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**APPENDIX A**

**COMBUSTION EMISSIONS ASSOCIATED  
WITH CONSTRUCTION AND OPERATION**



## Appendix A

### Combustion Emissions Associated with Construction Activities

#### Emission Factors –Sewer line project

Equipment	Days	Hours of Operation	Emission Factors (tons/hr)				
			CO	NO <sub>x</sub>	PM <sub>10</sub>	SO <sub>x</sub>	ROG
grader	1.5	12	0.567	1.623	0.084	0.276	0.148
Loader	7	56	0.424	0.858	0.086	0.115	0.132
excavator	7	56	0.598	1.423	0.078	0.013	0.182
paving equipment	2	16	0.419	0.961	0.069	0.144	0.117
paver	2	16	0.449	0.894	0.067	0.165	0.12

Assumptions: Total construction time frame 1 month, 4.33 week construction period, 5 work days per week, 8 hours per work day, 174 hours of operation total, excavation not required for construction.

Emission factors associated with construction of the WWTP were calculated utilizing URBEMIS 2007, and are provided below.

**FINAL**

*Environmental Information Document  
for Wastewater Collection and Treatment System  
Palo Verde, California*

*Appendix A  
Combustion Emissions Associated with Construction Activities*

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: G:\Environmental-Development\2010 Projects\WWTP\alternative.urb924

Project Name: alt1

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2007 TOTALS (tons/year unmitigated)	0.04	0.34	0.18	0.00	0.12	0.02	0.14	0.03	0.02	0.04	27.06
2007 TOTALS (tons/year mitigated)	0.04	0.34	0.18	0.00	0.12	0.02	0.14	0.03	0.02	0.04	27.06
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2008 TOTALS (tons/year unmitigated)	0.15	1.04	0.53	0.00	0.05	0.07	0.12	0.01	0.06	0.07	89.78
2008 TOTALS (tons/year mitigated)	0.15	1.04	0.53	0.00	0.05	0.07	0.12	0.01	0.06	0.07	89.78
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)							

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	0.01	0.02	0.12	0.00	0.02	0.00	10.34

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	0.01	0.02	0.12	0.00	0.02	0.00	10.34

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated





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2008	0.15	1.04	0.53	0.00	0.05	0.07	0.12	0.01	0.06	0.07	89.78
Asphalt 12/28/2007-01/11/2008	0.01	0.06	0.04	0.00	0.00	0.01	0.01	0.00	0.00	0.00	5.48
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.06	0.03	0.00	0.00	0.01	0.01	0.00	0.00	0.00	4.41
Paving On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80
Fine Grading 11/30/2007-01/11/2008	0.02	0.13	0.07	0.00	0.05	0.01	0.06	0.01	0.01	0.02	10.57
Fine Grading Dust	0.00	0.00	0.00	0.00	0.05	0.00	0.05	0.01	0.00	0.01	0.00
Fine Grading Off Road Diesel	0.01	0.13	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	10.11
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46
Building 01/11/2008-08/22/2008	0.11	0.85	0.42	0.00	0.00	0.05	0.05	0.00	0.05	0.05	73.71
Building Off Road Diesel	0.11	0.84	0.41	0.00	0.00	0.05	0.05	0.00	0.05	0.05	71.92
Building Vendor Trips	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.10
Building Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69
Coating 08/08/2008-09/05/2008	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Architectural Coating	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01

Phase Assumptions

Phase Fine Grading 11/30/2007 - 1/11/2008 - Default Fine Site Grading Description

Total Acres Disturbed: 2.23

Maximum Daily Acreage Disturbed: 0.56

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

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On Road Truck Travel (VMT): 0

Off-Road Equipment:

- 1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase Paving 12/28/2007 - 1/11/2008 - Default Paving Description

Acres to be Paved: 0.56

Off-Road Equipment:

- 4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day
- 1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
- 1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase Building Construction 1/11/2008 - 8/22/2008 - Default Building Construction Description

Off-Road Equipment:

- 1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day
- 2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase Architectural Coating 8/8/2008 - 9/5/2008 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250



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2008	0.15	1.04	0.53	0.00	0.05	0.07	0.12	0.01	0.06	0.07	89.78
Asphalt 12/28/2007-01/11/2008	0.01	0.06	0.04	0.00	0.00	0.01	0.01	0.00	0.00	0.00	5.48
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.06	0.03	0.00	0.00	0.01	0.01	0.00	0.00	0.00	4.41
Paving On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80
Fine Grading 11/30/2007-01/11/2008	0.02	0.13	0.07	0.00	0.05	0.01	0.06	0.01	0.01	0.02	10.57
Fine Grading Dust	0.00	0.00	0.00	0.00	0.05	0.00	0.05	0.01	0.00	0.01	0.00
Fine Grading Off Road Diesel	0.01	0.13	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	10.11
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46
Building 01/11/2008-08/22/2008	0.11	0.85	0.42	0.00	0.00	0.05	0.05	0.00	0.05	0.05	73.71
Building Off Road Diesel	0.11	0.84	0.41	0.00	0.00	0.05	0.05	0.00	0.05	0.05	71.92
Building Vendor Trips	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.10
Building Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69
Coating 08/08/2008-09/05/2008	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Architectural Coating	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01

Construction Related Mitigation Measures



**APPENDIX B**

**IMPERIAL COUNTY APCD CEQA AIR QUALITY HANDBOOK AND STANDARD  
MITIGAITONS – SECTION 7**



## 7. Mitigation Measures

Under CEQA, a Lead Agency must mitigate or avoid significant environmental impacts associated with a proposed project. Projects which have been deemed to have a significant environmental impact must identify feasible mitigation measures or alternatives to reduce the impacts below a level of significance. Thus, an EIR must not only identify significant environmental impacts but the EIR must attempt to mitigate or avoid those significant impacts by implementing feasible mitigation measures. Similarly, a MND should identify mitigation measures and include those measures as part of the project to reduce impacts on air quality to a less than significant. To achieve a level of insignificance, a project must reduce its air quality impacts below the threshold levels indicated in Section 4. In order to help Lead Agencies make proper discretionary judgments regarding the feasibility of the mitigation measures pertaining to air quality the following information is provided.

This section contains a menu of mitigation measures which may be used by project proponents and local agencies, to mitigate air quality impacts resulting from any proposed project. **By definition an air quality mitigation measure must go beyond already existing requirements and regulations.** Federal, State and local level regulatory programs currently exist to reduce air pollutant emissions from a variety of sources. Even with these regulatory programs additional mitigation measures are needed to supplement and compliment already existing regulations to help eliminate air quality impacts.

### 7.1 Construction Equipment and Fugitive PM<sub>10</sub> Mitigation Measures

Construction emissions, while traditionally temporary in nature, have been known to cause adverse air quality impacts. In fact, in some cases, construction emissions tend to represent the largest portion of the air quality impacts associated with a given project. Emissions resulting from the common activities associated with general construction and construction equipment both contribute to elevated concentrations of PM<sub>10</sub>, CO and ozone precursor emissions.

Below are a number of fugitive dust mitigation measures which have been shown to significantly reduce emissions. The following examples are not considered all inclusive. Use of alternative mitigation measures may also be considered if the appropriate documentation is provided.

***In no way does compliance with Regulation VIII, Fugitive Dust Control measures alleviate or otherwise preclude a project from compliance with any and all other applicable laws, ordinances, resolutions, rules, statutes or other local, state or federal regulations or requirements.***



**REGULATION VIII - FUGITIVE DUST CONTROL MEASURES (Most recently adopted)** – All construction sites, regardless of size, must comply with the requirements contained within Regulation VIII. Although compliance with Regulation VIII does not constitute mitigation under the reductions attributed to environmental impacts its main purpose is to reduce the amount of PM<sub>10</sub> entrained into the atmosphere as a result of anthropogenic (man-made) fugitive dust sources. Therefore, under all preliminary modeling a presumption is made that all projects are in compliance with Regulation VIII.

**Standard Mitigation Measures for Fugitive PM<sub>10</sub> Control**

- a. All disturbed areas, including Bulk Material storage which is not being actively utilized, shall be effectively stabilized and visible emissions shall be limited to no greater than 20% opacity for dust emissions by using water, chemical stabilizers, dust suppressants, tarps or other suitable material such as vegetative ground cover.
- b. All on site and off site unpaved roads will be effectively stabilized and visible emissions shall be limited to no greater than 20% opacity for dust emissions by paving, chemical stabilizers, dust suppressants and/or watering.
- c. All unpaved traffic areas one (1) acre or more with 75 or more average vehicle trips per day will be effectively stabilized and visible emission shall be limited to no greater than 20% opacity for dust emissions by paving, chemical stabilizers, dust suppressants and/or watering.
- d. The transport of Bulk Materials shall be completely covered unless six inches of freeboard space from the top of the container is maintained with no spillage and loss of Bulk Material. In addition, the cargo compartment of all Haul Trucks is to be cleaned and/or washed at delivery site after removal of Bulk Material.
- e. All Track-Out or Carry-Out will be cleaned at the end of each workday or immediately when mud or dirt extends a cumulative distance of 50 linear feet or more onto a paved road within an Urban area.
- f. Movement of Bulk Material handling or transfer shall be stabilized prior to handling or at points of transfer with application of sufficient water, chemical stabilizers or by sheltering or enclosing the operation and transfer line.
- g. The construction of any new Unpaved Road is prohibited within any area with a population of 500 or more unless the road meets the definition of a Temporary Unpaved Road. Any temporary unpaved road shall be effectively stabilized and visible emissions shall be limited to no greater than 20% opacity for dust emission by paving, chemical stabilizers, dust suppressants and/or watering.

In order to provide a greater degree of PM<sub>10</sub> reductions, above that required by Regulation VIII, the ICAPCD recommends the following:

**Discretionary Mitigation Measures for Fugitive PM<sub>10</sub> Control**

- a. Water exposed soil with adequate frequency for continued moist soil.
- b. Replace ground cover in disturbed areas as quickly as possible
- c. Automatic sprinkler system installed on all soil piles
- d. Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site.
- e. Develop a trip reduction plan to achieve a 1.5 AVR for construction employees
- f. Implement a shuttle service to and from retail services and food establishments during lunch hours

Although the preceding discussion of construction impacts and mitigation measures are primarily focused on PM<sub>10</sub> emissions from fugitive dust sources, Lead Agencies should also seek to reduce emissions from construction equipment exhaust. Because of the availability of new control devices, required in the manufacturing of PM oxidation catalysts and NO<sub>x</sub> absorbers, substantial reductions in PM and NO<sub>x</sub> emissions from diesel engines is achievable. These new retrofit kits and in some cases new original equipment require the use of ultra low sulfur diesel in order to be effective.

**Standard Mitigation Measures for Construction Combustion Equipment**

- a. Use of alternative fueled or catalyst equipped diesel construction equipment, including all off-road and portable diesel powered equipment.
- b. Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes as a maximum.
- c. Limit, to the extent feasible, the hours of operation of heavy duty equipment and/or the amount of equipment in use
- d. Replace fossil fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set)

To help provide a greater degree of reduction of PM emissions from construction combustion equipment the ICAPCD recommends the following enhanced measures.

### **Enhanced Mitigation Measures for Construction Equipment**

- a. Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak hour of vehicular traffic on adjacent roadways
- b. Implement activity management (e.g. rescheduling activities to reduce short-term impacts)

### **7.2 Standard Mitigation Measures for Project Operations**

These standard air quality mitigation measures have been separated according to land use and mitigation type.

***According to Table 1, Tier I, projects generating less than 55 lbs/day of NOx or ROG; less than 150 lbs/day of PM<sub>10</sub> or SOX; or less than 550 lbs/day of CO than 55 lbs/day, the Initial Study should require implementation of all the Standard Mitigation Measures in order to help mitigate or reduce the air quality impact to a level of insignificance. However, simple implementation of the mitigation measures does not guarantee that the project will be insignificant. The insignificance must be determined by the results of the Initial Study.***

***According to Table 1, Tier II, projects generating 55 lbs/day or greater of NOx or ROG; 150 lbs/day or greater of PM<sub>10</sub> or SOX; or 550 lbs/day or greater of CO, the EIR or Comprehensive Air Quality Analysis Report should select and implement all feasible and practicable measures from the discretionary list, in addition to the Standard Mitigation Measures.***

### **RESIDENTIAL PROJECTS**

Standard mitigation measures for residential projects include the following site design and energy efficiency standards:

#### **Standard Site Design Measures**

- a. Link cul-de-sacs and dead-end streets to encourage pedestrian and bicycle travel;
- b. Allocate easements or land dedications for bikeways and pedestrian walkways;
- c. Provide continuous sidewalks separated from the roadway by landscaping and on-street parking. Adequate lighting for sidewalks must be provided, along with crosswalks at intersections;

- d. Bicycle storage at apartment complexes or condos without garages.

Standard Energy Efficiency Measures

- a. Measures which meet mandatory, prescriptive and/or performance measures as required by Title 24.

**COMMERCIAL PROJECTS**

Standard mitigation measures for commercial projects include the following site design and energy efficiency standards:

Standard Site Design Measures

- a. Provide on-site bicycle lockers and/or racks;
- b. Provide on-site eating, refrigeration and food vending facilities to reduce lunchtime trips;
- c. Provide shower and locker facilities to encourage employees to bike and/or walk to work;
- d. Provide for paving a minimum of 100 feet from the property line for commercial driveways that access County paved roads as per County Standard Commercial Driveway Detail 410B (formerly SW-131A).

Standard Energy Efficiency Measures

- a. Measures which meet mandatory, prescriptive and/or performance measures as required by Title 24.

**7.3 Discretionary Mitigation Measures**

The discretionary mitigation measures listed in this section have been separated according to land use and mitigation type. It is important to note that the measures identified here do not represent a comprehensive list of all mitigation measures possible. Project proponents are encouraged to propose other alternatives that are capable of providing the same level of mitigation.

## **RESIDENTIAL PROJECTS**

### **Discretionary Site Design Measures**

- a. If the project is located on an established transit route, improve public transit accessibility by providing transit turnouts with direct pedestrian access to project.
- b. For bus service within a ¼ mile of the project provide bus stop improvements such as shelters, route information, benches and lighting.
- c. Increase street tree planting.
- d. Outdoor electrical outlets to encourage the use of electric appliances and tools.
- e. Provide bikeway lanes and/or link new comparable bikeway lanes to already existing lanes.
- f. Increase the number of bicycle routes/lanes.
- g. Provide pedestrian signalization and signage to improve pedestrian safety.
- h. Synchronize traffic lights on streets impacted by development

### **Discretionary Energy Efficiency Measures**

- a. Use roof material with a solar reflectance value meeting the EPA/DEO Energy Star® rating to reduce summer cooling needs.
- b. Use high efficiency gas or solar water heaters.
- c. Use built-in energy efficient appliances.
- d. Use double-paned windows.
- e. Use low energy street lighting (i.e. sodium).
- f. Use energy efficient interior lighting.
- g. Use low energy traffic signals (i.e. light emitting diode).
- h. Install door sweeps and weather stripping if more efficient doors and windows are not available.

## **COMMERCIAL PROJECTS**

### **Discretionary Site Design Measures**

- a. Increase street tree planting
- b. Shade tree planting in parking lots to reduce evaporative emissions from parked vehicles.
- c. Increase number of bicycle routes/lanes.
- d. If the project is located on an established transit route, improve public transit accessibility by providing transit turnouts with direct pedestrian access to protect or improve transit stop amenities.
- e. For bus service within a ¼ mile of the project provide bus stop improvements such as shelters, route information, benches and lighting
- f. Implement on-site circulation design elements in parking lots to reduce vehicle queuing and improve the pedestrian environment.
- g. Provide pedestrian signalization and signage to improve pedestrian safety.
- h. Synchronize traffic lights on streets impacted by development

### **Discretionary Energy Efficiency Measures**

- a. Use roof material with a solar reflectance value meeting the EPA/DOE Energy Star® rating to reduce summer cooling needs.
- b. Use built-in energy efficient appliances, where applicable.
- c. Use double-paned windows.
- d. Use low energy parking lot and street lights (i.e. sodium).
- e. Use energy efficient interior lighting.
- f. Use low energy traffic signals (i.e. light emitting diode).
- g. Install door sweeps and weather stripping if more efficient doors and windows are not available.
- h. Install high efficiency gas/electric space heating.

