8.10 Traffic and Transportation

8.10.1 Introduction

The Eastshore Energy Center (Eastshore) will be a nominal 115.5-megawatt (MW) intermediate/peaking load facility operating up to 4,000 hours per year using natural gas-fired reciprocating engine technology. The Eastshore facility will be located at 25101 Clawiter Road in the City of Hayward, Alameda County, California, on a 6.22 acre parcel owned by Eastshore Energy, LLC, the project owner. Major features of the Eastshore project include the following:

- Demolition of the existing site building, foundations and paved surface,
- Grading of site and installation of new foundations, piping and utility connections,
- Fourteen (14) nominal 8.4 MW (gross) Wartsila model 20V34SG natural gas-fired reciprocating engine – generator sets,
- Fourteen (14) state-of-the-art air pollution control systems representing Best Available Control Technology (BACT), one system per each of the 14 engines, consisting of a selective catalytic reduction (SCR) unit for oxides of nitrogen (NOx) control and an oxidation catalyst unit for carbon monoxide (CO) and precursor organic compounds (POC) control,
- Fourteen (14) approximately 70-foot tall stacks, each with a separate continuous emissions monitoring system (CEMS),
- Acoustically-engineered main building enclosing all 14 engines,
- Closed loop cooling system consisting of multiple fan-cooled radiator assemblies outside of the main engine building,
- Two 10,000 gallon (each) aqueous (19% by weight) ammonia storage tanks and handling system serving the SCR units,
- One raw water storage tank, approximately 35,000 gallons,
- One nominal 225–kW diesel-fired emergency black start generator,
- One (1) either electric or 7.15 MMBtu/hr natural gas-fired heater (BAAQMD exempt), used for heating of the natural gas fuel to the reciprocating engines,
- Miscellaneous ancillary equipment,
- Pre-existing onsite water and wastewater service interconnections,
- Onsite 115 kV switchyard including switchgear and step-up voltage transformers,
- Approximately 1.1-mile 115 kV single-circuit transmission line interconnecting to PG&E's Eastshore Substation,
- Approximately 200-foot offsite natural gas line connection to PG&E Line 153,

- Chain-link security fencing enclosing the facility with a secured entrance on Clawiter Road, and
- 4.65-acre temporary construction laydown and parking area located immediately across Clawiter Road from the Eastshore site.

This subsection assesses the traffic and transportation impacts associated with the construction and operation of the Eastshore. This analysis primarily examines impacts on roadway levels of service expected during both construction and operation of the Eastshore. Additional transportation factors examined in this subsection include transport of hazardous materials and public safety.

This subsection is organized as follows. Subsection 8.10.2 describes applicable laws, ordinances, regulations, and standards (LORS). Subsection 8.10.3 describes the local and regional traffic and transportation routes surrounding the Eastshore. Subsection 8.10.4 evaluates the project's impact on local traffic volumes and patterns. Subsection 8.10.5 evaluates potential cumulative impacts to traffic and transportation due to other simultaneous projects. Subsection 8.10.6 describes mitigation measures for the project. Subsection 8.10.7 lists the agency contacts used to address traffic and transportation issues. Subsection 8.10.8 discusses traffic and transportation permits required. Subsection 8.10.9 lists the references used to prepare this section.

8.10.2 Laws, Ordinances, Regulations, and Standards

Table 8.10-1 lists the federal, state, and local LORS that apply to traffic and transportation. Additional information concerning these LORS is presented below.

TABLE 8.10-1
LORS Applicable to Traffic and Transportation

LORS	Applicability	Conformance (Subsection)
Federal		
49 CFR 171-177	Govern the transportation of hazardous materials, including the marking of the transportation vehicles.	8.10.4.3.2, 8.10.7 and 8.10.8
49 CFR 350-399 and Appendices A-G	Address safety considerations for the transport of goods, materials, and substances over public highways.	8.10.4.3.2, 8.10.7 and 8.10.8
49 CFR 397.9	Establishes criteria and regulations for the safe transportation of hazardous materials.	8.10.4.3.2, 8.10.7 and 8.10.8
14 CFR 77.13(2)(i)	Requires applicants to notify Federal Aviation Administration (FAA) of construction, within 20,000 feet of an airport, greater than an imaginary surface as defined by the FAA.	8.10.2.1, 8.10.7 and 8.10.8
14 CFR 77.17	Requires applicant for construction within 20,000 feet of an airport to submit Form 7460-1 to the FAA.	8.10.2.1, 8.10.7 and 8.10.8
14 CFR 77.21, 77.23, and 77.25	Outline the obstruction standards that the FAA uses to determine whether an air navigation conflict exists for structures within 3 nautical miles of an airport.	8.10.2.1, 8.10.7 and 8.10.8

TABLE 8.10-1
LORS Applicable to Traffic and Transportation

LORS	Applicability	Conformance (Subsection)
State		
California Vehicle Code, Sections 13369, 15275, and 15278	Address the licensing of drivers and classifications of licenses required to operate particular types of vehicles, including certificates permitting the operation of vehicles transporting hazardous materials.	8.10.4.3.2 and 8.10.7
California Vehicle Code, Sections 25160 et seq.	Address the safe transport of hazardous materials.	8.10.4.3.2, 8.10.7 and 8.10.8
California Vehicle Code, Sections 2500-2505	Authorize the issuance of licenses by the Commissioner of the California Highway Patrol (CHP) to transport hazardous materials, including explosives.	8.10.4.3.2, 8.10.7 and 8.10.8
California Vehicle Code, Section 31303	Requires transporters of hazardous materials to use the shortest route possible.	8.10.4.3.2.
California Vehicle Code, Sections 31600-31620	Regulate the transportation of explosive materials.	8.10.4.3.2
California Vehicle Code, Sections 32100-32109	Requires transporters of inhalation hazardous materials or explosive materials to obtain a Hazardous Materials Transportation License.	8.10.4.3.2.
California Vehicle Code, Sections 34000-34121	Establish special requirements for transporting flammable and combustible liquids over public roads and highways.	8.10.4.3.2.
California Vehicle Code, Sections 34500, 34501, 34505, 34506, 34507, and 34510	Regulate the safe operation of vehicles, including those used to transport hazardous materials.	8.10.4.3.2, 8.10.7 and 8.10.8
California Vehicle Code, Section 35100 et seq.	Specifies limits for vehicle width.	8.10.7 and 8.10.8
California Vehicle Code, Section 35250 et seq.	Specifies limits for vehicle height.	8.10.7 and 8.10.8
California Vehicle Code, Section 35400 et seq.	Specifies limits for vehicle length.	8.10.7 and 8.10.8
California Vehicle Code, Section 35780	Requires a Single-Trip Transportation Permit to transport oversized or excessive loads over state highways.	8.10.7 and 8.10.8
The California Streets and Highways Code, Sections 660, 670, 1450, 1460 et seq. 1470	Require encroachment permits for projects involving excavation in city streets.	8.10.7 and 8.10.8
California State Planning Law, Government Code Section 65302	Requires each city and county to adopt a General Plan consisting of seven mandatory elements to guide its physical development, including a circulation element.	8.10.2.3
California Department of Transportation Manual on Uniform Traffic Control Devices	Specifies standards for construction in the public right-of-way.	8.10.2.3, 8.10.7 and 8.10.8

TABLE 8.10-1
LORS Applicable to Traffic and Transportation

LORS	Applicability	Conformance (Subsection)
Local		
The City of Hayward General Plan Circulation	The plan sets forth 15 goals that address regional traffic on freeways and major arterials promoting public transit and alternate modes of transportation.	8.10.3, 8.10.4 and 8.10.6
Truck Permits – Over Length, Width, Height, or Weight	The City of Hayward requires a permit before operating any oversize and/or overweight vehicles within the City.	8.10.7 and 8.10.8

8.10.2.1 Federal

- Title 49, Code of Federal Regulations (CFR), Sections 171-177, govern the transportation of hazardous materials, the types of materials defined as hazardous, and the marking of the transportation vehicles. The project will conform to this law by requiring that shippers of hazardous materials use the required markings on their transportation vehicles.
- Title 49 CFR, Sections 350-399, and Appendices A-G, Federal Motor Carrier Safety Regulations, address safety considerations for the transport of goods, materials, and substances over public highways. The project will comply with all standards for the transportation of goods, materials, and substances over public highways.
- Title 49 CFR, Section 397.9, the Hazardous Materials Transportation Act of 1974, directs the United States Department of Transportation to establish criteria and regulations for the safe transportation of hazardous materials. The project will comply with all standards for the transportation of hazardous materials.
- Title 14, CFR, Section 77.13(2)(i), requires an applicant to notify the Federal Aviation Administration (FAA) of the construction of structures within 20,000 feet of the nearest point of the nearest runway of an airport with at least one runway longer than 3,200 feet. Hayward Executive Airport (HWD) is approximately 8,500 feet (1.6 miles) north of the project site. Runway 10R/28L is approximately 5,700 feet long, and Runway 10L/28R is approximately 3100 feet long. The project will comply with this requirement by submitting the Notice of Proposed Construction or Alteration (FAA Form No. 7460-1) to the FAA.
- Title 14, CFR, Section 77.17, requires an applicant to submit a Notice of Proposed Construction or Alteration (FAA Form No. 7460-1) to the FAA for construction within 20,000 feet of the nearest runway of an airport with at least one runway longer than 3,200 feet. Hayward Executive Airport (HWD) is approximately 8,500 feet (1.6 miles) north of the project site. Runway 10R/28L is approximately 5,700 feet long and Runway 10L/28R is approximately 3100 feet long. The project will comply with this requirement by submitting the Notice of Proposed Construction or Alteration (FAA Form No. 7460-1) to the FAA.

- Title 14, CFR, Sections 77.21, 77.23, and 77.25, outline the criteria used by the FAA to determine whether an obstruction will create an air navigation conflict. The project will comply with this requirement by determining if any of the structures will create an air navigation conflict.

