1.66	2.46	2.46	2.46	2.46	2.46	0.24	0.24	0.24	0.24	0.24
580		2006	0.65	0.00	0.00	0.00	0.00	1.64	0.00	0.00	0.00	0.00	2.43	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.00	0.00
581		2007	0.65	0.00	0.00	0.00	0.00	1.62	0.00	0.00	0.00	0.00	2.40	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.00	0.00
582		2008	0.65	0.00	0.00	0.00	0.00	1.60	0.00	0.00	0.00	0.00	2.37	0.00	0.00	0.00	0.00	0.22	0.00	0.00	0.00	0.00
583		2009	0.65	0.00	0.00	0.00	0.00	1.58	0.00	0.00	0.00	0.00	2.34	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00
584		2010	0.65	0.00	0.00	0.00	0.00	1.56	0.00	0.00	0.00	0.00	2.31	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00
585				0.65	0.65	0.65	0.65		1.66	1.66	1.66	1.66		2.46	2.46	2.46	2.46		0.24	0.24	0.24	0.24
586		Skid Steer Loaders		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
587			ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Lanc	Grading	Drainage	Paving
588		2000	0.56	0.00	0.00	0.00	0.00	1.96	0.00	0.00	0.00	0.00	3.88	0.00	0.00	0.00	0.00	0.39	0.00	0.00	0.00	0.00
589		2001	0.56	0.00	0.00	0.00	0.00	1.96	0.00	0.00	0.00	0.00	3.88	0.00	0.00	0.00	0.00	0.39	0.00	0.00	0.00	0.00
590		2002	0.56	0.00	0.00	0.00	0.00	1.96	0.00	0.00	0.00	0.00	3.88	0.00	0.00	0.00	0.00	0.39	0.00	0.00	0.00	0.00
591		2003	0.56	0.00	0.00	0.00	0.00	1.96	0.00	0.00	0.00	0.00	3.88	0.00	0.00	0.00	0.00	0.39	0.00	0.00	0.00	0.00
592		2004	0.56	0.00	0.00	0.00	0.00	1.99	0.00	0.00	0.00	0.00	3.74	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.00	0.00
593		2005	0.56	0.56	0.56	0.56	0.56	2.01	2.01	2.01	2.01	2.01	3.59	3.59	3.59	3.59	3.59	0.30	0.30	0.30	0.30	0.30
594		2006	0.56	0.00	0.00	0.00	0.00	2.03	0.00	0.00	0.00	0.00	3.44	0.00	0.00	0.00	0.00	0.26	0.00	0.00	0.00	0.00
595		2007	0.56	0.00	0.00	0.00	0.00	2.06	0.00	0.00	0.00	0.00	3.30	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00
596		2008	0.56	0.00	0.00	0.00	0.00	2.08	0.00	0.00	0.00	0.00	2.91	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00
597		2009	0.56	0.00	0.00	0.00	0.00	2.08	0.00	0.00	0.00	0.00	2.68	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00
598		2010	0.56	0.00	0.00	0.00	0.00	2.08	0.00	0.00	0.00	0.00	2.44	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00
599				0.56	0.56	0.56	0.56		2.01	2.01	2.01	2.01		3.59	3.59	3.59	3.59		0.30	0.30	0.30	0.30
600		Surfacing Equipment		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
601			ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Lanc	Grading	Drainage	Paving
602		2000	3.63	0.00	0.00	0.00	0.00	20.22	0.00	0.00	0.00	0.00	38.04	0.00	0.00	0.00	0.00	1.92	0.00	0.00	0.00	0.00
603		2001	3.65	0.00	0.00	0.00	0.00	19.91	0.00	0.00	0.00	0.00	36.21	0.00	0.00	0.00	0.00	1.82	0.00	0.00	0.00	0.00
604		2002	3.66	0.00	0.00	0.00	0.00	19.59	0.00	0.00	0.00	0.00	34.39	0.00	0.00	0.00	0.00	1.72	0.00	0.00	0.00	0.00
605		2003	3.67	0.00	0.00	0.00	0.00	19.28	0.00	0.00	0.00	0.00	32.57	0.00	0.00	0.00	0.00	1.63	0.00	0.00	0.00	0.00
606		2004	3.68	0.00	0.00	0.00	0.00	18.97	0.00	0.00	0.00	0.00	30.75	0.00	0.00	0.00	0.00	1.53	0.00	0.00	0.00	0.00
607		2005	3.70	3.70	3.70	3.70	3.70	18.65	18.65	18.65	18.65	18.65	28.93	28.93	28.93	28.93	28.93	1.44	1.44	1.44	1.44	1.44
608		2006	3.71	0.00	0.00	0.00	0.00	18.34	0.00	0.00	0.00	0.00	26.68	0.00	0.00	0.00	0.00	1.34	0.00	0.00	0.00	0.00
609		2007	3.72	0.00	0.00	0.00	0.00	18.02	0.00	0.00	0.00	0.00	24.43	0.00	0.00	0.00	0.00	1.24	0.00	0.00	0.00	0.00
610		2008	3.74	0.00	0.00	0.00	0.00	17.71	0.00	0.00	0.00	0.00	22.19	0.00	0.00	0.00	0.00	1.15	0.00	0.00	0.00	0.00
611		2009	3.75	0.00	0.00	0.00	0.00	17.39	0.00	0.00	0.00	0.00	19.94	0.00	0.00	0.00	0.00	1.05	0.00	0.00	0.00	0.00
612		2010	3.76	0.00	0.00	0.00	0.00	17.08	0.00	0.00	0.00	0.00	17.69	0.00	0.00	0.00	0.00	0.96	0.00	0.00	0.00	0.00
613				3.70	3.70	3.70	3.70		18.65	18.65	18.65	18.65		28.93	28.93	28.93	28.93		1.44	1.44	1.44	1.44
614		Tractors/Loaders/Backhoes		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
615			ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Lanc	Grading	Drainage	Paving
616		2000	0.75	0.00	0.00	0.00	0.00	2.57	0.00	0.00	0.00	0.00	6.27	0.00	0.00	0.00	0.00	0.48	0.00	0.00	0.00	0.00
617		2001	0.74	0.00	0.00	0.00	0.00	2.54	0.00	0.00	0.00	0.00	6.11	0.00	0.00	0.00	0.00	0.48	0.00	0.00	0.00	0.00
618		2002	0.73	0.00	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00	5.95	0.00	0.00	0.00	0.00	0.48	0.00	0.00	0.00	0.00
619		2003	0.72	0.00	0.00	0.00	0.00	2.49	0.00	0.00	0.00	0.00	5.79	0.00	0.00	0.00	0.00	0.47	0.00	0.00	0.00	0.00
620		2004	0.71	0.00	0.00	0.00	0.00	2.47	0.00	0.00	0.00	0.00	5.57	0.00	0.00	0.00	0.00	0.45	0.00	0.00	0.00	0.00
621		2005	0.70	0.70	0.70	0.70	0.70	2.45	2.45	2.45	2.45	2.45	5.36	5.36	5.36	5.36	5.36	0.44	0.44	0.44	0.44	0.44
622		2006	0.69	0.00	0.00	0.00	0.00	2.43	0.00	0.00	0.00	0.00	5.14	0.00	0.00	0.00	0.00	0.42	0.00	0.00	0.00	0.00
623		2007	0.68	0.00	0.00	0.00	0.00	2.41	0.00	0.00	0.00	0.00	4.84	0.00	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.00
624		2008	0.67	0.00	0.00	0.00	0.00	2.40	0.00	0.00	0.00	0.00	4.54	0.00	0.00	0.00	0.00	0.38	0.00	0.00	0.00	0.00
625		2009	0.66	0.00	0.00	0.00	0.00	2.38	0.00	0.00	0.00	0.00	4.24	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.00	0.00
626		2010	0.65	0.00	0.00	0.00	0.00	2.36	0.00	0.00	0.00	0.00	3.94	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.00	0.00
627				0.70	0.70	0.70	0.70		2.45	2.45	2.45	2.45		5.36	5.36	5.36	5.36		0.44	0.44	0.44	0.44
628		Trenchers		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted		Weighted	Weighted	Weighted	Weighted
629			ROG	Grubbing/Land	Grading	Drainage	Paving	CO	Grubbing/La	Grading	Drainage	Paving	NOx	Grubbing/L	Grading	Drainage	Paving	PM10	Grubbing/Lanc	Grading	Drainage	Paving
630		2000	1.06	0.00	0.00	0.00	0.00	3.69	0.00	0.00	0.00	0.00	8.06	0.00	0.00	0.00	0.00	0.71	0.00	0.00	0.00	0.00
631		2001	1.03	0.00	0.00	0.00	0.00	3.60	0.00	0.00	0.00	0.00	7.49	0.00	0.00	0.00	0.00	0.70	0.00	0.00	0.00	0.00
632		2002	0.99	0.00	0.00	0.00	0.00	3.50	0.00	0.00	0.00	0.00	6.92	0.00	0.00	0.00	0.00	0.69	0.00	0.00	0.00	0.00
633		2003	0.99	0.00	0.00	0.00	0.00	3.50	0.00	0.00	0.00	0.00	6.92	0.00	0.00	0.00	0.00	0.69	0.00	0.00	0.00	0.00
634		2004	0.99	0.00	0.00	0.00	0.00	3.53	0.00	0.00	0.00	0.00	6.74	0.00	0.00	0.00	0.00	0.64	0.00	0.00	0.00	0.00
635		2005	0.99	0.99	0.99	0.99	0.99	3.56	3.56	3.56	3.56	3.56	6.55	6.55	6.55	6.55	6.55	0.58	0.58	0.58	0.58	0.58
636		2006	0.99	0.00	0.00	0.00	0.00	3.59	0.00	0.00	0.00	0.00	6.36	0.00	0.00	0.00	0.00	0.52	0.00	0.00	0.00	0.00
637		2007	0.99	0.00	0.00	0.00	0.00	3.62	0.00	0.00	0.00	0.00	6.18	0.00	0.00	0.00	0.00	0.47	0.00	0.00	0.00	0.00
638		2008	0.99	0.00	0.00	0.00	0.00	3.65	0.00	0.00	0.00	0.00	5.69	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.00	0.00
639		2009	0.99	0.00	0.00	0.00	0.00	3.68	0.00	0.00	0.00	0.00	5.20	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.00	0.00
640		2010	0.99	0.00	0.00	0.00	0.00	3.71	0.00	0.00	0.00	0.00	4.72	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00
641				0.99	0.99	0.99	0.99		3.56	3.56	3.56	3.56		6.55	6.55	6.55	6.55		0.58	0.58	0.58	0.58
642																						

