

## **4.10 TRANSPORTATION AND CIRCULATION**

### **4.10.1 INTRODUCTION**

This section addresses the potential for the Proposed Project to impact traffic. Following an overview of the existing traffic setting in **Subsection 4.10.1** and the relevant regulatory setting in **Subsection 4.10.2**, project-related impacts and recommended mitigation measures are presented in **Subsection 4.10.3**.

### **4.10.2 ENVIRONMENTAL SETTING**

#### **Existing Roadway Network**

Access to the project site is provided via the existing roadway network shown in **Figure 4.10-1**. Direct access to the project site is provided via Vaca Station Road. Roadways that would be utilized by project related traffic are described below.

*Interstate 80 (I-80)* is a six-lane east/west oriented freeway that provides regional access to the project site. I-80 is designated as a freeway in the City of Vacaville General Plan (1990) (General Plan) and is under the jurisdiction of the California Department of Transportation (Caltrans).

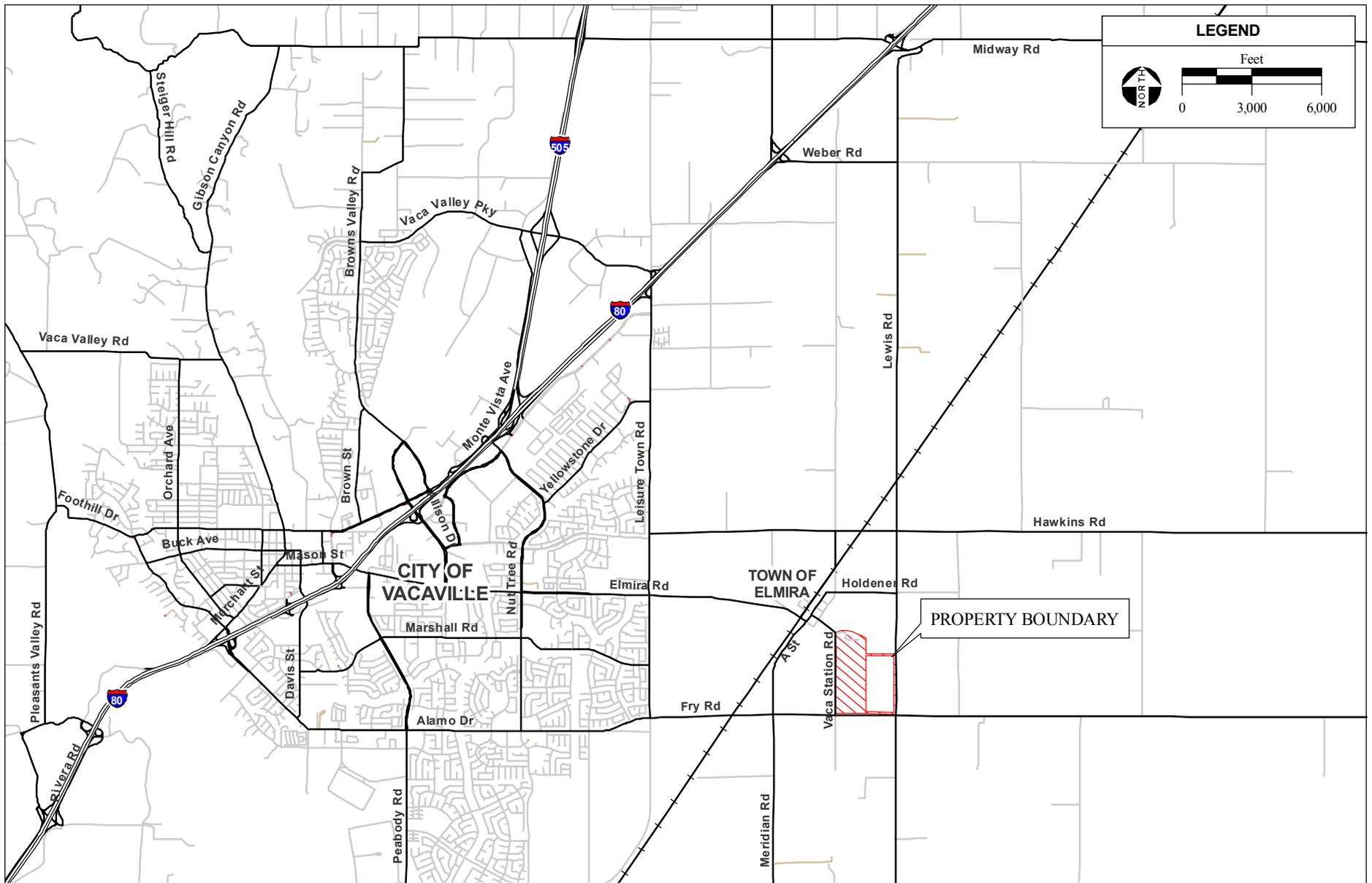
*Leisure Town Road* is a two to four-lane paved north/south oriented roadway that extends from Vanden Road to I-80. Leisure Town Road is under the jurisdiction of the City where it occurs along the eastern incorporated boundary, and is designated as a local truck route with a posted 40 mile per hour (mph) in the project vicinity. The Leisure Town Road / Elmira Road and Leisure Town / Alamo & Fry Intersections are signal controlled. Leisure Town Road provides access to the project site from I-80 to the north.

