4.6 Wastewater

This section discusses the impacts of wastewater discharges associated with the remediation and development components of the proposed Project. It also addresses potential Project impacts on surface and groundwater quality, and wastewater service providers. For each sub-topic, existing conditions, thresholds of significance, impacts, and mitigation measures are addressed.

The Project involves developing portions of the Project Site through entitlements for commercial and industrial land uses. The Applicant's goal is to develop approximately 51 acres of the 332-acre property with approximately 800,000 square feet of commercial/industrial development, of which approximately 30 acres would be business park and the other 21 acres would be used for services and manufacturing. The remaining portion of the Project Site is intended to be dedicated as open space. Prior to the development phase of the Project, site remediation work would occur. Details of the remediation and development components of the Project are provided in Chapter 2.0, Project Description.

Upon completion, the Project's wastewater infrastructure could potentially impact surface water quality, groundwater quality, and/or City wastewater disposal services, depending on which development path is pursued (i.e., the City or County Development Plan). Under the County Development Plan, the Project Site would remain within County jurisdiction and wastewater disposal would therefore be accomplished by an on-site water wastewater treatment facility.

Under the City Development Plan, the Project Site would be annexed into the City and served by the City by extending existing wastewater service utilities. The Project Site is directly adjacent to the City limits and according to as-built wastewater plans, the proposed Project could be serviced from either the eastern or western property boundaries, if annexed (City 2010).

4.6.1 Environmental Setting

4.6.1.1 Physical Setting

The Project Site is located within the unincorporated area of the County south of the City limits along Tank Farm Road. The tank farm, constructed in 1910, was as an accumulation point for petroleum pipelines from the San Joaquin Valley. The tank farm slowly withdrew from operation and by the late 1990s the site was fully decommissioned.

Currently the Project Site is mostly undeveloped with scattered remnants of the tank farm facility that was constructed beginning in 1910. The site consists of native grasslands and both natural wetlands and wetlands from water accumulation within the former oil storage facilities. However, soil conditions in these areas have poor percolation characteristics resulting in negligible wastewater percolation opportunities.

Additionally, cattle currently graze the open space for fire prevention and weed control. Urban developments within the City and the San Luis Obispo County Regional Airport (SLOCRA) surround the Project Site. The Project includes remediation and restoration of the Project Site and development of portions of the property.

The 332-acre Project Site drains essentially via sheet flow to the south. Natural slopes ascend to the north and northeast at gradients up to 2:1 (horizontal to vertical). Total relief across the Project Site is approximately 40 feet. Current land use is primarily undeveloped open space.

4.6.1.2 Surface Waters

The Project Site has three primary watersheds/catchments including on-site isolated catchments, the Tank Farm Creek watershed, and the on-site tributary to the East Fork of the San Luis Obispo Creek.

The on-site isolated catchments include numerous protected wetland areas and man-made containment areas which were formally containment basins used by the tank farm facility. These containment basins are isolated depressions which, according to the Hydrology Study, encompass approximately 140 acres of the Project Site (Avocet 2009). The basins are not connected to any watersheds or creeks and gather water only through direct precipitation or infiltration.

Tank Farm Creek is a tributary to the East Fork of San Luis Obispo Creek. According to the site Hydrology Study, 4000 feet of the creek are located on the Project Site (Avocet 2009). The watershed area is approximately 636 acres; an estimated 160 acres of the watershed are within the Project Site.

The Project Site also contains approximately 19 acres that discharge directly to the East Fork of San Luis Obispo Creek. The tributary area is in the southeast portion of the Project Site. Additional baseline information on the surface waters is provided in Section 4.5, Water Resources.

4.6.1.3 Groundwater

The San Luis Obispo Valley Groundwater Basin (SLOGWB) underlies the San Luis and Edna Valleys and is bound on the northeast by the Santa Lucia Range and on the southwest by the San Luis Range. The groundwater basin is an elongated trough of relatively recent (Pleistocene and Holocene age) sediments approximately 13 miles long and 2 miles wide. The SLOGWB is recharged primarily by streams flowing from the northeast. Groundwater levels fluctuate seasonally as the majority of precipitation falls in the winter months and the summer months are typically dry. The City currently has two operational potable wells, one non-potable well, and two irrigation wells. Approximately two percent of the City's annual water demand is supplied by the groundwater basin. The majority of the groundwater use from the basin is used by agriculture and private property purposes (City of San Luis Obispo 2010 Urban Water Management Plan).