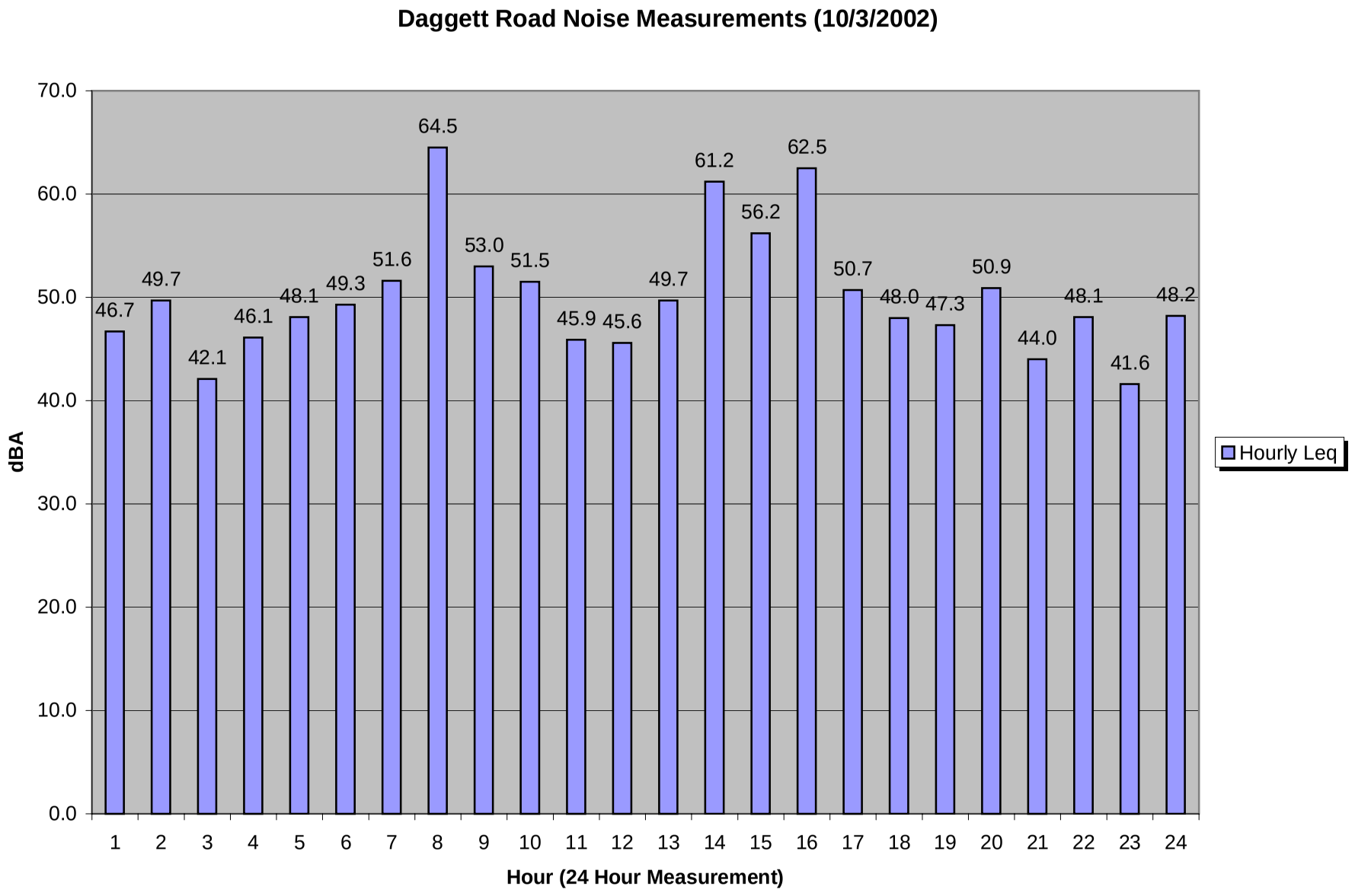
APPENDIX C

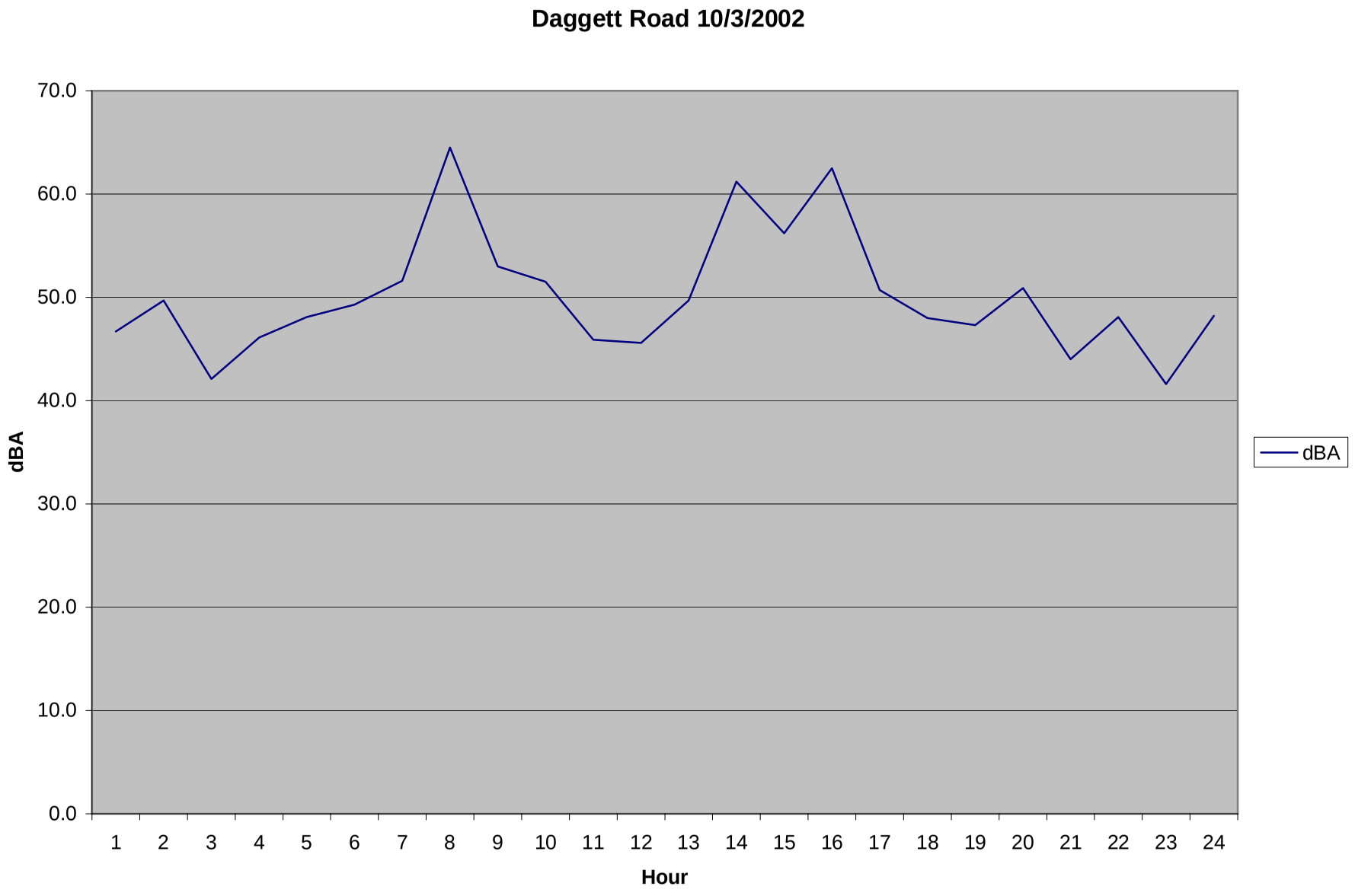
NOISE DATA

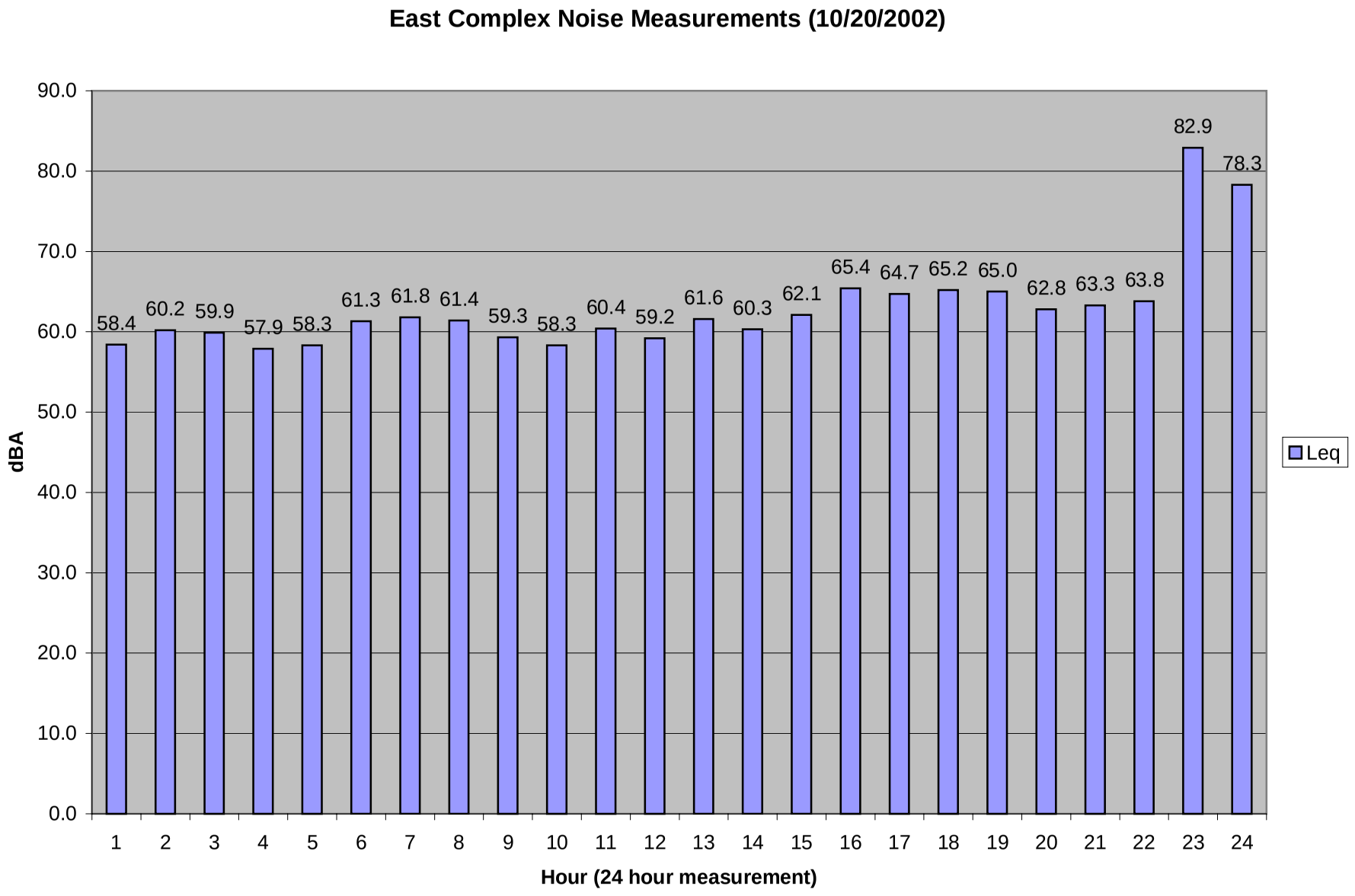
APPENDIX C

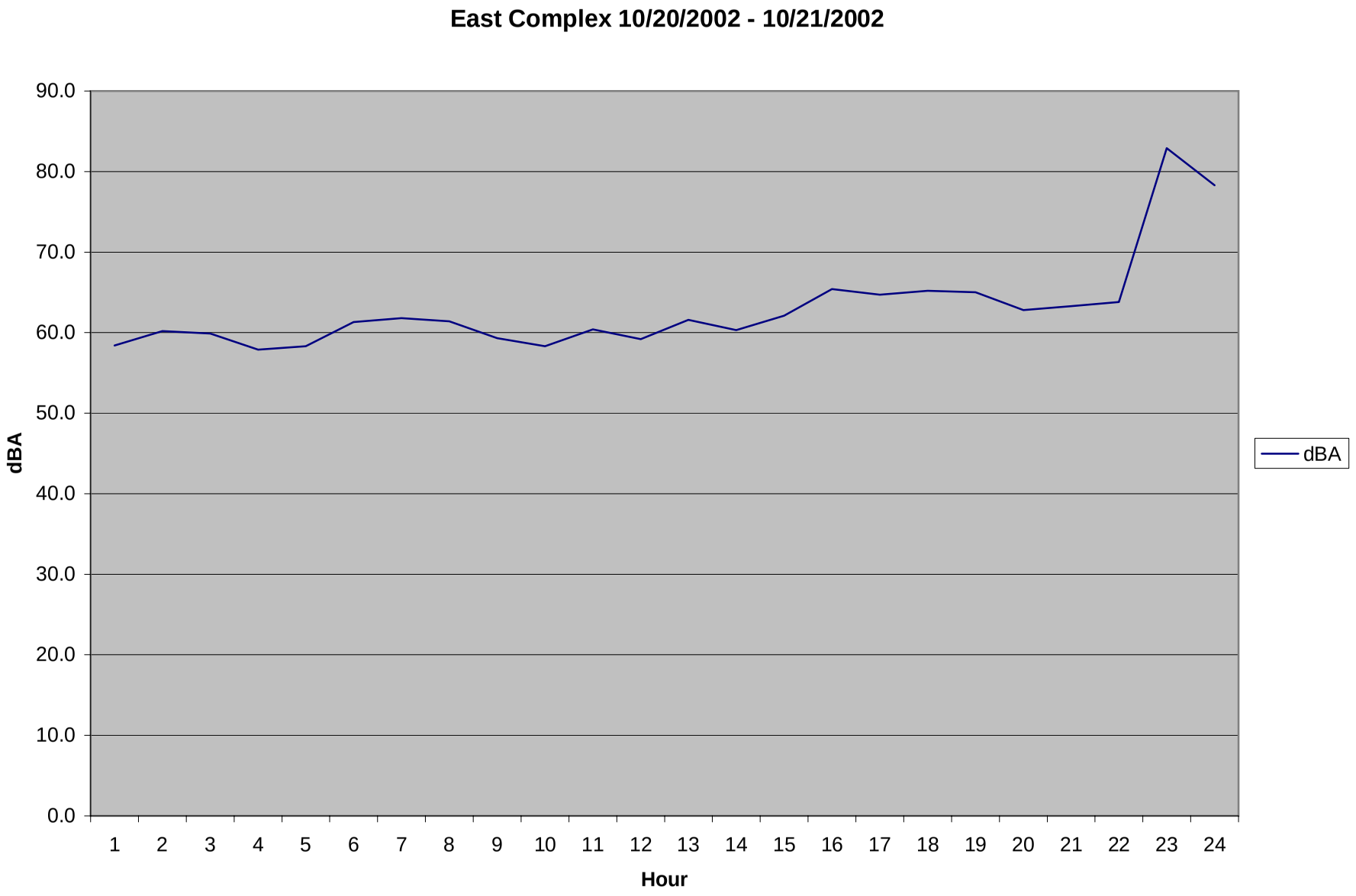
NOISE DATA

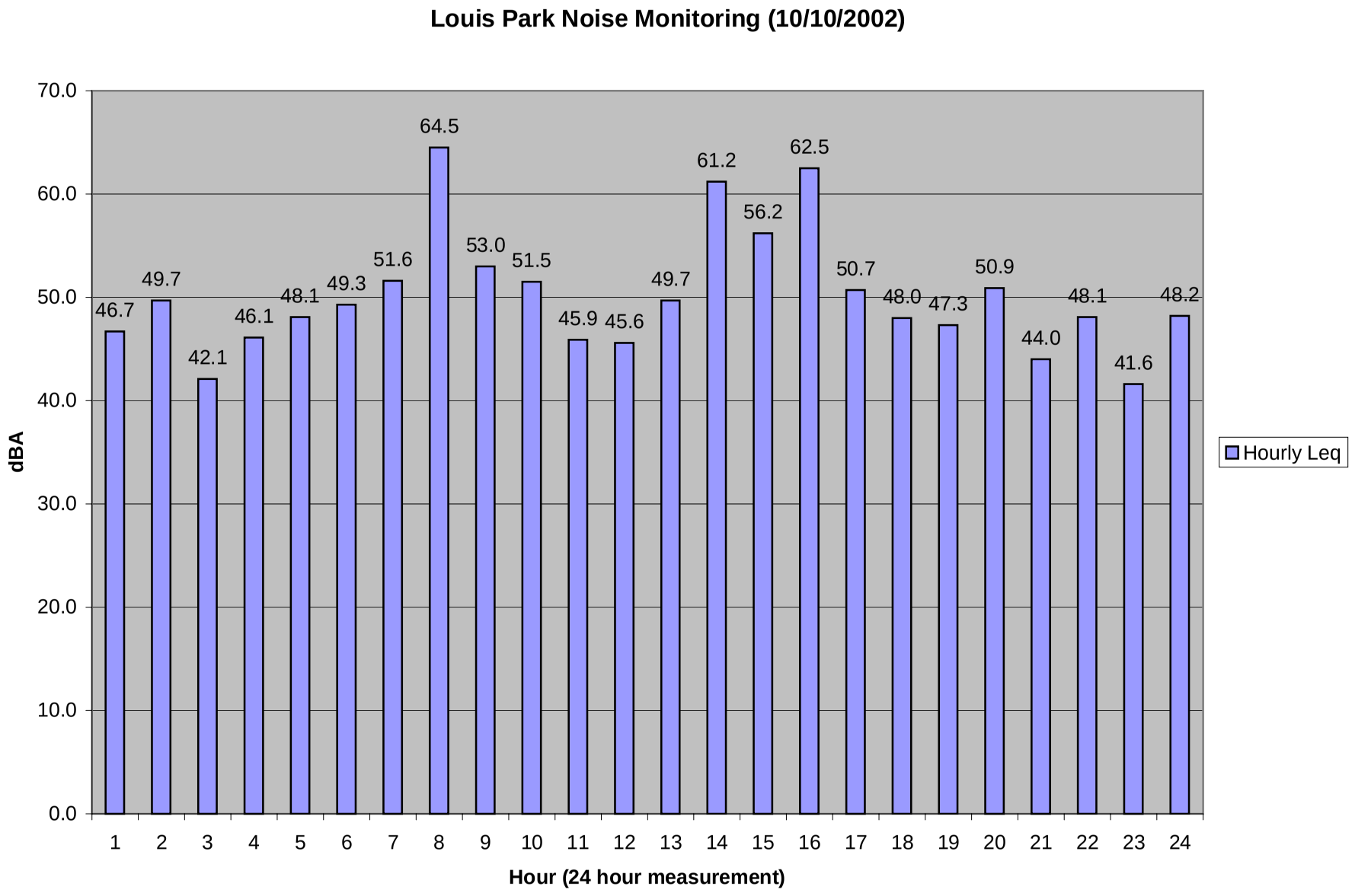
In order to characterize ambient noise conditions in and near the Project Area, long-term noise measurements were conducted at various locations including Dad's Point (Louis Park), Berth 20 at the West Complex, Lyons Golf Course, the terminus of Daggett Road, and an undeveloped area along the northern bank of the Stockton DWSC immediately north of the Port's East complex. Graphs highlighting the noise monitoring data collected at these locations are provided in this appendix.

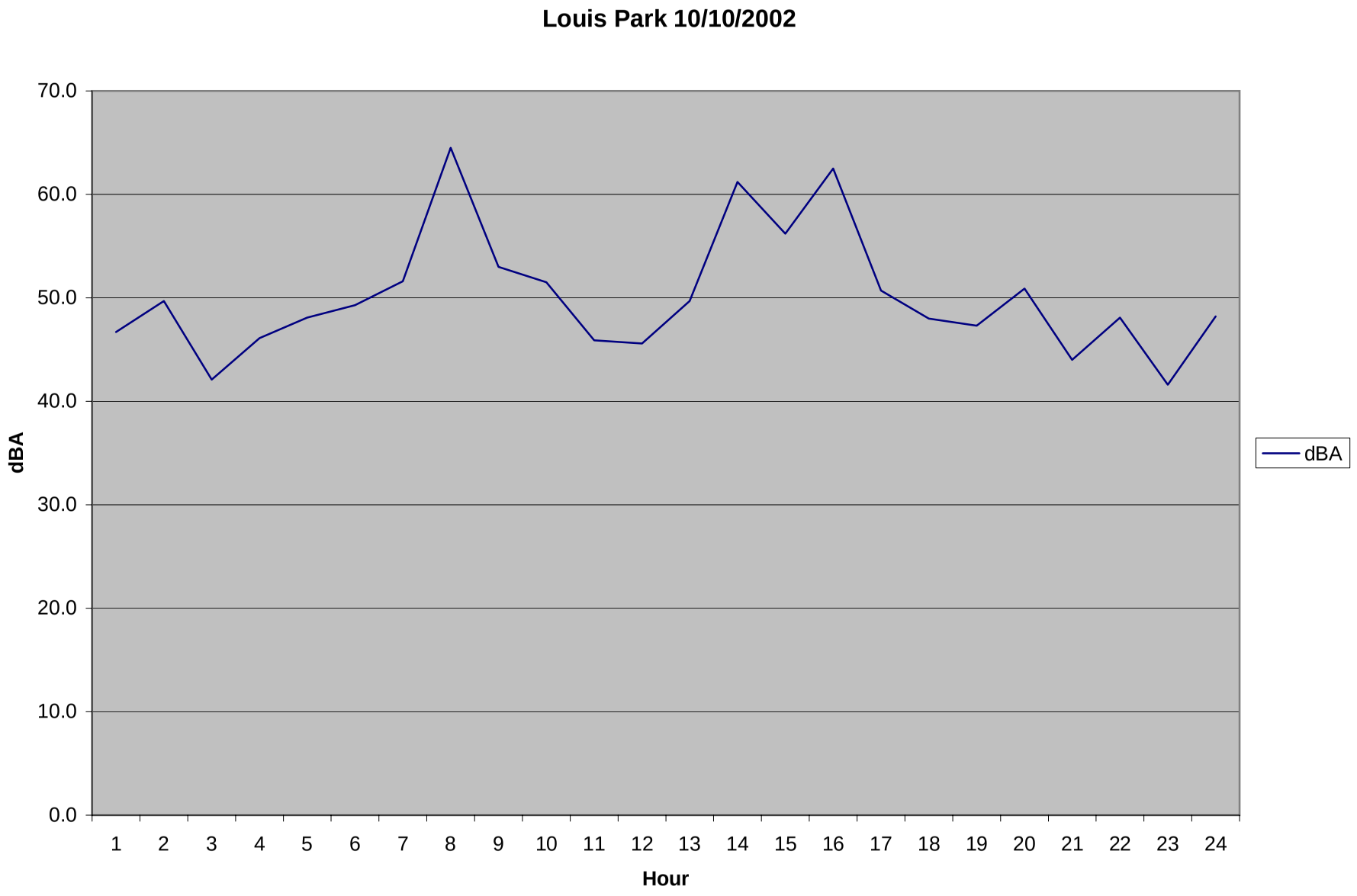

Daggett Road Noise Measurements (10/3/2002)
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
dBA
46.7
49.7
42.1
46.1
48.1
49.3
51.6
64.5
53.0
51.5
45.9
45.6
49.7
61.2
56.2
62.5
50.7
48.0
47.3
50.9
44.0
48.1
41.6
48.2
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour (24 Hour Measurement)
Hourly Leq

