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April 25, 2011

Mr. Craig Hoffman, CPM
(09-AFC-4C)
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

SUBJECT: Oakley Generating Station (09-AFC-4C)
TRANS-1 Construction Traffic Control Plan

Dear Mr. Hoffman:

Please find attached the Construction Traffic Control Plan for the Oakley Generating Station (OGS). The document has been submitted for Staff review, in accordance with Condition of Certification TRANS-1.

Contra Costa Generating Station LLC (CCGS LLC) acknowledges that OGS has not yet been certified by the California Energy Commission (CEC). Submittal of this compliance information is at CCGS LLC's risk and in no way implies or predisposes project certification by the CEC.

If you have any questions regarding this submittal, please do not hesitate to contact me at (916) 799-9463 or Doug Davy at (916) 286-0278.

Sincerely,

Greg Lamberg
CCGS LLC
Senior Vice President

Attachment: Construction Traffic Control Plan (09-AFC-4C)

cc: Jim McLucas, CCGS LLC
Doug Davy, CH2M HILL

DRAFT

APPLICATION FOR CERTIFICATION

Construction Traffic Control and Implementation Plan

TRANS-1

Oakley Generating Station

09-AFC-4C

April 2011

Submitted by

CCGS LLC

Submitted to

California Energy Commission

With Technical Assistance by

CH2MHILL

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Draft
TRANS-1

Construction Traffic Control and Implementation Plan

for the

Oakley Generating Station

(09-AFC-4C)

Prepared for

CCGS LLC

April 2011

CH2MHILL
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SECTION 1

Introduction

The purpose of this Construction Traffic Control and Implementation Plan, or Traffic Control Plan (TCP), is to reduce traffic impacts on the existing transportation facilities during construction of the Oakley Generating Station (OGS). The TCP was designed to satisfy the requirements for maintaining traffic and preserving the integrity of the existing local transportation facilities.

This document has been prepared to comply with Condition of Certification (COC) TRANS-1, as set forth in the California Energy Commission (CEC) Final Staff Assessment (FSA) for OGS (CEC, 2011). The TCP addresses the following requirements as stated in TRANS-1:

- **Item 1:** Construction-related vehicles other than local Oakley or Brentwood residents shall avoid the intersection of Main Street/Bridgehead Road (4:00 p.m. to 6:00 p.m.) during peak periods of construction. The intersection of Wilbur Avenue/Bridgehead Road shall be either avoided or a flagman provided during peak periods of construction between 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m. to reduce further degradation of the Level of Service (LOS) performance standard.
- **Item 2**: Temporary closure of travel lanes or disruptions to street segments, intersections, or Burlington Northern Santa Fe (BNSF) rail line operations during transmission line stringing activities or any other utility tie-ins.
- **Item 3**: Timing of heavy equipment and building materials deliveries.
- **Item 4**: Specification of construction-related haul routes, avoiding residential neighborhoods to the maximum extent feasible, and including the location of borrow or fill areas, the estimated number and frequency of trips, and the proposed schedule of hauling.
- **Item 5**: Redirecting construction traffic with a flag person or temporary restriping if required.
- **Item 6**: Signing, lighting, and traffic control device placement if required.
- **Item 7**: Assurance of access for emergency vehicles into the project site and through any construction-related temporary travel lane closures or disruptions.
- **Item 8**: Assurance of pedestrian and bicycle safety from construction vehicle travel routes and any construction-related temporary travel lane closures or disruptions.
- **Item 9**: Procedures for exiting and entering the site.
- **Item 10**: Access to residential and/or commercial property located near transmission line routes or any other utility tie-ins and any construction-related temporary travel lane closures or disruptions.

The other COCs pertaining to Traffic and Transportation are listed below. These COCs address transportation-related issues, but do not require additional focus in this TCP. Therefore, they are just provided for reference.