According to the data presented in the Well Construction and Testing, Groundwater Exploration Report, during the construction and testing of four on-site wells, groundwater was measured between 16.7 and 21.5 feet across the site. Associated water quality tests were performed and the water from the wells was found suitable for domestic water supply (Cleath & Associates 2002). Additional baseline information on the groundwater is provided in Section 4.5, Water Resources.

4.6.2 Regulatory Setting

4.6.2.1 Federal Policies and Regulations

Safe Drinking Water Act of 1974

The Environmental Protection Agency (EPA) implements the Safe Drinking Water Act of 1974 (SDWA), the primary federal regulation controlling drinking water quality in every public water system in the United States. The SDWA authorizes the EPA to establish and enforce guidelines for drinking water to protect against both naturally occurring and manmade contaminants.

Although Congress initially passed the SDWA in 1974, it amended the law significantly in 1986 and 1996. The Act originally set standards for the treatment of individual constituents, including pesticides, trihalomethanes, arsenic, selenium, radionuclides, nitrates, toxic metals, bacteria, viruses, and pathogens. The amendments to the Act made some significant changes, most of which created more stringent protection of drinking water sources. The amended Act also greatly enhanced the existing law by implementing operator training, funding for water system improvements, and public information as important components of safe drinking water.

The Clean Water Act

The Clean Water Act (CWA) of 1972 establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulates quality standards for surface waters. Under the CWA, the EPA has implemented many pollution control standards for the industry along with water quality standards for all contaminants in surface waters. The CWA made it unlawful to discharge any pollutant from a point source into navigable waters, unless the EPA authorized a National Pollutant Discharge Elimination System (NPDES) permit.

4.6.2.2 State Policies and Regulations

State Water Resources Control Board

The State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCB) are the principal state agencies with primary responsibility for the coordination and control of water quality. The SWRCB enforces the water quality standards set forth in the Clean Water Act for State of California on behalf of the United States EPA. Most of the SWRCB objectives are based on the California Code of Regulations, Title 22, State Drinking Water Standards. The City lies within Region 3, the Central Coast Regional Water Quality Control Board.

The SWRCB also regulates discharges, including those from septic systems, to ensure long-term water quality protection. The SWRCB authorizes on-site discharges with waste discharge

permits. Permit requirements are based upon criteria specified in the Basin Plan Implementation Program, which contains requirements, recommendations, and prohibitions for siting, design, construction, maintenance, and management of on-site wastewater systems.

On May 2, 2006, the SWRCB adopted a General Waste Discharge Requirement (WDR) for all publically owned sanitary sewer collection systems in California with more than one mile of sewer pipe. The goal of the WDR is to provide a consistent statewide approach for reducing Sanitary Sewer Overflows (SSO). The WDR requires that in the event of an SSO, all feasible steps to be taken to control the released volume to prevent untreated wastewater from entering storm drains and creeks. The WDR also requires that any SSO is reported to the SWRCB and a Sewer System Management Plan is developed and approved by the collection system's governing body.

The Porter-Cologne Water Quality Control Act of 1987

Water Quality in California is governed by the Porter-Cologne Water Quality Control Act of 1987, which assigns overall responsibility for water rights and water quality protection to the SWRCB and requires the SWRCB to develop and enforce water quality standards within California. California has been delegated the authority to issue NPDES permits for all areas within its boundaries, except certain federally designated lands.

Safe Drinking Water and Toxic Enforcement Act of 1986

The Safe Drinking Water and Toxic Enforcement Act of 1986 provides two methods for administratively listing chemicals known to the state to cause cancer or reproductive toxicity. The first method is if a body considered to be authoritative by state-qualified experts, such as the EPA or FDA, has formally identified the chemical as causing cancer or reproductive toxicity. The second method applies if a state or federal agency has formally required that the chemical be labeled or identified as causing cancer or reproductive toxicity. The criteria for the listing these chemicals is outlined in 22 CCR Section 12902.

Groundwater Management Act of 1992

The Groundwater Management Act, commonly referred to as Assembly Bill 3030, provides local public agencies with increased management authority over groundwater resources. Groundwater is a valuable natural resource within California and Assembly Bill 3030 ensures safe production and quality by encouraging local agencies to work cooperatively within their jurisdictions to manage groundwater resources (Water Code Section 10750).

4.6.2.3 Local Policies and Regulations

San Luis Obispo County

The County of San Luis Obispo encompasses approximately 3,300 square miles of land and has more than 260,000 residents. The San Luis Obispo County Water Resources Division is the County's management authority to ensure sustainable water uses, reliable water supplies, and better water quality. The Water Resources Division has incorporated the Integrated Regional Water Management Plan, which promotes coordination with state-wide water planning efforts.

