8.10 Traffic and Transportation

8.10.1 Introduction

This subsection presents the potential effects of the Walnut Energy Center (WEC) project on the transportation system, including any necessary modifications to the transportation system and an increase in traffic from construction and operation of the proposed facility. A description of the existing transportation system and levels of service (LOS) are presented, along with an analysis of potential impacts. Figure 8.10-1 (all figures are at the end of this subsection) shows the project site and the surrounding roadway network within the study area.

Subsection 8.10.2 presents applicable laws, ordinances, regulations, and standards (LORS); Subsection 8.10.3 discusses the existing environmental setting; Subsection 8.10.4 discusses the environmental effects of construction and subsequent operation; Subsection 8.10.5 describes the cumulative impacts; Subsection 8.10.6 includes any proposed mitigation measures to be implemented during construction and operation; and Subsection 8.10.7 contains references.

8.10.2 Laws, Ordinances, Regulations and Standards

LORS related to traffic and transportation are summarized in the following subsections.

8.10.2.1 Federal

- Title 49, Code of Federal Regulations (CFR), Sections 171-177 (49 CFR 171-177), governs the transportation of hazardous materials, the types of materials defined as hazardous, and the marking of the transportation vehicles.
- 49 CFR 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.
- 49 CFR 397.9, the Hazardous Materials Transportation Act of 1974, directs the U.S. Department of Transportation to establish criteria and regulations for the safe transportation of hazardous materials.

8.10.2.2 State

State laws that apply to this project include the following sections of this California Vehicle Code (CVC), unless specified otherwise:

- California Street and Highways Code (S&HC), Sections 660, 670, 1450, 1460 et seq., 1470, and 1480, regulates right-of-way encroachment and granting of permits for encroachments on state and county roads.
- 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.
- Sections 25160 et seq. address the safe transport of hazardous materials.

- Sections 2500-2505 authorize the issuance of licenses by the Commissioner of the California Highway Patrol (CHP) to transport hazardous materials, including explosives.
- Sections 31303-31309 regulate the highway transportation of hazardous materials, routes used, and restrictions. CVC Section 31303 requires hazardous materials to be transported on state or interstate highways that offer the shortest overall transit time possible.
- Sections 31600-31620 regulate the transportation of explosive materials.
- Sections 32000-32053 regulate the licensing of carriers of hazardous materials and include noticing requirements.
- Sections 32100-32109 establish special requirements for the transportation of substances presenting inhalation hazards and poisonous gases. CVC Section 32105 requires shippers of inhalation or explosive materials to contact the CHP and apply for a Hazardous Material Transportation License. Upon receiving this license, the shipper will obtain a handbook specifying approved routes.
- Sections 34000-34121 establish special requirements for transporting flammable and combustible liquids over public roads and highways.
- 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.
- S&HC, Sections 117 and 660-72, and CVC, Sections 35780 et seq., require permits to transport oversized loads on county roads. California S&HC Sections 117 and 660 to 711 requires permits for any construction, maintenance, or repair involving encroachment on state highway rights-of-way. CVC Section 35780 requires approval for a permit to transport oversized or excessive loads over state highways
- 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.
- All construction in the public right-of-way will need to comply with the "Manual of Traffic Controls for Construction and Maintenance of Work Zones" (Caltrans 1996).
- California Department of Transportation (Caltrans) weight and load limitations for state highways apply to all state and local roadways. The weight and load limitations are specified in the CVC Sections 35550 to 35559. The following provisions, from the CVC, apply to all roadways and are therefore applicable to this project.

  General Provisions:

  – The gross weight imposed upon the highway by the wheels on any 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 maximum wheel load is the lesser of the following: a) the load limit established by the tire manufacturer, or b) a load of 620 pounds per lateral inch of tire width, as determined by the manufacturer's rated tire width.

Vehicles with Trailers or Semitrailers:

– The gross weight imposed upon the highway by the wheels on any one axle of a vehicle shall not exceed 18,000 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 9,500 pounds, except that the gross weight imposed upon the highway by the wheels on any front steering axle of a motor vehicle shall not exceed 12,500 pounds.

8.10.2.3 Local

The transportation elements of local plans that are applicable to the WEC project are summarized in Table 8.10-1 and in the following subsection.

- City of Turlock (City), transportation and circulation element, sets forth policies that are applicable to the WEC project. They are as follows:
  - The City's level of service standards for the state highway system and specific routes of regional significance shall be those standards adopted in the Comprehensive General Plan and Environmental Impact Report (EIR). (City of Turlock 1992)
  - The City shall require all new development projects to analyze their contribution to increased traffic and to implement improvements necessary to address the increase.
- Stanislaus County (County) Transportation and Circulation Element of the General Plan identifies the goals, policies and implementation measures that ensure compatibility between land use, infrastructure, and transportation modes (motorized and non-motorized). The plan describes the County's circulation diagram and functional roadway classification system. The element establishes standards that guide the development of the transportation system and management of access to the highway system by new development, throughout the unincorporated areas of the County. (Stanislaus County 1994)
- Stanislaus County Congestion Management Program (CMP) is a planning partnership among the local, county, regional, non-attainment area, and state planning agencies that creates processes to facilitate coordination and cooperation and to provide a synergistic environment where optimum transportation decisions can be made.
- Regional Transportation Plan (RTP) represents the blueprint for major transportation investments in the Stanislaus region over the 25-year period from 2000 to 2025. The plan provides a vision for the regional transportation system, now and in the future, and is designed to achieve specific goals defined by the Stanislaus community.