- **TRANS-2.** The project owner shall ensure that all temporary construction equipment over 200 feet in height shall have lighting and marking consistent with Federal Aviation Administration Advisory circular 70/7460-1 K, Obstruction Marking and Lighting, 34 (Markers) for temporary construction equipment so not to create a hazard to air navigation.
- **TRANS- 3.** Following completion of project construction, the project owner shall repair any damage to roadways affected by construction activity along with the primary roadways identified in the traffic control plan for construction traffic to the road's pre-project construction condition. Prior to the start of construction, the project owner shall photograph, videotape, or digitally record images of the roadways that will be affected by all utility line construction and heavy construction traffic. The project owner shall provide the Construction Compliance Manager (CPM), City of Oakley, Contra Costa County, and/or Caltrans with a copy of the images for the roadway segments under its jurisdiction. Also prior to start of construction, the project owner shall notify the City, Contra Costa County, and/or Caltrans about the schedule for project construction. The purpose of this notification is to postpone any planned roadway resurfacing and/or improvement projects until after the project construction has taken place and to coordinate construction-related activities associated with other projects.
- **TRANS-4.** The project owner shall comply with Caltrans, Contra Costa County, City of Oakley, and other relevant jurisdictions limitations on vehicle sizes, weights, roadway encroachment, and travel routes and obtain any permits required for these actions.
- **TRANS-5.** The project owner shall coordinate with the City of Oakley and pay the applicable Traffic Impact Fee (authorized by Ordinance No. 14-00, adopted by Resolution 49-03) and the Regional Transportation Development Impact Mitigation Fee or any future alternative regional fee adopted by the City (authorized by Ordinance No. 14-00, adopted by Resolution No. 73-05).

1.1 Project Description

The OGS (formerly known as the Contra Costa Generating Station) is a combined-cycle, natural-gas-fired power plant owned by Contra Costa Generating Station, LLC (CCGS LLC). The project is located near the junction of State Routes 4 (SR 4) and 160 (SR 160), at the intersection of Bridgehead Road and Wilbur Avenue, in the City of Oakley, Contra Costa County. The project site is approximately 3,000 feet south of the San Joaquin River, on the southwestern margin of the San Joaquin-Sacramento River Delta. The project site is in the northwestern corner of Section 22, Township 2 North, Range 2 East, Mount Diablo Base and Meridian. The project site is currently used as a vineyard, and was never developed for industrial purposes. The project area, including the power plant site, laydown area, soil stockpile areas, force main sewer line, and transmission line right-of-way (ROW) are shown in Figure 1.

This map was compiled from various scale source data and maps and is intended for use as only an approximate representation of actual locations.

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FIGURE 1-1
PROJECT LOCATION
Oakley Generating Station
Oakley, California

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Power from the facility will be transmitted 2.4 miles to Pacific Gas and Electric Company's (PG&E's) Contra Costa Substation on a new 230-kV single-circuit transmission line. Construction of this line will follow an existing PG&E transmission line right-of-way (ROW) and will consist of replacing existing steel-lattice towers with tubular steel poles and reconductoring the line. It will also be necessary to construct a new sanitary sewer force main from the project tie-in location on Bridgehead Road to the gravity main located in Main Street. Construction of this line would be within the Bridgehead Road and Main Street ROWs.

The proposed construction worker parking and laydown area for the project will be located east of the proposed project parcel, and soil from the project will be temporarily stockpiled in three areas north of the project parcel. The project site is bounded on the west by the PG&E Antioch Terminal, a large natural gas transmission hub; on the north by formerly industrial property belonging to DuPont that has been abandoned; on the east by DuPont's titanium dioxide disposal area; and to the south by a vineyard and the Burlington Northern railroad.

1.2 Existing Conditions

1.2.1 Affected Roadways

Access to the site is provided from the east and west via SR 4, the south via SR 160, and from the north via SR 160. Local access to the project site will be via Wilbur Avenue and Bridgehead Road. Workers accessing the site during construction and CCGS LLC employees accessing the site during operations are expected to travel to the site using the roadways described below.