8.10.2.2 State

- California Vehicle Code, Sections 13369, 15275, and 15278, address the licensing of drivers and classifications of licenses required to operate particular types of vehicles. In addition, certificates permitting the operation of vehicles transporting hazardous materials are addressed. The project will conform to this law by requiring shippers to obtain required licenses and certificates.
- California Vehicle Code, Sections 25160 et seq., address the safe transport of hazardous materials. The project will comply with safety requirements.
- California Vehicle Code, Sections 2500-2505, authorize the issuance of licenses by the Commissioner of the California Highway Patrol (CHP) to transport hazardous materials, including explosives.
- California Vehicle Code, Section 31303, requires that hazardous materials be transported on the state or interstate highway that offers the shortest overall transit time possible. The project will conform to this law by requiring shippers of hazardous materials to use the shortest route feasible to and from the project site.
- California Vehicle Code, Sections 31600-31620 regulate the transportation of explosive materials. The project will comply with these regulations.
- California Vehicle Code, Sections 32100-32109, establish special requirements for the transportation of substances presenting inhalation hazards and poisonous gases. California Vehicle Code, Section 32105 requires that shippers of inhalation hazardous or explosive materials contact the California Highway Patrol (CHP) and apply for a Hazardous Material Transportation License. The project will conform to this law by requiring shippers of these types of material to obtain the Hazardous Material Transportation License.
- California Vehicle Code, Sections 34000-34121, establish special requirements for transporting flammable and combustible liquids over public roads and highways. The project will comply with these requirements.
- California Vehicle Code, Sections 34500, 34501, 34501.2, 34501.3, 34501.4, 34501.10, 34505.5-7, 34506, 34507.5, and 34510-11, regulate the safe operation of vehicles, including those used to transport hazardous materials. The project will comply with these regulations.
- California Vehicle Code, Sections 35100-35559, specify limits for vehicle width, height, length, and gross weight. Specifically, Section 35550 states: "The gross weight imposed upon the highway by the wheels on any one axle of a vehicle shall not exceed 20,000 pounds and the gross weight upon any one wheel, or wheels, supporting one end of an axle, and resting upon the roadway, shall not exceed 10,500 pounds." The project will comply with these requirements by limiting vehicle sizes and gross weights to the

specified limits or by obtaining a Single-Trip Transportation Permit for oversized or excessive loads over state highways, as described in the next paragraph.

- California Vehicle Code, Section 35780, requires a Single-Trip Transportation Permit to transport oversized or excessive loads over state highways. The permit can be acquired through the California Department of Transportation. This law is enforced by the CHP. The project will conform to this law by requiring that shippers obtain a Single-Trip Transportation Permit for oversized loads for each vehicle.
- The California Streets and Highways Code, Sections 660, 670, 1450, 1460 et seq. 1470, require encroachment permits for projects involving excavation in city streets. This law is generally enforced at the local level. The project will comply with this requirement by obtaining an encroachment permit from the City of Hayward Building Inspection Division.
- California State Planning Law, Government Code Section 65302, requires each city and county to adopt a General Plan consisting of seven mandatory elements to guide its physical development. Section 65302(b) requires that a circulation element be one of the mandatory elements. The scope of a circulation element consists of the "general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and other local public utilities and facilities, all correlated with the land use element of the plan." The City has prepared a General Plan; therefore, no action is required by the Applicant.
- California Department of Transportation Manual on Uniform Traffic Control Devices specifies standards for construction in the public right-of-way. It also requires that a temporary traffic control plan be provided for "continuity of function (movement of traffic, pedestrians, bicyclists, transit operations), and access to property/utilities" during any time the normal function of a roadway is suspended. All construction in the public right-of-way will comply with the specified standards.

8.10.2.3 Local

- The City of Hayward General Plan Circulation Element discusses and analyzes the movement of people and goods throughout and around the City of Hayward. The General Plan sets forth 15 goals that address regional traffic on freeways and major arterials promoting public transit and alternate modes of transportation. The Circulation Element goal that is relevant to Eastshore is the goal of maintaining acceptable levels of service (LOS) on city roads (at LOS E or greater). Eastshore will implement a traffic management plan during construction to reduce impacts to nearby roads to insignificant levels to conform to this goal.
- The City of Hayward requires a permit before operating any oversize and/or overweight vehicles within the City. The project will comply with the "Truck Permits – Over Length, Width, Height, or Weight" requirements by obtaining the permit from the City of Hayward Police Department before operating any oversize and/or overweight vehicles within the City.

8.10.3 Affected Environment

The Eastshore will be located in the City of Hayward, Alameda County. The project site is located in a densely-developed industrial and commercial area. The project site is zoned industrial and is currently occupied by a vacant warehouse building that is slated for demolition and a parking lot. Berkeley Farms operates its central milk products processing facility directly southeast of the site. This area is served by an extensive transportation system, including major freeway, highway, airport, and rail facilities.

8.10.3.1 Surrounding Roadway Network

The surrounding regional and local roadway networks are shown in Figures 8.10-1 and 8.10-2, respectively. There are no vehicle weight and load restrictions on the regional and local roadways that will be used as the primary routes to the project site. The City of Hayward estimates that truck traffic on roadways near the project site represents 12 percent of all daily vehicle traffic.

Regional access to the City is provided via the Interstate 880 (I-880) and State Route 92 (SR-92) freeways, which traverse through the center of the City in the north-south and the east-west direction, respectively. Local roadways in the Eastshore vicinity include Clawiter Road, Depot Road, Diablo Avenue, Enterprise Avenue, Falcon Avenue, Industrial Boulevard, and Viking Street. Local roadways in the vicinity of the PG&E Eastshore Substation include Arden Road, Corporate Avenue, Eden Landing Road, Investment Boulevard, Point Eden Way, and Production Avenue.

8.10.3.2 Existing Traffic Conditions

The Eastshore employees and construction workers commuting during the construction of the project may affect the roadways described below in the vicinity of the project site:

- I-880 is an eight-lane north-south freeway from Oakland to San Jose, which passes east of the project site. I-880 has one southbound High Occupancy Vehicle (HOV) lane and one northbound HOV lane in the project vicinity. The Eastshore can be accessed from I-880 via SR-92.
- SR-92 is an east-west highway from Hayward to Half Moon Bay, which passes south of the project site. In the vicinity of the project site, it is a six- to eight-lane freeway. SR-92 has an HOV lane on the westbound approach from Hesperian Boulevard to the San Mateo Bridge toll plaza. The Eastshore can be accessed via interchanges at Clawiter Road and Industrial Boulevard.
- Clawiter Road is a two-lane north-south arterial providing direct access to SR-92. The ramp terminal intersections at the Clawiter Road/Breakwater Avenue, Clawiter Road/Depot Road, and the Clawiter Road/Industrial Boulevard intersections are the only signalized intersections on Clawiter Road in the Eastshore vicinity. All other intersections are stop-controlled. Clawiter Road is located immediately to the east of the project site and will be used by all the Eastshore construction and operations traffic to access the facility.
- Depot Road is a two- to four-lane east-west arterial connecting Hesperian Boulevard and Industrial Boulevard to the east and terminating approximately 1 mile west of the Clawiter Road and the project site. Depot Road is located immediately to the north of the project site.

- Industrial Boulevard is a four-lane northwest-southeast arterial providing direct access to SR-92. All intersections along Industrial Boulevard in the project vicinity are signalized. Industrial Boulevard terminates at Clawiter Road, 0.25 mile north of the project site.
- Diablo Avenue, Enterprise Avenue, Falcon Avenue, and Viking Street are two-lane collectors in the Eastshore vicinity. Diablo Avenue is immediately to the south and Viking Street is immediately to the west of the project site.
- Arden Road, Corporate Avenue, Eden Landing Road, Investment Boulevard, Point Eden Way, and Production Avenue are located south of the Eastshore project site. They provide access to the local commercial/industrial area, including the PG&E Eastshore Substation, immediately to the south of SR-92. These two-lane roadways are designated as collector streets. None of the intersections is signalized. These roadways were not analyzed due to low existing traffic volumes and minimal Eastshore construction and operations traffic effects.

To assess the potential impacts of the Eastshore employees and construction workers, the following seven intersections and were evaluated:

- Clawiter Road and West Street
- Clawiter Road and Industrial Boulevard
- Clawiter Road and Depot Road
- Industrial Boulevard and Depot Road
- Clawiter Road/Breakwater Avenue at SR-92 Westbound ramps
- Clawiter Road/Eden Landing Road at SR-92 Eastbound ramps
- Industrial Boulevard/Cryer Street at SR-92 Westbound ramps

Existing morning and afternoon peak-hour turning movement volumes for the adjacent street system at these intersections and existing daily average and peak volumes on selected roadway segments were obtained from Caltrans and City of Hayward traffic volume counts. Existing morning and afternoon peak-hour turning movement counts are illustrated in Figures 8.10-3 and 8.10-4, respectively.

Traffic conditions were evaluated using the Synchro software (Trafficware, Version 6). Synchro is a traffic operations analysis tool that incorporates analytical tools from the industry-standard 2000 Highway Capacity Manual (HCM) and the Intersection Capacity Utilization (ICU) method. The ICU calculation sums the amount of time required to serve all movements at saturation for a given cycle length and divides by that reference cycle length. This indicates how much reserve capacity is available or how much the intersection is overcapacity. The ICU does not predict delay, but it can be used to predict how often an intersection will experience congestion. ICU LOS is identified through a letter designation, varying from LOS A to LOS H, as described in Table 8.10-2.