*Elmira Road* is a two to four lane paved east/west oriented roadway that extends from South "A" Street in the Town of Elmira, west to Leisure Town Road and then continues west through the City of Vacaville to I-80. Elmira Road is a City Road from Elmira through the City of Vacaville and is designated as a minor arterial from South "A" Street to Leisure Town Road and a major arterial within the City limits from Leisure Town Road to I-80. Elmira Road is a designated truck route with a posted speed limit of 45 mph in the vicinity of the project site. Elmira Road provides access to the project site from Leisure Town Road.

*South A Street* is a two-lane, north south collector west of the project site, and is a major collector for the town of Elmira. South A Street is under the jurisdiction of the County and provides access to the project site from Elmira Road.

*Vaca Station Road* is a two-lane paved north/south oriented roadway that extends from the eastern edge of the Town of Elmira to Fry Road. Vaca Station Road is under the jurisdiction of the County and is not designated within the County's General Plan. Vaca Station Road provides direct access to the project site.

*Fry Road* is a two-lane paved east/west oriented roadway located directly south of the project site that extends from SR-113 to Leisure Town Road. Fry Road is under the jurisdiction of the County and is



SOURCE: StreetMap North America, 2009; AES 2010

Vacaville EWWTP Tertiary Project DEIR / 209508 ■

**Figure 4.10-1**  
Existing Transportation Network

designated as a Route of Regional Significance in the County's General Plan. Fry Road provides access to the project site from the both the west and the east, and there is no posted speed limit in the project vicinity.

*Lewis Road* is a two-lane paved north/south oriented roadway that extends from Midway Road to Hay Road. Lewis Road is designated as collector road in the Solano General Plan and is under the jurisdiction of the County. Lewis Road provides access to the project site to and from the north, and access to Hay Road for trips to and from the land fill.

*Hay Road* is a two-lane paved east/west oriented roadway that extends from Meridian Road to SR-113. Hay Road is designated as collector road in the Solano General Plan and is under the jurisdiction of the County. Hay Road provides access to an existing land fill located west of State Route 113.

### **Bikeways, Pedestrian Facilities, Public Transportation System**

Bicycle pathways/routes in the immediate vicinity of the project site and along anticipated haul routes include bike routes on Fry Road, Meridian Road, and Elmira Road, as well as a bike path along Leisure Town Road, east of the project site. There are no pedestrian facilities within the vicinity of the project site. There is no public transportation which services the project site.

## **4.10.3 REGULATORY CONTEXT**

### **State**

#### ***California Department of Transportation***

Caltrans manages interregional transportation, including the management and construction of the California highway system. In addition, Caltrans is responsible for the permitting and regulation of state roadways. The project area includes two roadways that fall under Caltrans' jurisdiction, SR-113 and I-80. Caltrans establishes performance standards that apply to specific routes and publishes those standards in transportation concept reports (TCRs). Performance standards in TCRs are often expressed as LOS standards. LOS standards are established based on current operating conditions, surrounding land uses, local policies, and current plans for improvement on the facility.