- **SR 4 (Main Street):** SR 4 is an east-west highway that connects Contra Costa County to the San Francisco Bay Area to the west and San Joaquin County to the east. Near the project site, it is called Main Street and joins SR 160 approximately one-half mile south of the project site. According to 2009 traffic counts (the most recent counts published by Caltrans), the average daily traffic (ADT) on SR 4 in the vicinity of the project site is 23,900 vehicles per day with 5.4 percent truck traffic (Caltrans, 2011). It should be noted that the 2007 traffic counts provided in the original Application for Certification (AFC) may have been higher than the 2009 counts due to construction activities associated with the PG&E Gateway Generating Station during that time (CCGS, 2009).
- **SR 160:** SR 160 is a north-south highway that connects Contra Costa County with Sacramento County via the Antioch Bridge. According to the 2009 traffic counts, ADT on SR 160 near the project site was 11,400 vehicles per day, with truck traffic accounting for approximately 6.5 percent of all traffic (Caltrans, 2011).
- **Bridgehead Road:** Bridgehead Road is a north-south roadway that provides direct access to the project site. In the vicinity of the project site, it is an undivided two-lane road (CCGS, 2009). The City of Oakley 2009 traffic counts indicate the average daily traffic counts were 6,753 vehicles per day between Wilbur Avenue and Main Street (City of Oakley, 2011).
- **Wilbur Avenue:** Wilbur Avenue is an east-west roadway that provides access to the project site via Bridgehead Road and is under the City of Antioch's jurisdiction (CCGS,

2009). Wilbur Avenue is currently a four-lane road near the SR 160 ramps (CCGS, 2009). Studies conducted for the Marsh Landing Generating Station AFC indicated the average daily traffic in 2007 was approximately 8,800 vehicles per day near the SR 160 ramps (CCGS, 2009).

1.2.2 Railroads, Bus Routes and Bicycle Routes

Railroads

The nearest rail line is located approximately 750 feet south of the project site and crosses both Bridgehead Road and SR 160 (CCGS, 2009). This rail line is controlled by BNSF and provides commercial rail service to the area, handling 28 daily trains (CCGS, 2009). Amtrak also operates 8 to 10 daily passenger trains on the same tracks; with the closest stop in Antioch (CCGS, 2009). The nearest railroad crossing at Bridgehead Road is a grade-separated crossing (CCGS, 2009).

Bus Routes

The City of Oakley's 2002 General Plan indicates two primary types of public bus transit service in the city: school bus services and Tri-Delta Transit public bus service. School bus service operates on five routes, while public bus transit operates six routes throughout the city and beyond (CCGS, 2009). The bus lines nearest the OGS site are the following two Tri-Delta Transit lines: Rio Vista Delta Breeze Bus Route along SR 160 north of Main Street and the Tri-Delta Transit Bus Route along Main Street east of SR 160 (CCGS, 2009). These bus lines are located approximately 1,500 feet west and 2,000 feet south of the project site, respectively (CCGS, 2009).

Bicycle Routes / Pedestrian Facilities

No designated bicycle routes exist within the immediate vicinity of the project site and adjacent project area (CCGS, 2009). Sidewalks are provided in most of the new Oakley subdivisions, but there are gaps in the pedestrian system, including along Main Street in the proposed project area (CCGS, 2009).

SECTION 2

Construction Impacts

The following section identifies the potential traffic impacts associated with the construction of the OGS as identified in the CEC FSA. The anticipated construction of the generating facility, from site preparation and grading to commercial operation, is expected to take approximately 33 months.

2.1 Construction Traffic Impacts

2.1.1 Construction Workforce Traffic

Project construction will require an average of approximately 303 construction workers (CCGS, 2009). However, during months 10 through 30 of construction (the peak period), the maximum construction workforce may reach up to 729 workers (CCGS, 2009). Therefore, estimated daily construction trips during the peak construction period were used to determine potential impacts, as this would represent the worst-case construction traffic scenario. Based on experience with similar projects, it is estimated that some of the workforce will carpool and the average vehicle occupancy will be 1.5 persons per vehicle (CCGS, 2009).

2.1.2 Construction Truck Traffic

In addition to the construction workforce trips, construction-related truck traffic will contribute additional trips during project construction. Truck traffic was estimated using a passenger car equivalent (PCE) factor of 1.5 passenger cars per truck (CCGS, 2009). The greatest number of truck trips expected during construction of the project in the peak construction month is approximately 40 daily one-way truck trips; it was assumed that only five deliveries would be made during each peak hour. Truck deliveries are expected to occur on weekdays between 8:00 a.m. and 3:30 p.m.