TABLE 8.10-2
Intersection Capacity Utilization (ICU) Level of Service (LOS) Ranges

LOS	ICU	Traffic Flow Characteristics
A	≤ 0.55	The intersection has no congestion. A cycle length of 80 seconds or less will move traffic efficiently. All traffic should be served on the first cycle. Traffic fluctuations, accidents, and lane closures can be handled with minimal congestion. This intersection can accommodate up to 40% more traffic on all movements.
B	0.55 < ICU ≤ 0.64	The intersection has very little congestion. Almost all traffic will be served on the first cycle. A cycle length of 90 seconds or less will move traffic efficiently. Traffic fluctuations, accidents, and lane closures can be handled with minimal congestion. This intersection can accommodate up to 30% more traffic on all movements.
C	0.64 < ICU ≤ 0.73	The intersection has no major congestion. Most traffic should be served on the first cycle. A cycle length of 100 seconds or less will move traffic efficiently. Traffic fluctuations, accidents, and lane closures may cause some congestion. This intersection can accommodate up to 20% more traffic on all movements.
D	0.73 < ICU ≤ 0.82	The intersection normally has no congestion. The majority of traffic should be served on the first cycle. A cycle length of 110 seconds or less will move traffic efficiently. Traffic fluctuations, accidents, and lane closures can cause significant congestion. Suboptimal signal timings cause congestion. This intersection can accommodate up to 10% more traffic on all movements.
E	0.82 < ICU ≤ 0.91	The intersection is right on the verge of congested conditions. Many vehicles are not served on the first cycle. A cycle length of 120 seconds is required to move all traffic. Minor traffic fluctuations, accidents, and lane closures can cause significant congestion. Suboptimal signal timings can cause significant congestion. This intersection has less than 10% reserve capacity available.
F	0.91 < ICU ≤ 1.00	The intersection is over capacity and likely experiences congestion periods of 15 to 60 minutes per day. Residual queues at the end of green are common. A cycle length over 120 seconds is required to move all traffic. Minor traffic fluctuations, accidents, and lane closures can cause increased congestion. Suboptimal signal timings can cause increased congestion.
G	1.00 < ICU ≤ 1.09	The intersection is 10% to 20% over capacity and likely experiences congestion periods of 60 to 120 minutes per day. Long queues are common. A cycle length over 120 seconds is required to move all traffic. Motorists may be choosing alternate routes, if they exist, or making fewer trips during the peak hour. Signal timings can be used to “ration” capacity to the priority movements.
H	1.09 < ICU	The intersection is 20% over capacity and could experience congestion periods of over 120 minutes per day. Long queues are common. A cycle length over 120 seconds is required to move all traffic. Motorists may be choosing alternate routes, if they exist, or make fewer trips during the peak hour. Signal timings can be used to “ration” capacity to the priority movements.

Source: Trafficware, Intersection Capacity Utilization 2003.
(The ICU 2003 is designed to be compatible with the HCM. The default saturated flow rates and volume adjustments are the same as those recommended by the HCM.)

The City of Hayward General Plan Circulation Element classifies intersection operating conditions as acceptable if at LOS D or better, marginal if at LOS E, and unacceptable if at LOS F. Therefore, LOS E is considered to be the limit of acceptable delay for intersections in the City of Hayward. ICU values for intersections in the vicinity of the Eastshore are presented in Table 8.10-3. All intersections operate at acceptable LOSs during the morning and afternoon peak hours.

TABLE 8.10-3
ICU Summary—Existing Conditions

Intersection	AM ICU	AM LOS	PM ICU	PM LOS
Clawiter Road and West Street	0.33	A	0.47	A
Clawiter Road and Industrial Boulevard	0.42	A	0.59	B
Clawiter Road and Depot Road	0.41	A	0.60	B
Industrial Boulevard and Depot Road	0.56	B	0.50	A
Clawiter Road/Breakwater Avenue at SR-92 Westbound ramps	0.71	C	0.79	D
Clawiter Road/Eden Landing Road at SR-92 Eastbound ramps	0.65	C	0.77	D
Industrial Boulevard/Cryer Street at SR-92 Westbound ramps	0.75	D	0.73	C

Table 8.10-4 lists the existing design capacities, average daily traffic (ADT), truck percentages, peak hour traffic, volume-to-capacity (V/C) ratios, and LOSs on the roadway segments that may be affected by the project during its operation, as well as during construction (City of Hayward, 2005; Caltrans, 2005). Freeway capacities were based on 2,000 vehicles/lane/hour; highway capacities were based on 1,800 vehicles/lane/hour; and arterial and collector capacities were based on 800 vehicles/lane/hour. Peak hour distribution was determined for individual segments based on data obtained from Caltrans and City of Hayward traffic volume counts. The LOS for each roadway segment was determined based on the afternoon peak direction volumes.

The City of Hayward General Plan Circulation Element specifies LOS D as the minimum acceptable LOS for roadway segments in the City of Hayward. All roadways, except I-880 between Winton Avenue and Tennyson Road and Clawiter Road between Industrial Boulevard and SR-92 westbound ramps, operate at an acceptable LOS.

8.10.3.3 Public Transit

Public transit service in the City of Hayward is primarily provided by BART and AC Transit. Figure 8.10-5 shows public transit in the vicinity of the Eastshore project site. There are three BART lines: Freemont-Richmond, Freemont-Daly City/Colma, and Dublin/Pleasanton-Daly City/Colma. These lines serve three stations: Hayward, South Hayward, and Castro Valley, all located approximately 5 miles east of the project site.

AC Transit provides service through the East Bay, as well as express service across the Dumbarton Bridge and Bay Bridge to San Francisco. Bus Line 83 and Line 86 run in the immediate vicinity of the project site and connect Hayward and South Hayward BART stations. Line 83 runs every 30 minutes during morning and evening peak commute hours and every hour during off-peak hours. Line 86 provides service every 30 minutes only during morning and evening peak hours. Line 83 runs along Clawiter Road, while Line 86 runs along Depot Road and Industrial Boulevard in the project vicinity. Bus stops are located at Clawiter Road and Industrial Boulevard and Depot Road and Industrial Boulevard.

TABLE 8.10-4
Existing Roadway Daily Volume/Capacity Assessment

Roadway Segment	Between	Road Class	Median	Number of Lanes	ADT	Percent Truck	Peak Design Capacity	Peak Hour Demand	Peak V/C	Peak LOS
I-880	Winton & SR-92	Freeway	Divided	8	256,000	7.0%	2,000	16,900	1.08	F
I-880	SR-92 & Tennyson	Freeway	Divided	8	229,000	6.7%	2,000	14,900	0.95	E
SR-92	I-880 & Hesperian	Highway	Divided	8	109,000	7.0%	1,800	9,300	0.75	C
SR-92	Hesperian & Clawiter	Highway	Divided	8	99,000	7.0%	1,800	8,500	0.69	B
SR-92	Clawiter & San Mateo Bridge	Highway	Divided	6	93,000	6.5%	1,800	8,000	0.86	D
Clawiter Rd	Industrial & SR-92 WB Ramp	Arterial	Undivided	2	18,600	12.0%	800	1,293	0.91	E
Clawiter Rd	SR-92 WB Ramp & SR-92 EB Ramp	Arterial	Undivided	2	14,700	12.0%	800	1,014	0.63	B
Depot Rd	Dodge & Clawiter	Arterial	Undivided	2	8,400	12.0%	800	639	0.52	A
Depot Rd	Clawiter & Viking	Arterial	Undivided	4	11,900	12.0%	800	771	0.35	A
Industrial Blvd	Clawiter & Depot	Arterial	Divided	4	10,600	12.0%	800	966	0.32	A
Industrial Blvd	Depot & SR-92 WB Ramp	Arterial	Divided	4	18,500	12.0%	800	1,411	0.48	A
Eden Landing Rd	SR-92 EB Ramp & Arden	Collector	Undivided	2	8,200	12.0%	800	624	0.49	A

Freeway/Highway: A road with limited access, designed to serve regional through traffic.

Arterial Road: A road whose principal function is to serve major through-traffic movements between major traffic generators.

Collector Road: A road whose principal function is to provide direct access between local roads and arterials. Collectors may provide access to adjacent properties; however, more restrictions are placed on on-street parking and driveway placement.

Level of Service Criteria for Urban Streets, Highway Capacity Model, Transportation Research Board, 2000:

A 0.00 – 0.60 Free flow; insignificant delays
B 0.61 – 0.70 Stable operation; minimal delays
C 0.71 – 0.80 Stable operation; acceptable delays
D 0.81 – 0.90 Approaching unstable; queues develop rapidly but no excessive delays
E 0.91 – 1.00 Unstable operation; significant delays
F > 1.00 Forced flow; jammed conditions

Hayward is also served by Amtrak's Capitol Corridor route, which provides intercity rail service between Sacramento and San Jose. The Amtrak Station is located at B Street and Meekland Avenue, approximately 5 miles north of the project site.

8.10.3.4 Bicycle Lanes/Paths

The City of Hayward Bicycle Master Plan identifies existing bicycle facilities throughout the city. Existing Class III bicycle paths run along Clawiter Road, Depot Road, and Industrial Boulevard, as shown on Figure 8.10-5. There are no other proposed or planned facilities in the project area.

8.10.3.5 Railway Routes

Union Pacific (UP) and Burlington Northern Santa Fe (BNSF) have three main rail lines in Alameda County. These railroads connect the Port of Oakland to the City of Richmond, Santa Clara County, and San Joaquin County via Niles Canyon. A UP rail corridor crosses Clawiter Road just north of the Eastshore site boundary. A rail spur is available to the Eastshore site.

8.10.3.6 Airports

Hayward Executive Airport (HWD) is approximately 1.6 miles north of the project site. Metropolitan Oakland International Airport (OAK) is approximately 12 miles northwest of the project site. Palo Alto Airport (PAO) is approximately 12 miles south of the project site. San Francisco International Airport (SFO) is approximately 14 miles west of the project site. San Carlos Airport (SQL) is approximately 16 miles southwest of the project site. San Jose International Airport (SJC) is approximately 22 miles southeast of the project site.

8.10.3.7 Other Projects

Other transportation construction projects in the Eastshore vicinity include reconstruction of the existing I-880/SR-92 interchange, upgrade of the existing Clawiter Road/SR-92 interchange, and construction of an additional eastbound right-turn lane at Hesperian Boulevard/SR-92 eastbound off-ramp. Full funding has not been secured for these projects, and no physical improvements will occur for at least the next several years. Therefore, these projects will have no impact on the Eastshore construction.

The only other major project in the Eastshore vicinity is Russell City Energy Center (RCEC). The proposed RCEC site is currently located at the southwest corner of the intersection of Enterprise Avenue and Whitesell Street, less than 0.5 mile away from the Eastshore project site. California Energy Commission licensed the project in September 2002. Construction was originally scheduled to begin as early as summer of 2002, with commercial operation by summer of 2004, but construction has been delayed pending financing. The potential cumulative impacts of RCEC are discussed in Section 8.10.5.