### **Local**

#### ***Solano County General Plan (2008)***

The Transportation and Circulation Element of the Solano County General Plan (2008) establishes policies and standards for transportation. Applicable goals and polices are as follows:

#### ***Goals***

TC.G-3 Encourage land use patterns that maximize access and mobility options for commuting and other types of trips, and minimize traffic congestion, vehicle miles traveled (VMT), and greenhouse gas emissions.

TC.G-5 Encourage and maintain the safe, convenient transfer of goods and services from agricultural lands and industrial locations to regional and interregional transportation facilities.

### **Policies**

TC.P-1 Maintain and improve current transportation systems to remedy safety and congestion issues, and establish specific actions to address these issues when they occur.

TC.P-3 Establish land use patterns that facilitate shorter travel distances and non-auto modes of travel, and limit the extent of additional transportation improvements and maintenance that may be needed with a more dispersed land use pattern.

TC.P-4 Evaluate proposals for new development for their compatibility with and potential effects on transportation systems.

TC.P-5 Fairly attribute to each development the cost of on- and off-site improvements needed for state and county roads and other transportation systems to accommodate that development, including the potential use of development impact fees to generate revenue.

TC.P-8 Actively participate with the California Department of Transportation, Solano Transportation Authority, cities, and other agencies to plan for any proposed future realignments of current interregional routes.

TC.P-10 Anticipate increases in vehicular traffic on rural roads that serve agricultural-tourist centers, value-added agricultural uses in the interior valleys, and other unique land uses; complete related roadway improvements that support the viability of such uses.

TC.P-11 Maintain and improve the current roadways and highway system to meet recommended design standards set forth by the County, including streets that also carry transit and nonmotorized traffic.

TC.P- 13 Designate and reserve adequate transportation right-of-way to meet projected traffic volumes, anticipating reasonable future demand.

TC.I-2 In collaboration with other agencies and cities, continue to plan land uses that concentrate major employment and activity centers and services near transportation systems.

TC.I-9 Maintain an inventory of roadway conditions and widths so that an upgrade and replacement program can be developed and implemented for these facilities.

TC.I-11 Review roadway widening needs on major county roadways when reviewing proposed new developments to ensure that adequate right-of-way will be available.

***Solano County Road Improvement Standards and Land Development Requirements***

The *Solano County Road Improvement Standards and Land Development Requirements* (2006) (Chapter 28 of the Solano County Code) outlines LOS standards for Solano County. Applicable standards are as follows:

Section 1-4 The goal of Solano County is to maintain a Level of Service C on all roads and intersections. In addition to meeting the design widths and standards contained in this document, all projects shall be designed to maintain a Level of Service C, except where the existing level of service is already below C, the project shall be designed such that there will be no decrease in the existing level of service. Levels of Service shall be calculated using the Transportation Research Board's most recent Highway Capacity Manual.

***Vacaville General Plan (1990)***

The Transportation Element of the Plan (1990) establishes policies for transportation networks through the City. The goals and polices that are applicable to the Proposed Project are as follows:

***Policies***

- 6.1-14 Improve circulation facilities as needed to maintain traffic levels of service and safety on major arterials.
  
- 6.2-G1 Work with the California Department of Transportation (Caltrans) and Solano Transportation Authority (STA) to achieve timely construction of programmed freeway and interchange improvements.
  
- 6.2-G2 Coordinate, to the extent feasible, transportation system improvements with neighboring jurisdictions.
  
- 6.3-G4 Designate truck routes, and discourage unnecessary through-traffic in residential areas through circulation system design and planning.
  
- 6.3-I2 Avoid adding traffic to roadways carrying volumes above the standards.

**4.10.4 IMPACTS AND MITIGATION MEASURES**

**Method of Analysis**

This section identifies any impacts to transportation and traffic that could occur from construction, operation, and/or maintenance of the Proposed Project. Impacts to transportation and traffic were analyzed based on an examination of the project site and published information regarding transportation and traffic within the project area, and comparison of these factors to the significance criteria listed below. If significant impacts may occur, mitigation measures are included to increase the compatibility and safety of the Proposed Project and reduce impacts to less-than-significant levels. Impacts that were determined

to be less than significant in the Initial Study do not warrant further analysis and are not discussed within this EIR.