The County of San Luis Obispo Environmental Health Division protects the overall health of the community by preventing the disease transmission and exposure to harmful chemicals and

microbes in the environment. The San Luis Obispo County Code Title 8, Health and Sanitation, sets forth waste management and septic tank regulations within the County lines.

City of San Luis Obispo

The City of San Luis Obispo is the sole water purveyor within the City limits, allowing the City to maintain uniformity of water service and distribution standards. The City maintains control over water quality and ensures its consistency with the City's General Plan and Urban Water Management Plan to maintain an efficient long-term supply.

The City of San Luis Obispo is also the sole wastewater service provider within the incorporated area of the City. The City Wastewater Collections Division (WWC) oversees the operation and maintenance of the collection system based on the City of San Luis Obispo General Plan and the 2009 Sewer System Management Plan, which complies with the SWRCB's statewide WDR for sanitary sewer systems.

4.6.3 Significance Criteria

The following wastewater impacts would be considered significant if the Project would:

Violate waste discharge requirements or Central Coast Basin Plan criteria for wastewater systems - Wastewater impacts would be considered potentially significant if development of the Project would violate waste discharge requirements or the Central Coast Basin Plan Criteria for wastewater systems.

Adversely affect the quality of groundwater - Wastewater impacts on groundwater quality would be considered potentially significant if development of the proposed Project would result in the degradation of groundwater water, including point source and non-point source impacts, according to established water quality standards.

Adversely affect the quality of surface water or result in flood stage flow of surface water bodies - Wastewater impacts on surface water would be considered potentially significant if development of the Project would result in the degradation of surface water quality according to established water quality standards. Wastewater impacts would be considered significant if the release of wastewater to surface water bodies resulted in flood stage flows.

Adversely affect the community wastewater service provider - Wastewater impacts would be considered potentially significant if the development of the Project would increase wastewater facility demand beyond the City's existing and future commitments.

4.6.4 Remediation Project Impacts and Mitigation Measures

The remediation and restoration activities associated with the Project would generate limited amount of wastewater from pipeline abandonment and possibly on-site dewatering activities. The remediation and restoration activities associated with the Project would not have impacts on City wastewater infrastructure since no wastewater would be discharged to the City sewers.

Impact #	Impact Description	Phase	Residual Impact
WW.1	The wastewater generated from remediation activities could result in releases to the environment that could impact surface water or groundwater quality.	Remediation	Class III

The remediation activities would result in the excavation of areas of surface hydrocarbon expressions that are a hazard to wildlife. Construction of engineered caps would eliminate potential exposure pathways for human and ecological receptors. The implementation of the proposed Restoration Plan would result in the restoration or replacement of waters of the U.S. and wetlands impacted by the remediation activities. Following the completion of Project remediation and restoration activities, the on-site waters of the U.S. and wetlands would have improved function and values for the various wetland functions identified to occur on-site, including groundwater recharge, nutrient and pollution removal, and flood flow management.

The major sources of wastewater during the remediation would be associated with pipeline abandonment activities. The remediation component of the Project has been designed to limit the amount of excavation that would need to occur below the groundwater, which means that dewatering during excavation is not expected to be required. During the remediation activities portable toilets would be used. This waste would be removed from the Project Site via vacuum truck.

When operational, the tank farm required numerous pipelines to move oil between the pump house, boilers, tanks, and reservoirs. The site was also served by water, natural gas, and septic pipelines. It is estimated that more than 25,000 feet of oil pipeline were installed on-site. Most of the pipelines still remain in place. The Applicant proposes to abandon most of the pipeline in place. Portions of the pipelines that are within work areas would be removed for disposal, except for the Northwest Operations Area, where the pipelines would be closed in place by pressure-grouting. If a pipeline crosses an environmentally sensitive area (e.g., wetland) and would not otherwise be disturbed by remediation activities, it would also be closed in place by pressure-grouting. All pipelines would be flushed and, if possible, pigged to remove residual hydrocarbon and vapors prior to abandonment in place. If a section of pipeline is in such poor condition that it cannot be adequately cleaned, it would be excavated and removed in its entirety.