## **INDUSTRIAL PROJECTS**

- a. Implement carpool/vanpool programs and incentives (i.e. carpool ride matching for employees, assistance with vanpool formation, provision of vanpool vehicles, etc.)
- b. Provide for shuttle/mini bus service such as to establish a shuttle service from residential care areas to the worksite.
- c. Provide preferential carpool and vanpool parking
- d. Construct transit facilities such as bus turnouts/bus bulbs, benches, shelters, etc if the project is located on an established transit route.
- e. Design and locate buildings to facilitate transit access (i.e., locate building entrances near transit stops, eliminate building setbacks, etc.)
- f. Provide incentives to employees to take public transportation, walk, bike, etc.
- g. Provide pedestrian signalization and signage to improve pedestrian safety.
- h. Implement on-site circulation design elements in parking lots to reduce vehicle queing and improve the pedestrian environment.
- i. Provide on-site bicycle and motorcycle parking. Such as providing weather-protected bicycle parking for employees.
- j. Provide safe, direct access for bicyclists to adjacent bicycle routes.
- k. Provide shower and locker facilities to encourage employees to bike and/or walk to work – typically, one shower and three lockers for every 25 employees.
- l. Provide on-site eating, refrigeration and food vending facilities to reduce lunchtime trips.
- m. Increase street tree planting
- n. Measures which meet mandatory, prescriptive and/or performance measures as required by Title 24.
- o. Use low emission fleet vehicles such as TLEV, ULEV, LEV, ZEV
- p. Install an electrical vehicle charging station with both conductive and inductive charging capabilities.
- q. Use built-in energy efficient appliances, where applicable.

- r. Use double-paned windows
- s. Use low energy parking lot and street lights
- t. Use energy efficient interior lighting

#### **7.4 Off-site Mitigation**

##### **Off-site mitigation for Commercial and Residential Developments:**

Off-site mitigation measures are designed to offset emissions from residential and commercial projects that cannot be fully mitigated with on-site measures. Typically, off-site reductions can occur as a result from either stationary or mobile sources. For example, NO<sub>x</sub> emissions from increased vehicle trips from a residential development could be reduced by funding the expansion of existing transit services. Rule 310, Operational Development Schedule Fee has been adopted by the ICAPCD as a sound method for mitigating the emissions produced from the operations of new development projects throughout the County of Imperial. All project proponents have the option of either providing off-site mitigation or paying an Operational Development Fee. The evaluation process in providing this fee is found within the applicability and administrative requirements of Rule 310

##### **Off-site mitigation for Industrial Projects:**

Because industrial development projects are by their very nature much more complex, the evaluation of the air impacts resulting from an industrial development is addressed at two levels: that of the environmental review process and that of the ICAPCD permitting review process. The ICAPCD permitting review process addresses mitigation of air emissions from the Stationary source. Therefore, the ICAPCD has adopted the guidance policy #5 to help Lead Agencies and interested parties in the evaluation of off-site mitigation from mobile sources attracted to the stationary sources.





# Final Initial Study

## *Wastewater Collection and Treatment System Community of Palo Verde, California*

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Prepared for:

Palo Verde County Water District  
1065 Desert View  
Palo Verde, CA 92266

By the  
Border Environment Cooperation Commission  
Comisión de Cooperación Ecológica Fronteriza  
Blvd. Tomas Fernández, No. 8069  
Cd. Juárez, Chihuahua, México

March 2012

## DETERMINATION

On the basis of this initial evaluation the Imperial County Environmental Evaluation Committee (EEC):

- \_\_\_ Found that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to the earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.
  
- \_\_\_ Found that the proposed project MAY have a “potentially significant impact” or “potentially significant unless mitigated impact” on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
  
- \_\_\_ Found that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
  
- \_\_\_ Found that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent in the form of mitigation measures, which are described on an attached sheet, that have been added to the project. A MITIGATED NEGATIVE DECLARATION will be prepared.
  
- \_\_\_ Found that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Signature      Date \_\_\_\_\_

Printed Name For \_\_\_\_\_

### ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be significantly affected by this project as indicated by the checklist in the following sections:

	Aesthetics	Agricultural Resources	Air Quality
	Biological Resources	Cultural Resources	Geology/Soils
	Hazards & Hazardous Materials	Hydrology/Water Quality	Land Use/Planning
	Mineral Resources	Noise	Population/Housing
	Public Services	Recreation	Transportation/Traffic
	Utilities/Service Systems	Mandatory Findings of	

		Significance		
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Appendix A Combustion Emissions Associated with Construction Activities

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## **1.0 INTRODUCTION**

This Initial Study (IS) has been prepared in accordance with the California Environmental Quality Act (CEQA) and State Guidelines for Implementation of CEQA. It will serve as a preliminary environmental document for a proposed wastewater collection and treatment system for the Community of Palo Verde.

The purpose of this document is to identify any potentially significant environmental issues associated with developing the proposed project. This document satisfies disclosure requirements subsequent to CEQA. Consequently, this document will reveal if environmental issues will require further discussion and treatment in a future environmental document. It should be noted that funding for this project would be partially provided by the United States (US) Environmental Protection Agency (USEPA) which administers funds for water and wastewater infrastructure projects located within US-Mexico border region. USEPA policy for distribution of such border funds requires certification by the Border Environment Cooperation Commission (BECC) as a condition for grant award. As part of the BECC certification process, the proposed project must comply with both CEQA and the National Environmental Policy Act (NEPA); separate documentation satisfying the requirements of NEPA is being prepared concurrently with this IS.

### **1.1 Purpose**

The proposed wastewater collection and treatment system is intended to provide increased health, sanitation, and security to residents within Palo Verde and to improve water quality in the Palo Verde Lagoon and Outfall Drain.

The proposed wastewater collection and treatment system would replace failing onsite septic systems and leach fields, and would eliminate septic systems located within the designated setback of 50 to 100 feet from the Palo Verde Lagoon and Outfall Drain. The proposed project would include abandonment of existing septic systems in the area, which would protect groundwater and provide potential health benefits. Additionally, the project would address the elevated levels of *e-coli* and other fecal coliform bacteria outlined in the December 2003, State Water Board Report titled *Bacterial Indicators Total Maximum Daily Load for Palo Verde Outfall Drain*.

### **1.2 Intended Uses of this Document**

The primary intent of this document is to assess the potential environmental consequences of the proposed project in accordance with the State of California Guidelines for Implementation of CEQA. CEQA requires that any proponent of a qualifying project that requires discretionary authority of a governing body must first prepare an environmental assessment to determine the potential environmental impacts of that project before the project can be approved.

The Palo Verde County Water District (PVCWD) is the lead agency for the proposed project. The information in this IS provides an environmental perspective to the Water District and Community decision-makers, other responsible agencies, and other interested parties regarding potential effects of the proposed project.

## 2.0 PROJECT DESCRIPTION

The proposed project consists of two components: construction of a residential wastewater collection pipeline system and an aerated facultative lagoon wastewater treatment plant (WWTP) in Palo Verde. Construction of the WWTP would require an Imperial County (County) General Plan Amendment to the Palo Verde Community Area Plan and rezone of the project site to Government/Special Public (G-S). Additionally, approval by the County of a minor subdivision or a Parcel Map Waiver would be required to create a separate parcel of approximately 11 acres for the WWTP project site.

### Wastewater Collection System

The proposed residential wastewater collection system consists of connecting 222 parcels (164 parcels are currently occupied and 58 are vacant) and a project population equivalence of 328 (the total population of Palo Verde is approximately at 171). The collection system would include 8-inch-diameter gravity sewer lines, 4-inch-diameter service laterals, manholes, one pump station, and force mains in order to convey wastewater to the WWTP site. Construction would be completed by open-trench technologies.



*Implementation of the proposed project would include the removal of existing septic systems, many of which are within the 50-100-foot buffer area adjacent to the Palo Verde Lagoon.*

A pump station and force main would be constructed to convey wastewater across the Palo Verde Lagoon at Fourth Street. The 4-inch-diameter PVC force main that would span the bridge would be installed inside an 8-inch-diameter steel casing pipe. The annular space between the force main and casing pipe would be grouted and a leak detection apparatus would be installed inside the casing pipe to provide notification if a leak does occur in the force main. To cross the Palo Verde Lagoon, the force main would be attached to the bridge deck as the preferred engineering method due to operational advantages and financial considerations. Under this option, the casing and force main pipes would be installed on top of the bridge deck, which would increase the weight load on the bridge by approximately 35 pounds per foot, for a total weight of 4,130 pounds. This option would require a structural assessment of the bridge in order to determine if it could support the additional weight added by the casing and force main pipes. The bridge was inspected by the California Department of Transportation (CalTrans) on March 6, 2008 and repair work was recommended on the bridge including replacement of rotting sections of the bridge.

Alternately, if the bridge were determined to not be adequate to support the additional force main weight, the force main could be placed approximately 30 to 40 feet below ground surface and/or approximately 10 feet below the Lagoon bottom via directional drill under the Lagoon. This depth is required to provide a safe distance between the top of the force main and the bottom of the Lagoon including the scour depth of the Lagoon.

Solar power systems would be mounted on pumps, aerators and other mechanical equipment to the extent feasible. Pipeline construction would entail trenching, pipe laying, soil stockpiling, covering pipes with stockpiled soil, and operation of equipment to construct infrastructure to



serve 222 parcels. Additionally, power lines cross the project area and would require coordination prior to pipeline construction with Southern California Edison (SCE), Imperial County, and the Palo Verde Irrigation District (PVID), including obtaining all necessary permits. The wastewater collection system would route flows to the proposed WWTP located on the northeast (island) side of Palo Verde.

**Table 2-1. Pipes Required to Provide Wastewater Collection under Proposed Project (Lagoon WWTP and Collection System)**

Pipe Type	Pipe Purpose	Pipe Diameter (inches [in], centimeters [cm])	Amount needed for Construction (feet [ft], meters [m])	Depth of Pipe
PVC SDR-35 pipe	Gravity Sewer Pipe	8 in or 20.32 cm	13,396 ft or 4,083 m	5.0-20.0 ft or 1.5-6.1 m
PVC SDR-35 pipe	Sewer Service Line	4 in or 10.16 cm	17,098 ft or 5,212 m	4.0- 8.0 ft or 1.21-2.43 m
PVC C-900 pipe	Sewer Force Main	4 in or 10.16 cm	510 ft or 155 m	0.0-5.0 ft or 0.0-1.5 m

Under the proposed project, most wastewater pipelines would be installed within or on the sides of roads as other underground utilities permit. Excavation trenches for the 4-inch-diameter sewer service lines would range from 4.0 to 8.0 feet in depth and 3.0 to 6.0 feet in width. Trenches for the 8-inch-diameter gravity sewer pipe would range from 5.0 to 12.0 feet in depth and 6.0 to 13.0 feet in width. The embedment would be a minimum of 1.0 to 3.0 feet in depth for all wastewater installations. Asphalt or other paved surfaces would be replaced where cut, as required by Imperial County Public Works Department. Additionally, implementation of this alternative would entail the abandonment of existing septic systems and yard restoration to existing conditions.

### **Wastewater Treatment Plant**

To treat collected wastewater, a lagoon WWTP would be constructed under the proposed project and would consist of an aerated facultative lagoon with percolation/evaporation ponds, screens, grit removal, flow measurement, influent pump station and an ultraviolet (UV) disinfection system. The WWTP would be designed to accommodate full buildout of Palo Verde with an average daily flow (ADF) of 57,300 gallons per day (gpd) and a peak hourly flow of 225,934 gpd. The lagoon would be a four-cell arrangement with two aerated cells. Each cell would be approximately 190 feet long by 50 feet wide and a total depth of 13 feet. Additionally, two percolation basins, approximately 135 feet long by 100 feet wide by 6 feet deep, would also be needed. Due to the shallow groundwater depth in the project area, 8,000 cubic yards of fill material and berm construction would be required to elevate the WWTP facilities, lagoons, and percolation/evaporation ponds. The source of fill material would likely be from a combination of on-site materials as well as from the nearest borrow pit. The precise source location would be determined during development of the final design and grading plan, and would comply with local, state, and federal regulations.

The aerators used for the treatment lagoons would include a floating type aerator. The pontoon mounted aerator would include solar panels to help limit dependence on grid power and reduce operation and maintenance costs. Additional electrical supply and controls would include a cross-over connection should future potential solar photovoltaic (PV) renewable energy power supplies become available in Palo Verde.

Potable water of adequate quality and capacity would be available and rehabilitation of existing infrastructure would not be required. In addition, the proposed project would incorporate green building practices, to the extent feasible, to be developed in coordination with BECC, North American Development Bank (NADB), and USEPA. The proposed project does not include comprehensive paving of any streets or roads; only repair to disrupted surfaces would occur (i.e., asphalt surfaces would be replaced where excavation trenches have been cut).

The WWTP is proposed to be located on Assessor Parcel Number (APN) 006-220-056 in the northeastern portion of Palo Verde. The parcel is zoned *Residential (R-1)* and has a land use designation of *Medium Agriculture*. In order to comply with the Imperial County General Plan and zoning ordinance, the proposed project would require a rezone of the subject parcel to *Government/Special Public (G-S)*. Additionally, a minor subdivision or a Parcel Map Waiver from Imperial County would be required to create a separate legal parcel for the WWTP site. Resolution of land use and zoning consistency issues would be required prior to construction. Project implementation would take place over 8 to 12 months.

## 2.1 Project Location

The Community of Palo Verde is located in the far northeastern corner of Imperial County, with Riverside County abutting the Community to the north. Palo Verde is approximately 50 miles north of the US-Mexico international border, 6 miles west of the Colorado River, and 13 miles south of Interstate (I-) 10. State Highway 78 (Ben Hulse Highway) runs north and south through the Community and is the main arterial in Palo Verde (Figure 2-1). The Palo Verde Lagoon and Outfall Drain are in the Palo Verde Valley, and the Community of Palo Verde is centered on the Lagoon and Outfall Drain. The Valley is bound on the north by the Big Marina Mountains, on the west by Palo Verde Mesa, and on the south and east by the Colorado River.

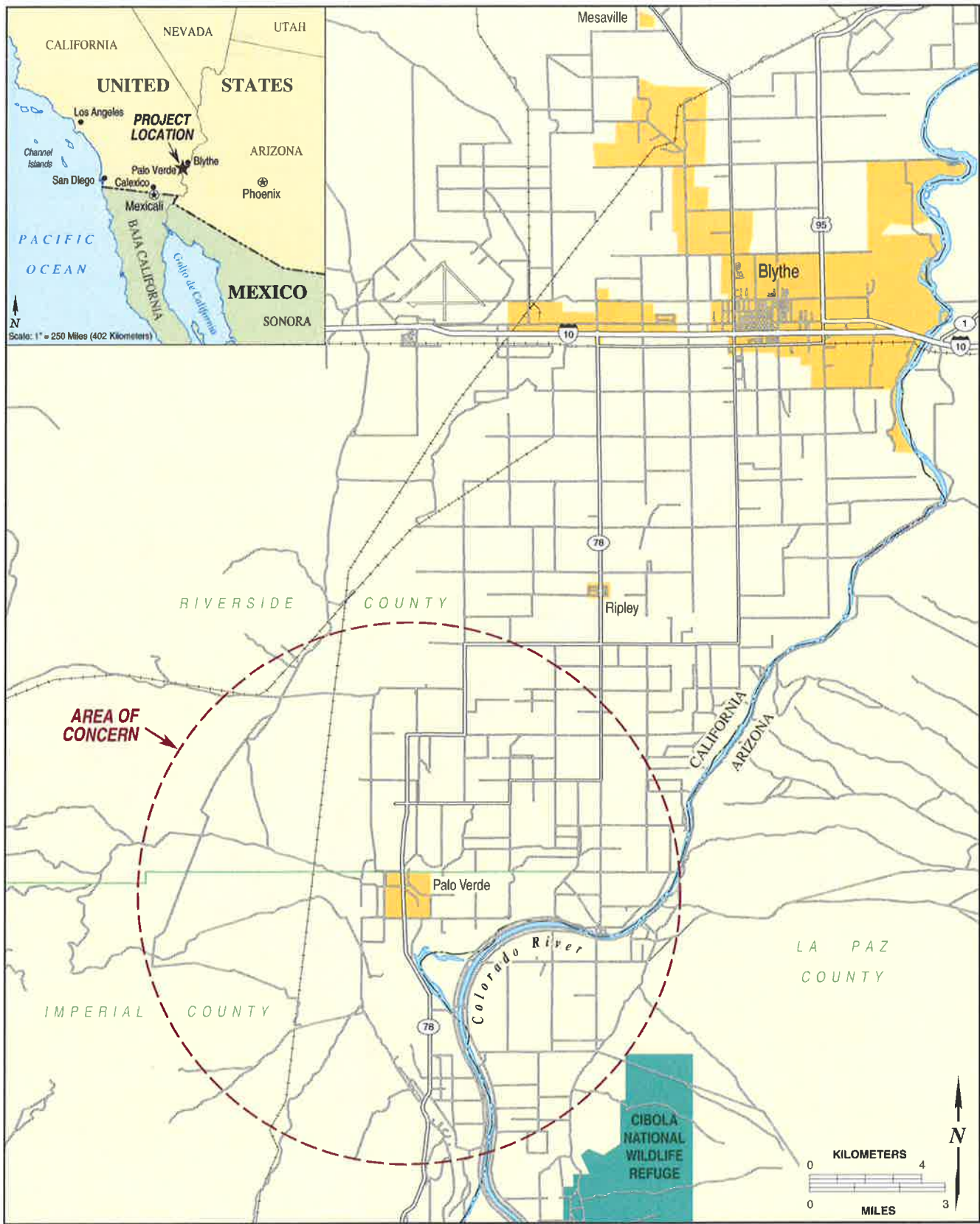


The Community of Palo Verde, with current 2010 population of approximately 171, has been experiencing a gradual population decline in recent years. The total area of Palo Verde is approximately 640 acres, which encompasses the entire project area. The Community consists of mostly residential housing and includes two recreational vehicle (RV) parks. Palo Verde also contains a small commercial center, fire station, post office, community hall, church, and sheriff's substation. The PVCWD owns and operates an existing water filtration plant and potable water supply system. Households in the Community currently rely on septic systems for their wastewater disposal needs and many of these systems are failing. Additionally, many of the septic systems do not meet the Palo Verde and Imperial County required setback distances of 50 to 100 feet from the adjacent Palo Verde Lagoon. PVCWD currently supplies potable water to 164 residences.