The City of Oakley has two major truck routes (SR 4 and East Cypress Road). Main Street/SR 4 serves as the primary route for goods movements within Oakley, and is connected to the SR 4 bypass by Lone Tree Way in Brentwood and by Laurel Road in Oakley. The City of Oakley's 2020 General Plan (City of Oakley, 2002a) designates the SR 4 bypass as a future truck route that will serve as the primary route for regional goods movements in the area. Additional truck routes include East Cypress Road and Bethel Island Road. Secondary truck routes include all the arterials in the city.

The California Vehicle Code (CVC) Sections 35550–35559 regulates the use of trucks on state facilities, including SR 4/Main Street and SR 160. The City of Oakley regulates the use of trucks off its truck routes within the city.

2.1.3 Construction Traffic-related Impacts

The construction laydown and parking area will be located immediately adjacent to the project site. Therefore, no offsite traffic will be generated between the construction laydown area and the project site. The peak construction traffic generated by the project, including construction worker trips and delivery/haul truck trips, is presented in Table 2-1. Peak construction traffic during the peak month (month 23) was used to analyze the worst-case LOS scenario.

TABLE 2-1
One-Way Trips Generated by Peak Construction

Vehicle Type	Average Daily Trips	AM Peak Hour Trips	PM Peak Hour Trips
Construction Workers Trips[a b]	972	486 in; 0 out	0 in; 486 out
Delivery/Haul Trucks (PCE)[c]	120	8 in; 8 out	8 in; 8 out
Total	**1092**	**494 in; 8 out**	**494 in; 8 out**

[a] The number of construction workers expected to commute as passengers in other workers' vehicles during the peak month is 243 workers. This calculation is based on an average vehicle occupancy of 1.5 passengers per vehicle. The commuter workers are included in the total number of construction worker trips.

[b] The number of peak construction workers expected to drive their own vehicles is 486 workers. Some of these drivers would accommodate carpooling workers in their vehicles.

[c] PCE was calculated using a ratio of 1.5 passenger cars for each truck, consistent with guidelines in the Highway Capacity Manual (Transportation Research Bureau, 2000).

The project's potential traffic impacts were evaluated by analyzing roadway segments and intersections in the vicinity of the project site and comparing them to the acceptable LOS thresholds. The City of Oakley (City of Oakley, 2002a) uses LOS D as its threshold value to define maximum roadway segment capacity. Both SR 160 and SR 4/Main Street are designated as routes of regional significance in the Contra Costa County Transportation Authority's (CCTA) 2009, Countywide Comprehensive Transportation Plan (CTP) (CCTA, 2009). The LOS D threshold is used for a number of roadway types in the Countywide CTP and is therefore used here as the maximum roadway segment capacity for facilities designated as routes of regional significance.

The expected LOS, which represents the existing traffic volumes on each study area roadway segment combined with the peak-hour traffic generated during construction, was compared to the existing LOS in Table 2-2. The traffic volumes were based on the higher (more conservative) 2007 counts presented in the OGS AFC (CCGS, 2009). As shown in the table, the addition of peak project construction traffic will not result in any significant impacts on the roadway segments within the study area.

Regarding intersection LOS performance standards, the Contra Costa County 2009 CTP has no specific thresholds for intersection LOS. However, the City of Oakley Long Range Roadway Plan (City of Oakley, 2002b) establishes a threshold of LOS D at signalized intersections and a threshold of LOS E for any individual movement at unsignalized intersections for routes of regional significance. Both SR 160 and SR 4/Main Street are designated as routes of regional significance in the City of Oakley General Plan. Therefore, the more stringent City of Oakley General Plan performance threshold was used to analyze the worst-case intersection impacts for the study area intersections.