Water trucks attached to portable pumps would be connected via hose to each pipeline segment within the facility. Additionally, several portable storage tanks or vacuum trucks would be stationed and attached to the pipelines to receive and collect the flush water. Each pipeline segment would be flushed with an adequate volume of water to remove residual oil from the pipelines. Pipeline flushing operations would continue until flush water containing total petroleum hydrocarbons of less than 100 parts per million is achieved. All wastewater from the flushing operations would be collected in tanks and removed from the site via vacuum trucks and hauled to an approved facility for disposal or recycling.

For pipelines that are to be removed, all liquids would be drained from the piping into a containment device and would be removed using a vacuum truck and hauled to an approved facility for disposal or recycling. The pipe segments would then be cut into manageable pieces,

the pipe ends wrapped in plastic to prevent spillage, the segments removed from the trench, and the trench backfilled. Scrap pipe would be temporarily stored in bins and transported off-site for recycling.

Pipelines that are scheduled for abandonment and have diameters greater than 4 inches would be grouted with a cement-slurry to prevent any future ground subsidence from pipe wall collapse. A portable grout pump would be used to pump grout into the pipeline segments. Grout would be pumped until it exits the other end of the pipe segment. Following grouting, the pipeline segment ends would be backfilled with soil and the soil compacted.

The excavations that are proposed as part of the remediation component of the Project have been designed to avoid groundwater, which should limit the need for any dewatering as part of the excavations. In the event that dewatering is required a vacuum truck could be used for small volumes. Water from the excavation area would be moved into vacuum trucks and hauled to an approved facility for disposal or recycling.

If the amount of dewatering is greater than what can be handled with vacuum trucks, the wastewater would be pumped to a set of skid mounted tanks that would be used to treat the water and then the water would be discharged on site via sprinklers or used for dust control. The on-site reuse of the treated water would require Waste Discharge Requirement (WDR) permit from the Regional Water Quality Control Board (RWQCB). The wastewater from the dewatering operations would have to meet the water quality requirements of the RWQCB 2011 Basin Plan before it could be discharged. This would all be addressed in the WDR permit, issued by the RWQCB.

As discussed above, most of the wastewater from remediation activities would be collected on-site and transported off-site via vacuum truck to an approved disposal for recycling facility. The only wastewater that might be discharged on-site would be associated with dewatering operation associated with excavations. However, dewatering for the excavations is not expected to be necessary since none of the excavations are expected to reach the level of groundwater. Any wastewater from the dewatering activities that was released at the site would have to meet the RWQCB 2011 Basin Plan requirements and be permitting by the RWQCB. Therefore, impacts associated with the discharge of wastewater from remediation activities would be less than significant.

Mitigation Measures

WW-1a *Prior to the discharge of any wastewater from remediation activities, the Applicant shall provide to the County a copy of the WDR from the RWQCB.*

WW-1b *Prior to issuance of grading permits for remediation the Applicant shall prepare a Dewatering Contingency Plan that shall be submitted to the RWQCB for review and approval. The Applicant shall provide to the County a copy of the RWQCB approval letter for the Dewatering Contingency Plan.*

Residual Impacts

The residual impacts would be *less than significant (Class III).*

4.6.5 City Development Plan Impacts and Mitigation Measures

Impact #	Impact Description	Phase	Residual Impact
WW.2	The wastewater generated from the City Development Plan component of the Project would exceed the design capacity of the City's downstream sewer lines or the capacity of the City's water reclamation facility.	Development	Class III

If the City Development Plan component of the Project is implemented, the development would occur subsequent to annexation into the City and would therefore utilize the City's wastewater collection and treatment system. A critical function of a wastewater collection system is to provide adequate capacity to handle peak flows.

The City of San Luis Obispo's Water Reclamation Facility (WRF) is responsible for treating all of the wastewater (sewage) within the City, California Polytechnic State University (Cal Poly), and the County airport. The facility treats 4.5 million gallons of wastewater daily based upon dry weather flows. The most recent upgrade to the WRF was completed to improve the quality of water discharged into San Luis Obispo Creek. The WRF has very stringent discharge requirements and now produces a high quality effluent that surpasses drinking water standards for many constituents. The WRF is designed to handle approximately 5.1 million gallons per day based upon dry weather flows. The City completed the Tank Farm Gravity Sewer, Lift Station and Force Main Project that involved the construction of a new regional lift station that is located just west of the Project Site on Tank Farm Road. The upgrade also included the installation of two miles of gravity sewer lines along Tank Farm Road and Broad Street, as well as approximately one mile of a 14-inch force main running north to Prado Road (City 2003b). This upgrade allows for the handling of future development anticipated in the Airport Area Specific Plan (AASP), including the 803,000 square feet of development associated with the proposed Project.