The climate in the region is continental desert, of extreme aridity, and is characterized by hot summers and moderate winters. The annual average maximum temperature is 88 degrees Fahrenheit (°F) (31°C) and the average minimum temperature is 55°F (13°C). Annual

precipitation of the area is approximately 4 inches, with the majority of rainfall events occurring during fall and winter months (Western Regional Climate Center [WRCC] 2009). Most natural vegetation in the Palo Verde Valley has been replaced by agricultural production and limited areas of light urban development; however large areas of undeveloped Sonora Desert and the nearby Cibola National Wildlife Refuge (NWR) provide valuable habitat to a variety of wildlife species.

According to the US Geological Survey, the elevation in the Palo Verde project area is generally between 232 and 233 feet above sea level. The project area drops significantly at the banks of the lagoon (10- to 20-foot drops). The decline across the project area is approximately 0.02 percent (BECC 2011).

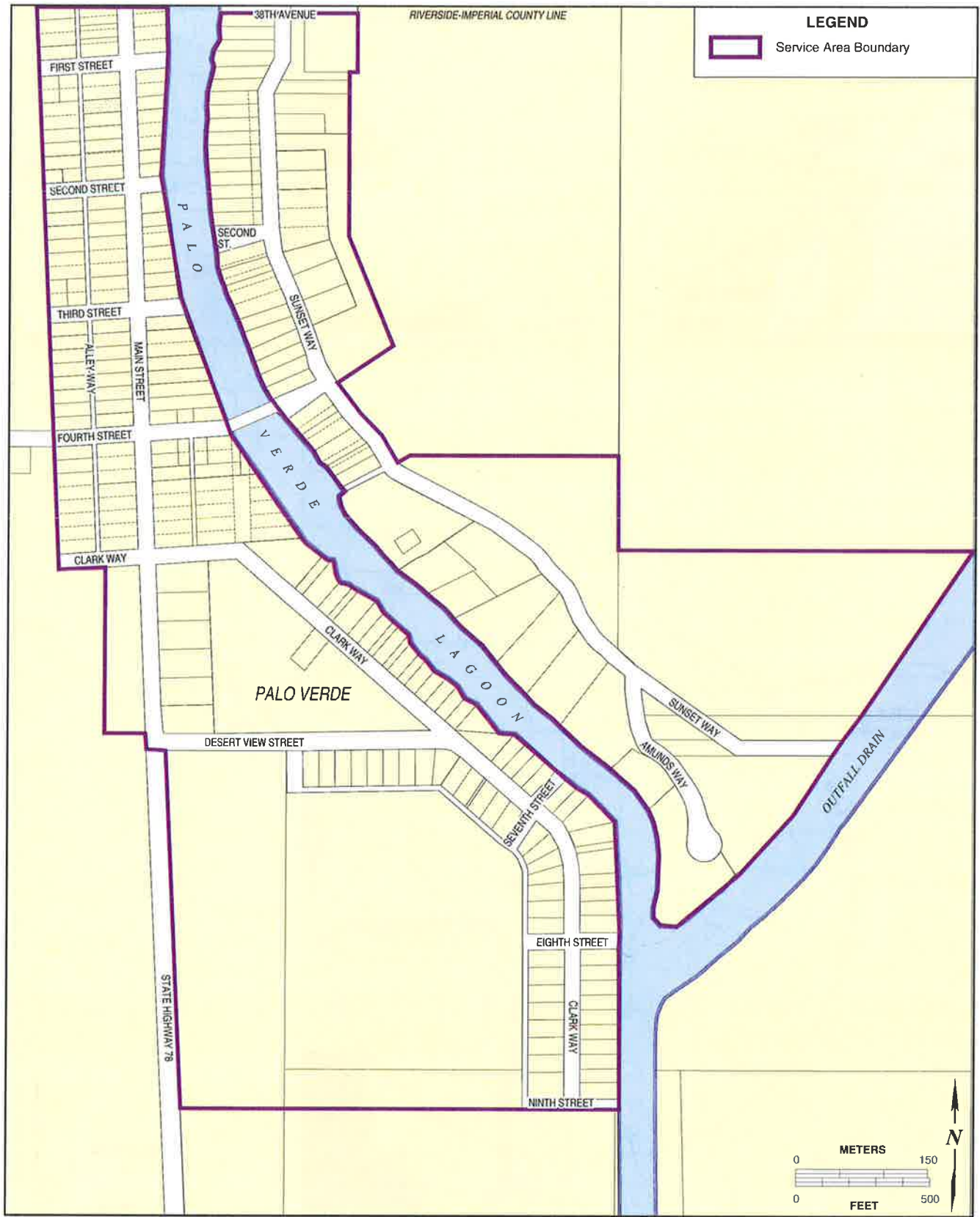


BECC

Regional Location Map  
Palo Verde, California

FIGURE  
2-1

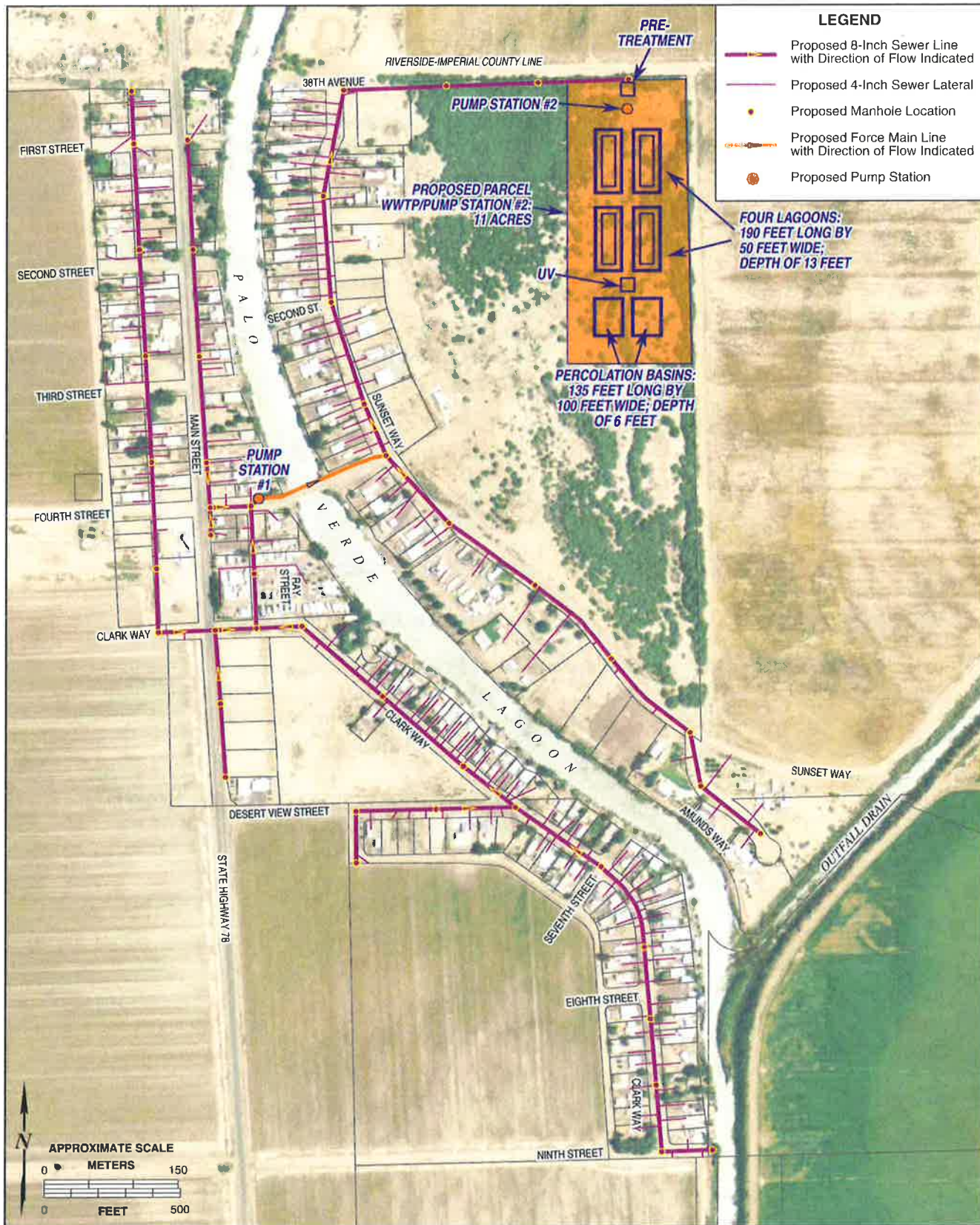




BECC

Project Area  
Palo Verde, California

FIGURE  
2-2



### 3.0 INITIAL STUDY ENVIRONMENTAL CHECKLIST

This section discusses potential environmental impacts associated with implementation of a wastewater collection and treatment system for the Community of Palo Verde.

#### Required Information

1. Project Title: Wastewater Collection and Treatment System for the Community of Palo Verde
2. Lead Agency Name and Address: Palo Verde County Water District  
1065 Desert View  
Palo Verde, CA 92266
3. Contact Person and Phone Number: Ms. Kathi Frice  
General Manager  
PVCWD  
1065 Desert View  
Palo Verde, CA 92266  
  
(760) 854-3519 - Voice
4. Project Location: Community of Palo Verde, California
5. Project Sponsor's Name and Address: Border Environment Cooperation Commission  
Comisión de Cooperación Ecológica Fronteriza  
Blvd. Tomas Fernández, No. 8069  
Cd. Juárez, Chihuahua, México  
  
US Environmental Protection Agency, Region IX  
75 Hawthorne Street  
San Francisco, California 94105



## CEQA GUIDANCE

Appendix I of the State CEQA Guidelines was used in answering the checklist questions:

1. A brief explanation is required for all answers except “No Impact” answers that are adequately supported by the discussion. A “No Impact” answer is adequately supported if the discussion shows that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A “No Impact” answer should be explained when it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including offsite as well as onsite, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. “Potentially Significant Impact” is appropriate if there is substantial evidence that an effect may be significant. If there are one or more “Potentially Significant Impact” entries when the determination is made, an EIR is required.
4. “Negative Declaration: Less than Significant with Mitigation Incorporated” applies where the incorporation of mitigation measures has reduced an effect from “Potentially Significant Impact” to a “Less Than Significant Impact.” The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less-than-significant level (mitigation measures from earlier analyses may be cross-referenced).
5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration (State CEQA Guidelines Sections 15063[c][D] and 15183). In this case, a brief discussion should identify the following:
  - a. Earlier Analysis Used. Identify and state where they are available for review.
  - b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
  - c. Mitigation Measures. For effects that are “Less than Significant with Mitigation Measures Incorporated,” describe the mitigation measures that were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., General Plans, Development Codes). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.



8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
9. The explanation of each issue should identify:
  - a. the significance criteria or threshold, if any, used to evaluate each question; and
  - b. the mitigation measure identified, if any, to reduce the impact to less than significance

Identification of the potential for residual significant adverse environmental impacts would trigger the need for preparation of an EIR. For issue areas in which no significant adverse impact would result or impacts would be reduced to a less-than-significant level by mitigation, further analysis is not required.

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>3.1 AESTHETICS</b>  Would the proposal:				
a. Have a substantial adverse effect on a scenic vista?				X
b. Substantially damage scenic resources, including, but not limited to, tree, rock outcroppings, and historic buildings within a scenic state highway?				X
c. Substantially degrade the existing visual character or quality of the site and its surroundings?			X	
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in this area?				X

### Existing Setting

The Community of Palo Verde is located in the far northeastern corner of Imperial County. The Palo Verde Lagoon and Outfall Drain are in the Palo Verde Valley, and Palo Verde is centered on the Lagoon and Outfall Drain. The Valley is bound on the north by the Big Marina Mountains, on the west by Palo Verde Mesa, and on the south and east by the Colorado River.

The aesthetics surrounding the Community of Palo Verde are characteristic of the Palo Verde Valley with extensive areas of row-crop agriculture and open areas of Sonoran Desert with interspersed mountains rising from the desert floor.

The project area is a residential community with predominantly wide earthen streets that accommodate very low levels of neighborhood traffic. Architecture is characteristic of typical residential development, containing a mixture of moderate-sized, single-family housing units. The buildings adjacent to State Highway 78 that comprise the commercial enterprises are primarily moderately sized, single-story structures. Many of the buildings in the project area were constructed before 1980, with few newer structures developed during the 1990s. The Palo Verde Lagoon has some riparian habitat, which provides a relatively lush natural aesthetic in the center of the Community. The project area is surrounded by agricultural fields to the north, east, south, and west.

### Discussion of Checklist Answers

a-b. **No Impact.** There are no designated roadways or areas within the project's viewshed as scenic routes or vistas. There are no designated state scenic highways adjacent to the

proposed project site; therefore, no impact would occur to the aesthetics associated with a scenic vista or scenic highway.

c. **Less than Significant.** Under the proposed project, wastewater collection infrastructure and a lagoon WWTP would be constructed. Short-term construction of the wastewater collection system would involve trenching along existing roadways; however, with the exception of the Palo Verde Lagoon crossing, manholes and the proposed pump station, the pipeline infrastructure would be installed entirely underground and would not result in a long-term change to aesthetics within Palo Verde. The lagoon WWTP and supporting infrastructure, including an access road, would result in higher levels of short-term surface disturbance associated with the excavation of percolation/evaporation ponds. Under the proposed project a force main would be installed across the Palo Verde Lagoon, which could be achieved through several engineering alternatives (see Section 2.0). No long-term visual impacts would result from the alternatives that involve boring beneath the Lagoon, nor if the force main were attached to the existing Fourth Street Bridge. If a freestanding structure were constructed adjacent to the existing bridge, the intrusion of a visually incompatible metal, utilitarian structure which would potentially impair the visual quality along the Palo Verde Lagoon; however impacts would not be substantial and would therefore be adverse, but remain less than significant.

The lagoon WWTP would be located to the east of a disturbed vacant area that is vegetated with brush that would provide a visual screen of the lagoon WWTP. Further, the WWTP would have a minimal vertical component, which would limit impacts to aesthetics to residents along the northern portions of Sunset Way and would not result in vertical components visible from elsewhere in the Community. In addition, surrounding land uses are vacant or agricultural and do not constitute visually sensitive receptors. Therefore, the proposed project would not degrade the existing visual character or quality of the site and its surroundings and impacts would therefore be less than significant.

d. **No Impact.** The proposed project would consist of installation of underground infrastructure and a lagoon WWTP. The lagoon WWTP would not create a new light source or source of glare; therefore, no impact associated with light or glare is anticipated under the proposed project.