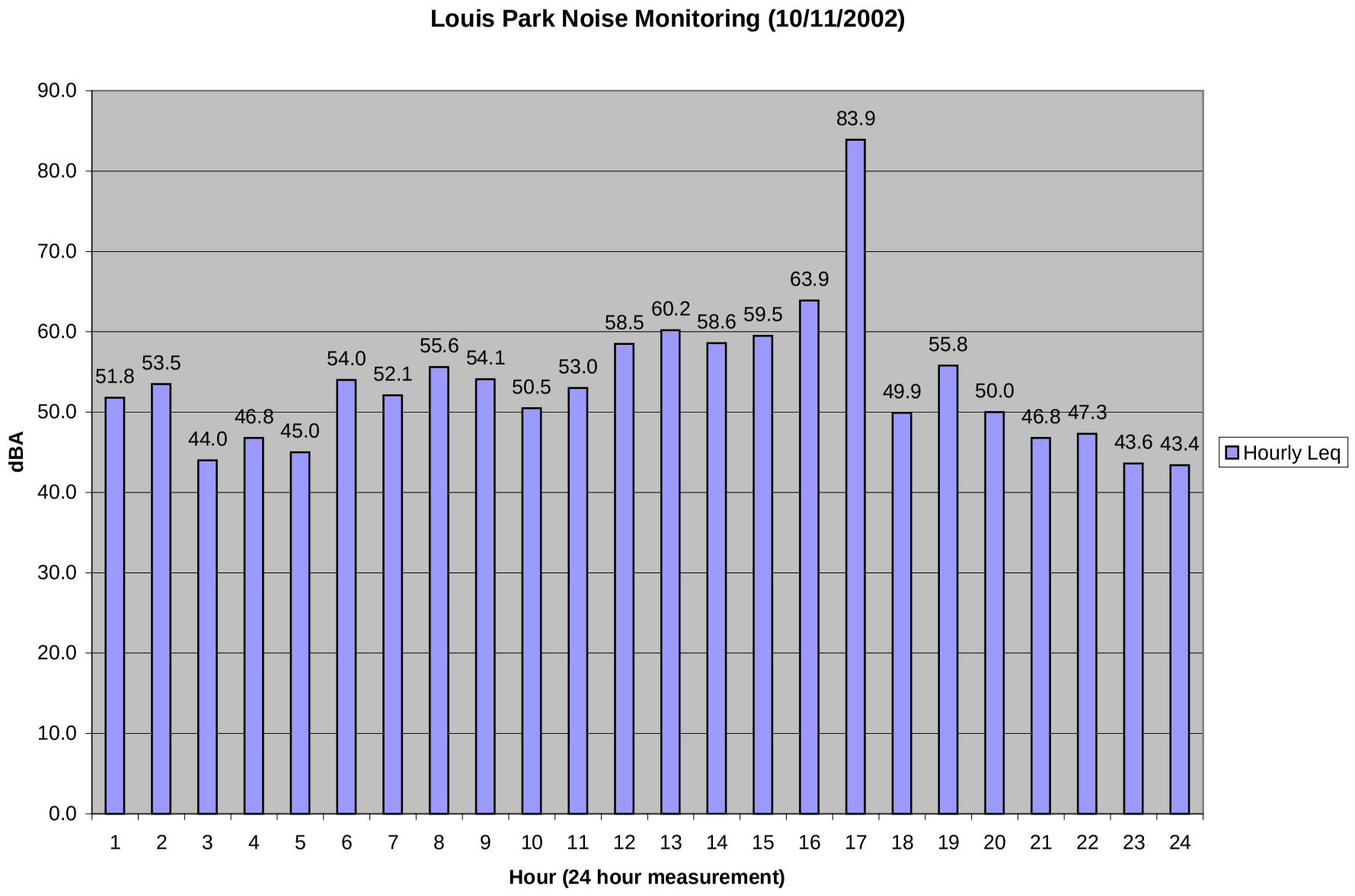

Daggett Road 10/3/2002
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
dBA
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour
dBA

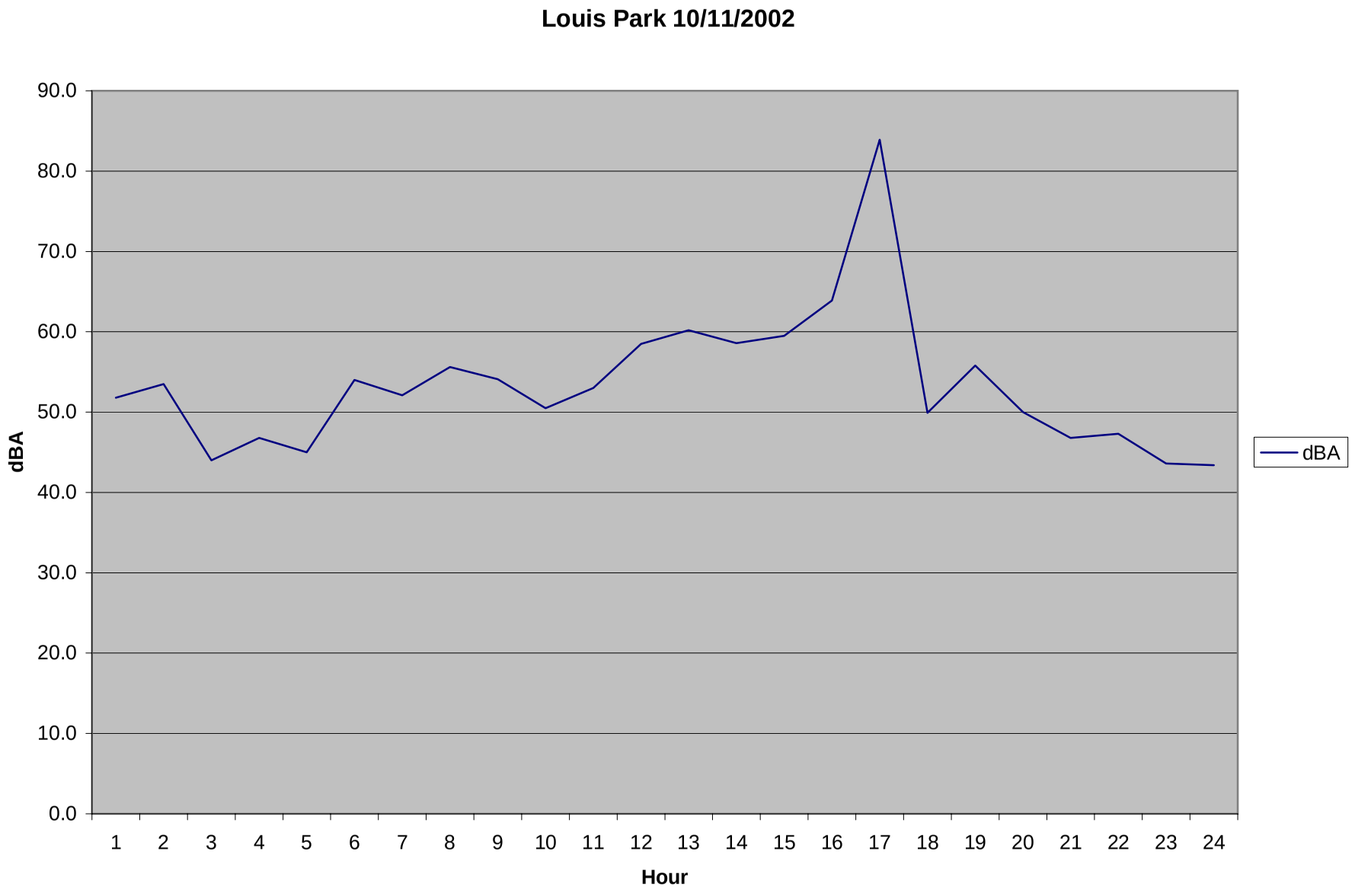

East Complex Noise Measurements (10/20/2002)
dBA
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
58.4
60.2
59.9
57.9
58.3
61.3
61.8
61.4
59.3
58.3
60.4
59.2
61.6
60.3
62.1
65.4
64.7
65.2
65.0
62.8
63.3
63.8
82.9
78.3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour (24 hour measurement)
Leq


East Complex 10/20/2002 - 10/21/2002
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
dBA
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour
dBA


Louis Park Noise Monitoring (10/10/2002)
dBA
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
46.7
49.7
42.1
46.1
48.1
49.3
51.6
64.5
53.0
51.5
45.9
45.6
49.7
61.2
56.2
62.5
50.7
48.0
47.3
50.9
44.0
48.1
41.6
48.2
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour (24 hour measurement)
Hourly Leq


Louis Park 10/10/2002
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
dBA
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour
dBA


Louis Park Noise Monitoring (10/11/2002)
dBA
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
51.8
53.5
44.0
46.8
45.0
54.0
52.1
55.6
54.1
50.5
53.0
58.5
60.2
58.6
59.5
63.9
83.9
49.9
55.8
50.0
46.8
47.3
43.6
43.4
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour (24 hour measurement)
Hourly Leq


Louis Park 10/11/2002
90.0
80.0
70.0
60.0
50.0
40.0
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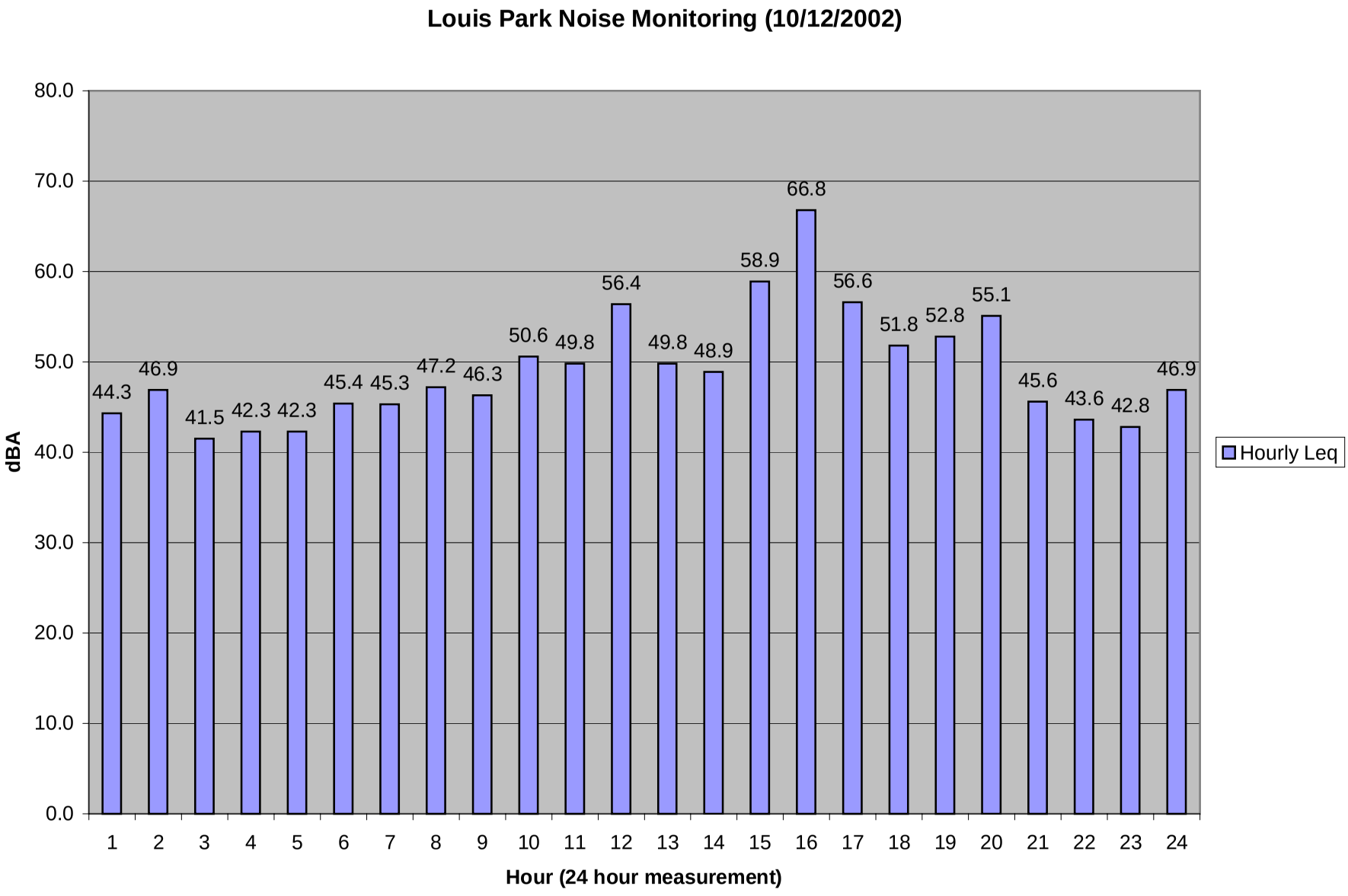
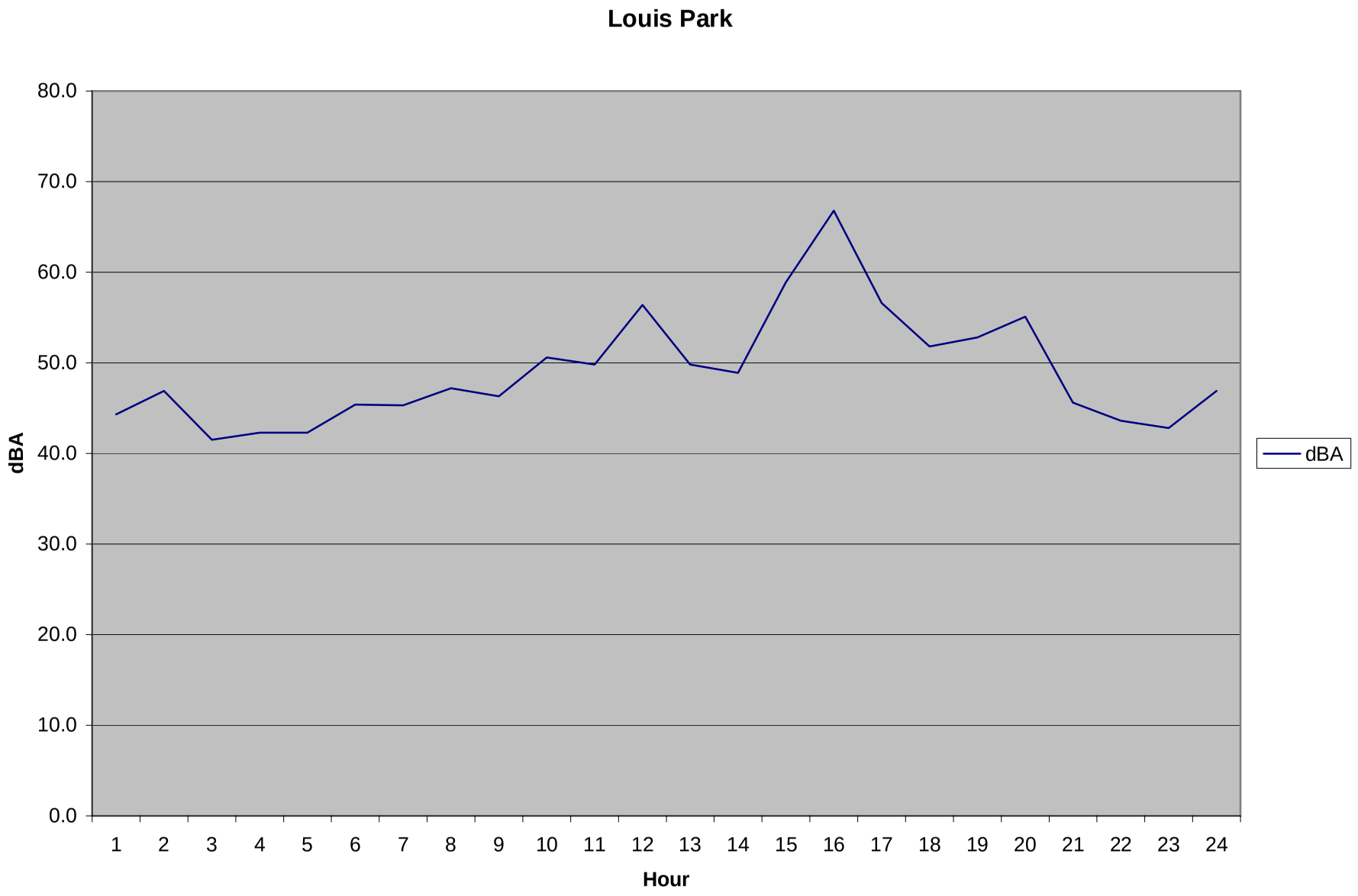
20.0
10.0
0.0
dBA
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour
dBA


Louis Park Noise Monitoring (10/12/2002)
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
dBA
44.3
46.9
41.5
42.3
42.3
45.4
45.3
47.2
46.3
50.6
49.8
56.4
49.8
48.9
58.9
66.8
56.6
51.8
52.8
55.1
45.6
43.6
42.8
46.9
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour (24 hour measurement)
Hourly Leq