Table 4.6-1 provides the estimated water use and wastewater generation for the City Development Plan component of the Project by land use. The wastewater would be equal to the total water use minus any water used for irrigation/landscape purposes in a non-drought year. Table 4.6-1 provides the total water demand per proposed land uses as well as the estimated percentage of indoor water use, which was all assumed to be wastewater that would be handled by the City wastewater facilities.

The water usage is based upon water use factors provided by City of San Luis Obispo as well as Project land uses. The City Development Plan aspect of the Project would require a water use demand of approximately 117 acre-feet per year (AFY). Landscape/irrigation water use was then estimated using the indoor water use factors provided by the City of San Luis Obispo. Based on these factors, the indoor water use for each proposed land development area was estimated. The projected wastewater generation for the City Development Plan aspect of the Project at complete build out was estimated to be approximately 71 AFY (64,090 gallons per day).

Table 4.6-1 Estimated Wastewater Flows for the City Tank Farm Development Plan, Non-drought Year

Land Use	Floor Area (square feet)	Water Use Factor (AFY)	Water Use Factor Units	Annual Water Use (AFY)	% Indoor Use (% of Total)	Wastewater Generated (AFY)	Wastewater Generated (gals/day)
Light Manufacturing	170,000	0.071	per 1,000 sq. ft.	12.07	90	10.86	9,697
Industrial Research and Development	50,000	0.1	per 1,000 sq. ft.	5.00	70	3.50	3,124
Business Park (Offices)	348,000	0.066	per 1,000 sq. ft.	22.97	70	16.08	14,352
General Retail	15,000	0.008	per 1,000 sq. ft.	0.12	80	0.10	86
Vehicle Services -Repair and Maintenance-Major	20,000	0.03	per 1,000 sq. ft.	0.60	80	0.48	428
Veterinary Clinic/Hospital, Boarding, Large Animal	5,000	0.2	per 1,000 sq. ft.	1.00	90	0.90	803
Photo and Film Processing Lab	10,000	0.071	per 1,000 sq. ft.	0.71	90	0.64	570
Printing and Publishing	10,000	0.071	per 1,000 sq. ft.	0.71	90	0.64	570
Warehousing, Indoor Storage	50,000	0.029	per 1,000 sq. ft.	1.45	80	1.16	1,036
Wholesaling and Distribution	50,000	0.029	per 1,000 sq. ft.	1.45	80	1.16	1,036
Hotel	70,000	0.43	per guest room	49.45	70	34.62	30,900
Specialized Education/Training Facility	5,000	0.066	per 1,000 sq. ft.	0.33	70	0.23	206
Public Transit Maintenance and Storage Facility	10,000	0.023	per 1,000 sq. ft.	0.23	70	0.16	144
Public Fire Station and Training Facility	5,000	0.064	per 1,000 sq. ft.	0.32	70	0.22	200
Recreational Fields	NA	1.4	per acre	21.00	5	1.05	937
Total	**818,000**			**117.41**		**71.80**	**64,090**

Source:
1. Water Use Factors based on City of SLO Utilities Department.
2. % indoor use numbers adapted from Water Use Factors, San Luis Obispo. 1999.
3. Hotel assumed 115 rooms.
4. Recreational fields assumed to be 15 acres and that 5 percent of the water use is for indoor use.

The City Development Plan would be within the allowable land use designations outlined in the AASP, which designates the developments to be those of services, including business park, service-commercial, public facilities, and open space with the majority of the development occurring on the northeast and northwest portions of the Project Site.

According to the AASP, the Specific Plan area has been projected to generate flows of approximately 745,000 gallons per day. Due to the fact the planned land use of the Project Site is part of the AASP, the 64,090 gallons per day of generated flow falls within the anticipated parameters. The proposed Project would convey the generated flow to the existing wastewater sewer line running westerly down Tank Farm Road.

The wastewater impacts due to the City Development Plan component of the Project are anticipated to be less than significant due to existing sewer lines, pump station, and WRF are capable of handling the projected flows at build-out. The AASP was developed with the anticipation of the Project Site being developed. The advanced planning, and incorporation into the AASP, has allowed for the projected wastewater generation from the City Development Plan to cause little to no impact to the wastewater facilities.

Mitigation Measures

The wastewater impacts to the City facilities are anticipated to be less than significant and no mitigation measures are required.