8.10.3.8 Public Safety

Railroad crossings are the roadway features in the vicinity of the project that could affect public safety. Figure 8.10-6 shows the railroad crossings that may have an increase in traffic from project construction or operation. The crossings at Depot Road east of Clawiter Road, Clawiter Road south of Depot Road and Clawiter Road south of Falcon Avenue are all at

grade and have full crossing protection with gates and red signaling lights. The crossing at Clawiter Road south of Falcon Avenue is a railroad spur that branches off the main UP tracks north of SR-92 and terminates east of Whitesell Street.

8.10.4 Environmental Consequences

The impact of the project is measured by the potential change in the LOS of surrounding roadway segments caused by the project. Traffic generated by the project is added to the existing volumes, and the resulting capacity impacts are assessed. This assessment was conducted only for the construction phase of the Eastshore.

Note that LOS analyses in this study are based on both peak-hour traffic volumes (for volume-capacity calculation) and peak-hour intersection operations (for ICU calculations). In both cases, the LOS scale is comparable; LOS A refers to little or no congestion, while LOS E indicates significant delays and traffic volumes generally at or close to capacity.

8.10.4.1 Significance Criteria

The significance criteria have been developed using guidance provided in the California Environmental Quality Act (CEQA), Appendix G (Title 14 California Code of Regulations 15000 et seq.), which identifies significant impacts to be caused by a project if it results in an increase in traffic that is substantial relative to the amount of existing traffic and the capacity of the surrounding roadway network. In addition, impacts are assessed in accordance with the criteria used by the City of Hayward, Alameda County Congestion Management Agency, San Francisco Bay Area Metropolitan Transportation Commission, and Association of Bay Area Governments. The more stringent criteria were used to determine project-related impacts. Impacts of the proposed project to transportation and circulation will be considered significant if the following criteria are met:

- Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.
- Exceed, either individually or cumulatively, a LOS standard established by the county congestion management agency for designated roads or highways.
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.
- Substantially increase hazards due to a design feature or incompatible uses.
- Result in inadequate emergency access.
- Result in inadequate parking capacity.
- Conflict with adopted policies, plans, or programs supporting alternative transportation.

8.10.4.2 Summary of Construction-phase Impacts

During the peak construction period, the project is expected to generate approximately 212 daily construction worker round-trips. To analyze the worst-case scenario, traffic impacts associated with peak-period construction traffic were analyzed.

8.10.4.2.1 Trip Generation. Table 8.10-5 summarizes the anticipated peak construction workers by month. The construction effort (during construction of the power-generating station and construction of the linears) is anticipated to require a maximum of 235 workers per day during the peak construction period, from Month 10 through Month 11.

TABLE 8.10-5
Construction Worker and Truck Summary

Month No.	Generating Station		Forecast No. of Commuting Worker Vehicles (1.106 Occupancy)
	No. of Commuting Workers	No. of Trucks	
1	43	21	39
2	64	21	58
3	71	23	64
4	82	16	74
5	85	16	77
6	132	15	119
7	183	18	165
8	216	18	195
9	218	18	197
10	233	18	211
11	235	18	212
12	211	18	191
13	152	12	137
14	91	10	82
15	77	9	70
16	67	9	61
17	55	10	50
18	32	8	28

Alameda County Congestion Management Agency's 2004 Countywide Transportation Management Plan indicates a typical vehicle occupancy rate of 1.106 persons per vehicle. To provide a worst-case analysis, it is assumed that most of the construction personnel will commute to parking areas adjacent to the project site at the laydown area in private automobiles using a typical vehicle occupancy rate of 1.106 persons per vehicle. The City will encourage construction contractor's employees to organize carpools. It is reasonable to expect some level of carpool use given the high level of congestion in the region and the travel time savings offered by carpool lanes on I-880.

The occupancy calculation results in a forecast of 212 constructions worker vehicles entering and exiting the site during the peak construction period (235 workers/1.106 workers/ vehicle = 212 vehicles). These 212 peak daily construction worker vehicles will arrive and depart during the period of 7:00 a.m. to 7:00 p.m.. Although morning and afternoon peak commute hours of the adjacent street system occur during the typical morning peak period of 6:30 a.m. to 8:30 a.m. and the afternoon peak period of 4:00 p.m. to 6:00 p.m., traffic volumes in the project area are high and comparable to the peak hour volumes throughout the day. Therefore, construction worker trips may affect the typical adjacent street system morning and afternoon peak ICU values.

The average and maximum daily truck traffic at the site during construction are estimated to be approximately 16 and 23 trucks per day, respectively. Truck traffic will consist of material deliveries, shuttles to laydown areas, and work vehicles spread throughout the workday with few expected deliveries during the peak hour. Traffic volumes in the project area are high and comparable to the peak hour volumes throughout the day; therefore, truck contribution to overall traffic impacts may be significant.

8.10.4.2.2 Trip Distribution. Distribution of project-generated traffic was derived from observation of existing travel patterns in the vicinity of the project site.

A three-step process was used to estimate the project-related traffic volumes at various points on the transportation system adjacent to the generating station and thereby establishing the magnitude and extent of traffic impacts. First, the amount of traffic that will be generated during construction was determined. Second, the construction traffic was distributed geographically to appropriate roadways through the commercial and industrial areas. Finally, the trips were assigned to specific roadways and the traffic increases were evaluated on a route-by-route basis.

Trip distribution for construction project traffic is illustrated in Figure 8.10-7. Approximately 85 percent of all construction trips are assumed to use SR-92 to I-880 via the Clawiter/SR-92 ramps. Approximately 35 percent of these construction trips are assumed to originate from the north via I-880; approximately 30 percent are assumed to originate from the south via I-880; approximately 20 percent are assumed to originate east of I-880. Approximately 10 percent of construction traffic is assumed to originate from the San Francisco Peninsula via SR-92. The remaining 5 percent of the traffic is assumed to be from the immediate local area.

8.10.4.2.3 Existing Plus Project Traffic Impacts. Roadways in the vicinity of the project will be affected by the project's construction-related traffic. Project-related construction commuter traffic will contribute less than 2 percent of the daily traffic volume on most of these roadways, but specific impacts were assessed.

The LOS analysis for roadway segments in the study area was performed by adding the project's peak hour volumes during construction to the existing peak hour volumes, as presented in Table 8.10-6.

In general, the addition of the forecasted peak project traffic (424 daily vehicles) is not anticipated to result in a significant change to operations of the roadway throughout the day. However, there are two affected segments, which are described below.

TABLE 8.10-6
Projected Daily Levels of Service During Construction

Roadway Segment	Between	Peak Hour Demand	Peak V/C	Peak LOS
I-880	Winton & SR-92	16,974	1.08	F
I-880	SR-92 & Tennyson	14,964	0.96	E
SR-92	I-880 & Hesperian	9,480	0.77	C
SR-92	Hesperian & Clawiter	8,680	0.70	B
SR-92	Clawiter & San Mateo Bridge	8,180	0.88	D
Clawiter Rd	Industrial & SR-92 WB Ramps	1,505	1.04	**F*** (from E)
Clawiter Rd	SR-92 WB Ramp & SR-92 EB Ramp	1,194	0.75	**C*** (from B)
Depot Rd	Dodge & Clawiter	644	0.52	A
Depot Rd	Clawiter & Viking	771	0.35	A
Industrial Blvd	Clawiter & Depot	971	0.32	A
Industrial Blvd	Depot & SR-92 WB Ramp	1,411	0.48	A
Eden Landing Rd	SR-92 EB Ramp & Arden	624	0.49	A

***** Indicates change in LOS.
Level of Service Criteria for Urban Streets, Highway Capacity Model, Transportation Research Board, 2000:

A	0.00 – 0.60	Free flow; insignificant delays
B	0.61 – 0.70	Stable operation; minimal delays
C	0.71 – 0.80	Stable operation; acceptable delays
D	0.81 – 0.90	Approaching unstable; queues develop rapidly but no excessive delays
E	0.91 – 1.00	Unstable operation; significant delays
F	> 1.00	Forced flow; jammed conditions

Three segments are predicted to have unacceptable LOS E and LOS F operations during the peak hour: I-880 between Winton Avenue and SR-92, I-880 between SR-92 and Tennyson Road, and Clawiter Road between Industrial Boulevard and SR-92 westbound ramps.

The two I-880 segments are predicted to have the same LOS with the project, but both may have potentially significant impacts. Because the I-880 segment between Winton Avenue and SR-92 is already over capacity, additional temporary construction traffic may be considered a potentially significant impact. The I-880 segment between SR-92 and Tennyson Road will remain at LOS E. Although, the project's contribution to these affected segments of I-880 will be less than 1 percent of daily trips, the additional trips added to these segments, with unacceptable existing operations, represents a potentially significant project impact.

The LOS at Clawiter Road, from Industrial Boulevard to SR-92 westbound ramps, is predicted to degrade from LOS E to LOS F due to peak construction traffic. This segment of Clawiter Road can accommodate approximately 148 peak-hour trips before the LOS changes from LOS E to LOS F. Peak-hour construction trips will exceed 148 trips from Month 7 to Month 12. Therefore, there may be a potentially significant temporary traffic impact during this period.

As a more focused assessment of the impacts on the surrounding roadways, an ICU analysis was conducted for the seven intersections that will be most directly affected by project

construction traffic. The traffic volumes on the adjacent street system during the project's peak arrival and departure times were compared with the traffic volumes on the adjacent street system during the typical morning and afternoon peak periods.

Construction period intersection volumes were generated by adding the project peak intersection volumes to the existing peak intersection volumes. Table 8.10-7 presents the change in ICU values with the addition of project peak construction traffic during the typical morning and afternoon peak hours. In general, the findings are that the construction of the Eastshore will not result in intersection ICUs that are significantly greater than those for the existing typical morning and afternoon peak hours for the street system. Therefore, the construction of the Eastshore is not expected to have significant impacts on roadway intersections.