Issues	Potentially Significant Impact	Potentially Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>3.2 AGRICULTURAL RESOURCES</b>  In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland.  Would the proposal:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?			X	
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?				X

### Existing Setting

Agriculture plays a central role in Palo Verde's economy. The Palo Verde Lagoon and Outfall Drain run through the middle of the Community and are part of the Palo Verde Valley's system of agricultural drains. Irrigation water from the PVID sustains agriculture in the area, and large parcels of valley land are used to grow crops such as melons, cotton, alfalfa, and various vegetables. Within the Palo Verde Community limits, there is a mixture of agricultural urban uses. Agricultural land surrounding the Community is mostly comprised of Prime Farmland or Farmland of Statewide Importance, although the area directly east of the Community is designated as Farmland of Local Importance (Department of Land Resource Protection [DLRP] 2007). The project area contains no land zoned for agriculture.

### Discussion of Checklist Answers

a, c. **Less than Significant.** The WWTP and the approximately 1,000-foot (305 meters) long roadway that would connect the WWTP to Sunset Way would be partially constructed on land that is currently designated as Farmland of Local Importance (unirrigated and uncultivated lands with prime and statewide soils). However, the site is zoned *low-density residential* (R1) and potential impacts to agricultural resources were determined to be acceptable upon buildout of low-density residential development on the project site. In addition, the proposed project would

provide wastewater treatment services to existing residences and would not induce growth beyond parcels that are currently developed, or where previously developed (prior to the 2007 tornado), or result in other changes that could result in conversion of farmland. Therefore, impacts to agricultural resources would be less than significant.

b. **No Impact.** The proposed project would not be located within agriculturally zoned land. The land where the WWTP would be sited is designated as Farmland of Local Importance (California Department of Conservation [CDC] 2006). However, the site is zoned *low-density residential* (R1) and is therefore intended for development of single-family homes and related compatible or accessory uses. There would be no impacts associated with a Williamson Act Contract, as no such contracts exist within the project area.

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>3.3 AIR QUALITY</b>  Where available, the significance criteria established by the applicable air quality management or pollution control district may be relied upon to make the following determinations.  Would the project:				
a. Conflict with or obstruct implementation of the applicable air quality plan?			<b>X</b>	
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?			<b>X</b>	
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?			<b>X</b>	
d. Expose sensitive receptors to substantial pollutant concentrations?				<b>X</b>
e. Create objectionable odors affecting a substantial number of people?			<b>X</b>	

### Existing Setting

#### Criteria Pollutants

Air quality in a given location is determined by the concentration of various pollutants in the atmosphere. National Ambient Air Quality Standards (NAAQS) are established by the USEPA for criteria pollutants, including: ozone (O<sub>3</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), particulate matter equal to or less than 10 microns in diameter (PM<sub>10</sub>) and 2.5 microns in diameter (PM<sub>2.5</sub>), and lead (Pb). NAAQS represent maximum levels of background pollution that are considered safe, with an adequate margin of safety, to protect public health and welfare. Air quality is affected by stationary sources (e.g., industrial development) and mobile sources (e.g., motor vehicles). Air quality at a given location is a function of several factors, including the quantity and type of pollutants emitted locally and regionally, and the dispersion rates of pollutants in the region. Primary factors affecting pollutant dispersion are wind speed and direction, atmospheric stability, temperature, the presence or absence of inversions, and topography.

**Ozone (O<sub>3</sub>).** The majority of ground-level (or terrestrial) O<sub>3</sub> is formed as a result of complex photochemicals (e.g., volatile organic compounds [VOCs]), nitrogen oxides (NO<sub>x</sub>), and oxygen.

O<sub>3</sub> is a highly reactive gas that damages lung tissue, reduces lung function, and sensitizes the lung to other irritants. Although stratospheric O<sub>3</sub> shields the earth from damaging ultraviolet radiation, terrestrial O<sub>3</sub> is a highly damaging air pollutant and is the primary source of smog.

**Carbon Monoxide (CO).** CO is a colorless, odorless, poisonous gas produced by incomplete burning of carbon in fuel. The health threat from CO is most serious for those who suffer from cardiovascular disease, particularly those with angina and peripheral vascular disease.

**Nitrogen Dioxide (NO<sub>2</sub>).** NO<sub>2</sub> is a highly reactive gas that can irritate the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections. Repeated exposure to high concentrations of NO<sub>2</sub> may cause acute respiratory disease in children. Because NO<sub>2</sub> is an important precursor in the formation of O<sub>3</sub> or smog, control of NO<sub>2</sub> emissions is an important component of overall pollution reduction strategies. The two primary sources of NO<sub>2</sub> in the US are fuel combustion and transportation.

**Sulfur Dioxide (SO<sub>2</sub>).** SO<sub>2</sub> is emitted primarily from stationary source coal and oil combustion, steel mills, refineries, pulp and paper mills, and from non-ferrous smelters. High concentrations of SO<sub>2</sub> may aggravate existing respiratory and cardiovascular disease; asthmatics and those with emphysema or bronchitis are the most sensitive to SO<sub>2</sub> exposure. SO<sub>2</sub> also contributes to acid rain, which can lead to the acidification of lakes and streams, and damage trees.

**Particulate Matter (PM<sub>10</sub> and PM<sub>2.5</sub>).** Particulate matter (PM) is a mixture of tiny particles that vary greatly in shape, size, and chemical composition, and can be comprised of metals, soot, soil, and dust. PM<sub>10</sub> includes larger, coarse particles, whereas PM<sub>2.5</sub> includes smaller, fine particles. Sources of coarse particles include crushing or grinding operations, and fugitive dust generated from travel on paved or unpaved roads. Sources of fine particles include all types of combustion activities (e.g., motor vehicles, power plants, wood burning) and certain industrial processes. Exposure to PM<sub>10</sub> and PM<sub>2.5</sub> levels exceeding current standards can result in increased lung- and heart-related respiratory illness. The USEPA has concluded that finer particles are more likely to contribute to health problems than those greater than 10 microns in diameter. Both PM<sub>10</sub> and PM<sub>2.5</sub> are monitored and regulated.

**Airborne Lead (Pb).** Airborne lead can be inhaled directly or ingested indirectly by consuming lead-contaminated food, water, or non-food materials such as dust or soil; fetuses, infants, and children are most sensitive to Pb exposure. Pb has been identified as a factor in high blood pressure and heart disease. Exposure to Pb has declined dramatically in the last 10 years as a result of the reduction of Pb in gasoline and paint, and the elimination of Pb from soldered cans.

### Regional Air Quality

The Community of Palo Verde is located within the Salton Sea Air Basin, which covers all of Imperial County and parts of western Riverside County. In Imperial County, the Salton Sea Air Basin is under the jurisdiction of the Imperial County Air Pollution Control District (APCD). Although the Imperial County APCD has jurisdiction over the air basin, it does not have jurisdiction over all activities contributing to the health of the air basin (e.g., activities outside the US). Industrial and mobile sources of emissions in the Palo Verde Valley are few, thus limiting exceedances of federal and state air quality standards. Due to the low average population density, air pollution from vehicular activity is relatively low. PM is a major air pollutant that is generated by wind blowing dry soils. Agricultural burning and cultivation practices contribute most of the airborne dust in the Palo Verde area. Some agricultural practices that generate dust are regulated, including leaving cultivated fields vacant and open to blowing winds, burning of

crop residues to clear fields for new cultivation, and crop dusting for fertilization and pest control.

The Imperial County APCD has adopted rules specifying pollutant emission levels and ambient air quality standards and operates and maintains air quality monitoring stations in Brawley, Calexico, El Centro, Niland, and Westmorland (USEPA 2009b). Imperial County is designated as a federal non-attainment area for PM<sub>10</sub>, PM<sub>2.5</sub> and 8-hour O<sub>3</sub> (USEPA 2009a; 2009b), and a State Ambient Air Quality Standards non-attainment area for 8-hour O<sub>3</sub> and PM<sub>10</sub>, and is unlisted for PM<sub>2.5</sub> (California Environmental Protection Agency [CalEPA] 2009).

Regulatory Framework

Air quality impacts are assessed by comparing impacts to baseline air quality levels and applicable ambient air quality standards. Federal and state air quality standards have been established for various pollutants. Standards are levels of air quality considered safe from a regulatory perspective, including an adequate margin of safety, to protect public health and welfare.

The Federal Clean Air Act (CAA) was enacted in 1970 and amended in 1977 and 1990 [42 USC 7506 (c)]. The CAA Amendments of 1990 place most of the responsibility to achieve compliance with NAAQS on individual states. USEPA requires each state to prepare a State Implementation Plan (SIP). A SIP is a compilation of goals, strategies, schedules, and enforcement actions that will lead the state into compliance with all NAAQS. Areas not in compliance with a standard can be declared non-attainment areas by USEPA or the appropriate state or local agency. In order to reach attainment, NAAQS may not be exceeded more than once per year. A non-attainment area can reach attainment when NAAQS have been met for a period of ten consecutive years. During this time period the area is in transitional attainment, also termed maintenance.

Additionally, the Imperial County APCD has developed Thresholds for Project Operations: Conformity threshold levels, as presented in Table 3-1 Imperial County Operational Emission Thresholds, and Table 3-2 Imperial County Construction Emission Thresholds.

**Table 3-1. Imperial County Operational Emission Thresholds**

Pollutant	Tier I	Tier II
Oxides of Nitrogen (NO <sub>x</sub> ) and Reactive Organic Gases (ROG)	Less than 55 pounds per day (lbs/day)	55 lbs/day and greater
Particulate Matter (PM <sub>10</sub> ) and Oxides of Sulfur (SO <sub>x</sub> )	Less than 150 lbs/day	150 lbs/day and greater
Carbon Monoxide (CO)	Less than 550 lbs/day	550 lbs/day and greater
Level of Significance	Less than Significant	Significant Impact

**Table 3-2. Imperial County Construction Emission Thresholds**

Pollutant	Significance Threshold
NO <sub>x</sub>	100 lbs/day
PM <sub>10</sub>	150 lbs/day
CO	550 lbs/day
ROG	75 lbs/day



The criteria for determining significant or adverse air quality impacts under the General Conformity Rule, and the need to determine appropriate mitigation measures for a proposed project, is based on the significance thresholds for criteria pollutants and their precursors for which an area is designated as being a nonattainment area is given in 40 Code of Federal Regulations (CFR) 51.853:

A conformity determination would be required for each criteria pollutant or precursor where the total direct and indirect emissions associated with the project would equal or exceed these thresholds:

- Ozone precursor pollutants, VOCs and NO<sub>x</sub>: 100 tons per year (tpy) (50 tpy for serious nonattainment areas, 25 tpy for severe nonattainment areas, and 10 tpy for extreme nonattainment areas)
- PM<sub>10</sub>: 70 tpy for serious nonattainment.

When the preliminary analysis of a project indicates that the proposed project may potentially be near the thresholds identified above, the Lead Agency may consider the project as having a potentially significant impact.

#### **Discussion of Checklist Answers**

a-c. **Less than Significant.** Imperial County is designated as a federal nonattainment area for PM<sub>10</sub>, PM<sub>2.5</sub> and 8-hour ozone (USEPA 2009a; 2009b), and a state Ambient Air Quality Standards nonattainment area for 8-hour ozone and PM<sub>10</sub>, and is unlisted for PM<sub>2.5</sub> (CalEPA 2009).

Emissions associated with the construction of the proposed project for precursor pollutants for ozone, PM<sub>10</sub> and PM<sub>2.5</sub> would be below the significance thresholds under the General Conformity Rule. Imperial County APCD Standard Mitigation Measures (refer to Appendix B) would be implemented to ensure best management practices to minimize deleterious air quality contaminants to the maximum extent feasible. The proposed project would be below the *de minimus* and therefore in compliance with the SIP. Therefore, no General Conformity Analysis is required.

Under the proposed project, long-term emissions would occur related to the one pump station and the operation of the lagoon WWTP. The majority of long-term operational emissions associated with the proposed project would comprise the off-site combustion of natural gas for the generation of industrial and utility electric power. Renewable energy systems will be incorporated into the final design plans for the project (in conformance to public agency regulatory requirements) to the greatest extent feasible to reduce consumption of grid electricity, reducing these indirect emissions from electricity generation. This would potentially include the use of solar PV systems on pump stations, aerators, and other mechanical equipment. For calculation purposes, it was assumed the WWTP would not use solar panels and would consume a maximum of 100,000 kWh/year. It was also assumed that one pump station would consume a maximum of 7,000 kWh/year with 20 percent of the energy being generated from solar power. Estimated emissions for the proposed project would be 20 lbs/year of NO<sub>x</sub> and 13 lbs/year of SO<sub>2</sub>, 3.4 lbs/year of PM<sub>10</sub>, 12 lbs/year of CO, and 0.8 lbs/year of ROG.

d. **No Impact.** No short-term or long-term concentrations of pollutants would occur as a result of the proposed project. Additionally, the proposed project would be constructed approximately

1,000 feet east of the nearest sensitive receptors (e.g., residences), and would be adjacent to agricultural and undeveloped areas, which do not constitute sensitive receptors. Therefore, sensitive receptors would not be exposed to concentrated sources of pollutants.

e. **Less than Significant.** The proposed project would have the potential to generate odors associated with the operation of the lagoon WWTP. Hydrogen sulfide and ammonia-based compounds are common odor pollutants from WWTPs. Under implementation of the proposed project, an odor buffer of 1,000 feet from residential properties would be sufficient to disperse odors from the lagoon WWTP (USEPA 2011; BECC 2011). Under the proposed project the lagoon WWTP would be constructed to the northeast of Palo Verde, approximately 1,000 feet east of Sunset Way and adjacent residences. Despite this buffer, the potential for odors to occur within Palo Verde exists under Alternative 1. Winds in Palo Verde tend to be from the west or southwest, which would generally direct odors away from residential areas and to the east of the proposed WWTP; however easterly winds do occur and would occasionally direct odors towards residential areas. However, implementation of the proposed project would not create objectionable odors affecting a substantial number of people.

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>3.4 BIOLOGICAL RESOURCES</b>				
Would the proposal:				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		X		
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service?			X	
c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?			X	
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native residents or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			X	
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
f. Conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X

### Existing Setting

#### Flora

The predominant plant community in the Valley is cultivated/ruderal, and is associated with agricultural and other human activities. Outside of the Valley, the Sonoran Desert remains largely undeveloped.

Most of the natural vegetation in the Palo Verde Valley has been replaced by cropland and low levels of urban and rural development. Native vegetation and sensitive biological resources exist along the Colorado River, the Palo Verde Lagoon, and the Palo Verde Drain that support

riparian vegetation; however, the Palo Verde Lagoon and the Palo Verde Drain have been degraded by nutrients and heavy metals from sewage; nutrients, silt, selenium, and pesticides from agricultural drainage; and invasive non-native species. Agricultural activities and other human disturbance have facilitated the spread of opportunistic plant species. Weedy vegetation tends to dominate ruderal areas such as roadsides, borders of cultivated fields, and canal riparian/levee areas, and includes plant species such as cheeseweed, shepherds purse, white horse-nettle, saltbush, saltcedar, Russian thistle, and Bermuda grass. Riparian habitats are dominated by non-native species such as saltcedar, common reed, and cattail (State Water Resources Control Board [SWRCB] 2003). At the southern end of the Valley is the Cibola NWR which provides a variety of riparian, marsh, and riverine habitats. Major invasive species removal projects to enhance natural riparian habitat have been undertaken by the United States Fish and Wildlife Service (USFWS) at the Cibola NWR (USFWS 2010).

### Fauna

The Palo Verde Valley and surrounding region host a variety of species. Due to the cultivated/ruderal nature within the Valley, common species are those that have adapted to high levels of human disturbance and water quality degradation; however, due to the low population densities and large areas of undeveloped Sonoran Desert surrounding the Palo Verde Valley, other wildlife sightings are not uncommon. Freshwater fish are found in rivers and canals, and are dominated by introduced species including the threadfin shad, mosquito fish, red shiner, California killifish, largemouth bass, and white and channel catfish (Imperial County 2008).