Residual Impacts

The residual impacts would be *less than significant (Class III).*

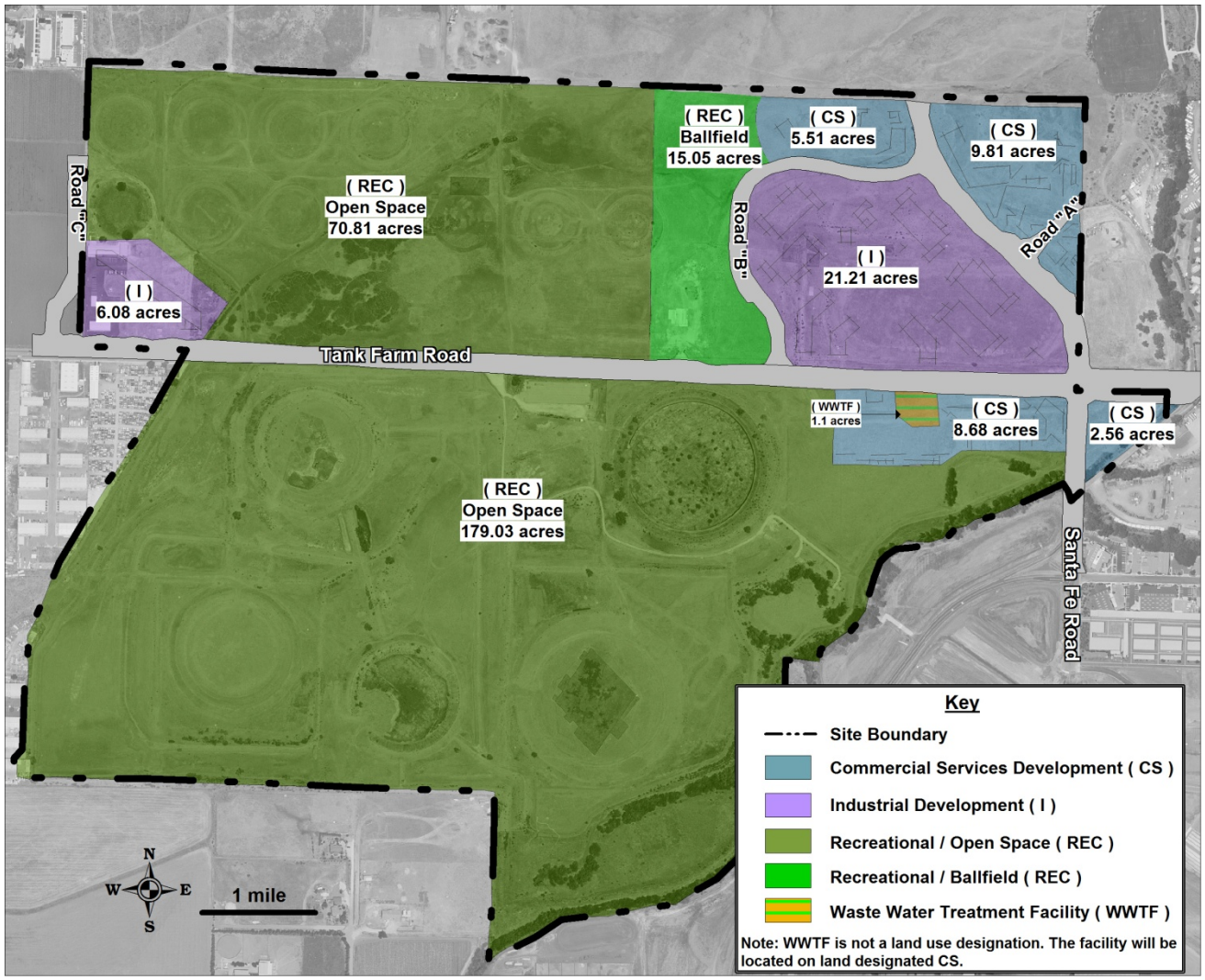
4.6.6 County Development Plan Impacts and Mitigation Measures

As part of the County Development Plan component of the Project, wastewater would be treated on-site at a 1.1 acre wastewater treatment facility. The location of the proposed facility is shown in Figure 4.6-1 south of Tank Farm Road.

On behalf of the Applicant, WSC, Inc. analyzed the water treatment facility siting and effluent disposal options of the Project Site as part of the Wastewater Treatment and Disposal Feasibility Assessment dated February 2011. A copy of this analysis is provided in Appendix A.2 of this EIR.