TABLE 8.10-7
ICU Summary—Construction Conditions

Intersection	AM ICU	AM LOS	PM ICU	PM LOS
Clawiter Road and West Street	0.33	A	0.47	A
Clawiter Road and Industrial Boulevard	0.42	A	0.59	B
Clawiter Road and Depot Road	0.41	A	0.60	B
Industrial Boulevard and Depot Road	0.56	B	0.51	A
Clawiter Road/Breakwater Avenue at SR-92 Westbound ramps	0.78	**D*** (from C)	0.84	**E*** (from D)
Clawiter Road/Eden Landing Road at SR-92 Eastbound ramps	0.65	C	0.83	**E*** (from D)
Industrial Boulevard/Cryer Street at SR-92 Westbound ramps	0.75	D	0.73	C

***** Indicates change in LOS.

Clawiter Road/Breakwater Avenue at SR-92 westbound ramps and Clawiter Road/Eden Landing Road at SR-92 eastbound ramps are the only intersections where the LOS will change because of construction-related traffic. However, they will still continue to operate at an acceptable LOS based on City of Hayward standards. The maximum project contribution to the SR-92 westbound off-ramp and eastbound on-ramp will be 181 trips, which accounts for less than 3 percent of total traffic on these two ramps (7,800 ADT for the westbound off-ramp and 6,800 ADT for the eastbound on-ramp). These additional peak-hour trips are not expected to have a significant impact on intersections.

8.10.4.2.4 Natural Gas, Water, Wastewater, and Sanitary Sewer Pipeline Construction Impacts. Water, wastewater, and sanitary sewer connections are located on the existing site. Water will be supplied by the City of Hayward. A small quantity of potable water will be required for domestic use. Water line construction is expected to occur from Month 1 to Month 3, and sewer line construction is expected to occur from Month 2 to Month 4.

Natural gas will be the only fuel used at the facility and will be supplied via a new approximately 200-foot interconnection to an existing PG&E gas pipeline paralleling Clawiter Road. Natural gas pipeline is expected to occur from Month 3 to Month 8. There is a potential for minor, short-term increase in motor vehicle hazard due to the nature of pipeline construction and operation of construction equipment. To mitigate the potential impacts, the traffic control plan must be prepared in accordance with Caltrans Manual on

Uniform Traffic Control Devices and Work Area Traffic Control Handbook (WATCH Manual). After construction is complete, no permanent alterations to the area roadways are proposed. Implementation of a traffic control plan for the affected area for the short duration of construction in that area is adequate to minimize the traffic impacts to an acceptable level.

8.10.4.2.5 Transmission Line Construction Impacts. A new, approximately 1.1-mile-long, 115-kV transmission (gen-tie) line will interconnect the Eastshore facility to the existing PG&E Eastshore substation. The route parallels Clawiter Road due south, overcrossing SR-92, then following Eden Landing Road and Arden Road, and entering the Eastshore substation from the west. This route will require removing and underbuilding the existing PG&E 12 kV distribution lines most of the length or up to the southern end of the SR-92 overcrossing. The entire length of the new gen-tie line will be constructed overhead with steel poles. Transmission line construction is expected to occur from Month 5 to Month 13.

Intersections and roadway segments along the transmission line routes may be affected during construction. However, traffic impacts at intersections will be site-specific and temporary in duration. No more than 500 feet of roadway length is usually affected at a time, and the affected areas shift as construction proceeds. If portions of the transmission lines are constructed along roads, both directions of travel must be maintained along the affected roadways. Since the transmission line construction typically requires a cross section of 10 to 15 feet to be closed there is a potential for traffic impacts; therefore, it will be necessary to implement a traffic control plan during construction of these segments. The plan must maintain a minimum 20-foot-wide clear travel way (10 feet for each direction) to allow traffic movements.

To mitigate the potential impacts, the traffic control plan must be prepared in accordance with Caltrans Manual on Uniform Traffic Control Devices and the WATCH Manual. After construction is complete, no permanent alterations to the area roadways are proposed. Implementation of a traffic control plan for the affected area for the short duration of construction in that area is adequate to minimize the traffic impacts to an acceptable level.

8.10.4.2.6 Onsite Circulation and Parking. The site will be located approximately 0.75 mile north of the intersection of Clawiter Road and SR- 92 on an approximate 6-acre, industrially-zoned site. During construction, employee parking for workers will be provided either onsite or directly across the street on the northernmost portion of Berkeley Farms' property. Construction traffic generated by the project will access these parking sites from local and regional roadways including SR-92, Clawiter Road, Depot Road, and Industrial Boulevard. Construction access onto the site will generally be from Clawiter Road. Materials and equipment will be delivered by truck.

Employee parking will be provided onsite after completion of the project.

8.10.4.3 Summary of Operation Phase Impacts

The operational phase of the proposed project will generate approximately 13 additional employee commutes, or 26 daily trips. A quantitative traffic analysis was not conducted for the long-term operations phase because it will generate a low volume of peak-hour trips (maximum of 13 morning and 13 evening peak-hour employee trips). This will not have a measurable impact on the study area intersections.

8.10.4.3.1 Project Operations. During operations of the Eastshore, it is estimated that 13 employees will work onsite. Five employees will work during the regular operation hours (8:00 a.m.-5:00 p.m.). An additional eight employees will work 8-hour rotating shifts, with two employees per shift. Based on this schedule, it is estimated that there will be seven inbound vehicular trips during the morning peak commuter hour, seven outbound vehicular trips during the afternoon commuter hour and two inbound vehicular trips during the afternoon commuter hour.

The addition of traffic associated with project operations during the peak commuter morning and afternoon hours will not result in an ICU value significantly higher than without the project. Therefore, the operation of the Eastshore will not have significant impacts on roadway intersections.

8.10.4.3.2 Transport of Hazardous Materials. Transport of large quantities of hazardous materials to the project site is not anticipated until the end of project construction. Table 8.10-8 summarizes expected truck trips during operations, including delivery of hazardous materials and removal of wastes. There will be a maximum of three truck trips per day, with an average of two or fewer truck trips per day to the project site. Aqueous ammonia (19 percent) will be delivered to the project site by tanker truck about eight times per month during extensive operations.

TABLE 8.10-8
Estimated Truck Traffic at the Facility During Operation

Delivery Type	Number and Occurrence of Trucks
Aqueous ammonia	8 per month
Lubricating oil	1 per month
Water Treatment Chemicals	2 per year
Cleaning chemicals	1 per month
Oily Water Waste Removal	4 per year
Trash Removal	1 per week
Sparing Replenishment	2 per year

The aqueous ammonia will be delivered by truck along public roads. The truck will travel on SR-92 and will exit at the Clawiter Road interchange. The truck will then travel north along Clawiter Road to the plant site. An alternative route from SR-92 will be to use the Industrial Boulevard interchange. The truck will then travel northwest along Industrial Boulevard, west on Depot Road, and south along Clawiter Road to the plant site.

Aqueous ammonia, which is considered to pose inhalation hazards, is subject to California Vehicle Codes 31303 and 32105, which require that hazardous materials be transported along the shortest route possible and that transporters obtain a Hazardous Materials Transportation License from the CHP. Deliveries of hazardous materials will occur over prearranged routes in compliance with applicable LORS. Traffic impacts related to the transport of hazardous materials to the Eastshore site will not be significant.

8.10.4.3.3 Public Safety. The project is located in an industrial and commercial zone with a residential area to the east. Construction-related traffic is not expected to cause safety impacts because it will not be routed through residential areas. The anticipated peak daily increase in vehicle trips from commuting during construction is 212 round trips. During operation, the number of daily commuter trips will be 13 round trips. This increase in traffic will not significantly increase the congestion-related safety effects.

The only other anticipated increase in traffic during project operation will be up to three truck trips per day for the project, including delivery of hazardous materials and removal of wastes. Aqueous ammonia tanker truck delivery will occur approximately eight times per month during peak operations. Deliveries supporting typical operating conditions are expected to be three per month. As stated in Subsection 8.10.2 and 8.10.4.3.2, the aqueous ammonia transporter will be required to obtain a Hazardous Material Transportation License in accordance with California Vehicle Code Section 32105 and will be required to follow appropriate safety procedures at railroad crossings.

8.10.5 Cumulative Impacts

There should not be significant cumulative impacts resulting from the proposed Eastshore in combination with other proposed transportation projects in the area. Transportation improvement projects along on I-880 and SR-92 are in very early planning phases and will not occur for at least the next several years.

The Russell City Energy Center project has the potential to result in significant cumulative traffic impacts if construction of both projects occurs simultaneously. According to the Application for Certification (Foster Wheeler Environmental Corporation, 2001), construction will occur over a period of 18 months. During that time, the average monthly construction workforce will be 126 persons, with a peak workforce of 235 persons. The peak daily round trips, including workers and trucks, is estimated to be 230.

The impact of this additional traffic was assessed for six critical intersections, some of which overlapped those analyzed for the Eastshore project. Of those, only one (Depot Road/Clawiter Road) operates at LOS D or worse and is expected to be affected by traffic from both projects. At that intersection, 32 peak hour trips would be added due to the RCEC project. Based on these forecasts, no additional cumulative impacts are expected at the intersections.

For the freeway and arterial segments, however, significant cumulative impacts are expected. The RCEC AFC did not include an analysis of freeway or other roadway segment impacts but, in general, workers for the RCEC construction would be expected to use the same roads to access regional facilities. In particular, RCEC workers would likely use the three segments predicted to have unacceptable LOS E and LOS F operations during the peak hour: I-880 between Winton Avenue and SR-92, I-880 between SR-92 and Tennyson Road, and Clawiter Road between Industrial Boulevard and SR-92 westbound ramps. If the construction of the RCEC and Eastshore projects occurred simultaneously, the impacts would be greater than those described for the Eastshore project alone.

Traffic volumes generated by the Eastshore during the operations phase will be low enough so that there should be no significant cumulative impacts during operation.

8.10.6 Mitigation Measures

8.10.6.1 Construction Impacts

Construction of the proposed project will add traffic to local roadways during the construction period. In most cases, the increase in delay is minimal because traffic will be added to major movements. Because there are no significant impacts to intersections, no mitigation measures are required. Since significant impacts may occur during construction, a traffic management plan will be prepared to reduce impacts to insignificant levels.