Other regional policies related to the project are described in Table 8.10-1. The plans and programs describe the framework for managing the transportation resources in the area of the WEC project site. Table 8.10-1 summarizes the relevant policies for Stanislaus County

transportation and circulation element of the General Plan and the City of Turlock Comprehensive General Plan.

TABLE 8.10-1
Relevant Objectives and Policies for Stanislaus County and the City of Turlock

Relevant Policies, Stanislaus County Transportation and Circulation Element of the General Plan	Conformance of Project with Policy
The County shall plan and design its roadway system in a manner that strives to meet Level of Service (LOS) D on urban roadways within the spheres of influence of the cities of Turlock and -Modesto LOS C on all other roadways in the county. In no case should the County plan for worse than LOS D on rural County roadways.	The project will not impact the County's ability to meet LOS rates on a permanent basis (Subsection 8.10.4)
The County shall require that new or modified access to property abutting a roadway and to intersecting roads conform to access specifications in the Circulation Diagram and Standards section.	The project will conform to access specifications off of South Washington Road (Subsection 8.10.4)
The County shall assess fees on new development sufficient to cover the fair share portion of that development's impacts on the local and regional transportation system.	The project proponent will submit the necessary fees described in this policy, as determined by the County. (Subsection 8.10.7)
The County shall work with the cities of Turlock and -Modesto and Stanislaus County in establishing a system of designated truck routes through urban areas.	The project will use established truck routes as they are identified. (Subsection 8.10.3)
The County shall promote transit services in designated corridors where population and employment densities are sufficient or could be increased to support those transit services, particularly within the spheres of influence of the cities and along existing transit corridors in the rural area of the county.	The project will not interfere with the County's plans to support transit services in rural areas. (Subsection 8.10.4)
Relevant Policies, City of Turlock Comprehensive General Plan and EIR	**Conformance of Project with Policy**
The City shall maintain a minimum LOS C on all arterials and collectors.	The project will not impact the City's ability to meet LOS rates on a permanent basis (Subsection 8.10.4)
The City will ensure that new development pays a fair share contribution to upgrade and expand the circulation system.	The project proponent will submit the necessary fees described in this policy, as determined by the City. (Subsection 8.10.7)
The City/County will promote the continued freight service on the Union Pacific rail line.	The project will not interfere with the City's plans to promote service (Subsection 8.10.4)
The City will promote a truck route system that is safe and efficient for the community.	The project will not interfere with the City's plans to promote the system and will adhere to safety and efficiency goals that the County identifies. (Subsection 8.10.4)

8.10.2.4 Compliance with Laws, Ordinances, Regulations, and Standards

All applicable LORS and administering agencies are summarized subsequently. Table 8.10-2 describes how WEC will comply with all LORS pertaining to traffic and transportation impacts.

TABLE 8.10-2
WEC Compliance with Laws, Ordinances, Regulations, and Standards

Authority	Administering Agency	Requirements	Compliance (Location in AFC where compliance discussed)
49 CFR, Section 171-177 and 350-300 Chapter II, Subchapter C and Chapter III, Subchapter B	U.S. Department of Transportation and Caltrans	Requires proper handling and storage of hazardous materials during transportation.	Project and transportation will comply with all standards for the transportation of hazardous materials. (Subsection 8.10.4)
CVC §31300 et seq.	Caltrans	Requires transporters to meet proper storage and handling standards for transporting hazardous materials on public roads.	Transporters will comply with standards for transportation of hazardous materials on state highways during construction and operations. The project will conform to CVC §31303 by requiring that shippers of hazardous materials use the shortest route possible to and from the site. (Subsection 8.10.4)
CVC §§31600 - 31620	Caltrans	Regulates the transportation of explosive materials.	The project will conform to CVC 31600 - 31620. (Subsection 8.10.4)
CVC §§32000 - 32053	Caltrans	Regulates the licensing of carriers of hazardous materials and includes noticing requirements.	The project will conform to CVC 32000 - 32053. (Subsection 8.10.4)
CVC §§32100 - 32109 and 32105.	Caltrans	Establishes special requirements for the transportation of substances presenting inhalation hazards and poisonous gases. Requires that shippers of inhalation or explosive materials contact the CHP and apply for a Hazardous Material Transportation License.	The project will conform by requiring shippers of inhalation or explosive materials to contact the CHP and obtain a Hazardous Materials Transportation License. (Subsection 8.10.4)
CVC §§34000 -34121.	Caltrans	Establishes special requirements for the transportation of flammable and combustible liquids over public roads and highways.	The project will conform to CVC §§34000 - 34121. (Subsection 8.10.4)
CVC §§34500, 34501, 34501.2, 34501.3, 34501.4, 34501.10, 34505.5-7, 34506, 34507.5 and 34510-11.	Caltrans	Regulates the safe operation of vehicles, including those used to transport hazardous materials.	The project will conform to these sections in the CVC. (Subsection 8.10.4)
CVC §§35550-35559	Caltrans	Regulates weight and load limitations.	The project will conform to these sections in the CVC. (Subsection 8.10.4)
CVC §§25160 et seq.	Caltrans	Addresses the safe transport of hazardous materials.	The project will conform to these sections in CVC. (Subsection 8.10.4)