TABLE 2-2
Roadway Segments Levels of Service With and Without Project

Roadway	Segment	Existing ADT	Existing LOS	Added Vehicles	ADT with Project	LOS with Project	Threshold	Exceed Threshold?
Bridgehead Road	Between Shady Haven Trailer Park and Wilbur Ave.	9,500	D or Better	1,004	10,504	Better than LOS D	D	NO
Wilbur Avenue	Between SR 160 NB and SB ramps	10,600	D or Better	302	10,902	Better than LOS D	D	NO

		AM Peak Hour				PM Peak Hour					
Roadway	Segment	Existing LOS	Added Vehicles	Peak Hour V/C with Project	Peak Hour LOS with Project	Existing LOS	Added Vehicles	Peak Hour V/C with Project	Peak Hour LOS with Project	AM and PM Peak Hour Threshold	Exceed Threshold?
SR 4 EB	Between Hillcrest Ave. and SR 160 junction	C	173	0.62	C	C	3	0.63	C	D	NO
SR 4 WB	Between Hillcrest Ave. and SR 160 junction	B	3	0.53	B	B	173	0.53	B	D	NO
SR 160 NB	Between SR 4 East junction and Wilbur Ave.	A	173	0.13	A	A	3	0.19	A	D	NO
SR 160 SB	Between SR 4 East junction and Wilbur Ave.	A	3	0.17	A	A	173	0.18	A	D	NO
SR 160 NB	Between Wilbur Ave. and Antioch Bridge	A	2	0.10	A	A	124	0.25	A	D	NO
SR 160 SB	Between Wilbur Ave. and Antioch Bridge	A	124	0.22	A	A	2	0.16	A	D	NO
SR 160 NB	Between Antioch Bridge and SR 12 junction	B	2	N/A	B	C	124	N/A	C	D	NO
SR 160 SB	Between Antioch Bridge and SR 12 junction	C	124	N/A	C	B	2	N/A	B	D	NO

Source: CCGS, 2009.

The expected LOS, which represents the existing traffic volumes at each intersection combined with the peak hour traffic generated during construction, are compared to the existing LOS in Table 2-3. Construction traffic associated with the project would temporarily result in significant delays at both the intersections of Main Street/Bridgehead Road (PM peak hour) and Wilbur Avenue/Bridgehead Road (both AM and PM peak hours). Based on the City of Oakley's performance threshold, the LOS at these intersections during the peak hour will be unacceptable. However, it should also be noted that under existing conditions, the intersection of Main Street/Bridgehead Road already operates at an unacceptable LOS E during the PM peak hour.

2.1.4 Emergency Access

Regional and local emergency access to the project site is not expected to be affected. In the event of an emergency at the project site during construction, emergency vehicles would access the project site via the new access driveway proposed off of Bridgehead Road (CCGS, 2009). Roadways affected by project construction would be maintained at an acceptable level of service and no road closures are expected to occur between Wilbur Avenue and the new project access driveway throughout the implementation of the TCP. Therefore, the emergency vehicle access to the project site is expected to be adequate.

There are nine fire stations in the East Contra Costa County Fire Protection District (District). Eight are staffed by the county and one, located near Clayton, is a contract station. Station 93 is the primary responding fire department. Station 93 is located at 212 Second Street in Oakley and is approximately 2 miles southeast of the project site. Approximate response time from Station 93 to the project site would be 6 minutes. Mutual aid response would come from the other fire stations in the District. CCGS LLC has engaged the District regarding the project's fire protection needs and the District's ability to respond.

2.1.5 Offsite Parking

During construction, workers and construction vehicles will park at the project laydown area within the project site boundaries (CCGS, 2009). Based on this, no on-street parking is anticipated or required during construction (CCGS, 2009).

Once operational, onsite parking will be provided for all employee and maintenance vehicles (CCGS, 2009). Therefore, both construction and operation of the OGS will have no impact on public parking resources serving the area.

2.2 Operational Impacts

The facility will be permitted to operate up to 24 hours per day, 7 days per week. It is expected the project will employ approximately 22 staff, including plant operation technicians, supervisors, administrative personnel, mechanics, engineers and others in three rotating shifts. Because of the relatively low number of trips generated by the project, operations are expected to have a minimal impact on the study area roadway segments and intersections. Furthermore, it is anticipated that most of the permanent workforce will live within Contra Costa County.