There are segments of I-880 and Clawiter Road where potentially significant impacts may occur. To mitigate those impacts, a Traffic Management Plan (TMP) will be prepared to address potential mitigation measures, including trip reduction and routing for workers. For example, an alternative route is to use the SR-92/Industrial Boulevard interchange and travel along Industrial Boulevard, Depot Road, and Clawiter Road to the project site. Existing traffic volumes and turning movements indicate that Industrial Boulevard, Depot Road, and intersections along these two roadways could accommodate construction-related traffic without significant impacts. This route would avoid further congestion and delays on Clawiter Road. The TMP will also consider scheduling of construction shift hours and material deliveries to avoid peak commute hours when Clawiter Road is used more extensively by nearby businesses. With the implementation of a TMP, the temporary traffic impacts on Clawiter Road and I-880 can be reduced to insignificant levels.

More generally, the TMP will be used to address the range of potential traffic issues during construction. The TMP will address timing of heavy equipment and building material deliveries, potential street or lane closures, signing, lighting, and traffic control device placement. Damage to a roadway opened during construction will be restored to or near its preexisting condition. The construction contractor will work with the local agency's engineer to prepare a schedule and mitigation plan for the roadways along the construction routes.

Traffic impacts that require mitigation measures are the impacts resulting from partial roadway closures during the natural-gas and transmission line construction. The following mitigation measures are anticipated to reduce those impacts to an insignificant level:

- Develop a TMP for the entire roadway network where the natural gas and transmission line are to be constructed.
- Incorporate detour signs in the TMP for construction.
- In the TMP, address the need to minimize the total length of roadway under construction at any one time to avoid having long stretches of roadway out of service but with no construction in progress.
- Conduct construction along affected roadways at night where permitted.

8.10.6.2 Operations Impacts

The operations-related and maintenance-related traffic associated with the project is considered to be minimal and insignificant when added to major movements on freeways and local roadways. Consequently, no operations-related mitigation measures are required.

8.10.7 Agencies and Agency Contacts

Table 8.10-9 lists the agency contacts related to traffic and transportation.

TABLE 8.10-9
Agency Contacts

Issue	Contact	Title	Telephone
FAA Form 7460-1	Western-Pacific Regional Office Air Traffic Division, AWP-520 15000 Aviation Boulevard Hawthorne, CA 90260	Air Traffic Division Manager	(310) 725-6557
Single-Trip Transportation Permit for Oversized Loads	Caltrans North Region Transportation Permits Office 1823 14th Street Sacramento, CA 95814	Staff	(909) 383-4637
Hazardous Material Transportation License	California Highway Patrol Accounting Section (HM Licensing Program) P.O. Box 942902 Sacramento, CA 94298-2902	Staff	(916) 327-5039
Public Works Encroachment Permits	Jim Lear Department of Community and Economic Development 777 B Street Hayward, CA 94541	Associate Civil Engineer	(510) 583-4785
Truck Permits – Over Length, Width, Height, or Weight	Gerald Robinson City of Hayward Police Department - Traffic 300 West Winton Avenue Hayward, CA 94544	Traffic Report Review Officer	(510) 293-7036
Wire Line Crossing or Longitudinal	Cathy Benton Burlington Northern Santa Fe Staubach Global Services, Inc. Permits Department 3017 Lou Menk Drive, Suite 100 Fort Worth, TX 76131-2800	Permit Manager	(866)498-6647
Wire Line Crossing Application	Joan Peble Union Pacific Railroad 1400 Douglas Street, Mail Stop 1690 Omaha, NE 68179	Real Estate Manager for Alameda County	(402) 544-8536

8.10.8 Required Permits and Permitting Schedule

The California Streets and Highways Code, Division 2, Chapter 5.5, Sections 1460-1470, mandate that an encroachment permit must be obtained from the City Public Works Department or Engineering Department if there is an opening or excavation in roadways. Table 8.10-10 presents the encroachment and other permits required for construction of the proposed linears, as well as the schedule for obtaining the permits. The project will comply with these requirements.

TABLE 8.10-10
Permit Schedule for Traffic and Transportation

Permit	Schedule
FAA Form 7460-1	At least 30 days before the earlier of the following dates: (1) The date the proposed construction or alteration is to (2) The date an application for a construction permit is to be filed
Caltrans single-trip transportation permit to transport oversized or excessive loads over state highway	Obtain when necessary; 4-hour processing time
City of Hayward Public Works Encroachment Permits	One to two weeks prior to construction
City of Hayward Truck permit	Processed the same day
Union Pacific Railroad Wire Line Crossing Application	Agreement processing time is approximately 30 to 45 days; a minimum of 48 hours' advance notice after execution of an agreement will be required prior to entry

8.10.9 References

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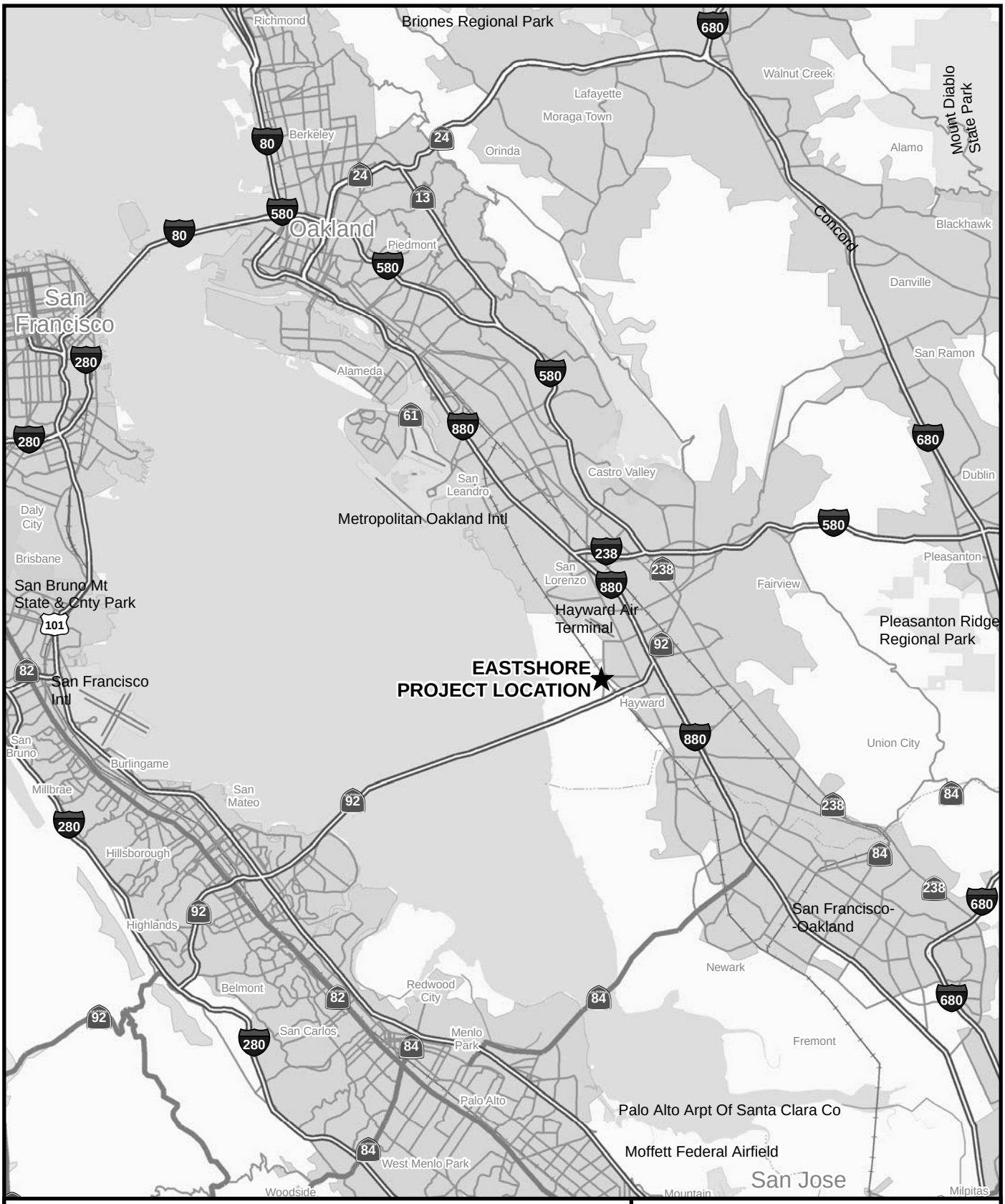

LEGEND

- Site Location
- Limited Access
- Highway
- Major Road
- Major Railroad Lines
- Urban Areas (State)