TABLE 8.10-2
WEC Compliance with Laws, Ordinances, Regulations, and Standards

Authority	Administering Agency	Requirements	Compliance (Location in AFC where compliance discussed)
CVC §§2500-2505.	Caltrans	Authorizes the issuance of licenses by the Commissioner of the CHP for the transportation of hazardous materials including explosives.	The project will conform to these sections in the CVC. (Subsection 8.10.4)
CVC §§13369, 15275, and 15278.	Caltrans	Addresses the licensing of drivers and classifications of licenses required for the operation of particular types of vehicles. In addition, certificates permitting the operation of vehicles transporting hazardous materials are required.	The project will conform to these sections in the CVC. (Subsection 8.10.4)
S&HC §§117, 660-711	Caltrans	Requires permits from Caltrans for any roadway encroachment during truck transportation and delivery.	Encroachment permits will be obtained by transporters, as required. (Subsection 8.10.7)
CVC §35780; S&HC §660-711; 21 CCR 1411.1-11411.6	Caltrans	Requires permits for any load that exceeds Caltrans weight, length, or width standards for public roadways.	Transportation permits will be obtained by transporters for all overloads, as required. (Subsection 8.10.7)
S&HC §§660, 670, 1450, 1460 *et seq.*, 1470, and 1480	Caltrans	Regulates right-of-way encroachment and the granting of permits for encroachments on state and county roads.	The project will conform to these sections in the CVC. (Subsection 8.10.7)
California State Planning Law, Government Code Section 65302	Caltrans	Project must conform to the General Plan.	Project will comply with Stanislaus County General Plan and the City of Turlock's Comprehensive General Plan. (Subsection 8.10.2)
Circulation and Transportation Element of the Stanislaus County General Plan and City of Turlock Comprehensive General Plan	Stanislaus County/City of Turlock	Specifies long-term planning goals and procedures for transportation infrastructure system quality in Stanislaus County and the City of Turlock, respectively.	Project will comply with goals and policies for County and City transportation and traffic system. (Subsection 8.10.2)

CCR California Code of Regulations
CFR Code of Federal Regulations
CVC California Vehicle Code
S&HC California Streets and Highways Code

8.10.3 Affected Environment

The plans and programs described in Tables 8.10-1 and 8.10-2 lay out a framework for managing the transportation resources in the area of the WEC project site.

8.10.3.1 Current and Projected Roadway and Highway Traffic Characteristics

The roadways and highways that would serve the WEC project are shown in Figure 8.10-2. The roadways that would serve WEC are West Main Street, South Washington Road, West Harding Road, South Walnut Road, South Tegner Road, and West Linwood Avenue, and Highway 99 would be the only highway serving the project area. Caltrans maintains the highway. Outside the project area, West Main Street also connects with Interstate Highway 5 (I-5) to the west. Other roadways that may be impacted include South Commons Road and Bradbury Road where new gas lines are proposed, and South Tegner Road and Kilroy Road, where the recycled water line is proposed.

For roadways and highways in the project area, Table 8.10-3 identifies the existing roadway classification, number of lanes, existing annual average daily traffic (AADT), annual average peak hour traffic, annual average daily truck traffic, percent of truck traffic, highway capacity and level of service (LOS) for the highways and roadways that would serve WEC. Also presented in Table 8.10-3 are the estimated future traffic characteristics without the project for 2005. Highway traffic estimates are presented for available mileposts or junctions for regional and local roadways in the general vicinity of WEC.

West Main Street [J17] is a 2-lane east-west 24-foot-wide roadway with 6-foot-wide shoulders, and no sidewalks. West Main Street serves as a major arterial roadway and gives egress and ingress to the City of Turlock and Highway 99. West Main Street is classified as a major arterial roadway according to Stanislaus County General Plan, with good pavement and a posted speed limit of 45 miles per hour (mph).

South Washington Road is a north-south 2-lane county roadway, 24-feet wide, with 3- to 4-foot-wide shoulders, and no sidewalks. South Washington Road is classified as a collector arterial according to Stanislaus County General Plan, with good-quality pavement, and a posted speed limit of 45 mph.

West Harding Road is a 24-foot-wide east-west paved roadway with 3-foot-wide shoulders and no sidewalks. West Harding Road is classified as a collector roadway according to the Stanislaus County General Plan, with good-quality pavement, and a posted speed limit of 45 mph.

South Walnut Road is a north-south 2-lane, 24-foot-wide roadway with 3-foot-wide shoulders and no sidewalks. South Walnut Road is classified as a collector arterial roadway according to the Stanislaus County General Plan, with good-quality pavement, and a posted speed limit of 45 mph.

South Tegner Road is a 2-lane, 24-foot-wide east-west roadway with 3-foot-wide shoulders classified under the Stanislaus County General Plan as being a local roadway. South Tegner Road has a posted speed limit of 40 mph with good-quality roadway pavement.

TABLE 8.10-3
Existing Traffic Characteristics for Streets and Highways for WEC

				Existing				Future, No Project Conditions (2005)			
Roadway	Classification	Number of Lanes	Hourly Design Capacity[a]	Average Daily Volume[b]	PM Peak Hour Volume[c]	PM Peak Hour LOS[d]	Average Daily Truck Traffic	Estimated Truck Percentages	Estimated Daily Volume	Estimated PM Peak Hour Volume	Estimated PM Peak Hour LOS
West Main Street	Major	2	1,800	7,425	745	B	N/A	17	8,866	890	C
South Washington Road	Collector	2	1,400	1,853	185	A	N/A	7	2,213	225	A
West Harding Road	Collector	2	1,400	432	45	A	N/A	10	516	55	A
South Walnut Road	Collector	2	1,400	7,765	780	B	N/A	10	9,272	930	C
South Tegner Road	Local	2	1,400	1,221	125	A	N/A	10	1,458	145	A
West Linwood Ave	Collector	2	1,400	8,712	875	C	N/A	10	10,403	1,040	C
Clayton Road	Collector	2	1,400	1,076	110[e]	A	N/A	N/A	1,247	125[e]	A
South Commons Road	Collector	2	1,400	327	33[e]	A	88[e]	27	379	38[e]	A
Bradbury Road	Collector	2	1,400	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Highway 99	Highway	6	9,825	64,000	5,800	F	14,186	17	76,419	11,465	F