Imperial County is located in one of the most important flyway corridors in the western hemisphere for migrant waterfowl, shorebirds, and songbirds. Generally, the greatest numbers and diversity of birds are found during the spring and fall months. Approximately 378 species of birds have been identified in Imperial County. The Cibola NWR, located approximately 7 miles south of the Community of Palo Verde and downstream from the Palo Verde Lagoon, provides habitat to over 288 species of birds. The Cibola NWR also provides habitat to various reptiles, fish, and large mammal species such as desert mule deer, bobcat and coyotes (USFWS 2010). Additionally, a variety of resident and migrant bat species are found in the area, particularly near agricultural canals and other waterways. The California leaf-nosed bat, Townsend's western big-eared bat, and the California mastiff bat are all listed as "Species of Special Concern" by the California Department of Fish and Game (CDFG), and have the potential to occur near the project area.

The project area consists of medium-density residential bordered by cultivated/ruderal areas in all directions; however 1 mile west, cultivated land ends and gives way to the Palo Verde Mountains Wilderness Area. An approximately 30-acre area of disturbed shrub habitat occurs on the island in the vicinity of the project area. Due to the proximity of the Palo Verde Lagoon riparian and open water habitats, the project area could provide forage opportunities and habitat to a variety of bird species, including the burrowing owl; however, no burrowing owls have been observed in this area. Further, the proximity of the project area to the Palo Verde Mountains Wilderness Area and the Cibola NWR makes it likely that a variety of species utilize habitats and forage opportunities provided by the Palo Verde Lagoon, irrigation channels, and agricultural fields within and adjacent to the Community of Palo Verde.

Endangered or Threatened Species

Several plant and animal species have been found in Imperial County and throughout California that are federal- or state-listed as threatened, endangered, candidate for protection, or species of concern.

In the vicinity of the project area (less than 2 miles [3 km]), the California Natural Diversity Database (CNDDB) notes several special status species (Table 3-3). The water of the Palo Verde Lagoon and Palo Verde Drain provide habitat for the razorback sucker, a federal and state endangered species. Additionally, the Yuma clapper rail, a state endangered and federally threatened species, has been identified in the vicinity of the Palo Verde Lagoon and is known to visit the Cibola NWR.

**Table 3-3. Threatened, Endangered, and Rare Species in the Palo Verde Vicinity (within 2-mile radius)**

Common Name	Scientific Name	State Status	Federal Status	California Native Plant Society (CNPS) List
American badger	<i>Taxidea taxus</i>	Species of Concern	None	
Colorado River cotton rat	<i>Sigmodon arizonae plenus</i>	Species of Concern	None	
Bitter rubberweed	<i>Hymenoxys odorata</i>	None	None	2
Pallid bat	<i>Antrozous pallidus</i>	Species of Concern	None	
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	Species of Concern	None	
Razorback sucker	<i>Xyrauchen texanus</i>	Endangered	Endangered	
Couch's spadefoot	<i>Scaphiopus couchii</i>	Species of Concern	None	
Vermilion flycatcher	<i>Pyrocephalus rubinus</i>	Species of Concern	None	
Yuma clapper rail	<i>Rallus longirostris yumanensis</i>	Endangered	Threatened	

Notes: CNPS 1B – Plants rare, threatened, or endangered in California and elsewhere  
 CNPS 2 – Plants rare, threatened, or endangered in California but more common elsewhere  
 CNPS 3 – Plants about which more information are needed by CNPS.

Source: CDFG 2009; 2010a; 2010b; 2010c.

Critical Habitat

The Palo Verde Lagoon, the Palo Verde Drain, and the portions of the Colorado River are designated as Critical Habitat for the endangered razorback sucker. A survey conducted by the USFWS in 1995 found populations at Cibola NWR's High Levee Pond, and Imperial NWR's Farmers Pond (approximately 25 miles south of the project site). These populations resulted from stocking efforts and are not naturally recruited fish. Limited stocking efforts are currently underway in the Lower Colorado River Basin by the USFWS. The USFWS is releasing razorback suckers that are 12 inches (31 cm) or greater in length in the federally designated Critical Habitat reaches of the Colorado River.

The razorback sucker is one of the recommended priority and planning species under the Lower Colorado River Multi-Species Conservation Program (LCRMSCP). The LCRMSCP is a long-term (50-year) multi-species habitat conservation effort that will cover at least 26 aquatic and terrestrial species along the Lower Colorado River through implementation of a Habitat Conservation Plan (HCP). The area covered by the LCRMSCP includes the 100-year floodplain

of the Colorado River from Lee's Ferry, Arizona south to the southern international border with Mexico, and includes the project area (CDFG 2000).

Of the 26 species covered in the LCRMSCP, 6 are currently listed under the Federal Endangered Species Act (ESA). The program addresses the ecological requirements of mammals, birds, fish, amphibians, and reptiles, as well as invertebrates and plants.

Other critical habitats in the project vicinity include 21,000 acres of Critical Habitat designated by the USFWS for the Peirson's milk-vetch in the Algodones Dunes within the Imperial Sand Dunes Recreation Area in Imperial County (Federal Register 2004). In addition, Critical Habitat has been designated for the peninsular bighorn sheep within the Painted Gorge Area of the Coyote Mountains in Imperial County (USFWS 2001). Both of these areas are more than 15 miles (24 km) from the project area in Palo Verde.

### Wetlands

In Imperial County wetlands are extremely limited due to the desert climate and lack of natural surface water resources. Due to their limited area and diminishing acreages, the occurrence of sensitive plants, and the ability to support a diversity of wildlife species, desert riparian and freshwater marsh habitats are considered sensitive in Imperial County (Imperial County 2008).

According to National Wetland Inventory maps for the area, riverine, freshwater forested/shrub and freshwater emergent wetlands occur along the Colorado River (USFWS 2010). No designated wetlands have been mapped within the project area associated with the Palo Verde Lagoon; however, wetland vegetation exists along undeveloped portions of the Lagoon.

### **Discussion of Checklist Answers**

a. **Less than Significant with Mitigation Incorporated.** The Palo Verde Lagoon, the Palo Verde Drain, and the Colorado River in the vicinity of the project area are Critical Habitat for the endangered razorback sucker. Critical habitat components could be affected by temporary noise and sedimentation impacts associated with construction and operation of the proposed project. However, proposed construction would be short-term, and high levels of sedimentation and impaired water quality currently exist in the Lagoon. In addition, discharge into the waterbody would require a variety of permits and close monitoring of discharge quality. Endangered Species Act, Section 7 Consultation with the USFWS would be required prior to implementation of proposed project. Therefore, with implementation of measures determined by and in compliance with USFWS requirements, short-term impacts to Critical Habitat would be reduced to less than significant.

b. **Less than Significant.** Construction associated with the proposed bridge crossing on Fourth Street would potentially result in impacts to aquatic and riparian habitats and species within the Palo Verde Lagoon. For any construction within the Lagoon or on the Lagoon banks, a Section 404 permit would be obtained from the United States Army Corps of Engineers (USACE) prior to commencement of any construction activities. Therefore, with implementation of measures determined by and in compliance with USACE requirements, impacts would be reduced to less than significant.

c. **Less than Significant.** Implementation of the proposed project would eliminate leaking of untreated wastewater into the environment, reducing the negative impacts to surface water resources. No designated wetlands are located within the proposed project area, and no direct

impacts to wetlands would occur; however, indirect impacts could occur from siltation to wetlands located along the Palo Verde Drain. Ground-disturbing activities associated with construction, particularly trenching and/or excavation, may temporarily result in increased sedimentation into the Palo Verde Lagoon and the Palo Verde Drain; however due to the high levels of sedimentation already occurring in these water bodies from the large amounts of loose soil in the vicinity, such increases would be minor. Sedimentation would likely settle out of the flow prior to reaching the Cibola National Wildlife Refuge (NWR) or Colorado River. Thus, no short-term or long-term changes to wetlands are anticipated as a result of the action alternatives.

d. **Less than Significant.** Implementation of the proposed project would not interfere with migratory fish or wildlife corridors. The proposed project would involve the installation of a new wastewater collection system and aerated facultative lagoon WWTP, and would not impair waterways within the Palo Verde Canal.

e & f. **No Impact.** The proposed project would not conflict with any local policies or ordinances protecting biological resources. Further, the proposed project would not conflict with the LCRMSCP or other adopted Habitat Conservation Plan, National Community Conservation Plan, or any other approved designations.

#### Mitigation Measures

##### 3.4.a. Mitigation measures for the protection of Burrowing Owls:

Prior to construction, the applicant shall conduct burrowing owl and burrow surveys during both the wintering and nesting seasons, unless the species is detected on the first survey. If possible, the winter survey should be conducted between December 1 and January 31 (when wintering owls are most likely to present) and the nesting season surveys should be conducted between April 15 and July 15 (the peak of the breeding season). Surveys conducted from two hours before sunset to one hour after, or from one hour before to two hours after sunrise, are also preferable.

Surveys should be conducted in accordance with guidelines included in Appendix B.

Mitigation actions should be carried out from September 1 to January 31 which is prior to the nesting season.

3.4.a.1. Occupied burrows should not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist approved by the CDFG verifies through non-invasive methods that either: (1) the birds have not begun egg-laying and incubation; or (2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.

3.4.a.2. To offset the loss of foraging and burrow habitat on the project site, a minimum of 6.5 acres of foraging habitat (calculated on a 100 meter {approximately 300 feet} foraging radius around the burrow) per pair or unpaired resident bird, should be acquired and permanently protected. The protected lands should be adjacent to occupied burrowing owl habitat and at a location acceptable to the CDFG. Protection of additional habitat acreage per pair or unpaired resident bird may be applicable in some instances.

3.4.a.3. When destruction of occupied burrows is unavoidable, existing unsuitable burrows should be enhanced (enlarged or cleared of debris) or new burrows created (by installing artificial burrows) at a ratio of 2:1 on the protected lands site.

3.4.a.4. If owls must be moved away from the disturbance area, passive relocation techniques (as described below) should be used rather than trapping. At least one or more weeks will be necessary to accomplish this and allow the owls to acclimate to alternate burrows.

3.4.a.5. The project sponsor should provide funding for long-term management and monitoring of the protected lands. The monitoring plan should include success criteria, remedial measures, and an annual report to the CDFG.



Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>3.5 CULTURAL RESOURCES</b>				
Would the proposal:				
a. Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?				<b>X</b>
b. Cause a substantial adverse change in the significance of an archeological resource pursuant to §15064.5?		<b>X</b>		
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		<b>X</b>		
d. Disturb any human remains, including those interred outside of formal cemeteries?		<b>X</b>		

### Existing Setting

The Colorado River Gold Rush of 1861 spurred steamboat trade along the Lower Colorado River, leading to the initial development by European settlers in the region. Most of the large cottonwood-willow stands and mesquite bosques had been cut down by 1890. By 1927, about 95,000 acres of farmland were irrigated along the mainstem of the Lower Colorado River between Cottonwood Basin and the Mexico border, most of which was in the Imperial Valley, leading to a reduction in riparian habitat. Boulder Dam (now Hoover Dam) was completed in 1935, drastically and suddenly changing water flow of the river, and eliminating the tremendous floods that characterized the ecosystem and limited permanent habitation of the Palo Verde Valley (U.S. Bureau of Reclamation 1996 as sourced by SWRCB 2003). Therefore, historic resources prior to 1935 in the Palo Verde Valley would likely have been severely damaged or destroyed during the frequent historic Colorado River flooding events.

There are no properties in or near Palo Verde that are listed as a California Historical Landmark (California State Parks 2010). No properties in the Palo Verde vicinity are listed on the National Register of Historic Places (NRHP) (National Park Service 2010). The closest NRHP-listed sites are in Blythe (Archeological sites CA-RIV-504, CA-RIV-773, and the Blythe Intaglios). A cultural resource records search for the Palo Verde area was conducted for the proposed project in May 2010 through the South Coastal Information Center (SCIC) within the California Historical Resource Information System. Results of this records search determined that there are no previously recorded prehistoric or historic archaeological sites within the Community of Palo Verde. A total of 8 cultural resource surveys and investigations have occurred in the vicinity of Palo Verde, 7 of which encompassed the entire developed area of the Palo Verde Community (SCIC 2010). The project area is located in a previously disturbed area, and any potential existing cultural sites are likely to have been disturbed by past activities.

## Discussion of Checklist Answers

a. **No Impact.** Construction activities associated with the proposed project would occur in previously disturbed areas (e.g., along existing roadways, and disturbed areas). Since no documented resources were identified during archival research and the area has been previously surveyed, it is unlikely that historical resources would be encountered during the proposed project. Therefore, no impacts to historic resources are anticipated under implementation of the proposed project.

### **b, c, and d. Less than Significant with Mitigation Incorporated.**

The possibility of encountering previously undiscovered cultural resources exists; therefore, should cultural, archaeological, or paleontological resources, or human remains be encountered during project construction, construction activity would cease until a qualified archaeologist performed an assessment of the resources uncovered and a determination of any required conservation and/or related efforts (e.g., further investigation) is made. Therefore, less than significant impacts to cultural resources are anticipated with implementation of the following proposed mitigations:

*3.5 In consultation with the Quechan and Colorado River Indian Tribal representatives, the Applicant will work to identify potentially sensitive cultural areas within the project location. Based on findings from the Initial Study and consultation with relevant Tribal representatives, ground-disturbing activities in proximity to potential culturally sensitive areas shall be monitored by both a qualified archaeologist and a Native American monitor. In the event that previously unknown subsurface cultural resources are found during ground-disturbing activities, all activities would be redirected to other locations until the resource can be assessed and the proper parties consulted.*

*Relevant tribal representatives will provide one or more certified Cultural Monitors to the Project site during coarse grading upon at least 5 working days telephonic notice from the Project proponent. Such notice shall be given to the appropriate Tribal Historic Preservation Officer, at 760-572-2423 (office). The Applicant will consult with the Tribe to create a Monitoring Protocol, which will outline the scope of proposed activity, monitoring duties and authorities, and project specific logistics. The Applicant and the Tribe will jointly agree on a protocol, and implement the protocol for the duration of ground disturbing activities*

*Proper training of on-site personnel will be required and, if requested, certified observers will be on-site to ensure proper avoidance and/or removal protocols are observed in the event that cultural resources are uncovered due to the Applicant's construction ground disturbance. Workers conducting grading activities and their supervisors shall receive proper training prior to the commencement of grading from a qualified archaeologist regarding the potential for sensitive archaeological resources to be unearthed during these grading activities. Workers shall be directed to report any potential archaeological or paleontological artifacts observed during grading and/or other construction activities to their supervisor. Ground disturbance should cease in the immediate vicinity of the discovery until the Cultural and/or Native American Monitor is notified of the discovery by the Superintendent of the project site.*

*The proposed mitigation measures shall be implemented prior to any ground disturbance at the site. Mitigation measures will comply with state and nationally-accepted protocols, including SB 18 regulations, e.g. avoidance and removal protocols, if applicable. The Applicant shall prepare,*

*implement and monitor the approved conditions for potential impacts on cultural resources from the project's construction and/or operational activities.*

*3.5.b. In the event archaeological resources potentially eligible for the CRHR are encountered, surface disturbing work in the immediate vicinity of the discovery shall temporarily halt until appropriate treatment of the resource is determined by a qualified archaeologist in accordance with the provisions of CEQA Section 15064.5. The archaeological monitor shall have the authority to re-direct construction equipment in the event archaeological resources potentially eligible for the CRHR are encountered.*

*3.5.c. In the event potentially significant paleontological resources are encountered, the contractor shall halt ground disturbing activities in the immediate area and notify the County Planning & Development Services Department and IID. The Applicant shall retain a qualified paleontologist to make an immediate evaluation of the significance and appropriate treatment of the encountered paleontological resources. Construction activities may continue on other parts of the site while evaluation and treatment of the discovered paleontological resources takes place.*

*3.5.d. In the event that human remains are encountered during ground-disturbing activities, all ground-disturbing activities in the vicinity of the find would be stopped. The County Coroner would be notified in compliance with all relevant federal regulations and as required by CEQA Guidelines, Section 156064.5(e). All parties involved would ensure that any such remains are treated in a respectful manner and that all applicable state and federal laws are followed. If human remains are found to be of Native American origin, or if associated grave goods or objects of cultural patrimony are discovered, the provisions of the Native American Graves Protection and Repatriation Act [NAGPRA] would be followed. The Native American Heritage Commission shall be asked to determine the descendants who are to be notified or, if unidentifiable, to establish the procedures for burial.*

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>3.6 GEOLOGY AND SOILS</b>				
Would the project:				
a. Expose people or structure to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated in the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.			X	
ii. Strong seismic ground shaking?			X	
iii. Seismic-related ground failure, including liquefaction?			X	
iv. Landslides?			X	
b. Result in substantial soil erosion or loss of topsoil?			X	
c. Be located on a geologic unit or soil that is unstable, or that would become unstable because of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X	
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?			X	
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?			X	

### Existing Setting

The geology of the project area is dominated by a north-trending depression known as the Colorado River Trough. This trough was formed by historical floods of the Colorado River and by millions of years of regional faulting, downwarping, and sediment infilling. Prior to the construction of Hoover Dam, the floodplain of the Colorado was considerably wider than the current meandering course of the river. There are several indications that the Colorado River

has changed course in the area, but normally, it has been contained by terraces along its floodplain. This floodplain is about 9 miles wide in the Palo Verde Valley.