N

Miles

0 2 4

1:250,000

SCALE IS APPROXIMATE

FIGURE 8.10-1
REGIONAL TRANSPORTATION FACILITIES
EASTSHORE ENERGY CENTER
HAYWARD, CALIFORNIA

CH2MHILL

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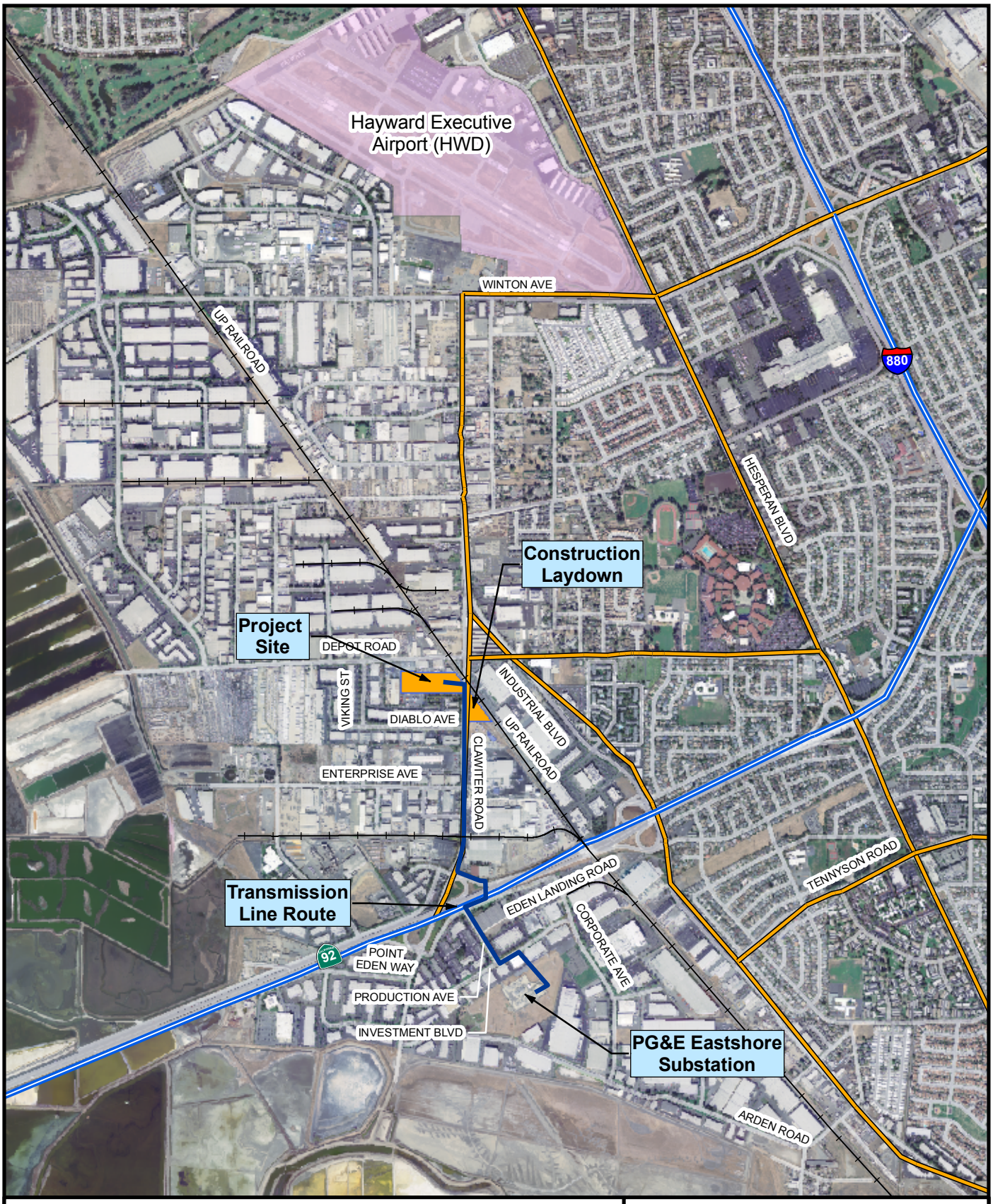

LEGEND

- Site Location
- Transmission Line Route
- Railroad
- Highway
- Major Road
- Airport

N

0 500 1,000 2,000 Feet

SCALE IS APPROXIMATE

FIGURE 8.10-2
LOCAL TRANSPORTATION FACILITIES
EASTSHORE ENERGY CENTER
HAYWARD, CALIFORNIA

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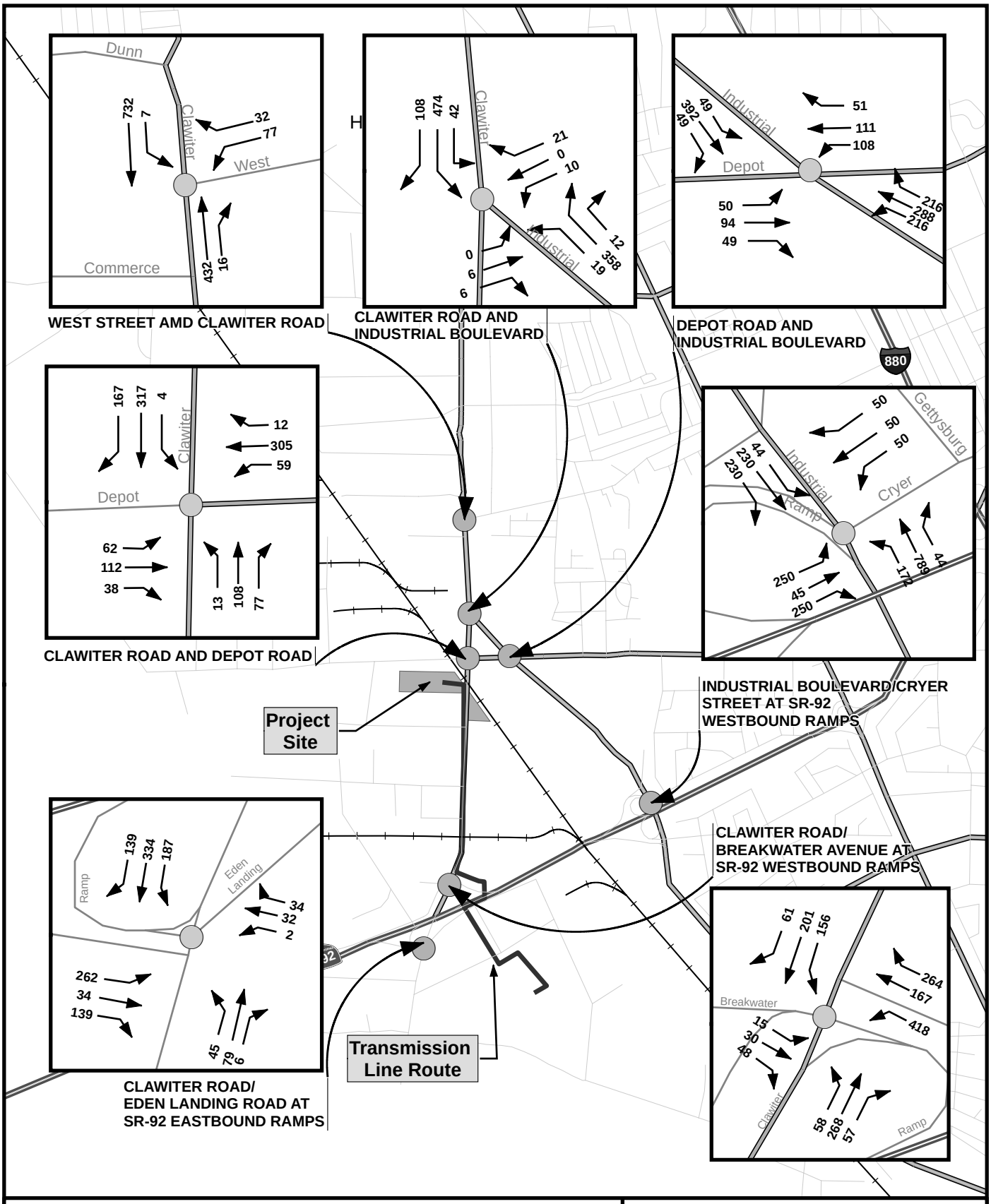

FIGURE 8.10-3
EXISTING
MORNING PEAK-HOUR
TURNING MOVEMENT

EASTSHORE ENERGY CENTER
HAYWARD, CALIFORNIA

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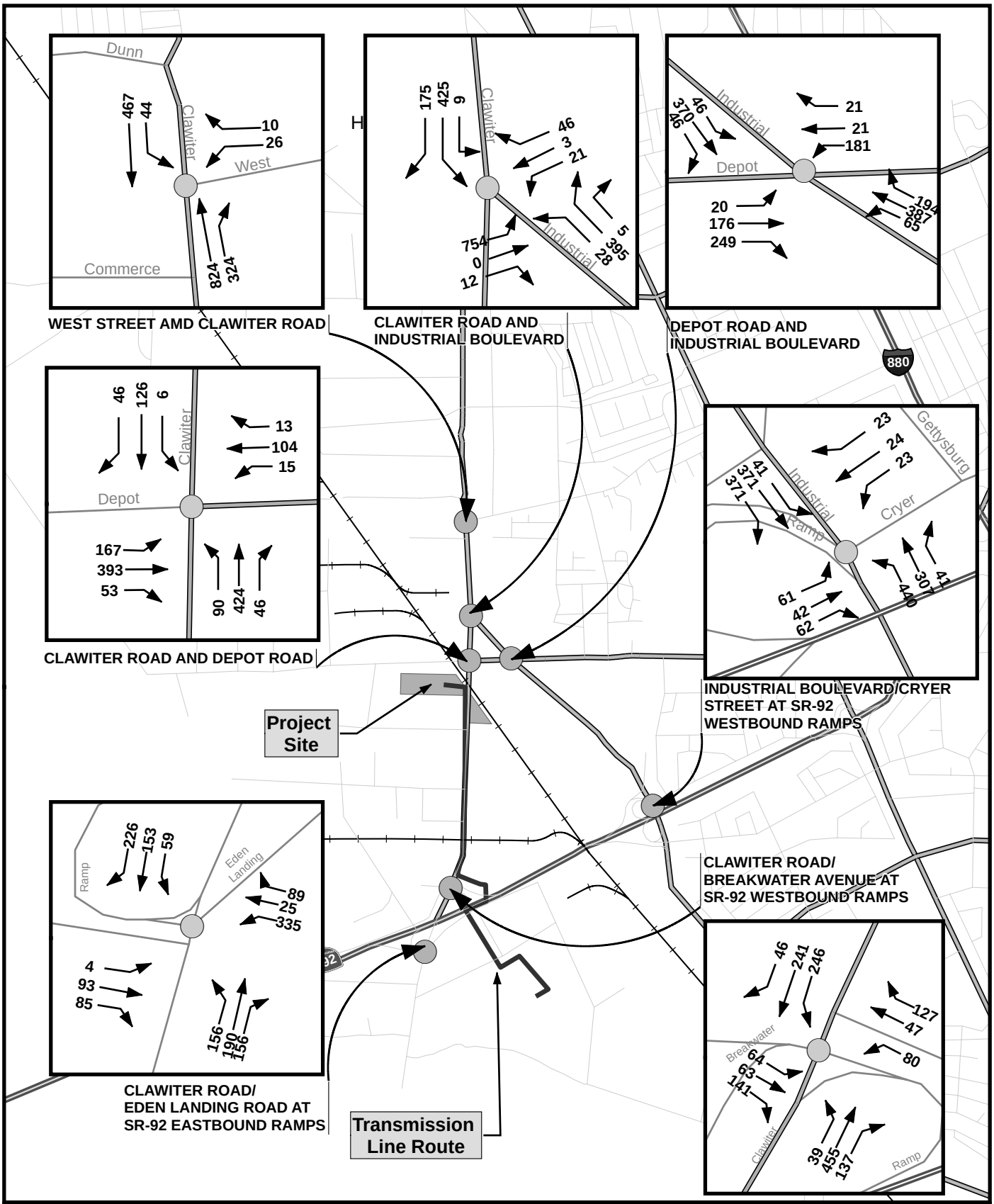