The proposed wastewater facilities would include a gravity collection system, wastewater treatment plant, and on-site re-use and/or disposal systems. To minimize the amount of disposal required, the proposed system would include extensive re-use of the treated effluent on-site for watering, landscaping, and the recreational facilities.

Figure 4.6-1 Proposed Location of Wastewater Treatment Facility-County Development Plan



The proposed wastewater treatment process would include tertiary treatment and disinfection systems sufficient to allow for re-use consistent with California Department of Public Health Title 22 regulations. The proposed concept would also include a recycled water distribution system to deliver recycled water to meet landscape irrigation and a dual plumbing system to meet toilet/urinal flushing demand.

The wastewater treatment facility would use one of two methods for treating the water: first, conventional activated sludge; and, second, membrane biologic reactor. Both technologies are suspended growth aerobic treatment processes and are effective for the reduction of biological oxygen demand (BOD), total suspended solids (TSS), and nitrogen. Appendix A.2 of this EIR provides a detailed description of the proposed wastewater treatment facility.

The proposed wastewater treatment assessment described in Appendix A.2 considered numerous effluent disposal options, including leach fields, spray fields, constructed wetlands, polishing wetlands and live stream discharge. The assessment analyzed each option and determined that the two viable effluent disposal options are: (1) polishing wetlands and (2) live stream discharge.

Further, Table 4.6-2 provides the estimated water use and wastewater generation for the City Development Plan by land use. The wastewater would be equal to the total water use minus any water used for irrigation/landscape purposes in a non-drought year. Table 4.6-2 provides the total water demand per proposed land uses as well as the estimated percentage of indoor water use, which was all assumed to be wastewater that would be handled by the proposed wastewater treatment plant.

Impact #	Impact Description	Phase	Residual Impact
WW.3	Discharges from the wastewater treatment plant would increase surface water flow rates and impact downstream properties.	Development	Class I

The Project includes two effluent disposal options: (1) polishing wetlands and (2) live stream discharge.

With the polishing wetlands, the effluent would flow into the existing on-site wetland, into Tank Farm Creek and ultimately be discharged into the upper East Fork of the San Luis Obispo Creek (i.e., south of the Project Site where the two creeks converge). Discharge of the blended tertiary treated effluent into the polishing wetland would be highest during the winter months due to the decreased demand for landscape irrigation recycled water. Thus, discharges would mimic natural systems with the higher flows occurring during the wet winter months and minimal to no discharge during the dry summer months due to increased demand for landscape irrigation.

Table 4.6-2 Estimated Wastewater Flows for the County Tank Farm Development, Non-drought Year

Land Use	Floor Area (square feet)	Water Use Factor (AFY)	Water Use Factor Units	Annual Water Use (AFY)	% Indoor Use (% of Total)	Wastewater Generated (AFY)	Wastewater Generated (gals/day)
Light Manufacturing	170,000	0.071	per 1,000 sq. ft.	12.07	90	10.86	9,697
Industrial Research and Development	50,000	0.1	per 1,000 sq. ft.	5.00	70	3.50	3,124
Business Park (Offices)	348,000	0.066	per 1,000 sq. ft.	22.97	70	16.08	14,352
General Retail	15,000	0.008	per 1,000 sq. ft.	0.12	80	0.10	86
Vehicle Services -Repair and Maintenance-Major	20,000	0.03	per 1,000 sq. ft.	0.60	80	0.48	428
Veterinary Clinic/Hospital, Boarding, Large Animal	5,000	0.2	per 1,000 sq. ft.	1.00	90	0.90	803
Business Support Services	10,000	0.071	per 1,000 sq. ft.	0.71	90	0.64	570
Printing and Publishing	10,000	0.071	per 1,000 sq. ft.	0.71	90	0.64	570
Warehousing, Indoor Storage	50,000	0.029	per 1,000 sq. ft.	1.45	80	1.16	1,036
Wholesaling and Distribution	50,000	0.029	per 1,000 sq. ft.	1.45	80	1.16	1,036
Hotel	70,000	0.43	per guest room	49.45	70	34.62	30,900
Specialized Education/Training Facility	5,000	0.066	per 1,000 sq. ft.	0.33	70	0.23	206
Water Treatment Plant	NA	1.4	per acre	1.40	5	0.07	62
Recreational Fields	NA	1.4	per acre	21.00	5	1.05	937
Total	**803,000**			**118.26**		**71.48**	**63,809**

Source:
1. Water Use Factors based on City of SLO Utilities Department.
2. % indoor use numbers adapted from Water Use Factors, San Luis Obispo. 1999.
3. Hotel assumed 115 rooms.
4. Recreational fields assumed to be 15 acres and that 5 percent of the water use is for indoor use.