N/A = Data not available
[a] Maximum number of vehicles per hour in both directions for LOS E.
[b] Estimated number of vehicles per day in both directions.
[c] Vehicles per hour in both directions.
[d] LOS based on Highway Capacity Manual methods (Transportation Research Board 2000).
[e] Estimated as 10 percent of daily.
Future projections are based upon a 3 percent growth factor from existing conditions

West Linwood Avenue is a 24-foot-wide, east-west paved roadway with 3-foot-wide shoulders and no sidewalks. West Linwood Avenue is classified as a collector roadway according to the Stanislaus County General Plan, with good-quality pavement, and a posted speed limit of 40 mph.

Clayton Road is an east-west 2-lane, 24-foot-wide roadway with 3-foot-wide shoulders and no sidewalks. Clayton Road is classified as a collector arterial roadway according to the Stanislaus County General Plan, with good-quality pavement, and a posted speed limit of 45 mph.

South Commons Road is a north-south 2-lane, 24-foot-wide roadway with 3-foot-wide shoulders and no sidewalks. South Commons Road is classified as a collector arterial roadway according to the Stanislaus County General Plan, with good-quality pavement, and a posted speed limit of 45 mph.

Bradbury Road is an east-west paved 24-foot-wide roadway with 2- to 3-foot-wide shoulders and is classified under the Stanislaus County General Plan as being a collector arterial roadway. This roadway has good pavement quality and has a speed limit of 40 mph.

Ruble Road is an east-west single-lane, 12- to 14-foot roadway that may be used for emergency access only. It provides local access and is paved, with the exception of a small portion at the west end.

Table 8.10-4 shows the average daily traffic (ADT) volumes on the local roadways in the study area for available traffic data from Stanislaus County. Year 2002 ADTs are estimated at a 3 percent growth factor. Figure 8.10-2 illustrates the existing 2002 ADTs of the potential affected roads surrounding the project site.

TABLE 8.10-4
Estimated Average Daily Traffic Volumes

Roadway	2000 ADT (No. of Vehicles)	2001 ADT (No. of Vehicles)	2002 ADT (No. of Vehicles)
West Main Street (West of S. Washington Road)	N/A	N/A	7,425
South Washington Road (South of W. Main Street)	N/A	N/A	1,853
West Harding Road (West of S. Washington Road)	N/A	419	432*
South Walnut Road	5,288*	6,314*	7,765*
Tegner Road	N/A	N/A	1,221
West Linwood Ave (South of S. Walnut Road)	5,933*	7,084*	8,712*
Clayton Road	N/A	N/A	N/A
South Commons Road	N/A	N/A	N/A
Bradbury Road	N/A	N/A	N/A

ADT average daily traffic
N/A not available
*Estimated using a 3 percent growth factor based on historic growth in the area
Source: Stanislaus County Engineering Department

LOS is a qualitative measure describing operational conditions in a traffic stream, and motorists' or passengers' perceptions of those conditions. LOS for the roadways and highways affected by the project are presented in Table 8.10-3. A LOS definition generally describes these conditions in terms of speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. LOS A represents best condition, and LOS F represents the worst. To determine the LOS for selected highways and roadways in the study area, daily traffic capacity was determined by estimating capacities obtained from the current Highway Capacity Manual (HCM) (Transportation Research Board 2000). Daily traffic volumes (Table 8.10-4) were compared with these capacities to determine volume-to-capacity ratios, which were used to calculate the existing LOS.

According to Caltrans policy, LOS D threshold for roadway degeneration is acceptable for planning purposes. Currently, Highway 99 is operating at LOS F. For the City of Turlock and Stanislaus County, LOS C threshold is acceptable for planning purposes.

The overall LOS for the roadways surrounding the proposed project site prior to construction is LOS C and above, which represents free-flow traffic operating conditions. Individual users are virtually unaffected by the presence of others in the traffic stream. There are no intersection data available to analyze intersection impacts.

In the future, it is estimated that during the evening peak hour in 2005, all roadways in the project vicinity, with the exception of Highway 99, will function at LOS C or better (with or without the project). For Highway 99, assuming a 55/45 peak-hour directional split at a 3 percent growth rate, it is estimated to be at LOS F for future conditions (with or without the project).

8.10.3.2 Truck Routes—Weight and Load Limitations

In addition to the Caltrans and CVC Sections 35550-35559, Stanislaus County Public Works Department and public website indicates that there are no special weight and load limitations for the county roads identified within the project area.

Due to the agricultural base of the community, goods movement is a very important factor to the local circulation system. The City encourages truck traffic to use West Main Street and South Walnut Road.

8.10.3.3 Accident Rates

Accidents are generally expressed in terms of the accident rate, where accident occurrence is indexed to the amount of traffic using a given roadway. For roadway segments, accident rates are computed as the number of accidents per million vehicle-miles (MVM) of travel.

The total number of accidents reported in the project vicinity and the accident rates for selected roadways are presented in Table 8.10-5. West Main Street, South Washington Road, West Harding Road, South Walnut Road, Ruble Road, South Tegner Road, West Linwood Avenue, Clayton Road, South Commons Road, and Bradbury Road accident rates are all

within acceptable limits according to Caltrans' 1999 Accident Data Report on State Highways for these type of roadways and highways.