The City of Vacaville requires a formal traffic study for private development projects with an expected trip generation greater than 100 peak hour trips for projects proposed within the City's jurisdiction (Vacaville Infrastructure, Facilities and Services Status Report, 2007). Because the potential traffic impacts of the Proposed Project are primarily related to short term construction activities; and, because the project is serviced by roads under the jurisdiction of the County of Solano, the analysis of traffic in this EIR uses the volume and capacity of the roadways and the level of service (LOS) thresholds for determining construction related impacts.

The traffic analysis within this EIR is based on the following assumptions:

- 40 one-way construction worker trips per day (20 In and 20 Out).
- Transport of cut and fill material would require an estimated 2,250 16-cy truck deliveries, at approximately 14 one-way trips per day (or an estimated peak of seven deliveries per day, 2 one-way trips per hour) for a period of approximately 16 months.
- Four round trips (8 one-way trips) material truck deliveries per day.
- Truck delivery routes from I-80 would take either 1) Leisure Town Road to Fry Road to Vaca Station Road; or, 2) Midway Road to Lewis Road to Fry Road to Vaca Station Road
- Both routes from I-80 are conservatively analyzed using all project related traffic.
- The haul route for cement exportation to Hay Road Landfill would be Vaca Station Road to Fry Road to Lewis Road to Hay Road.
- For the purpose of assessing roadway capacity, one truck trip is equal to 2.0 passenger car (PC) trips.

### **TRIP GENERATION & DISTRIBUTION**

Based on the assumptions noted above and most current count information available, **Tables 4.10-1** through **4.10-3** document expected project trip generation and distribution

### **Thresholds of Significance**

Criteria for determining the significance of impacts to traffic and circulation have been developed based on Appendix G of the California Environmental Quality Act's (CEQA) *Guidelines* and relevant agency guidelines. Impacts to the existing transportation network would be considered significant if the Proposed Project would:

- Cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase on either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections);
- Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways;
- Result in a change in area traffic patterns, including either an increase in traffic levels or a change

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in location that results in substantial safety risks;

- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- Result in inadequate emergency access;
- Result in inadequate parking capacity; and/or
- Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

**TABLE 4.10-1. ESTIMATED AVERAGE DAILY TRIPS (ADT)**

ACTIVITY			In	Out	ACTIVITY			In	Out
<i>Initial Construction</i>					<i>Cut &amp; Fill Operation</i>				
	Construction Worker Trips		20	20		Construction Worker Trips	20	20	
Trucks:	Concrete Exportation <sup>a</sup>		7	7	Trucks:	Cut & Fill Transport	7	7	
	Passenger Car Equivalents		14	14		Truck Deliveries	4	4	
	<u>Total Directional Trips</u>		<u>34</u>	<u>34</u>		<u>Total Estimate Trucks/Day</u>	<u>11</u>	<u>11</u>	
	<b>Total Initial Construction Trips</b>		<b>68</b>			<u>Passenger Car Equivalents</u>	<u>22</u>	<u>22</u>	
						<u>Total Directional Trips</u>	<u>42</u>	<u>42</u>	
						<b>Total Peak Construction Trips</b>	<b>84</b>		

Note: EIR assumption - 1 truck is equivalent to 2 Passenger Cars in evaluating capacity impact

<sup>a</sup> Assume daily concrete exportation trips to land fill occurs at same rate as cut and fill operation, but occurs at a separate time from cut and fill operation. Assume haul route would be from project south on Lewis Road to Hay Road, East on Hay Road to Hay Road Land Fill.

Source: City of Vacaville Traffic Engineering Staff, 2009

**TABLE 4.10-2. DAILY TRIP DISTRIBUTION**

	Roadways				
	Leisure Town	Fry	North Lewis	South Lewis	Hay
Truck Trips	14.5	14.5	7.5	14	14
Truck Trips Pass. Car Equiv	29	29	15	28	28
Construction Worker Trips	27	27	13	0	0
<b>Total Passenger Car Trips</b>	<b>56</b>	<b>56</b>	<b>28</b>	<b>28</b>	<b>28</b>
	<b>84</b>			<b>28</b>	

Notes: EIR Assumptions – (1) Work, Cut & Fill and Delivery trips are distributed to and from Leisure Town to Fry to Vaca Station (66%) or Midway Road to Lewis Road to Fry Road to Vaca Station (34%). (2) Concrete Exportation Delivery trips are distributed to and from Vaca Station to Fry to Lewis, South to Hay and east on to Land Fill.