TABLE 2-3
Intersections Levels of Service With and Without Project

		AM Peak Hour				PM Peak Hour					
		Existing		With Project		Existing		With Project			
Intersection	**Control**	**Delay (seconds)**	**LOS**	**Delay (seconds)**	**LOS**	**Delay (seconds)**	**LOS**	**Delay (seconds)**	**LOS**	**AM and PM Peak Hour Threshold**	**Exceed Threshold?**
Main St. and SR 160 SB Ramps	Signalized	22	C	22	C	24	C	24	C	D	NO
Main St. and SR 160 NB Ramps	Signalized	16	B	16	B	32	C	33	C	D	NO
Main St. and Bridgehead Rd.	Signalized	27	C	27	C	65	**E**	88	**F**	D	**YES** (PM peak)
Wilbur Ave. and SR 160 SB ramps	Unsignalized	13 (SB approach)	B	24 (SB approach)	C	13 (SB approach)	B	26 (SB approach)	D	D	NO
Wilbur Ave. and SR 160 NB ramps	Unsignalized	15 (NB approach)	B	12 (NB approach)	B	15 (NB approach)	B	15* (NB approach)	C	D	NO
Wilbur Ave. and Bridgehead Rd.	Unsignalized	30	D	64	**F**	20	C	62	**F**	D	**YES** (AM and PM peaks)

Source: CCGS, 2009.
*The delay has been rounded up, which explains why for the same delay in seconds, the existing and with project PM Peak Hour LOS at the intersection are different.
Bold indicates unacceptable LOS.
NB – Northbound; SB – Southbound

Other project-related trips (delivery trucks, visitors, and other business-related trips) are expected to be minimal and would occur during regular business hours. The existing state highway and county roadway system would not be affected by any increase in commute traffic associated with the operation of OGS.

Per TRANS-5, CCGS LLC will coordinate with the City of Oakley and pay the applicable Traffic Impact Fee (authorized by Ordinance No. 14-00, adopted by Resolution 49-03) and the Regional Transportation Development Impact Mitigation Fee or any future alternative regional fee adopted by the City (authorized by Ordinance No. 14-00, adopted by Resolution No. 73-05).

2.3 Linear Facilities Construction Impacts

The OGS will be connected with the regional electrical grid by a 2.4-mile-long transmission line between the project site and the existing Contra Costa Substation (CCGS, 2009). This transmission line will be placed within the existing 80-foot-wide PG&E ROW that runs between the project site and the substation (CCGS, 2009). This transmission line will cross several local roadways and SR 160 (CCGS, 2009). This transmission line upgrade will upgrade an existing line with a new 230-kV line, crossing SR 160 overhead, and replacing existing steel lattice towers with new monopoles (CH2MHILL 2010v). PG&E has designated a pull-and-tensioning site in a vineyard just west of the highway crossing for transmission line stringing (CEC, 2010).

The new sanitary sewer force main will extend south along Bridgehead Road from a point adjacent to the plant entrance road for 0.33 mile to Main Street. It will then turn eastward and run for 0.11 mile to the interconnection point with Ironhouse Sanitation District's gravity main. Construction of the sanitary sewer will take approximately one month, will require a workforce of approximately 10, and will take place during the early months of construction (months 1 through 6) using standard mechanical open trenching construction methods. The pavement will be restored in Bridgehead Road and Main Street when construction is complete. Temporary lane closures will be required along Bridgehead Road and Main Street. The provisions provided in Sections 3 and 4 of this TCP should mitigate these potential impacts.

Encroachment permits may be needed for roads that are affected by the new sewer line connections or crossed by overhead transmission line stringing, as well as where transmission line construction activities would parallel existing roads and require the use of any public ROW (for example, temporary lane closures). Per TRANS-4, CCGS LLC and the construction contractors will comply with Caltrans, Contra Costa County, City of Oakley, and other relevant jurisdiction limitations and will obtain any permit required for such activities.

SECTION 3

Traffic Control Plan

3.1 General Requirements

This section outlines the traffic control required during the construction of OGS. The traffic control is related to the impacts discussed in Section 2 and addresses the traffic control requirements for construction that have the potential to affect offsite traffic.