TABLE 8.10-5
Recent Accident History Data for Highways and Roadways in the Project Vicinity

Roadway	Section	Number of Accidents		Accident Rate, MVM
		3-year Total	Average per Year	
West Main Street	County Roadway: Washington Road - Tegner Road	1	0.33	0.12
South Washington Road	County Roadway: Clayton Road - Main Street	1	0.33	.48
West Harding Road	County Roadway: Washington Road-Lander Avenue	2	0.66	1.39
South Walnut Road	County Roadway: Harding Road - Turlock City Limits	6	2	0.57
South Tegner Road	Local Roadway: Ruble Road - Linwood Avenue	1	0.33	0.74
West Linwood Ave.	County Roadway: South Washington Road - Highway 99	8	2.6	0.33
Clayton Road	County Roadway	N/A	N/A	N/A
South Commons Road	County Roadway	N/A	N/A	N/A
Bradbury Road	County Roadway	N/A	N/A	N/A
Highway 99 (Stanislaus/Merced Counties)	Mile Post 1.47 (3 miles north/south of mile posting)	210	70	0.49

MVM million vehicle-miles
N/A Not Available
[a] Source: Stanislaus County Public Works Department (1999 to 2001)
[b] Source: Caltrans (2002).

8.10.3.4 Transportation Improvements

8.10.3.4.1 Future Plans and Projects

No major future plans or projects affecting transportation or circulation were identified in the City of Turlock General Plan and EIR (1992), as well as personal communications with planning staff.

8.10.3.4.2 Local Comprehensive Transportation Plans

The City of Turlock General Plan and EIR indicate no near-term major improvements to the transportation system in the City. However, West Main Street is being considered for expansion from a two-lane to a four-lane arterial roadway.

8.10.3.5 Pedestrian/Bicycle Facilities

The City of Turlock and the Stanislaus County General Plans do not indicate any future enhancements to its current pedestrian or bicycle facilities.

8.10.3.6 Public Transportation

The City of Turlock has two public transportation services: the Bus Line Service of Turlock (BLAST), which services the local community, and the Dial-O-Ride, which provides transportation within the City and the County. South Tegner Road, west of the project site, is the closest BLAST-serviced roadway. Dial-O-Ride has no designated route structure; it is dependent on the passenger destination.

8.10.3.7 Rail Traffic

Union Pacific Railroad (UPRR) operates an active main line, also referred to as the Tidewater Southern Railroad, on the north border of the project site. The UPRR right-of-way (ROW) parallels the south side of West Main Street and is used primarily for freight service.

An existing railroad spur will be used at the project site to deliver larger equipment. The railroad spur abuts the proposed project site.

8.10.3.8 Air Traffic

The project site is within an agricultural area that could have private landing strips for agricultural uses in the general area. The closest general aviation airport (Turlock Airport) is within the Turlock city limits. This airport occupies 640 acres, and has one 3,000-foot runway.

The nearest international airport is located in Sacramento, approximately 100 miles from the project site.

8.10.3.9 Project Description

8.10.3.9.1 Project Site Access

The site is located in an industrial area about 4 miles west of the downtown portion of the City of Turlock in Stanislaus County. WEC will be located on approximately 18 acres of land within a 69-acre parcel under TID's control and will be used to accommodate the generation facilities, including the storage tank areas, parking area, control/administration building, water treatment facility, and generation equipment.

The site is located southeast of the intersection of West Main Street and South Washington Road. Access to the site will be provided via a new road built off South Washington Road through the west side of the project parcel. This new road will be approximately 1,900 feet in length. A secondary emergency access will be provided by construction of an access road along the eastern edge of the project that extends south to Ruble Road.

Most of the project site will be paved to provide internal access to all project facilities and onsite buildings. The areas around equipment, where not paved, will have gravel surfacing. See Section 2.0, Project Description, for further discussion of the project site.

8.10.3.9.2 Transmission Line

New 115-kV and 69-kV transmission lines would interconnect the WEC project to the TID electrical system. The new 115-kV transmission line will be approximately 1,950 feet long and will loop one circuit of an existing double-circuit 115-kV transmission line into the WEC switchyard. The new 69-kV transmission line will be approximately 670 feet long and will loop an existing 69-kV line into the WEC.

8.10.3.9.3 Gas Pipeline

Natural gas for the facility will be delivered via approximately 3.6 miles of new 8-inch pipeline that will connect to PG&E's existing gas transmission line (Line 215). Gas supply is described in Section 6.0. The gas line route is anticipated to go from the project site west along the railroad tracks, and then south on South Commons Road to Bradbury Road.

8.10.3.9.4 Water Pipeline

Approximately 1,800 acre-feet per year (afy) of recycled water from the City will be used to meet WEC water demands. This water will be provided via a new 1.6-mile pipeline connecting to the City's Wastewater Treatment Plant. The City is currently developing a Title 22 water treatment facility and is required by the Regional Water Quality Control Board (RWQCB) to have it operational by May 2006. Since the WEC project will commence operations the fourth quarter of 2005, TID proposes to use potable water from the City of Turlock to meet the WEC's water demands until the City's recycled water is available. The potable water will be provided via a 0.9-mile pipeline, connecting to an existing City water main located on Tegner Road, east of the WEC site. Potable water for drinking, safety showers, fire protection, plant service, and sanitary uses will continue to be served from the City's potable water system. (See Section 7.0 for further details.)

8.10.4 Environmental Consequences

This subsection describes the potential impacts of the WEC project. Subsection 8.10.4.1 presents the significance criteria; Subsection 8.10.4.2 discusses construction phase impacts; and Subsection 8.10.4.3 presents the impacts related to plant operation.