Source: City of Vacaville Traffic Engineering Staff, 2009

**TABLE 4.10-3. COMPARISON TO EXISTING DAILY VOLUMES AND CAPACITY**

	Roadways				
	Leisure Town	Fry	North Lewis	South Lewis	Hay
<b>Existing Daily Traffic Volumes</b>					
ADT	9600	3126	632	554	648
Truck Trips	14.5	14.5	7.5	14	14
% Increase in Trucks	0.2%	0.5%	1.2%	2.5%	2.2%
<b>Total Passenger Car Trips</b>	<b>56</b>	<b>56</b>	<b>28</b>	<b>28</b>	<b>28</b>
% Increase in Traffic Volume	0.6%	1.8%	4.5%	5.1%	4.3%
<b>Roadway Capacity (Daily)</b>					
2 Lane Arterial LOS C Capacity	15000				
2 Lane Collector LOS C Capacity		10000	10000	10000	10000
<b>Total Passenger Car Trips</b>	<b>56</b>	<b>56</b>	<b>28</b>	<b>28</b>	<b>28</b>
% Increase of LOS C Capacity	0.4%	0.6%	0.3%	0.3%	0.3%
Notes: <sup>a</sup> ADT for Leisure Town Road (North of Alamo / Fry) estimated from Vacaville 4/15/2009 PM Peak Hour Count. ADT's for Fry Road Lewis (North and south of Fry Road and Hay Road from Counts provided by Solano County Public Works Staff. Capacity based on current Vacaville General Plan (Table from Figure 6-1) Source: City of Vacaville Traffic Engineering Staff, 2009					

## Effects Found Not to be Significant

As discussed within the Initial Study for the Proposed Project included within **Appendix B**, the Proposed Project would not result in a change in area traffic patterns or propose changes to area roadway design features or uses. The Proposed Project would have no impacts to parking or alternative transportation. Therefore, further discussion of these issue areas is not included within this EIR.

## Project Specific Impacts and Mitigation Measures

### Construction Impacts

#### Impact

#### 4.10-1 Construction of the Proposed Project could cause an increase in traffic in relation to the existing traffic load and capacity of the street system.

Construction of the Proposed Project would increase the level of traffic on project area roadways. Construction vehicles and equipment expected to be used include, but are not limited to, legally loaded trucks, dump trucks, delivery and service trucks, and construction worker vehicles. An estimated 20 one-way construction worker vehicle trips would occur between 6:00 am and 8:00 am and 20 one-way trips between 4:00 PM and 6:00 pm. Construction worker trips would be dispersed though out the roadway system. Additionally, during the work day it is estimated that two soil haul truck trips and one material delivery trip per hour would occur. Truck deliveries from I-80 would take either 1) Leisure Town Road to Fry Road to Vaca Station Road; or, 2) Midway Road to Lewis Road to Fry Road to Vaca Station Road. Construction traffic will not be allowed to

access the project via Elmira Road through the Town of Elmira. Primary impacts from construction-related trucks deliveries would include short-term and intermittent lessening of roadway capacities due to slower movements and larger turning radii of the trucks compared to passenger vehicles. However, the temporary increase in traffic resulting from the project (a maximum of 23 trips per hour during peak traffic hours, and 84 passenger car equivalent trips daily) along these roadways is significantly less than locally established peak hour threshold and is found to be less than 1 percent of LOS C roadway capacity. It was found that the temporary project trips associated with concrete demolition would increase the volume on South Lewis Road by 5.1 percent, or 28 daily trips (passenger car equivalent); however, considering that existing traffic volumes are relatively low, these trips are temporary, and the increase is less than 1 percent of LOS C capacity, this increase is not substantial. Because project related trips would be less than 1 percent of LOS C Roadway capacity, and existing traffic is also much less than LOS C capacity, the addition of temporary project-related construction trips would not result in a change in LOS. Temporary project construction trips would not result in a substantial increase in traffic volumes on area roadways and the level of service experienced by motorists would not change significantly; therefore, the addition of temporary project related construction trips and additional employee trips is found to be less than significant. **Less than Significant.**

## Impact

### 4.10-2 The temporary increase in large vehicle traffic related to construction of the Proposed Project could result in deterioration of roadways, and subsequently potential traffic hazards.