All construction area traffic controls implemented for road restoration and modification will conform to the requirements in the 2009 U.S. Department of Transportation Manual on Uniform Traffic Control Devices (MUTCD) (FHWA, 2009) and the 2010 *California Manual on Uniform Traffic Control Devices* (CA Supplement)(Caltrans, 2010), as well as the current edition of the *Work Area and Traffic Control Handbook* (WATCH) (APWA, 2009). Traffic control signage will be used and will be selected based on the appropriate traffic conditions, duration of operation, and physical constraints. Signage and traffic control design will follow the examples of typical applications for utility operations found in the MUTCD and CA Supplement. The following signs may be used during construction (but not limited to):

- Construction Work Ahead
- One Lane Traffic Ahead
- Right Lane Closed Ahead
- Detour
- Flagger

3.2 Traffic Control for Construction

It is anticipated that linear construction may result in temporary traffic and/or pedestrian disruption as a result of lane/shoulder/sidewalk closures needed to accommodate construction. If construction requires a lane closure that cannot maintain one travel lane in each direction, the use of flagmen would be required. The construction contractor will be required to provide traffic control to maintain a safe environment for vehicles traveling through the work zone and construction workers inside the work zone. The contractor will be required to submit details of the specific traffic control measures during construction. During excavation, the pits must be protected and drivers must be made aware of the construction ahead. The specific work hours in which the contractor may implement the TCP will need to be approved by the corresponding agency.

Per TRANS-3, upon completion of the construction of the OGS project, CCGS LLC or its contractor will repair and/or reconstruct any portions of the primary roadways used by construction traffic (namely Bridgehead Road, Main Street, and Wilbur Avenue) that have been damaged by project construction due to overweight or oversize construction vehicle or because of trenching activities. The pre-construction condition of these roads will be documented using video and submitted to the CPM, City of Oakley, Contra Costa County and/or Caltrans for review and approval. Also per TRANS-3, prior to the start of

construction, CCGS LLC will notify the City of Oakley, Contra Costa County and/or Caltrans about the schedule for project construction, so that any of their planned roadway resurfacing and/or improvement projects are postponed until after the end of the project construction, and to coordinate construction-related activities associated with other projects.

3.3 Heavy Haul Mitigation Measures

Up to 46 oversized or heavy loads would be delivered by rail during project construction. Additionally, 50 to 60 oversize/permit truckloads of materials are expected to be delivered to the site. CCGS LLC will comply with the time frames specified on the permits issued to deliver these loads. The transportation permitting process (e.g., the Caltrans oversized/overweight loads permitting process) ensures that all load/size restrictions on the roads are verified by the appropriate jurisdiction, including the validation of the route(s) to be used. The permitting process also determines if pilot vehicles are necessary to escort the oversized loads to the project site. Consideration will also be given to transit and emergency vehicle services. Passage of emergency vehicles will be granted at all times regardless of the controlled traffic conditions in place at the time. All construction area traffic controls implemented will conform to the requirements in the California MUTCD.

SECTION 4

Mitigation Strategies

To mitigate any potential traffic impacts, multiple strategies will be put into place to reduce the risk of congestion and ensure traffic safety. The TRANS-1 items listed in Section 1 have been organized into the following three mitigation strategy categories and are discussed in the following sections.

- Planning strategies (appropriate scheduling and routing of construction traffic)
- Communication strategies
- Traffic control strategies

4.1 Planning Strategies

TRANS-1, Item 1

Significant delays are expected at both the intersections of Main Street/Bridgehead Road (during the PM peak hour) and Wilbur Avenue/Bridgehead Road (during both the AM and PM peak hours). The proposed COC TRANS-1, Item 1 would mitigate those impacts to a less-than-significant level by prohibiting the use of the intersection of Main Street/Bridgehead Road between 4:00 p.m. and 6:00 p.m. for construction-related vehicles other than local Oakley or Brentwood residents. At the Wilbur Avenue/Bridgehead Road intersection between 7:00 a.m. and 9:00 a.m. and between 4:00 p.m. and 6:00 p.m., the use of this intersection will be either avoided, or a flagman will be provided. Note that the COC TRANS-1, Item 1 is applicable only when construction activities are at their peak (from Month 10 to Month 30).