8.10.4.1 Significance Criteria

A project is generally considered to have a significant impact if it will cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system. Local policies (both City and County) are intended to prevent degradation of the public road service below an adopted LOS. As described in Stanislaus County General Plan, LOS C at peak hour is a reasonable and achievable standard for major arterial roadways. However, it is also acceptable for the LOS of the roadways to drop from C to D for a short duration, such as during construction. For roadways affected by the project, a 3 percent growth factor is assumed in establishing impacts on future background levels of traffic. This growth factor is considered reasonable because of the area's rural nature.

8.10.4.2 Summary of Construction Phase Impacts

Construction of the generating facility, from site preparation and grading to commercial operation, is expected to take a total time of 20 to 24 months.

Table 8.10-6 indicates the total daily construction-related vehicle trip generation, based on the estimated peak workforce for the site, transmission line, water line, and gas line. Table 8.10-7 indicates the estimated daily and evening peak traffic volumes and LOS expected during the construction of the project. The increase in daily and evening peak traffic, in addition to changes in the LOS, would not have an adverse impact on the highway and roadways in the project vicinity. The increase in total daily construction-related vehicle trip generation would not have an adverse impact on highways and roadways in the project vicinity.

TABLE 8.10-6
Total Daily Construction-Related Vehicle Trip Generation at the Project Site[a]

Average Work Force	Average Daily Vehicle Trips	Peak Workforce	Peak Daily Vehicle Trips[b]
114 workers	175	205 workers	315

[a] This analysis assumes a 1.3 average vehicle occupancy (AVO).
[b] Does not include linear construction trips. Construction trips for linears and project site is estimated to be 471.

Due to the relatively small size of the peak construction workforce and truck traffic, the only noticeable impact will be localized near the construction site. Comparing Tables 8.10-3 and 8.10-7, the increase in construction-related vehicle trip generation would not be adverse because construction workers typically begin work at 6:00 a.m. and finish early, limiting the number of vehicles during peak-hour traffic periods and thus reducing potential traffic effects. Details of potential construction impacts on transportation and traffic conditions are discussed in the following subsection.

8.10.4.2.1 Plant Construction

There will be an average and peak workforce of approximately 114 and 205, respectively, consisting of construction craft people, supervisory, support, and construction management personnel onsite during construction of the plant and transmission line. It is anticipated that most of the construction workforce will be drawn from the cities of Turlock and Modesto in Stanislaus County as well as parts of Merced County. The peak construction site workforce level is expected to last from month 11 through month 19 of the construction period. During the peak construction period, using a 1.3 AVO for commuting, plant construction workers will generate an estimated 315 daily trips, 158 of which will occur during the evening peak hour. Construction will generally be scheduled to occur between 7 a.m. and 7 p.m., Monday through Friday. Additional hours may be necessary to make up schedule deficiencies or to complete critical construction activities (e.g., pouring concrete at night during hot weather, working around time-critical shutdowns and constraints). During some construction periods and during the startup phase of the project, some activities may continue 24 hours a day, including Sunday.

Construction laydown and parking areas will be located on the remaining 51 acres within the WEC parcel, west of the proposed plant footprint (see Figure 1.1-2). Construction traffic is anticipated to use South Washington Road. Materials and equipment will be delivered by truck and rail.

Increases in traffic due to construction will consist of deliveries by truck of plant equipment and construction materials, such as concrete and steel. It is anticipated that rail deliveries will include major components of the heat recovery steam generator (HRSG), combustion turbine generator, and steam turbine generator; while truck deliveries would include piping, supports, and valves; concrete and reinforcing steel; construction consumables, and office supplies.

Construction of WEC will require the use and installation of heavy equipment and associated systems. Construction materials will be delivered continually to the site by trucks. The number of trucks used during construction is expected to be small. An average

TABLE 8.10-7
Estimated Daily and Evening Peak Traffic Volumes and LOS Expected During Project Construction

			Future Project Conditions During Construction (2002 - 2005)				Future Project Conditions During Operation (2005)			
Roadway	Classification	Number of Lanes	Estimated Daily Construction Trips[a]	Combined Daily Traffic (with Est. Daily Construction Trips)	Combined PM Peak Traffic	Estimated LOS	Estimated Increase in Daily Volume[b]	Estimated Daily Volume	Estimated PM Peak Traffic	Estimated LOS
West Main Street (West of S. Washington Road)	Major	2	471	7,896	973	C	42	8,929	890	C
South Washington Road (South of W. Main Street)	Collector	2	471	2,324	413	A	42	2,276	225	A
West Harding Road (West of S. Washington Road)	Collector	2	471	903	273	A	42	581	60	A
South Walnut Road	Collector	2	471	8,236	1,008	C	42	9,336	935	C
Tegner Road	Local	2	471	1,692	353	A	42	1,521	150	A
West Linwood Ave (South of S. Walnut Road)	Collector	2	471	9,183	1,103	C	42	10,466	1,045	C
Clayton Road	Collector	2	471	1,547	338	A	42	1,289	146	A
South Commons Road	Collector	2	471	798	261	A	42	421	59	A
Bradbury Road	Collector	2	461	N/A	N/A	N/A	42	N/A	N/A	N/A
Highway 99 (at MP 9.16, Manning Avenue)	Highway	6	471	64,471	6,028	F	42	76,955	11,566	F

[a] Estimated Peak Daily Construction Trips, Peak Construction Workers, including truck trips (20 per day) and construction traffic approximately 136 per day and 36 in the evening peak for linear facilities (water, natural gas and transmission), would equate to 471 daily and 228 in the pm peak.