Louis Park
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60.0
50.0
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10.0
0.0
dBA
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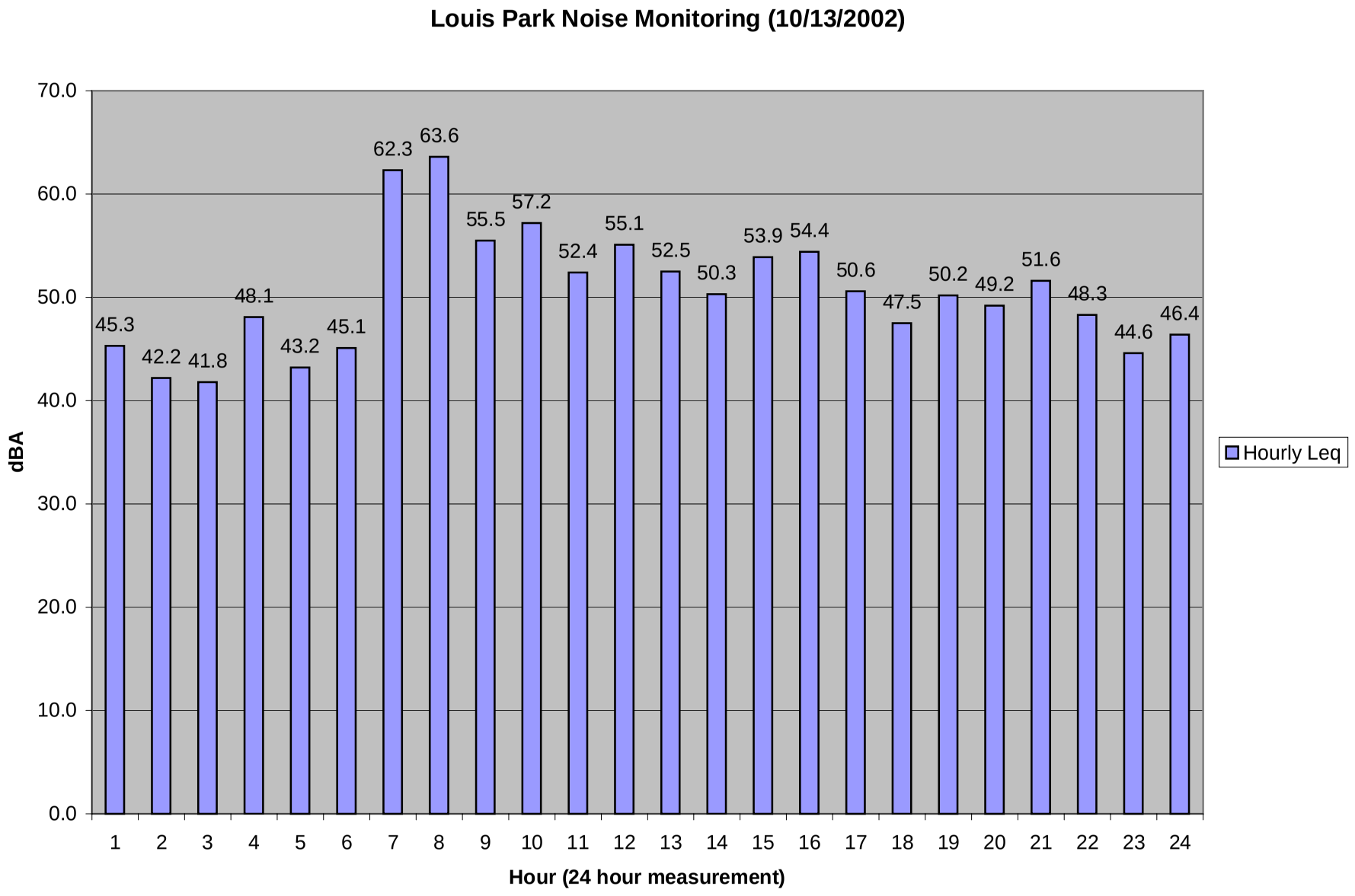
Hour
dBA


Louis Park Noise Monitoring (10/13/2002)
dBA
70.0
60.0
50.0
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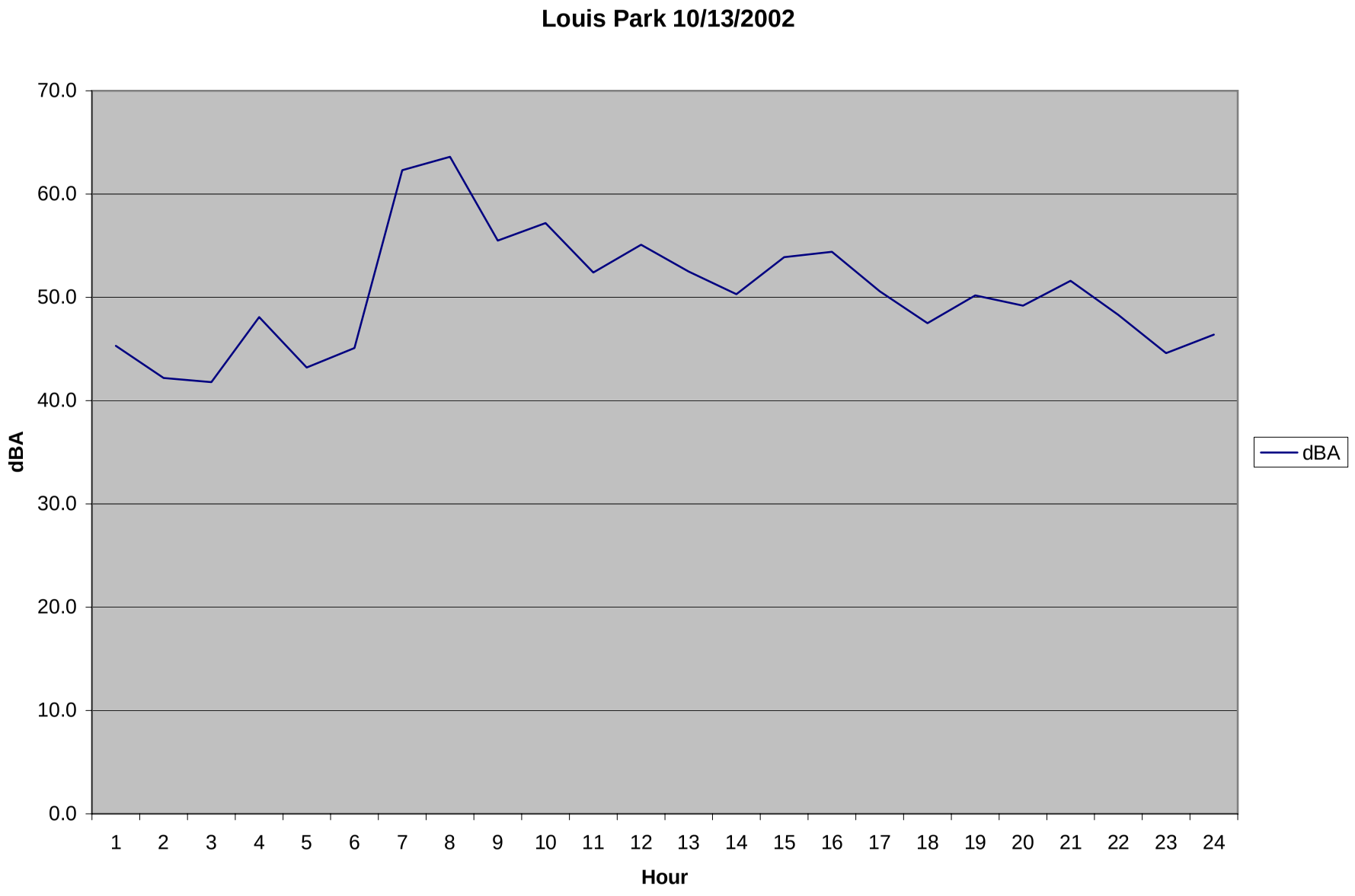
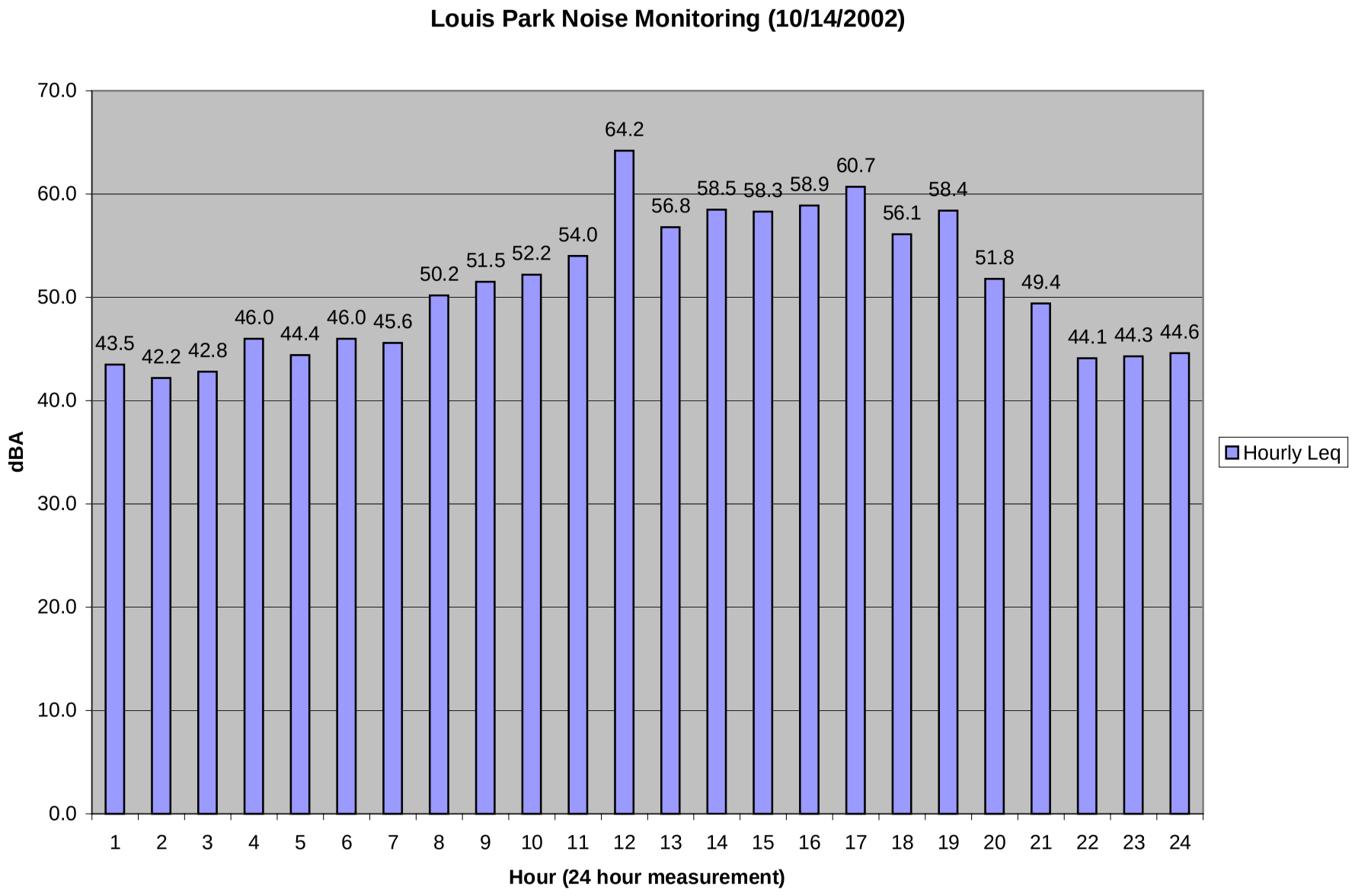
30.0
20.0
10.0
0.0
45.3
42.2
41.8
48.1
43.2
45.1
62.3
63.6
55.5
57.2
52.4
55.1
52.5
50.3
53.9
54.4
50.6
47.5
50.2
49.2
51.6
48.3
44.6
46.4
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour (24 hour measurement)
Hourly Leq


Louis Park 10/13/2002
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
dBA
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour
dBA