TRANS-1, Item 2

Temporary closure of travel lanes is expected to occur during the construction of the sanitary sewer line and transmission line, which may disrupt street segments and intersections. Roads potentially affected include portions of Bridgehead Road, Main Street, and SR 160 as described in Section 2.3. Traffic control will be as described in TRANS-1, Item 5. The temporary closure of travel lanes will also be communicated to the operators of the BNSF railroad to minimize impacts on rail line operations during transmission line stringing activities or any other utility tie-ins.

TRANS-1, Item 3

The timing of deliveries is as follows:

- Truck deliveries are scheduled from 8:00 a.m. to 3:30 p.m.
- Permitted truck deliveries will be scheduled according to time frames specified on the permits issued.

TRANS-1, Item 4

According to COC HAZ-6, CCGS LLC will direct all vendors delivering any hazardous material to the site to use only the routes approved by the CPM (SR 4 to SR 160 to Wilbur Avenue to Bridgehead Road to the project site, or SR 4/Main Street and turn onto Bridgehead Road to the project site). CCGS LLC will obtain approval of the CPM if an alternate route is desired.

The primary truck route will follow the same route. The number of one-way deliveries per day is estimated to be approximately 40 and the proposed delivery schedule is 8:00 a.m. to 3:30 p.m. on weekdays. Materials excavated during earthwork activities will be stockpiled on the DuPont property. Onsite access routes will be used to transport the excavated materials to the soil stockpile areas. Therefore, material hauling routes will avoid residential neighborhoods.

TRANS-1, Item 8

The MUTCD provides guidance regarding pedestrians. To ensure their safety near work zones, the following measures will be utilized:

- Promote adequate pedestrian safety via physical separation from work space and vehicular traffic, overhead protection, etc.
- Provide adequate and safe detour(s) whenever sidewalks are closed or blocked. The use of signs at intersections can give advance notification of closures ahead, and inform pedestrians where to cross.
- Clear the path of debris and other items that may obstruct pedestrians' paths.
- Inspect pedestrian accommodations during construction to ensure that the TCP is followed.

TRANS-1, Item 9

The proposed project would include a new entrance lane from Bridgehead Road, just south of the intersection of Bridgehead Road and Wilbur Avenue. This would be the primary access point to the OGS. The site access has been examined to determine if any traffic control issues exist, but none have been identified. Therefore, no special procedures for exiting and entering the site have been devised.

4.2 Communication Strategies

TRANS-1, Item 7

No full closures of any public road in the project area are anticipated, but if any partial or full lane closures are needed, the contractor will be required to provide advance notification to emergency providers. Therefore, no special traffic control issues have been identified that will limit emergency access.

TRANS-1, Items 10

Coordination with business owners will be necessary when access to driveways cannot be maintained. It is expected that project construction activities associated with the force main would block driveways; however, it is expected that impacts will be short-term. CCGS LLC will notify business owners prior to construction of OGS and will work with business owners to lessen any inconvenience as much as possible. In particular, residents, businesses and hospitals that would be affected by the partial or complete road closure will receive advance notification of closure activities.

4.3 Traffic Control Strategies

TRANS-1, Item 5

The 2006 California MUTCD has a variety of typical applications for work zones, including closures with and without flaggers. If the contractor is required to reduce the roadway to one lane of travel (for example, during the construction of the linears), flagger control will be used. Flaggers will be used as necessary to control the flow of traffic through the construction area and will be used in all cases where traffic is being routed through the construction zone under one-way control. Flagger stations will be located far enough ahead of the workspace so that approaching traffic has sufficient distance to stop before entering the workspace. All flaggers will be trained as required by Cal/OSHA regulations and will be prepared to provide verification of training. The specific work hours in which the contractor may implement flag control will need to be approved by the corresponding agency.

TRANS-1, Item 6

Placement of necessary signage, lighting, and traffic control devices at the project construction site and laydown areas will be planned for as needed and implemented according to the MUTCD guidelines.

SECTION 5

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