[b] Total increase in daily volume is 21 vehicles, assumed to be distributed evenly among the routes shown.

of 8 to 10 truck deliveries per day are estimated during construction. Most major pieces of construction equipment will remain within the power plant construction and lay-down areas during construction. A conservative, "worst-case" estimated number of daily trucks during the peak construction period is about 20 trucks per day. In addition, "heavy-haul" loads will be delivered to the project site by rail. Up to 40 rail cars will be used to deliver heavy or large items such as the heat recovery steam generator (HRSG) modules, combustion turbines and generators, steam turbine and generator, and generator step-up transformers. There is an existing east-west running railroad spur approximately 150 feet north of the project site.

The vehicles used to transport heavy equipment and construction materials will require transportation permits when they exceed the size, weight, width, or length thresholds set forth in Section 35780 of the CVC, Sections 117 and 660-711 of the California SHC, and Sections 1411.1 to 1411.6 of the California Code of Regulations. Affected vehicles will be required to obtain transportation permits from the City of Turlock, Stanislaus County, and Caltrans.

Transport route arrangements would be required with Caltrans officials for permitting and escort, as applicable. Generally, only small quantities of hazardous materials will be used during the construction period, as described in Subsection 8.12, Hazardous Materials Handling. They may include gasoline, diesel fuel, motor oil, hydraulic fluid, solvents, cleaners, sealants, welding flux, various lubricants, paint, and paint thinner. Because of the small quantities of hazardous materials involved, separate truck deliveries of hazardous materials during construction are unlikely.

Construction debris and small quantities of hazardous wastes will be generated during construction (see Subsection 8.13, Waste Management). During construction, a minimal number of truck trips per month will be required to haul waste for disposal. Transportation of hazardous materials to and from WEC will be conducted in accordance with CVC Section 31303. Because the transport of hazardous wastes will be conducted in accordance with the relevant transportation regulations, no significant impact is expected.

All road-crossing construction activities will be in accordance with local, state, and federal regulatory requirements and specifications. Adequate barricades and lights will be provided around excavations at crossings in accordance with Caltrans "Manual of Traffic Controls for Construction and Maintenance of Work Zones" and California Vehicle Code Section 21400. A construction management plan will be developed for this project.

8.10.4.2.2 Water Pipeline and Related Facilities

Construction of the recycled and potable water pipelines and related facilities will require a peak workforce of approximately 18 people, and will be completed over a 4- to 5-month period. During the peak construction period, using a 1.3 AVO for commuting, construction workers will generate an estimated 48 daily trips, 24 of which will occur during the evening peak time periods.

8.10.4.2.3 Natural Gas Pipeline

Construction of the 3.6-mile natural gas pipeline will require a peak workforce of approximately 36 people, and will be completed over a period of 3 to 5 months. During the peak construction period, using a 1.3 AVO for commuting, construction workers will generate an estimated 56 daily trips, 28 of which will occur during the evening peak time

periods. The construction workforce will likely park their vehicles adjacent to the pipeline alignment.

8.10.4.2.4 Transmission Lines

Construction of the 69-kV and 115-kV transmissions lines will require a peak workforce of approximately 20 people, and will be completed over a 3- to 4-month period. During the construction period, TID's construction workers will meet at the corporate yard and travel together to the worksite in crew trucks. Construction workers will generate an estimated 6 daily trips, none of which will occur during the evening peak time periods since their work hours are from 7:00 a.m. to 3:30 p.m.

8.10.4.3 Operation Phase Impacts

Permanent access to the site will be provided via a new road built off South Washington Road through the west side of the project parcel. This new road will be approximately 1,900 feet in length.

Workers will generate an estimated 22 daily trips, none of which will occur during the evening peak. (See Subsection 8.8, Socioeconomics, for further worker detail.) There will be approximately 21 full-time employees working at the plant; however, not all of the workers will be onsite at the same time since the operators will work in shifts. Ten operators will work 12-hour rotating shifts, 2 operators per shift, with 2 relief operators (7 a.m. to 7 p.m. and 7 p.m. to 7 a.m.), 7 days per week. The standard shift for the maintenance technicians and administrative positions will be 8 hours per day (7 a.m. to 3:30 p.m.), 5 days per week, with unscheduled days and hours as required (i.e., weekends). During the day, 11 staff will be at the plant.

Table 8.10-7 shows projected current daily volume in 2005 and LOS on nearby roadways, and daily volumes and LOS under the worst-case scenario. As indicated in the table, the County roads remain at LOS C or above, which meets Stanislaus County and the City of Turlock LOS standards.

During plant operations, trucks will periodically deliver/pick up replacement parts, lubricants, water treatment chemicals, anhydrous ammonia, sulfuric acid, trash, and other consumables. Table 8.10-8 summarizes expected truck trips for the project, including delivery of hazardous materials and removal of wastes. On average, there will be three truck trips to the project site per day. For further information on the management of hazardous materials and waste products, see Subsections 8.12 and 8.13, respectively.

Sulfuric acid and various cleaning chemicals are considered hazardous materials. According to Division 13 Section 31303 of the CVC, the transportation of hazardous materials will be on the state or interstate highways that offer the shortest overall transit time possible.

Anhydrous ammonia is considered a potential inhalation hazard. Division 14.3 Section 32105 of the CVC specifies that unless there is not an alternative route, every driver of a vehicle transporting inhalation hazards shall avoid, by prearrangement of routes, driving into or through heavily populated areas, congested thoroughfares, or places where crowds are assembled.