The project area is located in the Palo Verde Valley on the northern border of Imperial County, just south of Riverside County. The Palo Verde Valley is 29 miles long and 15 miles across at its widest point (Colorado River Basin Regional Water Quality Control Board [RWQCB] 2003). The Valley is bound on the north by the Big Maria Mountains, on the west by Palo Verde Mesa, and on the south and east by the Colorado River.

According to existing U.S. Geological Survey elevation data, the elevation in the Palo Verde project area is generally between 232 and 233 feet above sea level. The project area drops significantly at the banks of the lagoon (10- to 20-foot drops). The decline across the project is approximately 0.02 percent (BECC 2011).

The nearest active fault is the San Andreas Fault, located near the Salton Sea, approximately 60 miles southwest of the Blythe area. Several faults are also located about 100 miles to the northwest in the Mojave Desert. In October 1999, an earthquake occurred along a couple of these Mojave Desert faults. Major local tectonic activities associated with earthquakes in the Palo Verde area, however, are believed to have ended more than one million years ago.

### Soils

Agricultural land surrounding the Community is mostly comprised of Prime Farmland or Farmland of Statewide Importance, although the area directly east of the Community is designated as Farmland of Local Importance (DLRP 2007). The Palo Verde Valley floor is comprised of alluvium. Soils are generally level, moderately to well-drained sandy loams and loamy sands. Soil associations in the Palo Verde Valley include Rositas-Gilman, Cibola-Ripley-Indio, and Imperial-Holtville Meloland. Soil types in the vicinity of the project area are primarily Indio very fine sandy loam. Other soils in Palo Verde include Holtville silty clay, Gilman silty clay loam, Imperial silty clay, and Holtville silty clay (Natural Resources Conservation Service [NRCS] 2010). Soil erosion is not a serious concern in this area, although limited areas next to river bluffs and canyons are subject to erosion hazards (BECC 2011).

Salinity control is the major soils management concern. Average annual precipitation in the valley is usually less than 4 inches while evapotranspiration totals about 48 inches per year (USDA 1974 as sourced by Colorado River Basin RWQCB 2003). More than 1 ton of salt is left in the land with every acre-foot of irrigation water, and the accumulation of salt in the root zone can cause soils to become too saline for crop growth.

### **Discussion of Checklist Answers**

a. **Less than Significant.** The project proposes new infrastructure placed in an area of low seismic activity. No known active faults are located in the Palo Verde area and major tectonic activities associated with earthquakes are believed to have ended more than 1 million years ago in the region. Consequently, the potential for seismic activity and ground rupture is low. Further, the proposed facilities would be constructed in accordance with the California State Building Code (Title 24 of the California Administrative Code), which contains specifications to minimize adverse effects due to ground shaking from earthquakes and liquefaction. With the implementation of building and construction standards, impacts to the proposed facilities resulting from geologic hazards would be less than significant. Since construction would primarily occur in previously disturbed or developed areas, excavation trenches would not

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substantially affect soils, geology, or seismicity; therefore, potential impacts under the proposed project would be less than significant.

b. **Less than Significant.** Soil erosion is not a substantial concern from the proposed project due to the limited area of disturbance, implementation of best management practices, low occurrences of rainfall events, and level topography. Therefore, erosion impacts and topsoil loss would be less than significant.

c & d. **Less than Significant.** Liquefaction hazards are greatest in areas of shallow groundwater, such as the proposed project site; however, the project would be placed in an area of low seismic activity. Groundshaking could occur within the project area, therefore the proposed facilities would be constructed in accordance with the California State Building Code (Title 24 of the California Administrative Code), which contains specifications to minimize adverse effects due to ground shaking from earthquakes and liquefaction. Since this construction would primarily occur in previously disturbed or developed area, excavation trenches would not substantially affect soils, geology, or topography; therefore, potential impacts from the wastewater collection pipeline infrastructure would be less than significant.

e. **Less than Significant.** Substantial fill activities would occur during construction of the lagoon WWTP, particularly during construction of the two percolation ponds which would be 135 feet long by 100 feet wide by 6 feet deep, resulting in a total of 162,000 cubic feet of water capacity in the percolation/evaporation ponds. Due to shallow groundwater depths, the percolation ponds would be built-up above existing ground level and contained behind earthen dikes. However, since soil disturbance would be lessened through Best Management Practices (BMPs), in addition to provisions to be incorporated into the Storm Water Pollution Prevention Plan (SWPPP) that would be developed prior to construction, impacts under the proposed project would be less than significant.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>3.7 GREENHOUSE GAS EMISSIONS</b>				
Would the project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X	

**Existing Setting**

Global climate change can be measured by changes in wind patterns, storms, precipitation, and temperature. Scientific consensus has identified human-related emissions of greenhouse gases (GHGs) above natural levels is a significant contributor to global climate change. GHG are substances that trap heat in the atmosphere and regulate the Earth's temperature, and include water vapor, CO<sub>2</sub>, methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), ground level ozone, and fluorinated gases, including: chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), and halons.

Primary activities associated with GHG emissions include transportation, utilities (e.g., power generation and transport), industry, manufacturing, agriculture, and residential. End-use sector sources of GHG emissions in California are as follows: transportation (40.7 percent), electricity generation (22.2 percent), industry (20.5 percent), agriculture and forestry (8.3 percent) and other (8.3 percent) (California Energy Commission [CEC] 2005). The main sources of increased concentrations of GHG due to human activity include the combustion of fossil fuels and deforestation (e.g., CO<sub>2</sub>), livestock and rice paddy farming, land use and wetland depletions, and landfill emissions (e.g., CH<sub>4</sub>), refrigeration systems and fire suppression systems use and manufacturing (e.g., CFCs), and agricultural activities, including the use of fertilizers.

**Discussion of Checklist Answers**

a. **Less than Significant.** Energy would be provided to the proposed project primarily from off-site combustion of natural gas for the generation of industrial and utility electric power; however, as part of best management practices for energy reduction, final project plans will incorporate on-site solar photovoltaics for pumps, aerators, and other mechanical equipment to the greatest extent feasible. Electrical generation may include non-polluting sources such as solar, wind, or nuclear power. Operational energy requirements were estimated and it was assumed the WWTP would consume a maximum of 100,000 kWh/year (typical residential homes consume approximately 3,000 kWh/year). Additionally, each pump station would consume a maximum of 7,000 kWh/year with 20 percent of the energy being generated from on-site solar power. Sewage treatment plants have the potential to also result in methane emissions, which contribute to global climate change, although the quantity of contribution would be minor. Although, both the construction and the operation of the proposed project would incrementally

contribute to GHG emissions, given the short-term nature of construction and the limited nature of the energy utilization of the proposed project, contributions to GHG emissions would be less than significant.

b. **Less than Significant.** The only adopted applicable plan to the project that reduces GHGs is AB 32, which has identified 1990 emission levels as a goal to be achieved by the year 2020 through adoption of AB 32. To meet this goal, California would need to generate lower levels of GHG emissions than current levels. It is recognized that for most projects there is no simple metric available to determine if a single project would help or hinder meeting the AB 32 emission goals. As discussed above, the project would not result in a substantial increase in the emission of GHGs from construction activities, generation of vehicle traffic, and energy use. Therefore, limited increase should not hinder statewide compliance with the goals of AB 32 and contributions would be less than significant.



Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>3.8 HAZARDS AND HAZARDOUS MATERIALS</b>				
Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			<b>X</b>	
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			<b>X</b>	
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				<b>X</b>
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				<b>X</b>
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				<b>X</b>
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				<b>X</b>
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				<b>X</b>
h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				<b>X</b>

## Existing Setting

Hazardous materials and waste include any solid, liquid, contained gaseous, or semisolid material, or any combination of materials that pose a substantial present or potential hazard to human health or the environment. This may include medical and industrial wastes, pesticides, herbicides, radioactive materials, combustible fuels, and biohazardous material (i.e., biological material capable of causing disease in humans). Improper use, storage, transport, or disposal of these materials may result in harm to humans, surface or ground water degradation, air pollution, fire, or explosion.

In Imperial County, the California Department of Toxic Substances Control (DTSC) serves as the Certified Unified Program Agency (CUPA), managing regulation and permitting of businesses that handle hazardous materials and hazardous waste (Imperial County 2007). The California Department of Health Services Medical Waste Management Program permits and inspects all medical wastes. Imperial County Environmental Health & Consumer Protection Services participates on the Imperial County Hazardous Emergency Assistance Team providing health and safety expertise in the containment and cleanup of accidental hazardous waste spills (Imperial County 2007). There are no hazardous waste contamination sites in need of cleanup or response listed within or near the Community of Palo Verde (DTSC 2010).

## Discussion of Checklist Answers

a–b. **Less than Significant.** The proposed project would involve the installation of a new wastewater collection system and aerated facultative lagoon WWTP to the east of the northern terminus of Sunset Way that discharges into percolation/evaporation ponds. Wastewater would be transported from residential areas through an underground pipeline system consisting of 8-inch- and 4-inch-diameter pipes. Upon implementation of the proposed action, waste conveyed to the wastewater treatment system would be contained within the system until fully treated. No hazardous chemicals would be utilized or stored in the WWTP. The lagoons would need to be drained and waste sludge (bio-solids) removed two to four times per year.

Depending of WWTP final design, bio-solids would need to be removed from the grit screen as frequently as on a monthly basis, but more typically on a quarterly basis. It is anticipated that bio-solids would either be land applied or disposed of at an appropriate landfill. Appropriate disposal of bio-solids would be determined in a Bio-Solids Management Plan, which would be developed as part of the final WWTP design, consistent with local, state, and federal regulations.

Hazardous materials would potentially be required for mosquito control within the lagoons; however, chemical use would be administered in accordance with a Mosquito Abatement Plan, which would be developed to comply with local, state, and federal regulations. No other hazardous materials or waste would be created, disturbed, moved, or used as part of the proposed action alternatives.

The removal of septic systems would eliminate the discharge of partially treated wastewater into the environment. Therefore, implementation of the proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, nor would the proposed project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Further, the removal of septic systems would eliminate the leaching of wastewater into the environment; therefore, the proposed

project would provide a beneficial impact by improving the quality of waste management in Palo Verde.

c. **No Impact.** The nearest school is located in East Blythe, approximately 17 miles to the northeast of the project site. Since the proposed project would improve the existing wastewater collection and treatment facilities, and there are no schools located within one-quarter mile of the project site, there would be no increased risk of emission of hazardous materials within the vicinity of a school.

d. **No Impact.** The proposed project area does not contain any sites that are listed as hazardous materials sites, compiled pursuant to Government Code Section 65962.5; therefore, no impacts to the public or environment relating to hazardous materials sites would result under the proposed project.

e & f. **No Impact.** The nearest airport to the proposed project area is Blythe Airport, located more than 12 miles north of the proposed project site. Since the proposed project area is not located within 2 miles of any airport or private airstrip, no safety impacts associated with airports would result for people residing or working in the project area.

g. **No Impact.** The proposed project would involve the installation of a new wastewater collection system and aerated facultative lagoon WWTP to the east of the northern terminus of Sunset Way that discharges into percolation/evaporation ponds. The proposed project would not permanently alter existing roadways and would have no impact on an adopted emergency response plan or emergency evacuation plan.

h. **No Impact.** The proposed project area is not directly adjacent to hillside areas that have wildfire risks. Developed and agricultural areas, such as the project vicinity, are not subject to wildland fires. Since the proposed project would not create any new structures in wildfire prone areas or change existing land uses, the proposed project would not expose people or structures to risk of loss, injury or death involving wildland fires.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>3.9 HYDROLOGY AND WATER QUALITY</b>				
Would the project:				
a. Violate any water quality standards or waste discharge requirements?			X	
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?			X	
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?			X	
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?			X	
e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?			X	
f. Otherwise substantially degrade water quality?			X	
g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?			X	
h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows?			X	
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?			X	
j. Inundation by seiche, tsunami, or mudflow?				X

## Existing Setting

### Surface Water

The Community of Palo Verde is localized around the Palo Verde Lagoon, a slow-flowing freshwater channel. The Colorado River, located approximately 6 miles east and 2.5 miles southeast of the Community of Palo Verde, is the main source of surface water in the region and much of Southern California. Water is diverted from the Colorado River at the Palo Verde Diversion Dam, located approximately 25 miles north of the Community of Palo Verde, and flows to a 150-mile system of open drains/canals that include the Palo Verde Lagoon. Water from these drains is discharged into the Palo Verde Outfall Drain, which flows south to the Cibola NWR, where it rejoins the Colorado River. The PVID is responsible for maintaining this system of drains/canals, which supplies water to approximately 9,000 acres of agricultural land in Palo Verde Valley. Currently, the PVID has an unlimited allocation for water as long as it is used to benefit agriculture (Imperial County 2008).

The Community of Palo Verde is drained by the Palo Verde Lagoon. Informal drainages channel water towards the Lagoon; however, limited paved surfaces and scant rainfall reduce the need for formal stormwater drainage channels.

### Groundwater

The primary source of groundwater recharge is the Colorado River, and recharge by underflow from tributary areas is small by comparison. In irrigated areas of the Colorado River Basin Region, such as the project area, deep percolation of applied water from the Colorado River provides some replenishment of groundwater (Imperial County 2008). Direct recharge from rainfall is very minor. The Palo Verde Valley has very shallow groundwater depths, and historically was found throughout the valley at a depth of approximately 5 feet. Water works projects occurring primarily in the 1960s, including the dredging of the Palo Verde Lagoon, provided a drain mechanism for groundwater and has lowered groundwater levels to approximately 10 feet, where they exist currently. The height of water in the Palo Verde Lagoon generally is equal to or slightly lower than groundwater levels in the surrounding area (PVID 2010). Perched groundwater conditions are known to occur in some areas of Palo Verde Valley, including in the vicinity of the Community of Palo Verde. Groundwater is generally unconfined in the Palo Verde region; however, some confined zones exist in the more than 7,000 feet of alluvial sediments that form the aquifers in area.

The PVCWD is responsible for supplying water to residents of the Community of Palo Verde for domestic purposes. The PVCWD operates two deep-water wells (the North and South wells), which extract groundwater from the basin. These wells extract approximately 45,000 gallons per day (gpd) of fairly good quality water, which is then treated and distributed to the Community (Imperial County 2008). The water is stored in two 120,000-gallon tanks located 2 miles south of Palo Verde, elevated to 20-feet above ground level, which provide water via gravity flow to the Community. Water pressure is suitable for all general purposes, including fire flow at all hydrants (Imperial County 2004)

### Floodplains

Flooding is a hazard within Palo Verde and surrounding areas. Flooding hazards are greatest on either side of the Palo Verde Lagoon and in the southern portion of the Community (refer to Figure 3-2). The area adjacent to the Palo Verde Lagoon and farmlands to the south of the Community are considered to be a natural floodplain; this area is mapped as *Zone A* on FEMA

Flood Insurance Rate Map (FIRM) panels 06025C-0300C (FEMA 2008). *Zone A* represents areas subject to inundation by the 1-percent-annual-chance flood event generally determined using approximate methodologies (because detailed hydraulic analyses have not been performed, no Base Flood Elevations or flood depths are known). Most of the potential flood areas around the Palo Verde Lagoon are developed with single-family homes. Additionally, the PVID canals and laterals are open channels; however, flow levels are controlled and hazards from significant flooding from these sources are minimal.