Louis Park Noise Monitoring (10/14/2002)
dBA
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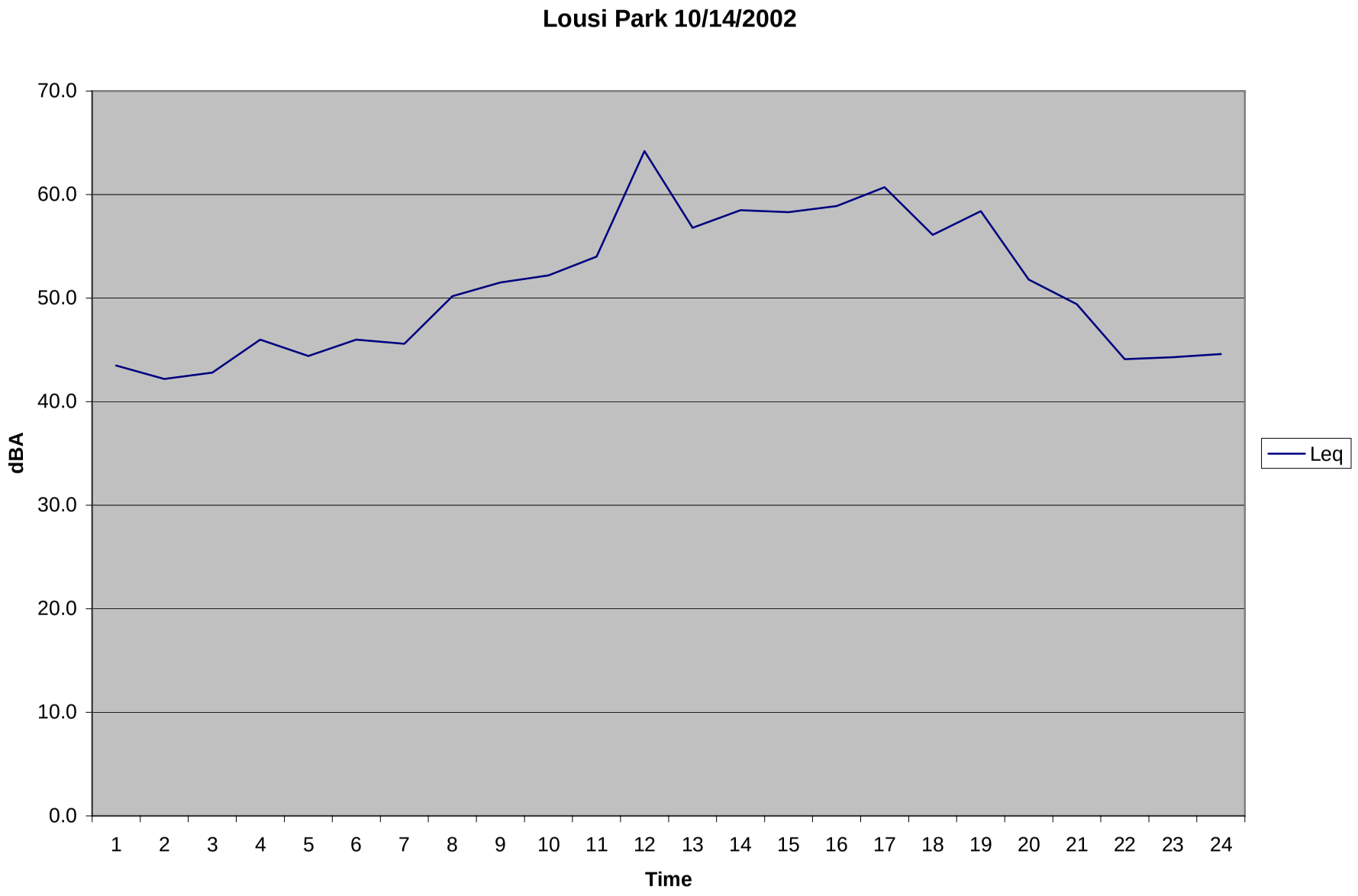
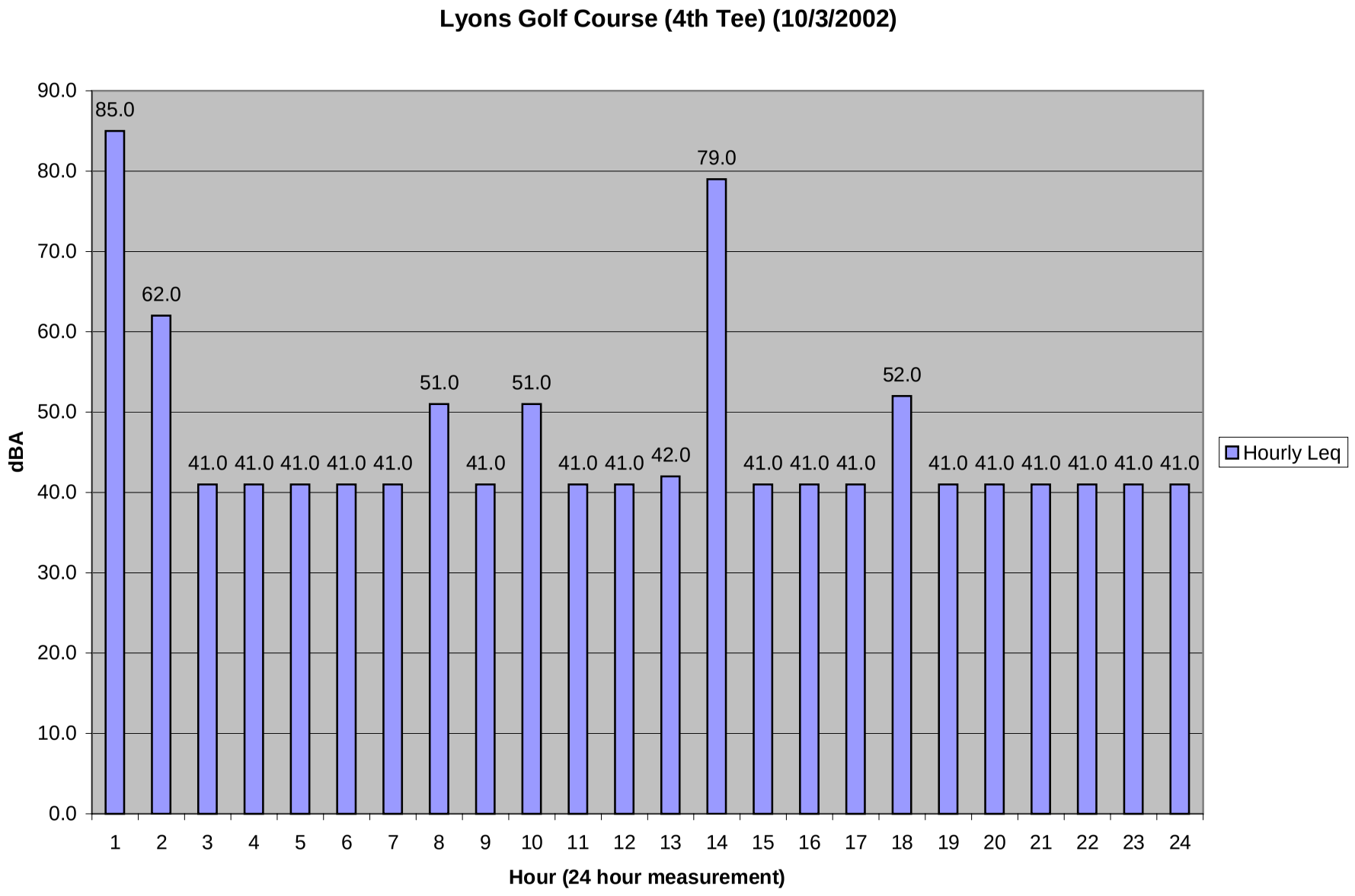
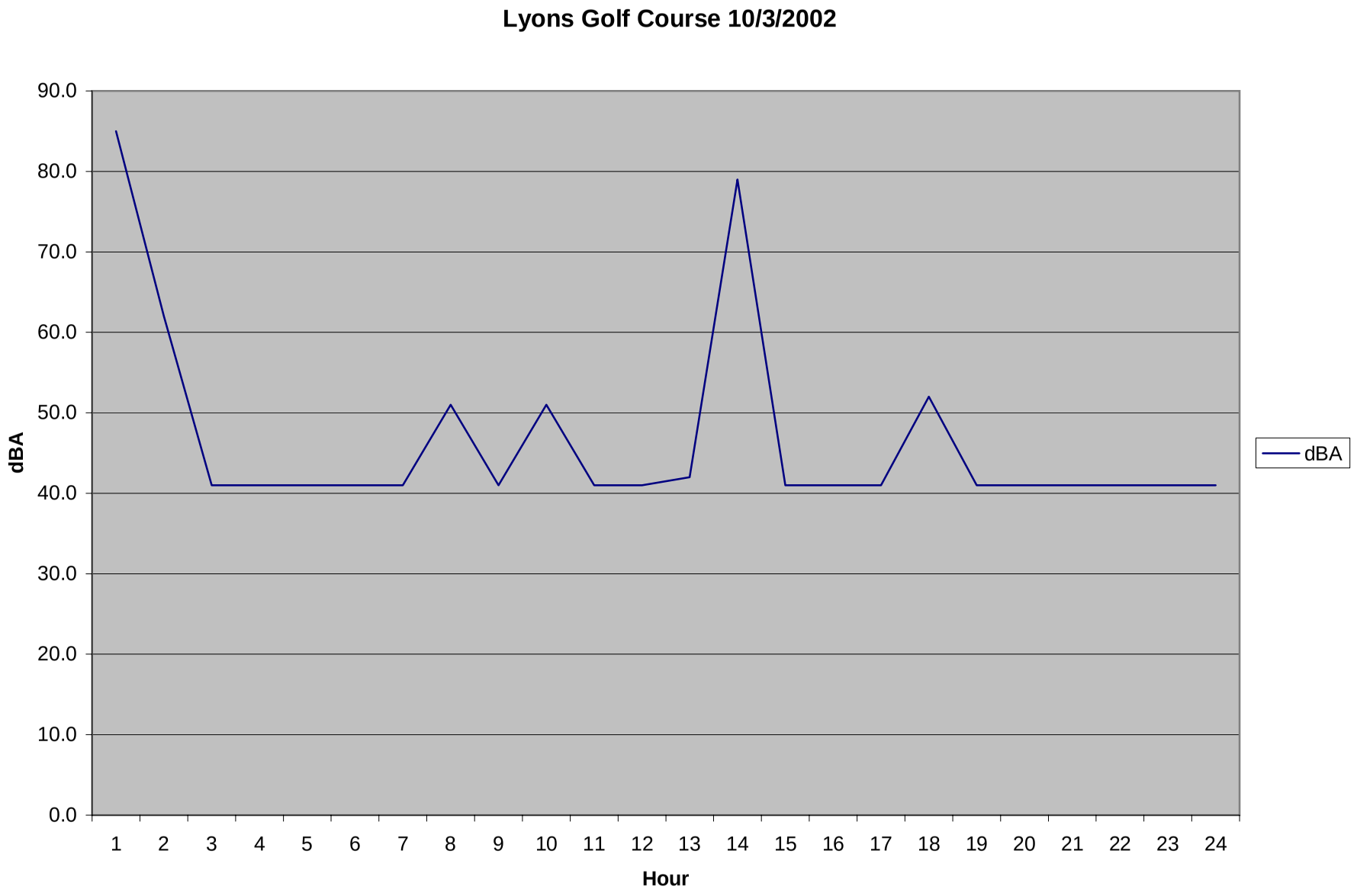
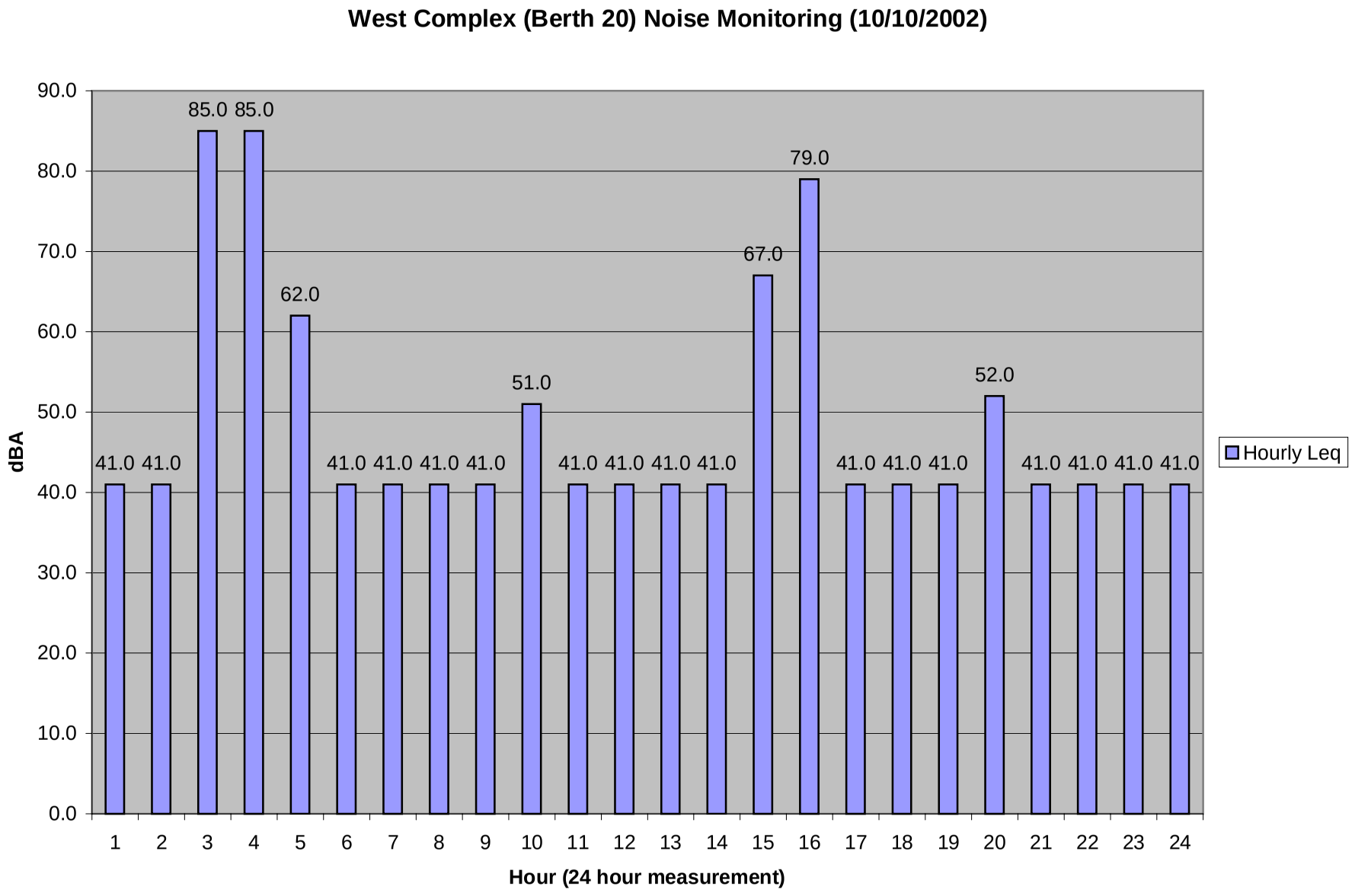
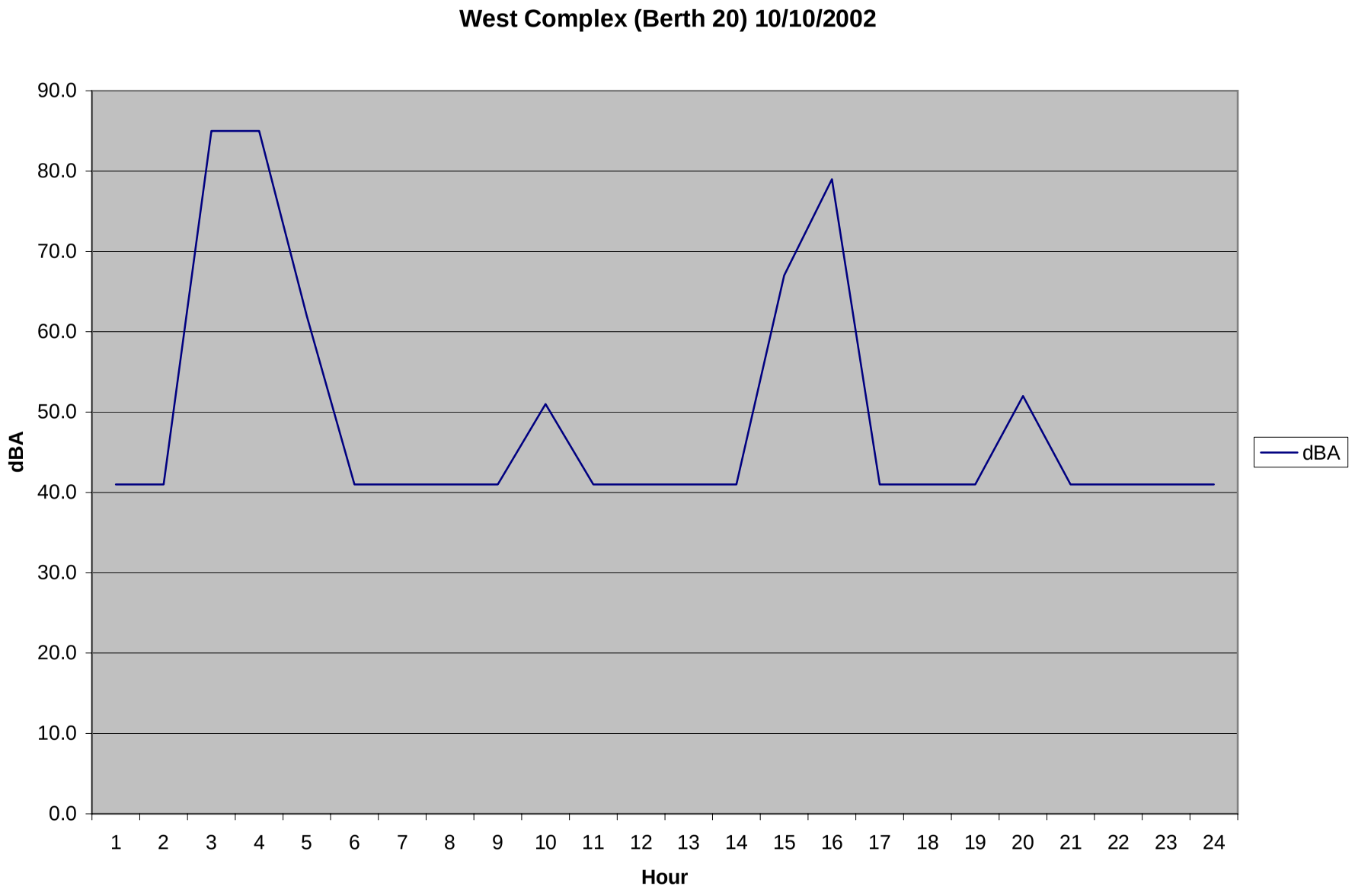
30.0
20.0
10.0
0.0
43.5
42.2
42.8
46.0
44.4
46.0
45.6
50.2
51.5
52.2
54.0
64.2
56.8
58.5
58.3
58.9
60.7
56.1
58.4
51.8
49.4
44.1
44.3
44.6
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour (24 hour measurement)
Hourly Leq

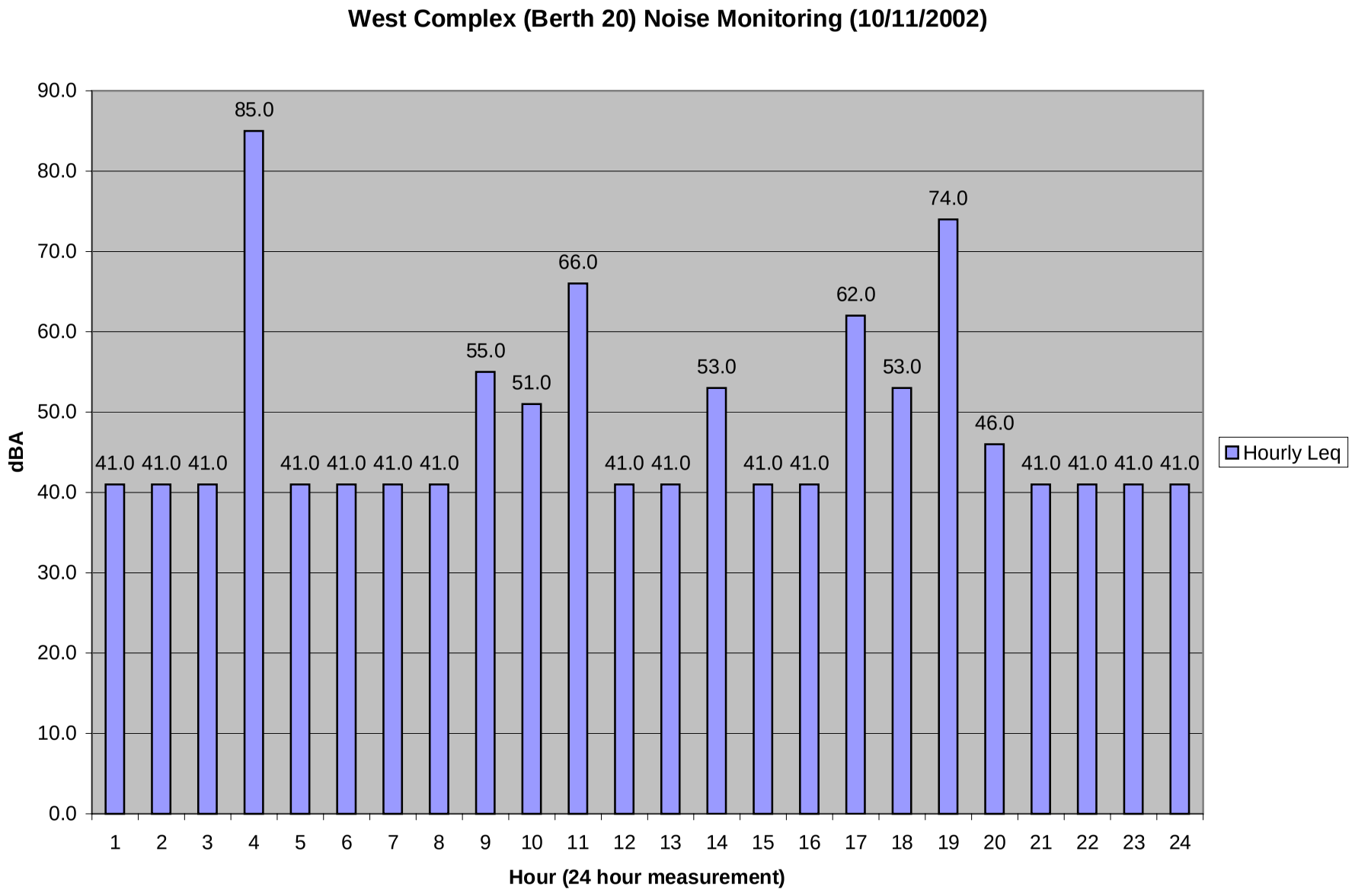

Lousi Park 10/14/2002
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
dBA
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Time
Leq