FIGURE 8.10-4
EXISTING
AFTERNOON PEAK-HOUR
TURNING MOVEMENT
EASTSHORE ENERGY CENTER
HAYWARD, CALIFORNIA

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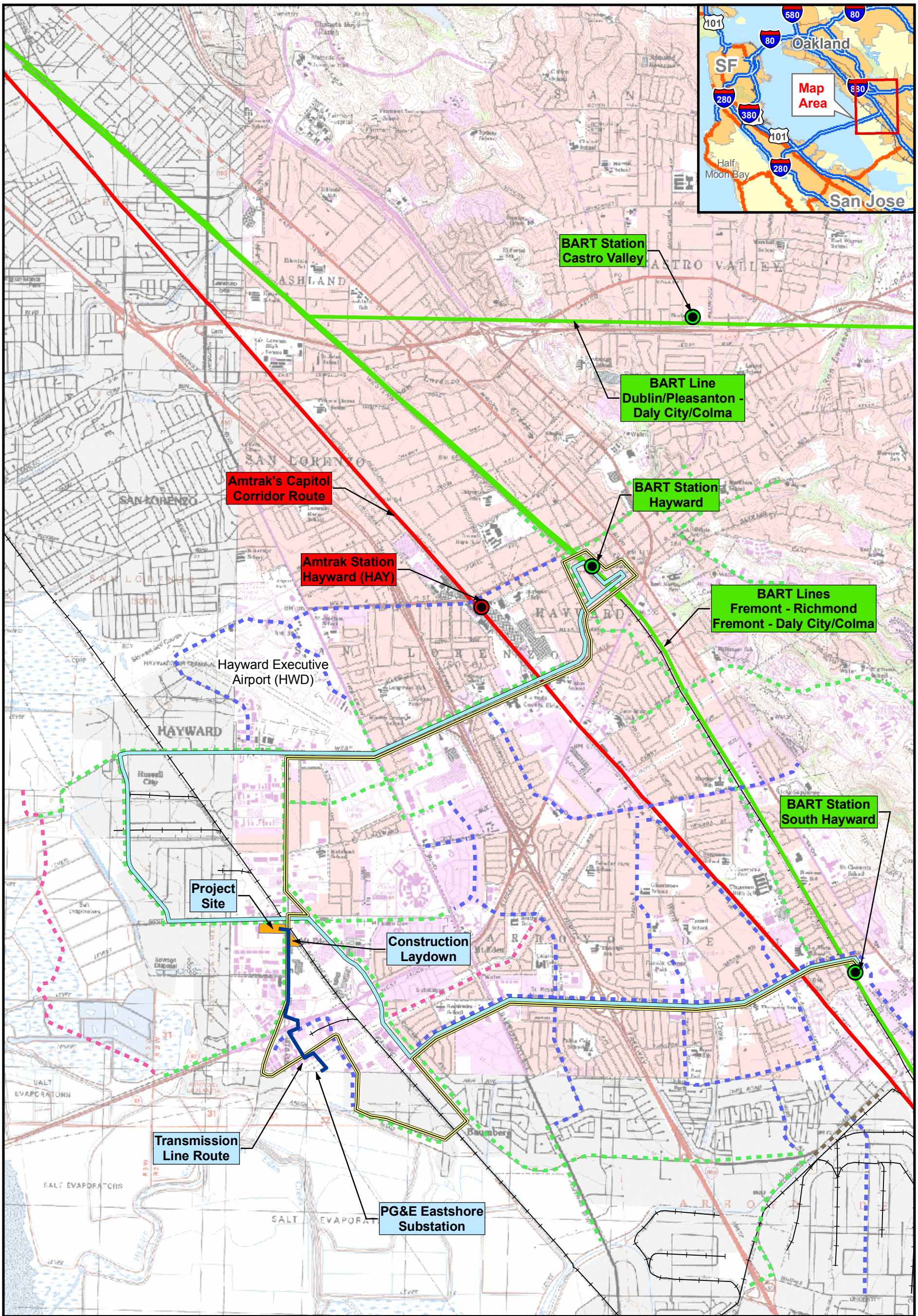

LEGEND

- Site Location
- Transmission Line Route
- Amtrak
- BART
- Other Railroads
- Capitol Corridor
- Bay Area Rapid Transit
- AC Transit Bus Line 83
- AC Transit Bus Line 86
- Class 1 Bike Route
- Class 2 Bike Route
- Class 3 Bike Route
- Other Bike Route

N

0 1,500 3,000 6,000 Feet

SCALE IS APPROXIMATE

FIGURE 8.10-5
PUBLIC TRANSPORTATION AND BICYCLE FACILITIES
EASTSHORE ENERGY CENTER
HAYWARD, CALIFORNIA

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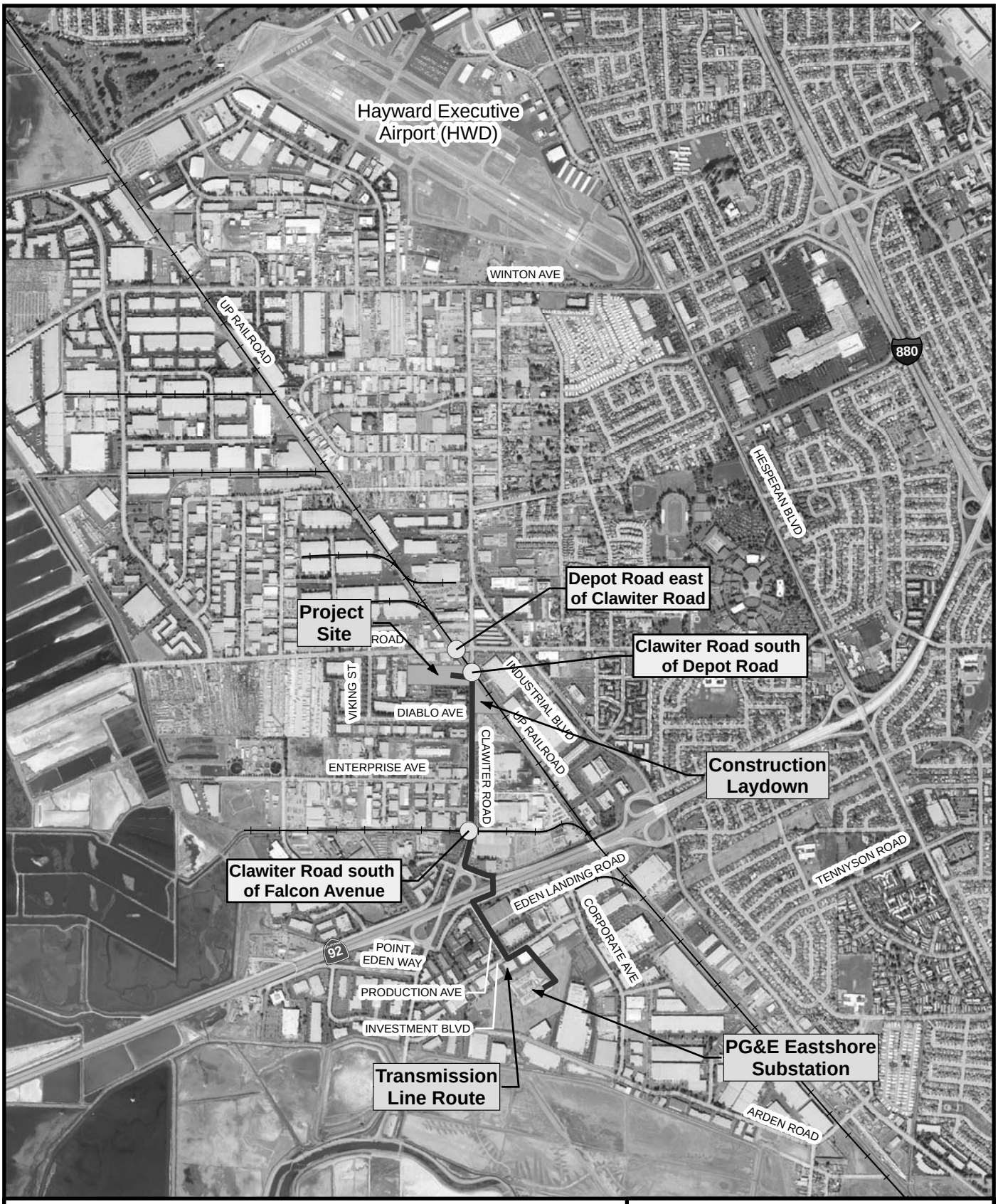

LEGEND Note: All crossings are at grade and have full crossing protection with gates and red signaling lights.

- Site Location
- Transmission Line Route
- Railroad
- Highway
- Major Road
- Railroad Crossing

N

0 500 1,000 2,000 Feet

SCALE IS APPROXIMATE

FIGURE 8.10-6
RAILROAD CROSSINGS
EASTSHORE ENERGY CENTER
HAYWARD, CALIFORNIA

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LEGEND

- Site Location
- Transmission Line Route
- Railroad
- Highway
- Major Road

Note: Remaining 5% of the traffic is assumed to be from the immediate local area.

N

0 500 1,000 2,000 Feet

SCALE IS APPROXIMATE

FIGURE 8.10-7
TRIP DISTRIBUTION
EASTSHORE ENERGY CENTER
HAYWARD, CALIFORNIA

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