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

Delivery Type	Number and Occurrence of Trucks
Anhydrous ammonia	1 to 2 per month
Sulfuric acid	2 per month
Cleaning chemicals	1 per month
Trash pickup	1 per week
ZLD salt cake	5 per week
Lubricating oil	4 per year
Lubricating oil filters	4 per year
Laboratory analysis waste	4 per year
Oily rags	4 per year
Oil absorbents	4 per year
Water treatment chemicals	4 per week

Additionally, transporters of inhalation hazardous or explosive materials must contact the CHP and apply for a Hazardous Material Transportation License. Upon receiving this license, the shipper will obtain a handbook that will specify the routes approved to ship inhalation hazardous or explosive materials. The exact route of the inhalation or explosive material shipment will not be determined until the shipper contacts the CHP and applies for a license. Transportation impacts associated with power plant operations will not be significant for the following reasons:

- Visits by trade persons, vendors, consultants, and other non-plant personnel are expected to be minimal and would likely occur primarily during non-peak commute periods.
- Deliveries of hazardous materials will be limited. Delivery of these materials will occur over prearranged routes and will be in compliance with all LORS governing the safe transportation of hazardous materials.

8.10.5 Cumulative Impacts

As described previously, the available capacity of the regional state routes and local roads in Stanislaus County and the City of Turlock area shows the regional transportation system has the capacity to accommodate future traffic including that resulting from the proposed construction and operation of WEC. There are no other known proposed projects whose workforce and/or material deliveries would concurrently travel the same state routes and local roadways. Therefore, there are no significant cumulative traffic impacts.

8.10.6 Mitigation Measures

8.10.6.1 Construction Phase

Construction of WEC will add a moderate amount of traffic to state routes and local roadways during the peak construction period. However, because existing roadway

capacity is adequate, these project-related traffic increases will not result in significant impacts.

During operation and construction, access to the facility will be provided via South Washington Road to a newly constructed roadway entrance.

The construction contractor will prepare a construction traffic control plan and construction management plan that addresses timing of heavy equipment and building material deliveries, signing, lighting, traffic control device placement, and establishing work hours outside of peak traffic periods.

Methods for mitigating potential traffic impacts caused by construction may include such activities as stationing flag persons at the access road into the site, and placing advance warning flashes, flag persons, and signage along the roadways associated with the natural gas and water pipelines. Access during pipeline construction will be along existing roads and rights-of-way. Damage to any roadway opened during the construction of the linear lines including natural gas or water pipelines 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.

It should be noted that most trip reduction strategies are not feasible for the construction phase of the project, primarily because of the differing schedules of tradespersons and the need to transport tools and materials to the job site.

8.10.6.2 Operations and Maintenance Phase

The operations-related and maintenance-related traffic associated with WEC is considered to be minimal; state routes and local roadways have adequate capacity to accommodate operations-related traffic. Consequently, no operations-related mitigation measures are required for WEC.

8.10.7 Permits and Permitting Schedule

Table 8.10-9 presents the permits and permit schedule.

TABLE 8.10-9
Permits and Permit Schedule for WEC Traffic and Transportation

Permit	Administering Agency	Schedule
Transport oversized or excessive loads over state highways	Caltrans Dee Garcia (annual) Permit Office on Duty (single-trip) 916-322-4954	Obtain when necessary, 2-hour processing time (single trip) to 2 weeks (annual trip).
Transportation permit for oversized vehicles	Caltrans Dee Garcia (annual) Permit Office on Duty (single-trip) 916-322-4954	Obtain when necessary, same-day processing.
Hazardous Materials Transportation License	CHP Joel Arbuckle 916-445-1865	Obtain when necessary, approximately 2-week processing time
Shipping of inhalation or explosive materials	CHP Joel Arbuckle 916-445-1865	Obtain when necessary, approximately 2-week processing time

8.10.8 References

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WEST MAIN STREET
7,425
WEC
SOUTHERN
TIDEWATER
RUBLE ROAD
330
1,850
1,250
1,100
CLAYTON ROAD
WEST LINWOOD AVE
8,725
64,000
SR 99
7,800
COMMONS ROAD
SOUTH WASHINGTON ROAD
SOUTH TEGNER ROAD
SOUTH WALNUT ROAD
WEST HARDING ROAD
450
Chatom Union Sch
Chemurgic
Sewage Disposal
Wakefield Sch
Cunningham Sch
Osborn Sch
Crane Sch
Hospital
PO
Cem
Park
Water
Well
BM 81
BM 87
BM 96
BM 101
BM 73
BM 77
BM 78
AIRSTRIP
LEVINE RD
SIMMONS ROAD
SILVA ROAD
IDAHO ROAD
BRADBURY ROAD
HARDING LATERAL NO 5
NO 5½ LATERAL
STANISLAUS CO
MERCED CO
MAIN
WEST
SOUTH
PARK ST
HIGH ST
OLIVE ST
VERMONT ST
MONTANA ST
LINWOOD AVE
GLENWOOD AVE
GREENWAY AVE
MITCHELL ROAD
PRAIRIE ROAD
FAITH HOME ROAD
FLOWER ROAD
CANAL ROAD
CERES ROAD
LANDER AVENUE
AQUEDUCT AIRSTRIP
KILROY AVENUE
SODERQUIST ROAD
TIDEWATER SOUTHERN CANAL
13 18 17 16 15
24 19 20 21 22 23
25 30 29 28 27 26
36 31 32 33 34 35

LEGEND
PROPOSED GAS
PROPOSED RECYCLED WATER
PROPOSED POTABLE WATER

0 2,000 Feet

N

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FIGURE 8.10-1
TID LOCAL STREETS AND DAILY TRAFFIC VOLUMES
WALUNT ENERGY CENTER

CH2MHILL