Lyons Golf Course (4th Tee) (10/3/2002)
dBA
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
85.0
62.0
41.0 41.0 41.0 41.0 41.0
51.0
41.0
51.0
41.0 41.0
42.0
79.0
41.0 41.0 41.0
52.0
41.0 41.0 41.0 41.0 41.0 41.0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour (24 hour measurement)
Hourly Leq


Lyons Golf Course 10/3/2002
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
dBA
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour
dBA


West Complex (Berth 20) Noise Monitoring (10/10/2002)
dBA
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
41.0 41.0 85.0 85.0 62.0 41.0 41.0 41.0 41.0 51.0 41.0 41.0 41.0 41.0 67.0 79.0 41.0 41.0 41.0 52.0 41.0 41.0 41.0 41.0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour (24 hour measurement)
Hourly Leq


West Complex (Berth 20) 10/10/2002
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
dBA
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour
dBA


West Complex (Berth 20) Noise Monitoring (10/11/2002)
dBA
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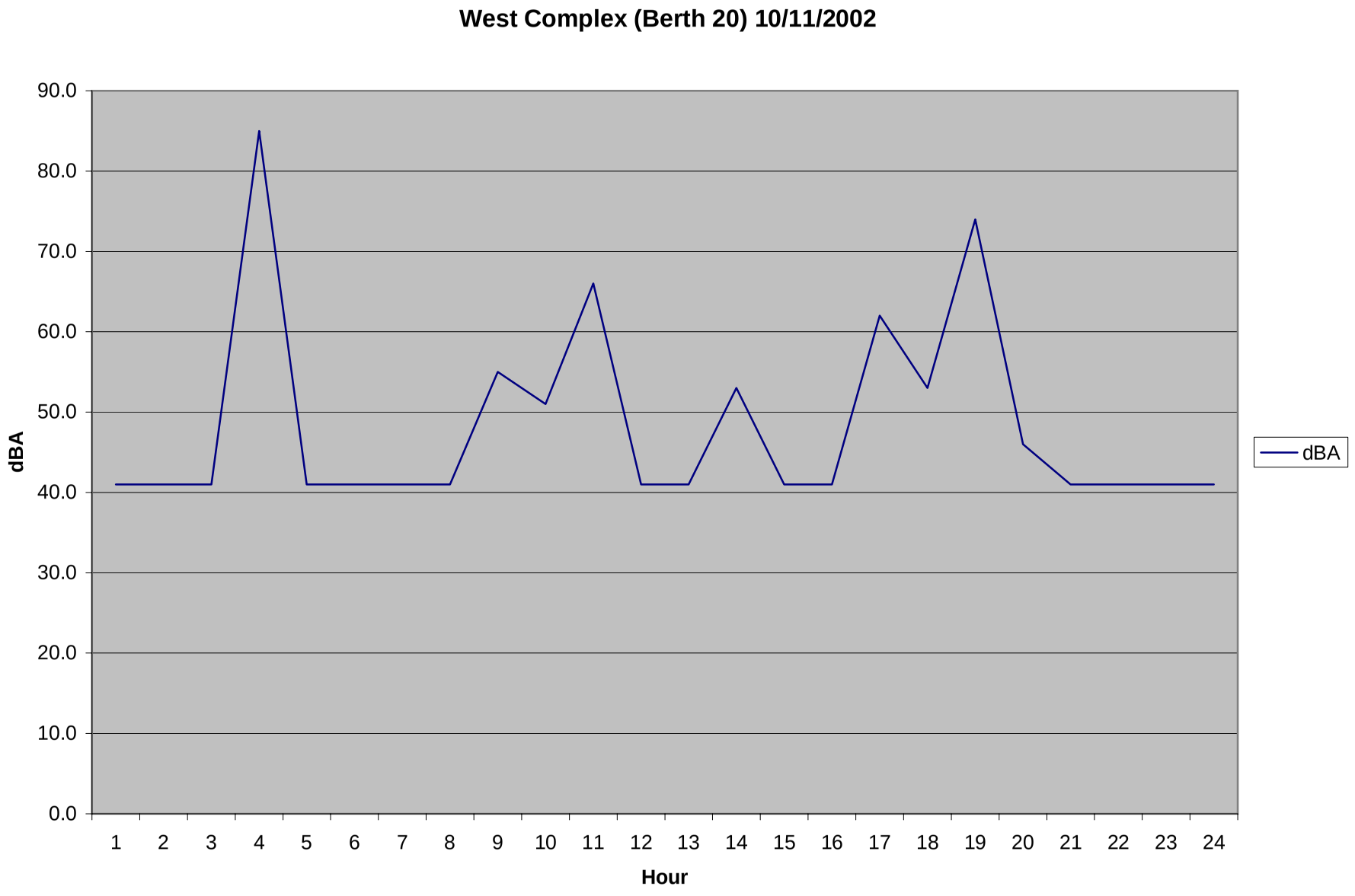
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
41.0 41.0 41.0 85.0 41.0 41.0 41.0 41.0 55.0 51.0 66.0 41.0 41.0 53.0 41.0 41.0 62.0 53.0 74.0 46.0 41.0 41.0 41.0 41.0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour (24 hour measurement)
Hourly Leq


West Complex (Berth 20) 10/11/2002
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50.0
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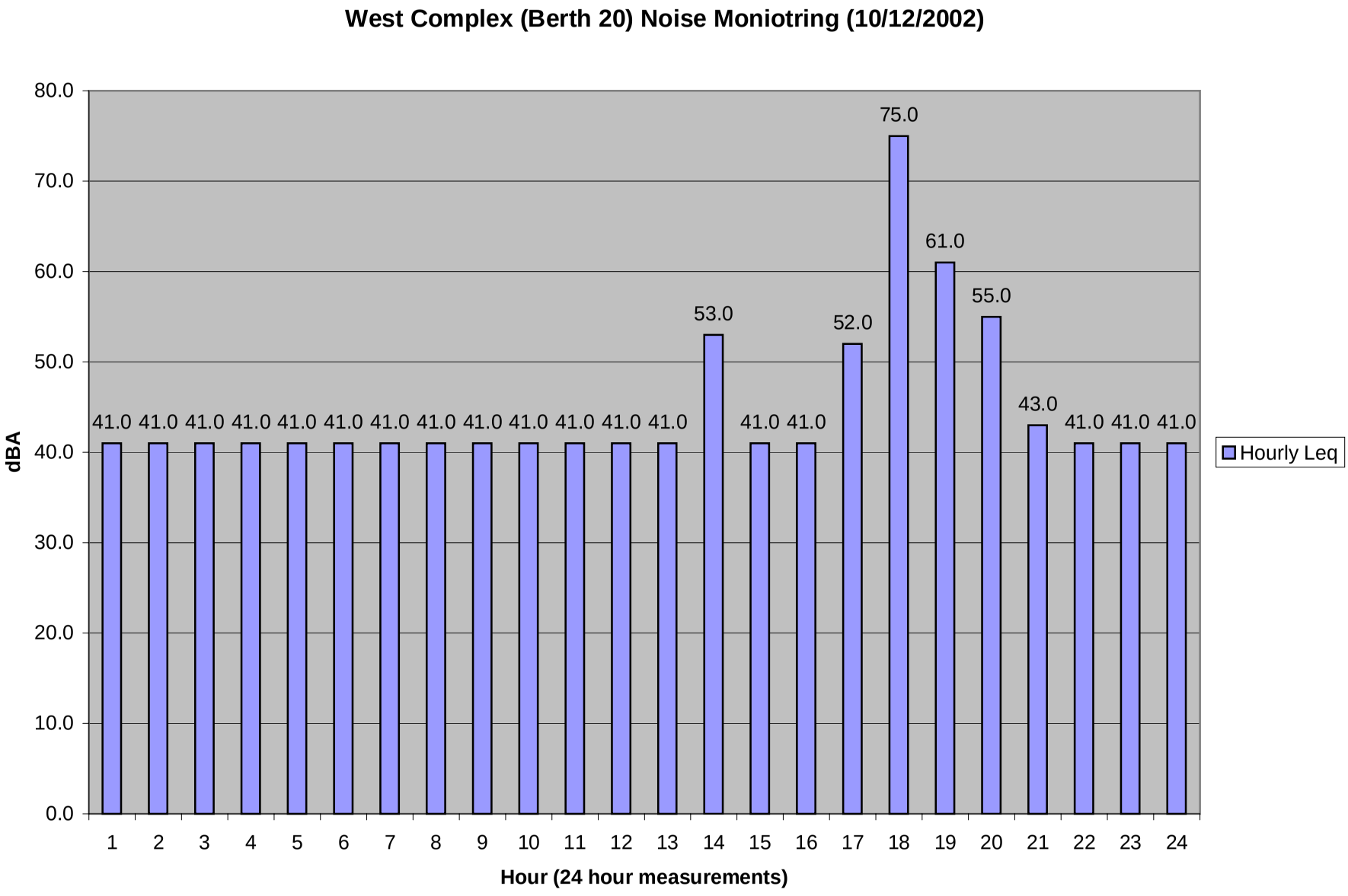
0.0
dBA
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour
dBA


West Complex (Berth 20) Noise Moniotring (10/12/2002)
dBA
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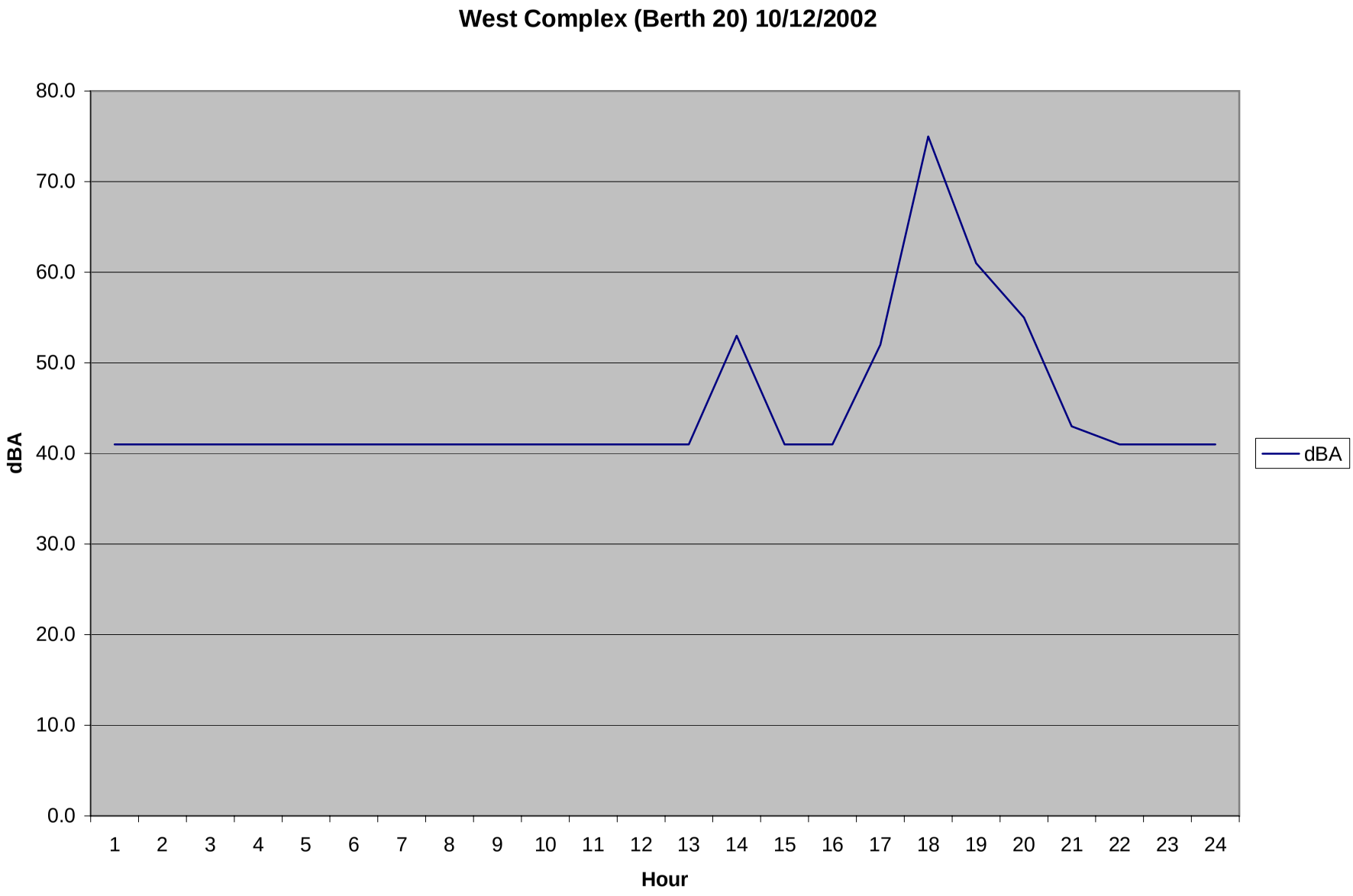
60.0
50.0
40.0
30.0
20.0
10.0
0.0
41.0 41.0 41.0 41.0 41.0 41.0 41.0 41.0 41.0 41.0 41.0 41.0 41.0 53.0 41.0 41.0 52.0 75.0 61.0 55.0 43.0 41.0 41.0 41.0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour (24 hour measurements)
Hourly Leq


West Complex (Berth 20) 10/12/2002
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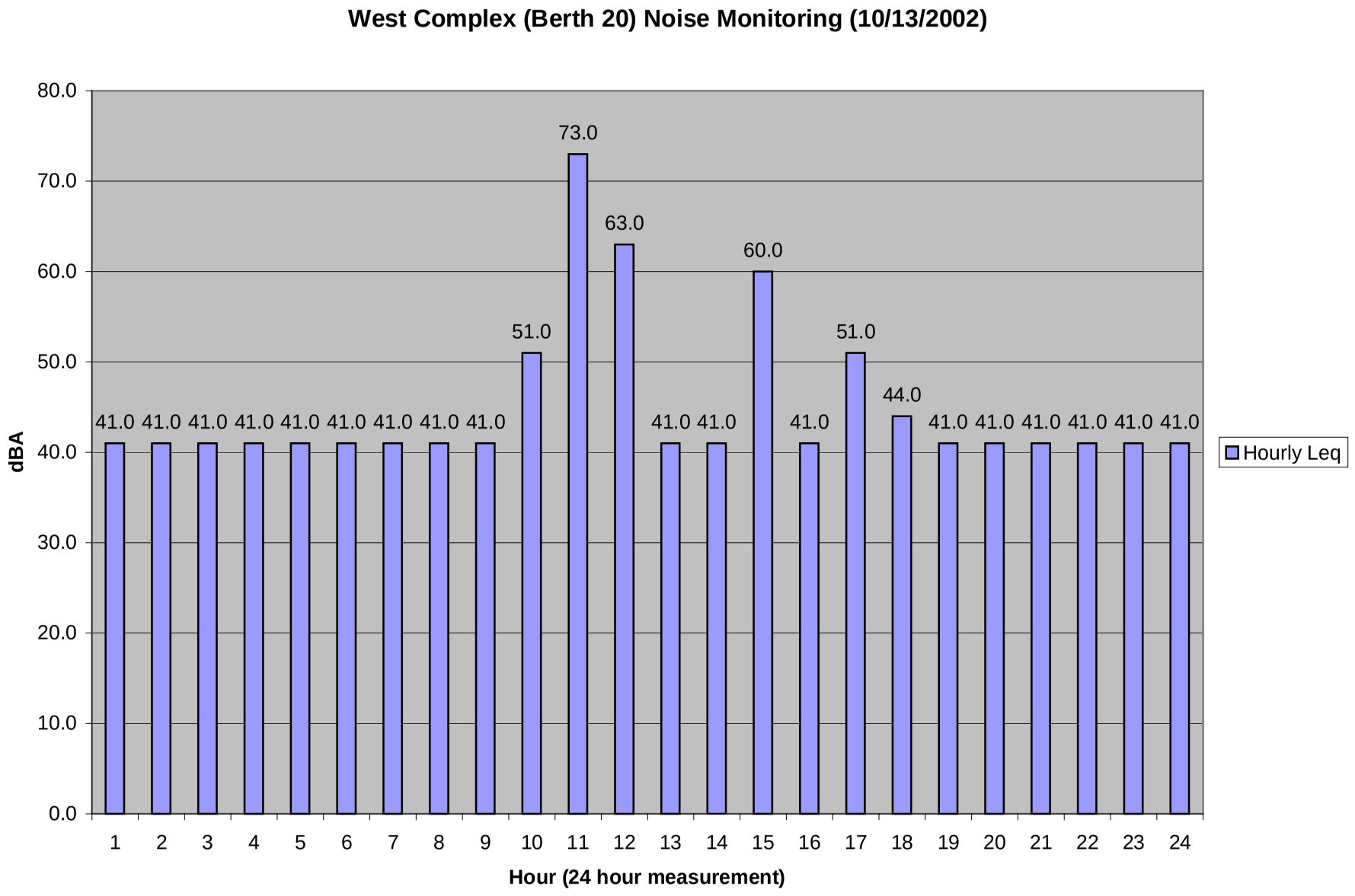
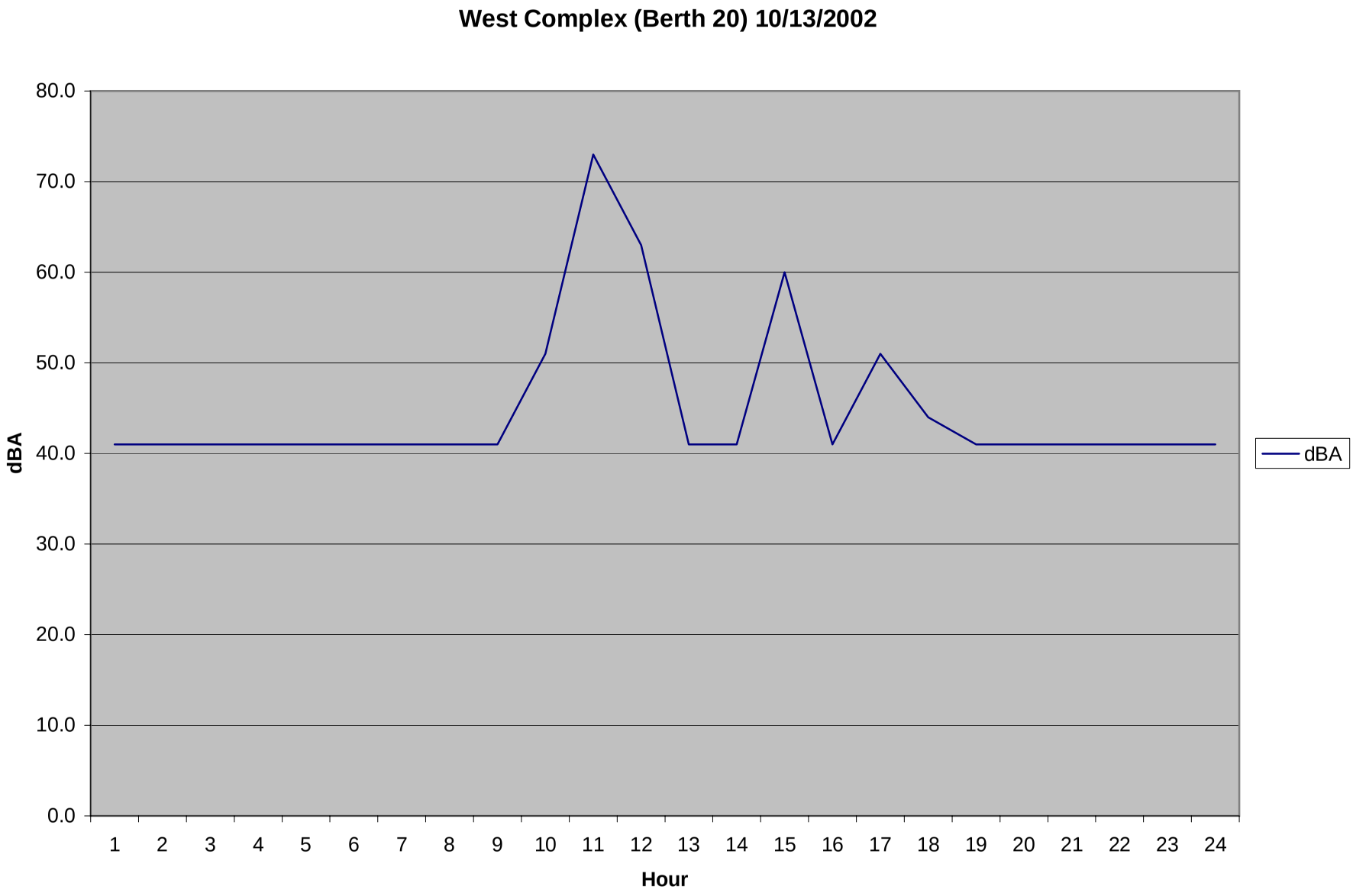
50.0
40.0
30.0
20.0
10.0
0.0
dBA
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour
dBA