### Water Quality

Palo Verde is built around the Palo Verde Lagoon and Outfall Drain, which run through the middle of the Community and are part of the Palo Verde Valley's system of agricultural drains. Irrigation water from the PVID sustains agriculture in the area, and large parcels of valley land are used to grow crops such as melons, cotton, alfalfa, and various vegetables. The lagoon is a small canal-like lake historically used for contact water recreation such as boating, swimming, and water-skiing, which are now prohibited because of the high level of contamination in the lagoon.

The SWRCB's 303(d) list of impaired water bodies identifies Palo Verde Outfall Drain as water quality limited because bacteria concentrations violate water quality objectives that protect the following beneficial uses: contact and non-contact water recreation (REC I and REC II); warm freshwater habitat; wildlife habitat; and preservation of rare, threatened, or endangered species. *E-coli* and other fecal coliform bacteria are associated with human and animal fecal waste, and indicate the likelihood of the presence of infectious pathogens. The main sources of pathogens as indicated by *e-coli* and other fecal coliform bacteria in the Palo Verde Agricultural Drain are natural background sources and dysfunctional septic systems. Natural sources of pathogens appear to play a significant role, but their actual contribution, and contributions from other non-point sources of pollution in general have not been fully characterized. Studies indicate the probable main sources of pathogens are waterfowl (96.9 percent), mammals (2.3 percent), septic systems (0.4 percent) and songbirds (0.4 percent) (SWRCB 2003).

### **Discussion of Checklist Answers**

a. **Less than Significant.** Implementation of the proposed project is intended to provide wastewater collection and treatment services to the Community of Palo Verde. Prior to construction a SWPPP would be prepared and implementation would adhere to BMPs. Since land effluent discharges would occur under the proposed project, which would potentially affect groundwater, the Palo Verde County Water District (PVCWD) would be required to file a Report of Waste Discharge with the State Water Resources Control Board (SWRCB) to obtain waste discharge requirements (WDRs) Form 200.

The proposed project would not violate any water quality standards or waste discharge requirements and would therefore result in less than significant impacts.

b. **Less than Significant.** Once constructed, the lagoon WWTP would provide groundwater recharge through the associated percolation ponds. Due to the shallow depth of groundwater, recharge from the percolation/evaporation ponds would occur quickly. A limited increase of impermeable surfaces would occur as a result of the WWTP structure; however due to the minor contribution of rainfall and the relatively undeveloped nature of the project area, such an increase would not affect groundwater recharge rates. Since land effluent discharges would

occur under Alternative 1 and would potentially affect groundwater, the PVCWD would be required to file a Report of Waste Discharge with the SWRCB to obtain WDRs Form 200.

c-f. **Less than Significant.** Short-term impacts could result from run-off related to construction of the proposed wastewater collection and treatment system. Ground-disturbing activities associated with the proposed project would involve new construction of a wastewater collection and treatment system. Site preparation activities (e.g., grading, trenching) and construction would result in temporary exposure and compaction of soils, affecting surface water drainage flow patterns and percolation rates. Increases in surface water runoff could result in increased sediment loading to the Palo Verde Lagoon and other canals/drainage ways during periods of precipitation. Precipitation events in the Palo Verde region are minor and infrequent and would not be expected to result in substantial runoff events; therefore, impacts associated with runoff and drainage patterns would be less than significant.

g-i. **Less than Significant.** Under the proposed project the wastewater collection system would be constructed largely within the FEMA 100-year floodplain, which occurs along the banks of the Palo Verde Lagoon for the length of the Community, as well as in areas of southern Palo Verde. Pipeline segments would be buried at depth and would not be affected by potential flood events. Watertight manhole covers would be used for all manholes occurring within the 100-year floodplain and wherever the manhole tops may be flooded by street runoff or high water. Pump stations would be located at the bottom of the 'wet well' enclosed in a manhole approximately 10 to 20 feet below ground surface (bgs). The pump stations would be waterproofed with sealing lids/hatches to prevent water from flowing into the pump station and therefore impacts related to the wastewater collection system would be less than significant.

The WWTP site for the proposed project would be located outside the FEMA 100-year flood boundary, so no direct impacts to structures would occur during a flood event; however, a rise in groundwater conditions could temporarily affect the function of the percolation/evaporation ponds. Similar to the existing Ripley WWTP 10 miles to the north, the lagoon WWTP under the proposed project would include installation of an under drain beneath the percolation/evaporation ponds to prevent groundwater from coming to the surface. Impacts would be temporary and less than significant.

j. **No Impact.** The project area is not located within identified tsunami or seiche risk areas, as it is not located in the vicinity of any major water bodies. Potential mudflows do not pose a risk to the project area. Therefore no impacts specific to inundation by seiche, tsunami, or mudflow would occur.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>3.10 LAND USE PLANNING</b>  Would the project:				
a. Physically divide an established community?				X
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or Development Code) adopted for the purpose of avoiding or mitigating an environmental effect?			X	
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?				X

### Existing Setting

The Community of Palo Verde – which has a 2010 population of 171 – is located in the US-Mexico border region, approximately 48 miles north of the international boundary. Land use in the Palo Verde Valley is characterized as agricultural and residential uses. The Community of Palo Verde has been experiencing a population decline and has undergone little development during the past 20 years (Imperial County 2004). Palo Verde zoning regulations and land use designations are provided in the Palo Verde Community Plan, within the Imperial County General Plan (2008).

The Community of Palo Verde consists of mostly residential housing and includes two RV parks. Palo Verde also contains a small commercial center, fire station, post office, community hall, church, and sheriff's substation. PVCWD owns and operates an existing water filtration plant and potable water supply system. Households in the Community currently rely on septic systems for their wastewater disposal needs and many of these systems are failing. Additionally, many of the septic systems do not meet the Palo Verde and Imperial County required setback distances of 50 to 100 feet from the adjacent Palo Verde Lagoon.

Outside the Community, land uses are almost entirely agricultural. Crop production in the area is primarily melons, cotton, alfalfa, and vegetables (Colorado River Basin RWQCB 2003). Farmland surrounding the Community is generally classified as Prime or Farmland of Statewide importance.

The PVCWD was incorporated in 1962 to provide potable water service to area. When the District's exiting potable water system was initially constructed in 1983, it consisted of wells and a pipeline distribution network. Delivery of water to residents began in 1984. In 1988, a sand filter system was installed to reduce iron and manganese, and a chlorination system was installed to provide disinfection. In 2000, two 120,000-gallon storage tanks were installed at the water treatment plant. Further improvements were made to refurbish and replace delivery



system pipes, including an outfall drain and State Route 76 crossing, and to install residential water meters. PVCWD currently supplies potable water to 164 residences.

#### **Discussion of Checklist Answers**

a. **No Impact.** The proposed project would not create a physical division within a community.

b. **Less than Significant.** The nature of the proposed project – improvements to a municipal infrastructure system designed to service existing population – would not currently be consistent nor compatible with existing Palo Verde Community Area Plan land use designation and Imperial County zone district regulations for the existing parcel; however, under the Preferred Alternative, the wastewater collection and WWTP project would occur pursuant to an Imperial County General Plan Amendment and rezone. The current parcel, APN 006-220-056, is zoned Residential (R-1) and has a land use designation of Medium Agriculture. In order to comply with the Imperial County General Plan and zoning ordinance, the proposed project would require a general plan amendment and a rezone of the subject parcel to Government/Special Public (G-S) zone district. Additionally, a minor subdivision or a Parcel Map Waiver from Imperial County would be required to create a separate legal parcel for the WWTP site. Resolution of land use and zoning consistency issues would be required prior to construction, and upon resolution, impacts would be less than significant.

The wastewater collection pipeline and lagoon WWTP site would not conflict with any applicable land use plan, policy, or regulation.

c. **No Impact.** The proposed project would not conflict with the LCRMSCP or any other adopted Habitat Conservation Plan, National Community Conservation Plan, or any other approved designations.

Issues	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>3.11 MINERAL RESOURCES</b>  Would the project:				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				<b>X</b>
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				<b>X</b>

**Existing Setting**

There are no known mineral resources within or near the project area.

**Discussion of Checklist Answers**

a & b. **No Impact.** The proposed project would not occur in an area known to contain mineral resources. Further, the proposed project area currently does not have active aggregate or petroleum mining operations. Therefore, there would be no impact to mineral resources.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>3.12 NOISE</b>				
Would the project result in:				
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			X	
b. Exposure of persons to or generation of excessive groundbourne vibration or groundbourne noise levels?			X	
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X
f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				X

### Existing Setting

The noise environment in the Community of Palo Verde is generally low due to the low population density. The majority of noise generated in Palo Verde is from vehicular traffic. Regional traffic noise is associated with State Highway 78, which runs east-west across Imperial County from Blythe to Oceanside. The noise environment of the project area is characteristic of a low-density rural environment. Local vehicular traffic is the primary generator of noise in the project area.

### Discussion of Checklist Answers

a. **Less than Significant.** Long-term operation of the proposed project would consist of an underground pipeline system and lagoon WWTP, which would have minor associated noise generation. Construction activities would result in short-term increases in ambient noise levels; however, such increases would be temporary and implementation of BMPs – such as the use of equipment sound mufflers and restriction of construction activity to normal working hours. The project would be required to be complaint with Imperial County Noise Element standards, which

apply to noise measured at the nearest sensitive receptor (adjacent residences). County standards would require construction equipment operation to be limited to the hours of 7 a.m. to 7 p.m. Monday through Friday, and 9 a.m. to 5 p.m. Saturday. No commercial construction operations are permitted on Sunday or holidays (Imperial County 2008). Therefore, the proposed project would not result in noise generation inconsistent with the General Plan or noise ordinances.

b. **Less than Significant.** Implementation of the project would include trenching, soil movement, pipe laying, and other construction activities. A variety of equipment would be required for construction and temporary noise increases would occur (Table 3-4). Construction noise generated during implementation would be reduced through BMPs—such as the use of equipment sound mufflers and restriction of construction activity to normal working hours. Construction activities over the implementation period would expose Palo Verde residents to less than significant groundbourne vibration and groundbourne noise levels.

**Table 3-4. Average Noise Generation by Equipment Type**

Equipment Type	Noise Level (dBA)
Whacker Packer (jumping jack)	<90
Jackhammer	<86
Trencher	<86
Excavator	<90
Front loader	<90
Backhoe	<90
Compactor	<90
Cement mixer	<86
Bulldozer	<86
Dump truck	<86
Tank truck	<86
Asphalt truck	<86
Asphalt spreader	<86

c. **Less than Significant.** The lagoon WWTP would generate noise associated with the operation of WWTP machinery. Noise generated from aeration equipment and fans are the greatest source of noise associated with lagoon-type treatment systems. A noise buffer required for WWTPs range from 250 to 1,000 feet from sensitive receptors (e.g., residential properties), depending on the noise controls included in the WWTP design. Under the proposed project the lagoon WWTP would be constructed in northeastern Palo Verde, approximately 1,000 feet east of the northern terminus of Sunset Way and adjacent residences, which would reduce impacts associated with noise to less than significant. Long-term noise generation from the proposed pump station would produce a 'humming' noise for between two to three hours a day. The pump would be located at the bottom of a wet well, enclosed in a manhole approximately 10 to 20 feet bgs. Resulting noise generation would therefore be less than significant.

d. **Less than Significant.** Refer to checklist answer (b).

e & f. **No Impact.** The proposed project is not located within or in the vicinity of an airport or private airstrip. The Blythe Airport is the nearest airport, located more than 12 miles north of the proposed project area. No new residents would be exposed to excessive noise levels.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>3.13 POPULATION AND HOUSING</b>				
Would the project:				
a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?			X	
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X

### Existing Setting

#### Imperial County

In 2008, the estimated population of Imperial County was 175,622. The 2009 estimated population of Imperial County was 179,254, a growth of 2.1 percent from the previous year (California Department of Finance 2009). The County has grown by approximately 26 percent since 2000, when the population was 142,361 (US Census Bureau 2000).

As of December 2009, Imperial County has a total labor force of approximately 75,303, with an unemployment rate of approximately 27.7 percent, or 20,890 persons (US Bureau of Labor Statistics [BLS] 2009). Due to the County's significant seasonal agricultural economy, greater seasonal variations in unemployment occur, thereby resulting in consistently high unemployment rates. According to the United States Bureau of Economic Analysis (US BEA), the main source of employment in Imperial County in 2007 was state and local governments (21.3 percent of total employment). The next greatest sources of employment were retail trade (13.3 percent), health care and social assistance (6.0 percent), farm employment (5.4 percent), and accommodation and food services (5.4 percent) (US BEA 2007).

The Palo Verde Valley has a higher percentage of poverty than many regions in California (US Census Bureau 2008). In Imperial County, the estimated 2008 median household income was \$41,757. About 9 percent of households earned less than \$10,000 per year, and approximately 22 percent of households earned between \$10,000 and \$25,000 per year (US Census Bureau 2008).

#### Community of Palo Verde

According to the 2010 Decennial Census, the population of the Palo Verde Census Defined Place (CDP) was 171 (US Census Bureau 2011). The Palo Verde CDP is limited to the

Community of Palo Verde, which, according to the Southern California Association of Governments (SCAG), had a population of 297 persons in 2003 and 298 persons in 2005. The 2010 population of Palo Verde is 171, a reduction of approximately 27.5 percent from 2000 levels (SCAG 2009; US Census Bureau 2011). This reduction in population was in part due to the loss of housing units in the 2007 tornado, which could not be rebuilt. According to the SCAG, the population of the Community of Palo Verde is projected to increase to approximately 371 by 2020 and to approximately 411 by 2035 (SCAG 2009). Population estimates and percentage increase over 2000 population levels are summarized in Table 3-5 below.

**Table 3-5. Population Trends in Palo Verde, California**

	<b>2000</b>	<b>2010</b>	<b>2020<sup>1</sup></b>	<b>2035<sup>1</sup></b>
Total Population	236	171	371	411
Percent Increase from 2000	--	-27.5%	57.2%	74.2%

<sup>1</sup> Projection.

Sources: SCAG 2009; US Census Bureau 2000; 2011.

### Discussion of Checklist Answers

a. **Less than Significant.** The proposed project aims to provide wastewater collection and treatment services to in the Community of Palo Verde. The wastewater collection infrastructure would provide the connections to existing residences and would maintain capacity for the potential redevelopment of properties that were destroyed in the 2007 tornado. These properties previously utilized septic systems that were within the 50- to 100-foot buffer area adjacent to the Palo Verde Lagoon, and therefore were prohibited from reconstruction. The provision of wastewater collection infrastructure could increase the pace at which the project area is developed; however, buildout would not constitute a substantial population increase over historic populations in Palo Verde. Therefore, population growth associated with the proposed action would result in a less than significant impact.

b & c. **No Impact.** The proposed project would not displace existing housing located within the project area.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
<b>3.14 PUBLIC SERVICES</b>				
a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i. Fire protection?				<b>X</b>
ii. Police protection?				<b>X</b>
iii. Schools?				<b>X</b>
iv. Parks?				<b>X</b>
v. Other Public Facilities?			<b>X</b>	

**Existing Setting**

The Imperial County Fire Department maintains an office at 112 Highway 78 (and Desert View). There is one paid firefighter staffing the office four hours/day, five days/week. This fireman is on-call at all times and is assisted by three volunteers from the Community. The Imperial County Sheriff's Department also maintains an office at 112 Highway 78. The office is not staffed full-time, however there are two Sheriffs on patrol in the district at all times. Response time for the Sheriffs is generally 10 to 15 minutes from the time of report. Palo Verde is located in the San Pasqual Valley Unified School District. However, no educational facilities are presently located in Palo Verde. The nearest San Pasqual School District facilities are located 60 miles south of the Community in Winterhaven. An inter-district agreement exists between the San Pasqual District and Palo Verde Unified School District in Riverside County which permits local children to attend the schools in the Blythe area about 17 miles to the northeast. The Palo Verde Park is an unimproved site approximately 3 miles south of the Community on the east side of Highway 78. The park is paved and has small public restrooms and a part-time attendant. The site fronts the banks of the Colorado River. The Palo Verde Lagoon offers limited boating activity to residents and visitors (Imperial County 2004).