It is estimated that during the construction period, transport of cut and fill material would require an estimated 2,250 16-cy truck deliveries, at approximately 14 one-way trips per day (or seven deliveries per day, 2 one-way trips per hour) for a period of approximately 16 months. Trucks are expected to travel along Leisure Town, Fry, Hay, Lewis, and Vaca Station Roads. Although excessive volumes of heavy loaded trucks have the potential to chronically damage roadways, truck trips associated with project construction would be legally loaded. Any extra legal loads needed for specialized deliveries, would be subject to a permit process involving fees and special requirements. The number of truck trips using roadways would increase temporarily during construction, but not beyond five percent, which is the standard Solano County established as minimum truck traffic to be considered for roadway design (Solano County Roadway Standards Section 1-2.1 Traffic Projections). Damage to City and County roads is a potentially significant impact. **Mitigation Measure 4.10-2** would reduce this impact to less than significant by requiring compliance with regulations in the California Vehicle Code (CVC), particularly legal weight and width limits, intended to minimize adverse impacts to roadways. **Less than Significant with Mitigation.**

**Mitigation Measure 4.10-2.** Construction traffic shall comply with the CVC sections related to vehicle weight and width. Any extra legal loads needed for specialized deliveries shall be subject to special permit requirements from Solano County.

**Impact****4.10-3 Construction traffic generated by the Proposed Project has the potential to result in inadequate emergency access.**

The project site has two emergency access points along Vaca Station Road, located along the northwestern and southwestern boundary of the project site. Since truck traffic during construction hours would use the south route on Vaca Station Road, the northern route would be available for any emergency access. The northern route is the most direct route for the City of Vacaville Fire Department response and to the hospitals in the City of Vacaville. The level of temporary truck traffic, and very low increases in long-term traffic volumes (from up to five (5) additional employees during operation), would not change the level of service experienced by motorists. Therefore, because the Proposed Project would not result in inadequate emergency access, this potential impact is considered less than significant. **Less than Significant.**

**Operational Impacts****Impact****4.10-4 Traffic generated by operation of the Proposed Project has the potential to increase traffic on City of Vacaville and Solano County roadways beyond an acceptable capacity.**

The Proposed Project would not increase the capacity of the EWWTP, and therefore would not accommodate growth within the City that could result in additional traffic. An additional one to five full-time employees may be needed to operate the proposed facilities and expanded laboratory at the EWWTP. The resulting additional trips added to the roadway network would not cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system, or result in deterioration in LOS below accepted standards; therefore, this impact is considered to be less than significant. **Less than Significant.**

**Cumulative Impacts****Impact****4.10-5 Traffic generated by construction of the Proposed Project in combination with cumulative development and construction in the project area has the potential to increase traffic on affected roadways beyond an acceptable capacity.**

Cumulative projects in the vicinity of the project site, including growth resulting from build-out of the City's General Plan and potential development of a power plant adjacent to the project site, could result in adverse impacts to traffic and circulation. The only potentially foreseeable development that would occur in the project area during the construction phase of the Proposed Project is the CPV Vaca Station electrical power generation facility (that is proposed adjacent to the southeast portion of the project site). Construction of the power plant may occur concurrent

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with construction of the Proposed Project, and would result in 452 additional trips on City and County roadways per hour (CPV, 2008). Construction traffic associated with the power plant in conjunction with the maximum of 23 trips per hour that would result from the construction of the Proposed Project would result in a substantial increase in traffic on City and County roadways. The incremental effect of the Proposed Project on the cumulative traffic environment would be up to 23 trips per hour, or five percent of cumulative traffic, and would not be considered substantial. Therefore, the Proposed Project's incremental contribution to this potentially significant cumulative impact would be considered less than significant. **Less than Significant.**