West Complex (Berth 20) Noise Monitoring (10/13/2002)
dBA
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
41.0 41.0 41.0 41.0 41.0 41.0 41.0 41.0 41.0 51.0 73.0 63.0 41.0 41.0 60.0 41.0 51.0 44.0 41.0 41.0 41.0 41.0 41.0 41.0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour (24 hour measurement)
Hourly Leq


West Complex (Berth 20) 10/13/2002
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60.0
50.0
40.0
30.0
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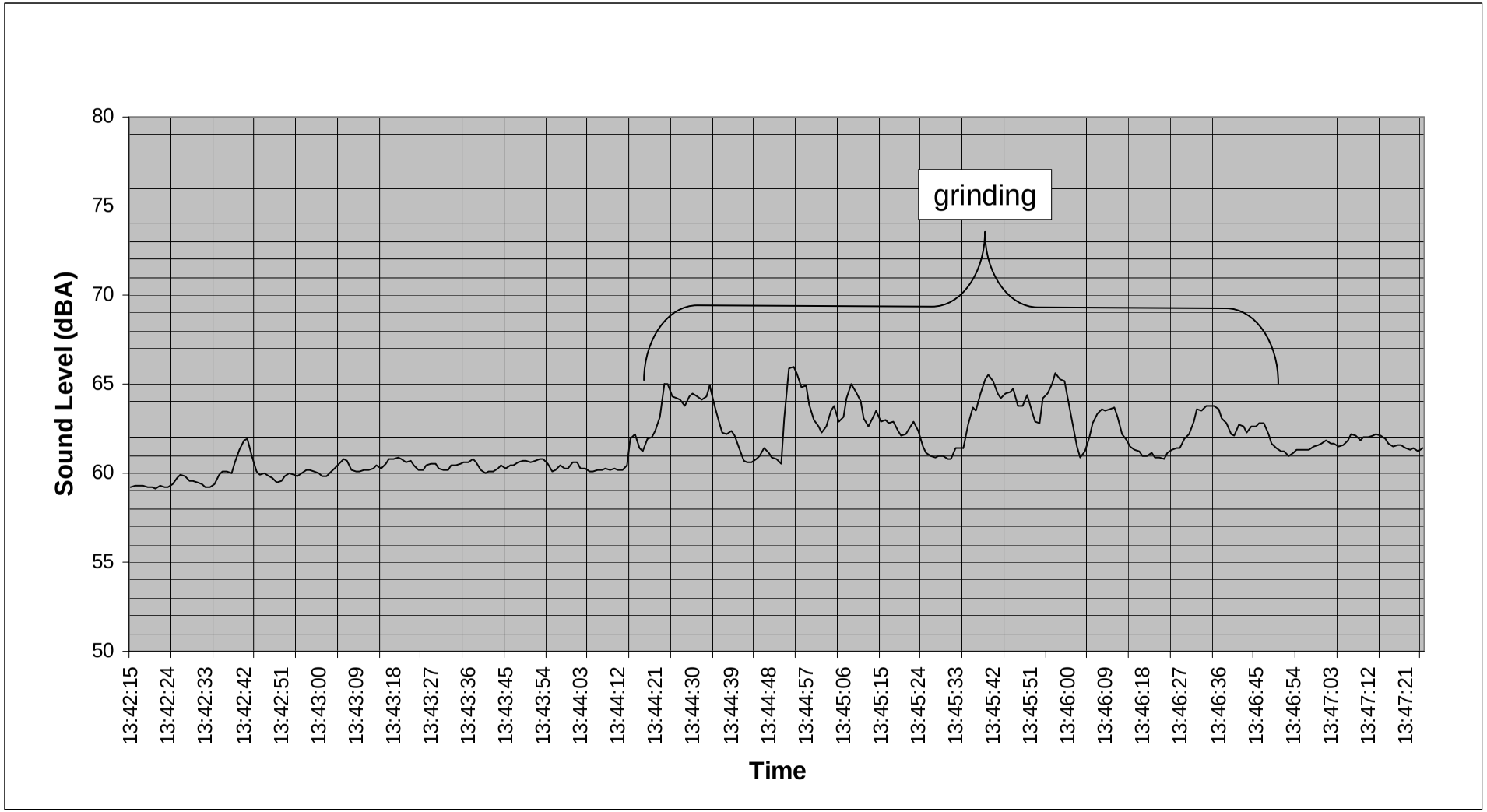
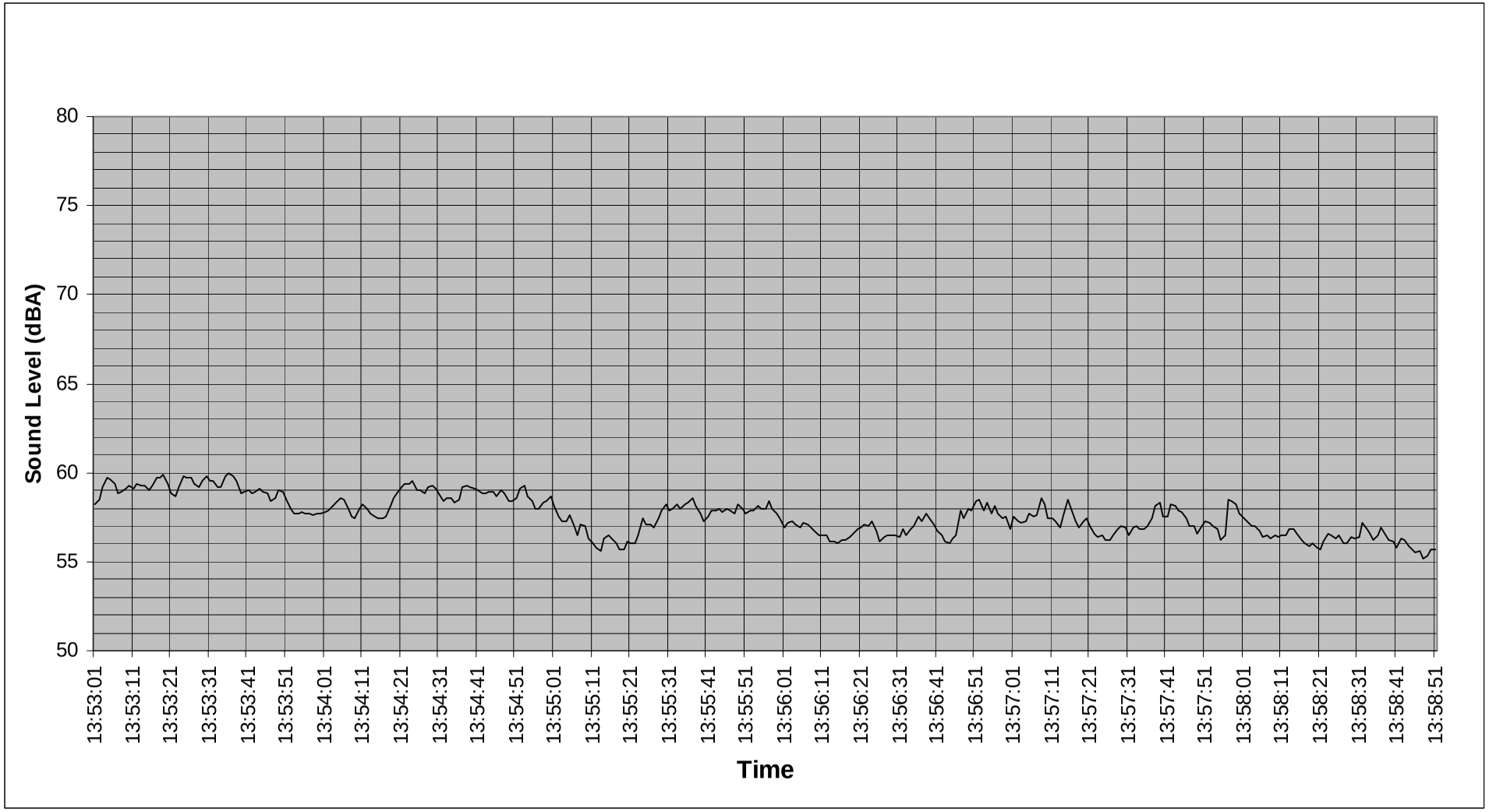
10.0
0.0
dBA
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour
dBA