**Discussion of Checklist Answers**

a.i.–a.iv. **Less than Significant Impact.** The proposed project consists of the modification of the underground wastewater collection pipeline and construction of a lagoon WWTP. Since the project would not significantly alter any structures or government facilities, and there would be



less than significant impacts on population and housing (see 3.12), there would be no impacts associated with fire protection, police protection, schools, or parks.

a.v. **Less than Significant.** The proposed project involves the modification of the wastewater collection system and construction of a lagoon WWTP within Palo Verde. Since the project would improve the existing pipeline network, and provide improved wastewater treatment, impacts associated with wastewater collection and treatment public services would be beneficial and less than significant.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>3.15 RECREATION</b>				
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			X	
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?				X

**Existing Setting**

The Palo Verde Park is an unimproved site approximately 3 miles south of the Community on the east side of Highway 78. The park site is paved, has small public restrooms, and has a part-time attendant. The site fronts the banks of the Colorado River. The Palo Verde Lagoon offers limited boating activity to residents and visitors. A miniature golf course is under construction along Desert View Drive.

**Discussion of Checklist Answers**

a. **Less than Significant.** The proposed project aims at providing improved wastewater collection and treatment services to under-served areas of Palo Verde. Since the proposed project would not directly induce growth and would constitute a less than significant impact to population and housing (see 3.12), the project would not substantially increase the use of existing regional parks and other recreational facilities.

b. **No Impact.** The proposed project does not include recreational facilities or require the construction or expansion of recreational facilities.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>3.16 TRANSPORTATION/TRAFFIC</b>				
Would the proposal:				
a. Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?			X	
b. Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?				X
c. 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?				X
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X	
e. Result in inadequate emergency access?			X	
f. Result in inadequate parking capacity?			X	
g. Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?				X

### Existing Setting

Regional access to the Community of Palo Verde includes State Highway 78, which runs east-west, across Imperial County from Blythe to Oceanside. In addition, I-10, located 10 miles north of Palo Verde, is a major east-west route extending from Los Angeles to Phoenix, Arizona. I-10 does not cross the international border.

There are two primarily north-south streets in Palo Verde: Main Street (State Highway 78) in the western portion of the Community, and Sunset Way on the eastern side of the Palo Verde Lagoon. Cross streets are numbered (First through Ninth), and are generally aligned east-west. Fourth Street, also called Palo Verde Drive, provides the only access across the Palo Verde Lagoon to the residential area along Sunset Way. The eastern portion of Fourth Street, including the bridge, is paved with pavement surface in generally good condition. The inventory rating of the bridge is 16.3 metric tons (35,935 pounds (lb)) and an operating rating of 22.7 metric tons (50,044 lb). A 2008 Bridge Inspection Report indicated that the bridge is aging and

experiencing cracking, and recommended the replacement of several deck planks and backfilling the northeast wing wall (CalTrans 2008). The majority of streets in the Community are unpaved. There are no curbs, gutters, or sidewalks in the Community.

#### **Discussion of Checklist Answers**

a. **Less than Significant.** Under the proposed project, construction activities would occur along existing roadways. During construction, a less than significant increase in construction related traffic would occur. During construction, roadway access by residents or users of the proposed area would be temporarily restricted. Short-term impacts regarding access would be minimized by the use of standard engineering and traffic management practices and adherence to the *Engineering Design Guidelines Manual for the Preparation and Checking of Street Improvement, Drainage, and Grading Plans within Imperial County*. Once operational, wastewater treatment and water distribution infrastructure would not impact roadways or other transportation methods.

b & c. **No Impact.** The proposed project would result in less than significant impacts to population and housing (see 3.12), and therefore will not substantially increase traffic loads. Further, the proposed project does not involve the modification or removal of any roads. A new private road would be constructed to provide access to the lagoon WWTP site; however, this road would not interfere with traffic volumes or flow within Palo Verde, since it would only be accessible to maintenance and facility employees. No impact to the volume to capacity ratio, or congestion at intersections would result under the proposed project.

c. **No Impact.** No airports are located within or in close proximity to the project area. The nearest airport is the Blythe Airport located more than 12 miles north of the proposed project area. Implementation of this project would not affect air traffic at any of the airports within Imperial County or at any other airport within the region.

d-f. **Less than Significant.** The proposed project does not involve the redesign or modification of the road network. The proposed project involves trenching and construction activities, which would take place on existing roads within the project area. Due to the aging nature of the bridge, no construction equipment weighing greater than a maximum of 35,935 lbs would be able to cross the bridge. In addition, if a structural assessment concludes that the bridge is capable of supporting the proposed force main, the force main would be placed on top of the bridge on one of the existing walkways. However, impacts to the design, emergency access, and parking along the roads during construction would be less than significant with implementation of standard engineering and traffic management practices.

g. **No Impact.** The proposed project would have no impact on policies or plans regarding alternative transportation, as it would not alter the existing road network.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>3.17 UTILITIES AND SERVICE SYSTEMS</b>				
Would the project:				
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?			X	
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			X	
c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could have significant environmental effects?			X	
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements necessary?				X
e. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			X	
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			X	
g. Comply with federal, state, and local statutes and regulations related to solid waste?			X	

### Existing Setting

There is currently no wastewater treatment system in the Community of Palo Verde. Households in the Community currently rely on septic systems for their wastewater disposal needs and many of these systems are failing. Additionally, many of the septic systems do not meet the Palo Verde and Imperial County required setback distances of 50 to 100 feet from the adjacent Palo Verde Lagoon. Sewage systems are regulated by the Imperial County Public Health Department's Liquid Waste Program (Imperial County 2007). PVCWD owns and operates an existing water filtration plant and potable water supply system.

### Discussion of Checklist Answers

a–b. **Less than Significant.** Development of proposed wastewater collection system and treatment lagoon WWTP would not increase wastewater generation, rather, it would provide

wastewater collection and treatment services to the under-served community of Palo Verde. Short-term construction-related increases in wastewater generation are anticipated under the proposed project; however, these impacts would be intermittent and less than significant. Compliance with local construction procedures, regulations, and BMPs would minimize short-term impacts to less than significant.

c. **Less than Significant.** The proposed project would not increase storm water runoff and, therefore, would not require expansion of existing storm water facilities or construction of new storm water drainage systems. Less than significant alterations in drainage patterns associated with the lagoon WWTP are anticipated under the proposed project.

d. **No Impact.** The proposed project would have a less than significant beneficial impact to groundwater recharge rates. The proposed project would not increase demand for water supply; therefore, there would be no impact to water supply.

e. **Less than Significant.** Under implementation of the proposed project, a wastewater collection and treatment system would replace the use of septic systems in Palo Verde. Further, it is intended to eliminate sewage leaks caused by inadequate infrastructure through the development of appropriate wastewater collection infrastructure, thereby reducing the potential for untreated or poorly treated wastewater to enter the environment. Since the area is currently not served by a wastewater treatment provider, the proposed project would have a beneficial impact on wastewater treatment services in Palo Verde.

f. & g. **Less than Significant.** The proposed project would be served by a landfill with sufficient permitted capacity to accommodate such project's solid waste disposal needs and would comply with federal, state, and local statutes and regulations for solid waste; therefore, project impacts would be less than significant.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>3.18 MANDATORY FINDINGS OF SIGNIFICANCE</b>				
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife species population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?			X	
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, and the effects of probable future projects)			X	
c. Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?			X	

**Discussion of Checklist Answers**

a. **Less than Significant.** The proposed project consists of improvements to wastewater infrastructure within an area that has been previously developed or disturbed; therefore, the proposed project does not have the potential to substantially reduce the habitat of fish or wildlife species, cause a species population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory. As discussed in Section 3.4, *Biological Resources*, and Section 3.5, *Cultural Resources*, biological resources in the Plan area are limited, the proposed project would result in beneficial impacts to water quality and therefore aquatic species, and no known cultural resources exist.

b. **Less than Significant.** The proposed project would result in the conversion of Farmland of Local Importance; however, the land proposed for development is zoned for residential development and therefore the impacts resulting from the potential development of this farmland has already been determined to be limited. In addition, as noted in Section 3.3, *Air Quality*, the proposed project would incrementally increase global climate change through GHG emissions. The California Legislature has enacted AB 32, the 2006 Global Warming Solutions Act to reduce carbon dioxide emissions to 1990 levels by the year 2020. While general GHG emission inventories are available on the national and state level, no localized or regional GHG emission inventory is yet available. However, as discussed in Air Quality, the project consists entirely of

wastewater collection infrastructure and treatment facility equipment that would not result in any substantial long-term emissions. Therefore, the proposed project would not create cumulatively considerable impacts.

c. **Less than Significant.** The proposed project would not result in impacts that would, directly or indirectly, cause substantial adverse effects on human beings. The proposed project could potentially have short-term adverse effects on human beings, especially during construction activities (i.e., noise, dust, etc.), but none of these were found to be long-term and/or significant. Operational impacts from the proposed project would result in minor occasional increases in odor to portions of the community; however, the project would result in an overall improvement to odor in the vicinity of the Palo Verde Lagoon, as well as the local water quality by eliminating leaks from existing septic systems. The proposed project would therefore benefit the quality of life for residents of the project area.



#### 4.0 ACRONYMS

°C	degrees Celsius
°F	degrees Fahrenheit
ADF	Average Daily Flow
APCD	Air Pollution Control District
APN	Assessor Parcel Number
BECC	Border Environment Cooperation Commission
BEIF	Border Environment Infrastructure Fund
bgs	below ground surface
BMP	Best Management Practices
CAA	Clean Air Act
CalEPA	California Environmental Protection Agency
CDFG	California Department of Fish and Game
CDP	Census Defined Place
CEC	California Energy Commission
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CFCs	Chlorofluorocarbons
CFR	Code of Federal Regulations
CH <sub>4</sub>	Methane
cm	Centimeter
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	carbon monoxide
CWA	Clean Water Act
dB	Decibel
dBA	A-weighted decibel
DIP	ductile iron pipe
DLRP	Department of Land Resource Protection
DTSC	Department of Toxic Substances Control
EID	Environmental Information Document
EO	Executive Order
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
gpcd	gallons per capita per day
gpd	gallons per day
GHG	greenhouse gas
HCFCs	Hydrochlorofluorocarbons
HCP	Habitat Conservation Plan
I-	Interstate
IBC	International Boundary Commission
IBEP	Integrated Border Environmental Plan
IBWC	International Boundary and Water Commission
IS	Initial Study
km	Kilometer
km <sup>2</sup>	square-kilometer

LCRMSCP	Lower Colorado River Multi-Species Conservation Program
mgd	million gallons per day
mi <sup>2</sup>	square-mile
NAAQS	National Ambient Air Quality Standards
NADB	North American Development Bank
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO <sub>2</sub>	nitrogen dioxide
NO <sub>x</sub>	nitrogen oxides
N <sub>2</sub> O	nitrous oxide
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWR	National Wildlife Refuge
O <sub>3</sub>	Ozone
Pb	Lead
PER	Preliminary Engineering Report
PM <sub>10</sub>	particulate matter equal to or less than 10 microns in diameter
PM <sub>2.5</sub>	particulate matter equal to or less than 2.5 microns in diameter
PVC	polyvinyl chloride
PVID	Palo Verde Irrigation District
PVCWD	Palo Verde County Water District
RV	recreational vehicle
RWQCB	Regional Water Quality Control Board
SCAG	Southern California Association of Governments
SCE	Southern California Edison
SHPO	State Historic Preservation Officer (or Office)
SIP	State Implementation Plan
SO <sub>2</sub>	sulfur dioxide
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
tpy	tons per year
US	United States
USACE	United States Army Corps of Engineers
US BEA	United States Bureau of Economic Analysis
USDA	United States Department of Agriculture
UV	Ultraviolet
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VOCs	volatile organic compounds
WWTP	Wastewater Treatment Plant
WRCC	Western Regional Climate Center

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## Appendix A

### Combustion Emissions Associated with Construction Activities

Emission Factors –Sewer line project

Equipment	Days	Hours of Operation	Emission Factors (tons/hr)				
			CO	NO <sub>x</sub>	PM <sub>10</sub>	SO <sub>x</sub>	ROG
grader	1.5	12	0.567	1.623	0.084	0.276	0.148
Loader	7	56	0.424	0.858	0.086	0.115	0.132
excavator	7	56	0.598	1.423	0.078	0.013	0.182
paving equipment	2	16	0.419	0.961	0.069	0.144	0.117
paver	2	16	0.449	0.894	0.067	0.165	0.12

Assumptions: Total construction time frame 1 month, 4.33 week construction period, 5 work days per week, 8 hours per work day, 174 hours of operation total, excavation not required for construction.

Emission factors associated with construction of the WWTP were calculated utilizing URBEMIS 2007, and are provided below.

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: G:\Environmental-Development\2010 Projects\WWTP\alternative.urb924

Project Name: alt1

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007



Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2007 TOTALS (tons/year unmitigated)	0.04	0.34	0.18	0.00	0.12	0.02	0.14	0.03	0.02	0.04	27.06
2007 TOTALS (tons/year mitigated)	0.04	0.34	0.18	0.00	0.12	0.02	0.14	0.03	0.02	0.04	27.06
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2008 TOTALS (tons/year unmitigated)	0.15	1.04	0.53	0.00	0.05	0.07	0.12	0.01	0.06	0.07	89.78
2008 TOTALS (tons/year mitigated)	0.15	1.04	0.53	0.00	0.05	0.07	0.12	0.01	0.06	0.07	89.78
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)							

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	0.01	0.02	0.12	0.00	0.02	0.00	10.34

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	0.01	0.02	0.12	0.00	0.02	0.00	10.34

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated



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2008	0.15	1.04	0.53	0.00	0.05	0.07	0.12	0.01	0.06	0.07	89.78
Asphalt 12/28/2007-01/11/2008	0.01	0.06	0.04	0.00	0.00	0.01	0.01	0.00	0.00	0.00	5.48
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.06	0.03	0.00	0.00	0.01	0.01	0.00	0.00	0.00	4.41
Paving On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80
Fine Grading 11/30/2007-01/11/2008	0.02	0.13	0.07	0.00	0.05	0.01	0.06	0.01	0.01	0.02	10.57
Fine Grading Dust	0.00	0.00	0.00	0.00	0.05	0.00	0.05	0.01	0.00	0.01	0.00
Fine Grading Off Road Diesel	0.01	0.13	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	10.11
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46
Building 01/11/2008-08/22/2008	0.11	0.85	0.42	0.00	0.00	0.05	0.05	0.00	0.05	0.05	73.71
Building Off Road Diesel	0.11	0.84	0.41	0.00	0.00	0.05	0.05	0.00	0.05	0.05	71.92
Building Vendor Trips	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.10
Building Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69
Coating 08/08/2008-09/05/2008	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Architectural Coating	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01

Phase Assumptions

Phase: Fine Grading 11/30/2007 - 1/11/2008 - Default Fine Site Grading Description

Total Acres Disturbed: 2.23

Maximum Daily Acreage Disturbed: 0.56

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

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On Road Truck Travel (VMT): 0

Off-Road Equipment:

- 1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 12/28/2007 - 1/11/2008 - Default Paving Description

Acres to be Paved: 0.56

Off-Road Equipment:

- 4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day
- 1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
- 1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 1/11/2000 - 0/22/2000 - Default Building Construction Description

Off-Road Equipment:

- 1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day
- 2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 8/8/2008 - 9/5/2008 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report.



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2008	0.15	1.04	0.53	0.00	0.05	0.07	0.12	0.01	0.06	0.07	89.78
Asphalt 12/28/2007-01/11/2008	0.01	0.06	0.04	0.00	0.00	0.01	0.01	0.00	0.00	0.00	5.48
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.06	0.03	0.00	0.00	0.01	0.01	0.00	0.00	0.00	4.41
Paving On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80
Fine Grading 11/30/2007-01/11/2008	0.02	0.13	0.07	0.00	0.05	0.01	0.06	0.01	0.01	0.02	10.57
Fine Grading Dust	0.00	0.00	0.00	0.00	0.05	0.00	0.05	0.01	0.00	0.01	0.00
Fine Grading Off Road Diesel	0.01	0.13	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	10.11
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46
Building 01/11/2008-08/22/2008	0.11	0.85	0.42	0.00	0.00	0.05	0.05	0.00	0.05	0.05	73.71
Building Off Road Diesel	0.11	0.84	0.41	0.00	0.00	0.05	0.05	0.00	0.05	0.05	71.92
Building Vendor Trips	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.10
Building Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69
Coating 08/08/2008-09/05/2008	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Architectural Coating	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01

Construction Related Mitigation Measures

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## Appendix B