Figure A-1



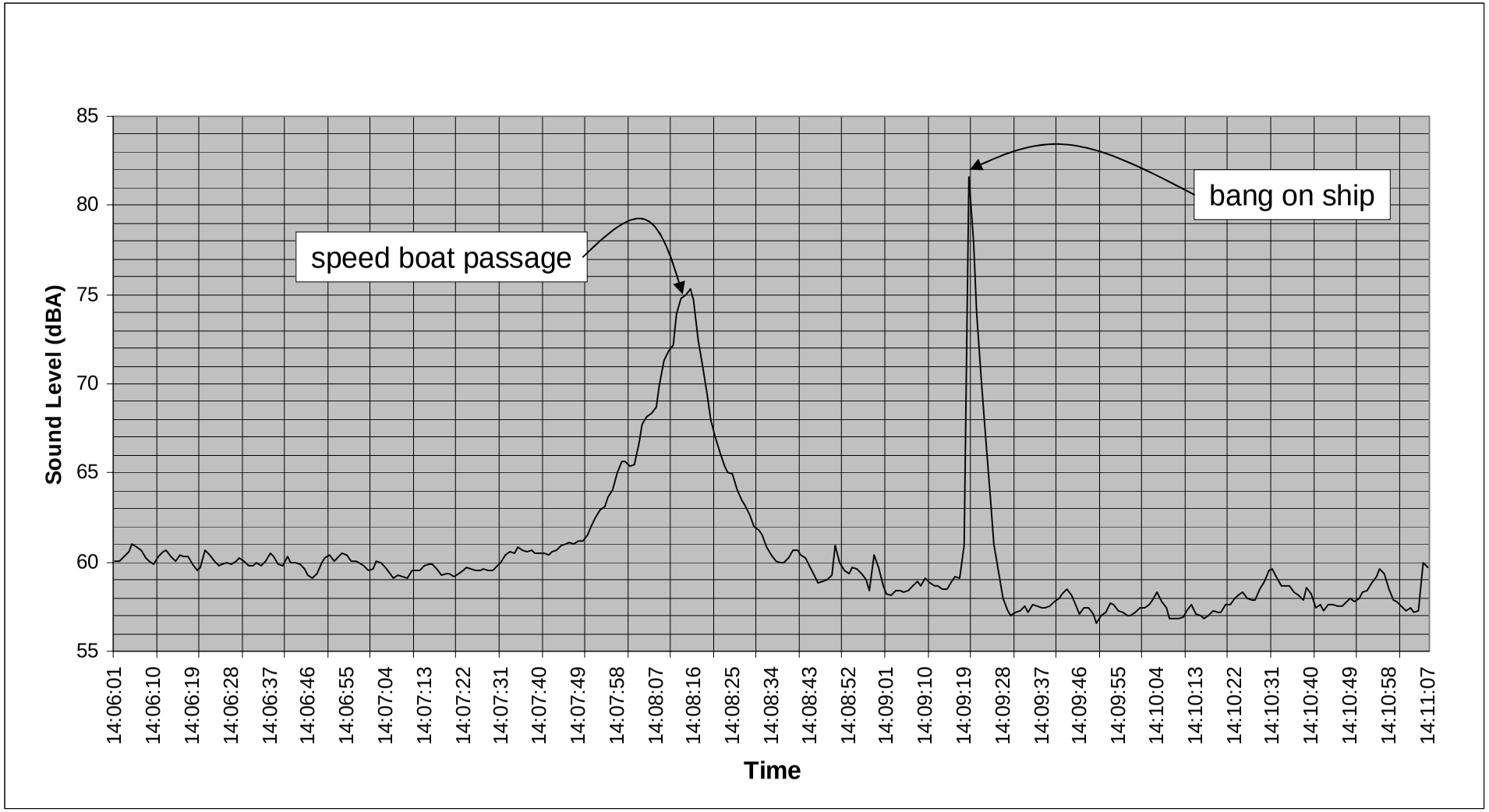
Position 1

Figure A-2



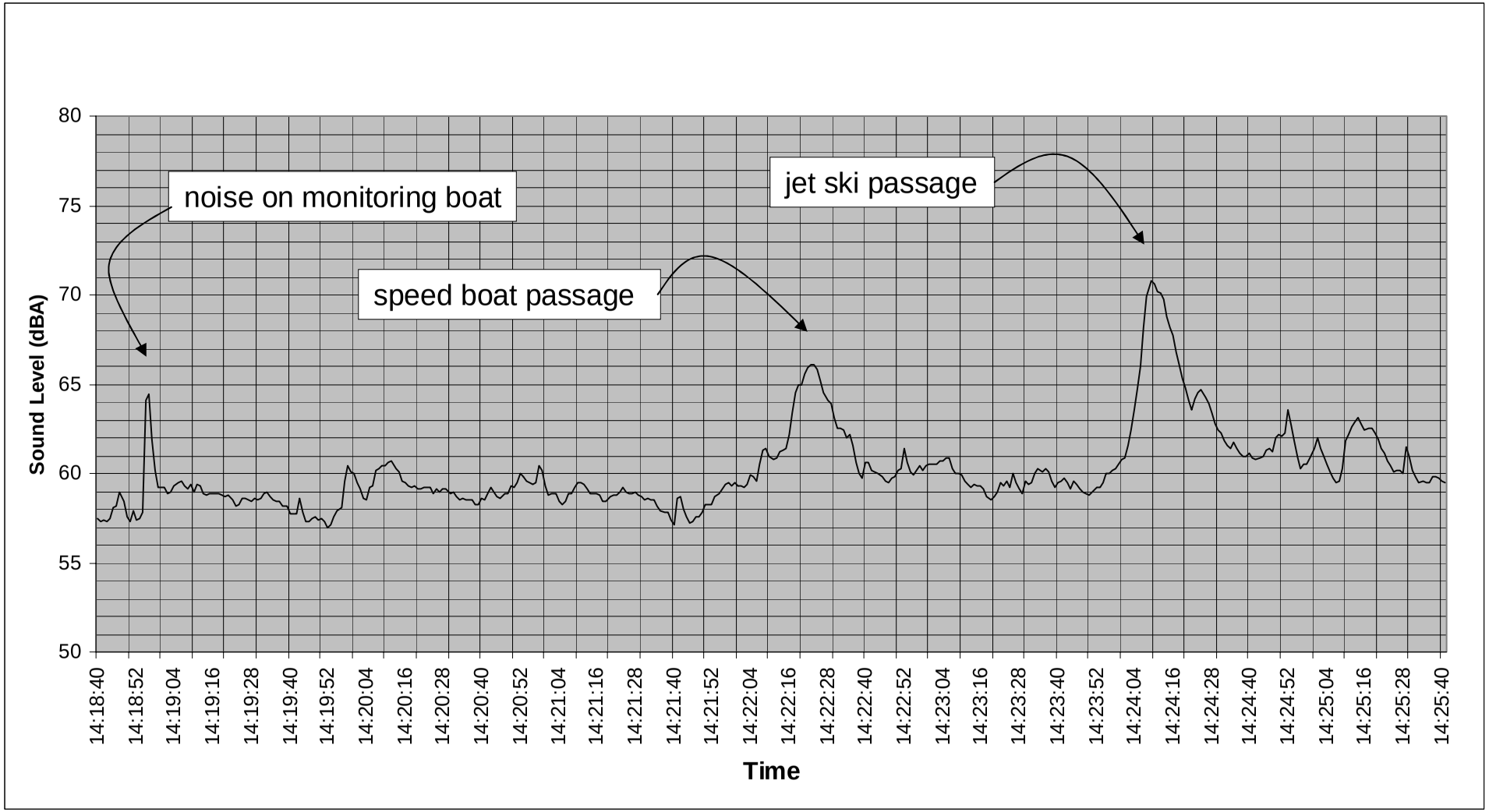
Position 2

Figure A-3



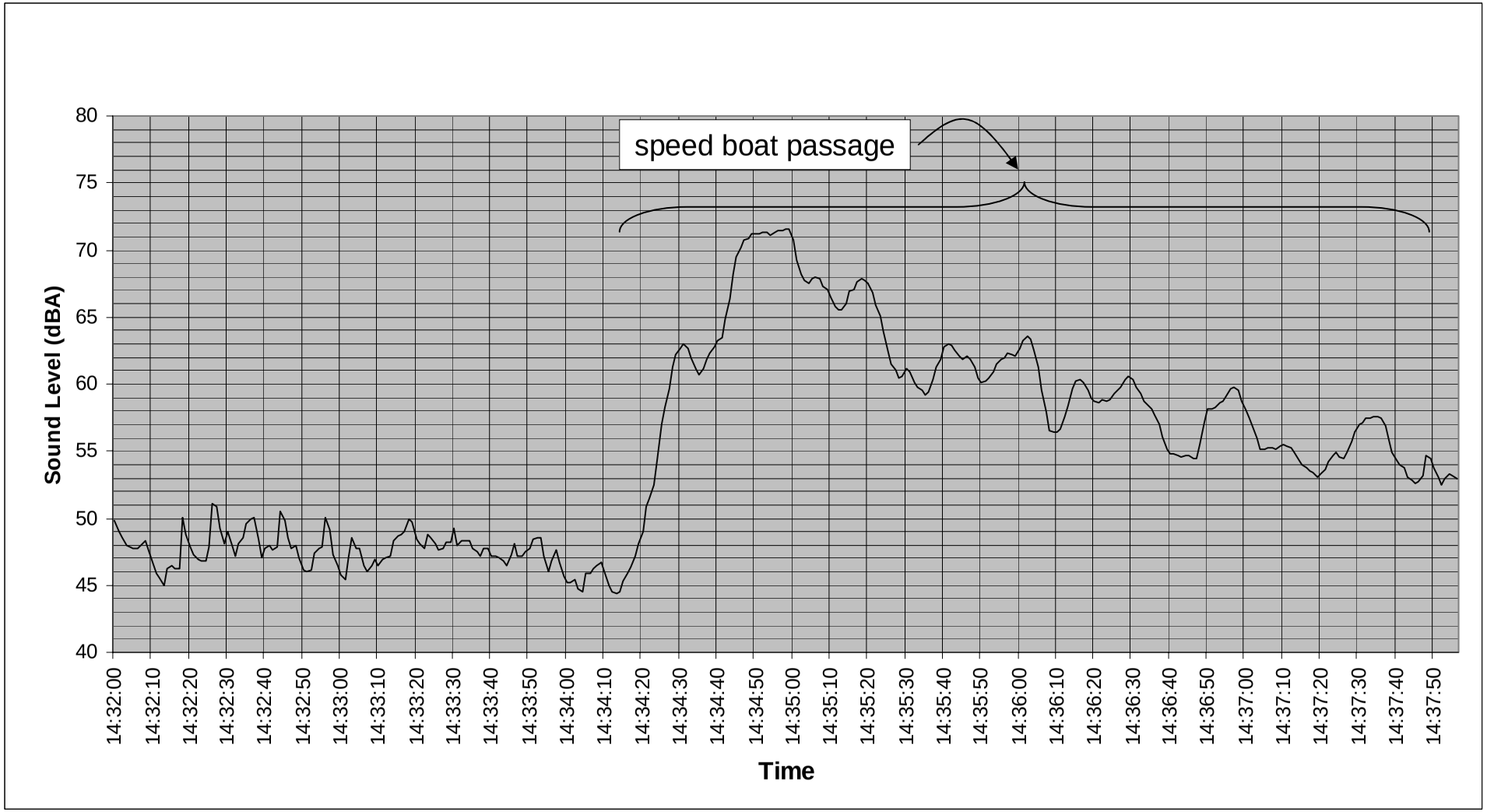
Position 3

Figure A-4



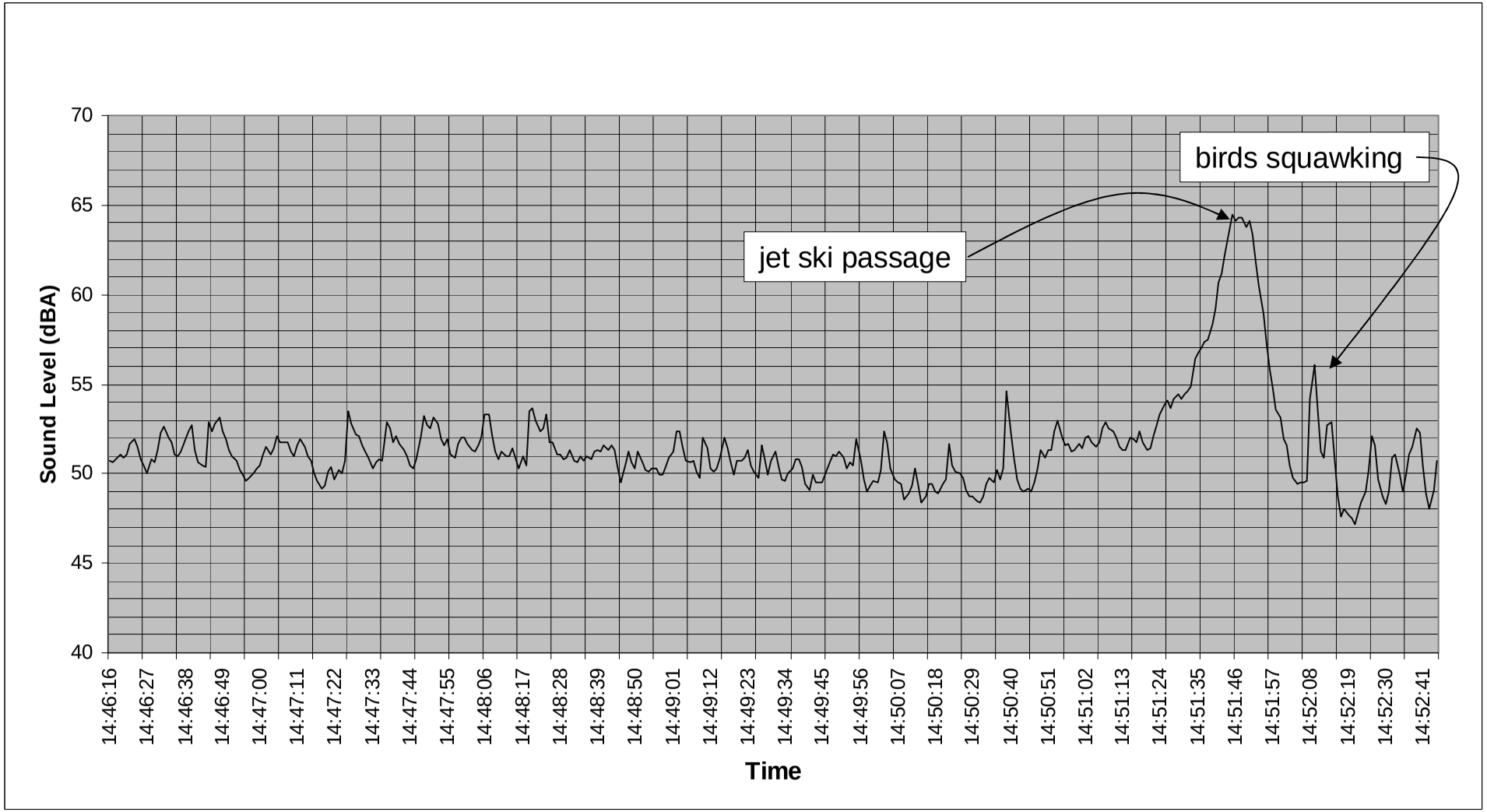
Position 4

Figure A-5



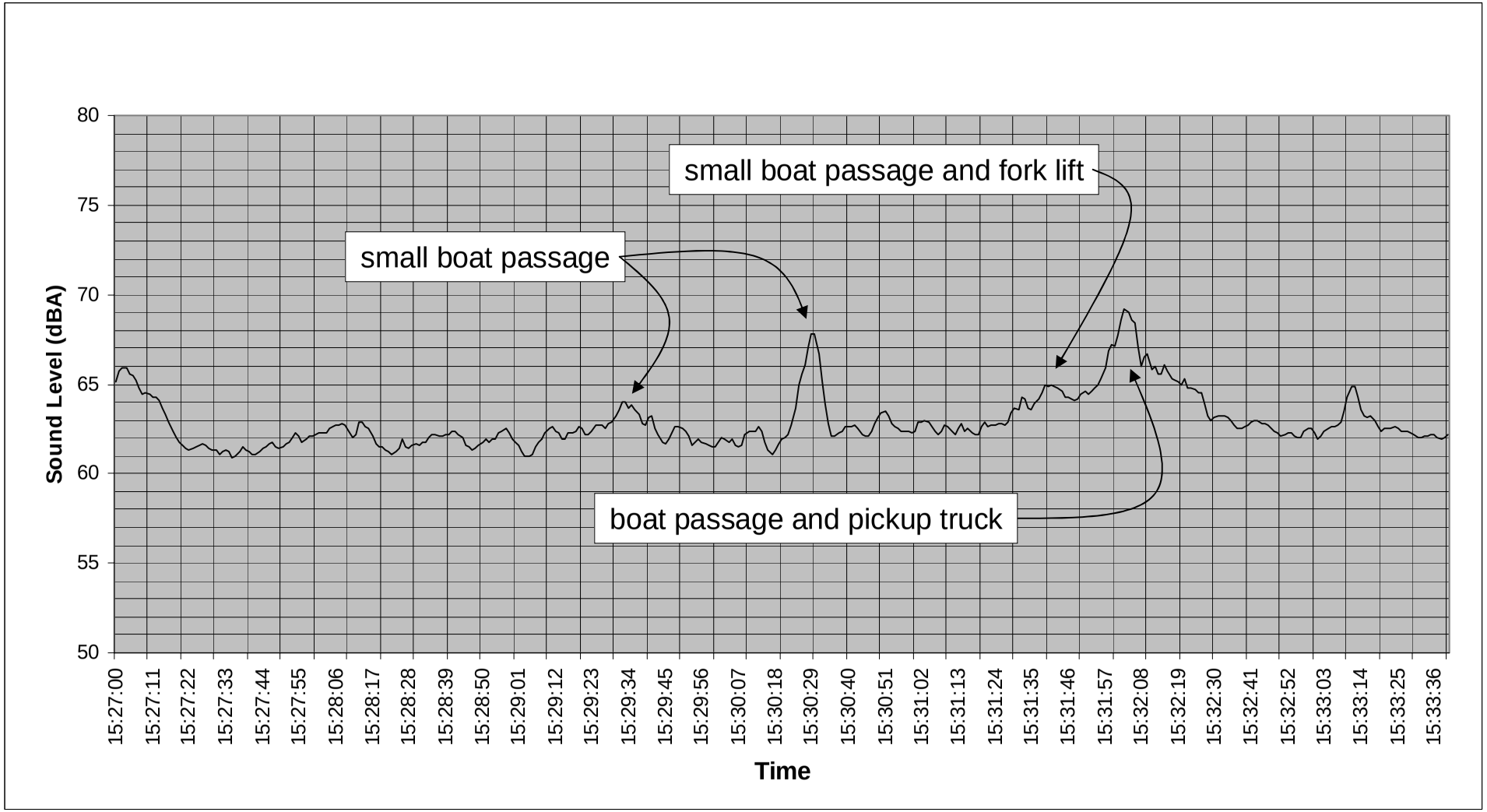
Position 5

Figure A-6



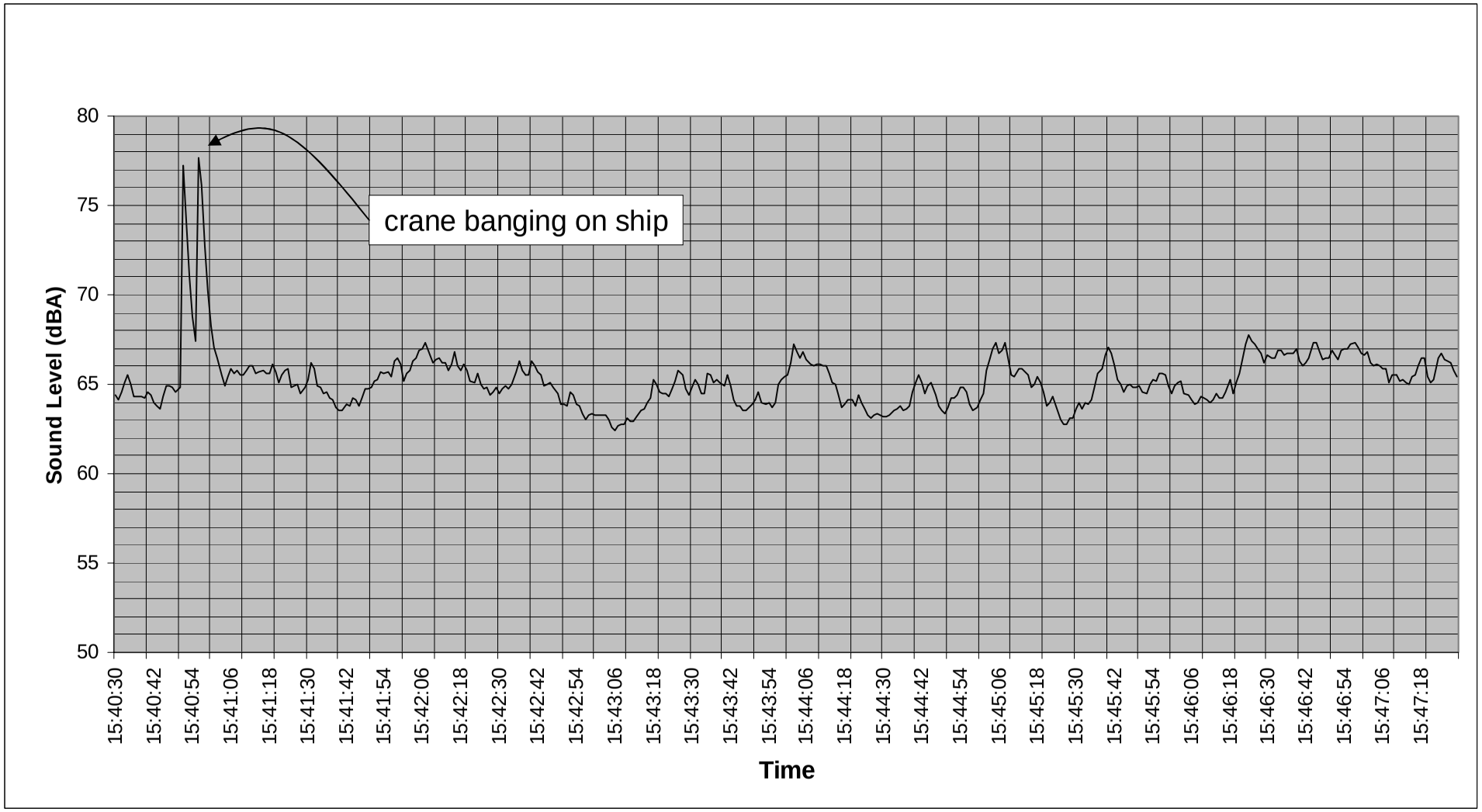
Position 6

Figure A-7



Position 7

Figure A-8



Position 8