As previously stated, with the live stream discharge option, the effluent from the wastewater treatment plant would be discharged directly into the upper East Fork of the San Luis Obispo Creek just south of the proposed plant and along the eastern boundary of the Project Site. The discharges would mimic natural systems with the higher flows occurring during the wet winter months and minimal to no discharge during the dry summer months due to increased demand for landscape irrigation. Table 4.6-3 provides an estimate of the typical seasonal recycled water supply and demand for non-drought years. As this table shows, in the winter months there would be a need to directly discharge to the East Fork of San Luis Obispo Creek.

As discussed in the San Luis Obispo Creek Water Management Plan (SLOCWMP) (City 2003a), the upper East Fork of the San Luis Obispo Creek experiences flooding every 25 to 50 years, and the lower East Fork greater than every 50 years. The SLOCWMP defines flooding as when the flows are outside the banks of the creek. Downstream of the proposed wastewater treatment facility discharge point where the East Fork joins the main San Luis Obispo Creek, a number of areas are prone to flooding with a frequency of less than 25 years (City 2003a).

Table 4.6-3 Estimated Seasonal Recycled Water Supply and Demand, Wet Year – County Development Option

Month	Recycle Water Supply (AF)	Dual Plumbing Demand (AF)	Landscape Irrigation Demand (AF)	Surplus (Deficit) Recycled Water Supply (AF)
January	5.96	3.39	0.0	2.57
February	5.96	3.39	0.0	2.57
March	5.96	3.39	0.3	2.29
April	5.96	3.39	6.8	(4.19)
May	5.96	3.39	7.1	(4.58)
June	5.96	3.39	8.2	(5.61)
July	5.96	3.39	6.9	(4.33)
August	5.96	3.39	6.7	(4.14)
September	5.96	3.39	5.7	(3.15)
October	5.96	3.39	4.2	(1.67)
November	5.96	3.39	0.7	1.84
December	5.96	3.39	0.1	2.45
Annual	71.48	40.65	46.8	(15.94)

Source: Adapted from Wastewater Treatment and Disposal Feasibility Assessment, 2011.

During peak rain events in the winter the Project would add approximately 27,000 gallons per day to the flow in the creek. The discharge of this continuous flow into the creek may potentially increase flow rates and impact flow velocities which could be detrimental to downstream properties or habitats. These discharges would occur during the winter months and could potentially exacerbate already heavy flows within the nearby creeks and downstream. Given that some of the downstream locations have flooding potential less than every 25 years, this discharge from the wastewater treatment plant during heavy rain events would be considered a significant impact.

Mitigation Measures

WW-3 *Prior to recordation of a final map, commencement of tract improvements or issuance of the first building permit for the development phase, the Applicant shall receive a wastewater discharge permit from the State Regional Water Quality Control Board. The Applicant shall also submit, to the County Public Works Department for review and approval, a wastewater discharge plan for the wastewater treatment plant that shall be reviewed and approved by San Luis Obispo County Department of Planning and Building and Public Works. The plan shall include the method that would be used to avoid discharges from the wastewater treatment plant that increase flows to the San Luis Obispo Creek during rain events that could result in increased flooding. The plan shall include at the minimum the following:*

1. *How creek levels would be monitored during rain events.*
2. *At what flow and water level in the creek would discharges to the creek be halted.*
3. *The method used to hold wastewater during periods when it cannot be discharged.*

Residual Impacts

Even with the implementation of the proposed mitigation measure it would be very difficult to assure that discharges from the wastewater treatment plant would not occur during rain events that could result in flooding to downstream areas. Therefore, the impact would be considered *significant and unavoidable (Class I)*.

Impact #	Impact Description	Phase	Residual Impact
WW.4	The wastewater treatment plant discharges would increase pollutants into the East Fork of San Luis Obispo Creek.	Development	Class II

Two different biologic treatment processes were analyzed for the proposed wastewater treatment facility: first, conventional activated sludge; and, second, membrane biologic reactor. Both technologies are suspended growth aerobic treatment processes and are effective for the reduction of biological oxygen demand (BOD), total suspended solids (TSS), and nitrogen. Wastewater discharges within California are regulated by the Environmental Protection Agency (EPA), the State Water Resources Control Board (SWRCB), and the Regional Water Quality Control Board (RWQCB). The 1972 Federal Clean Water Act (CWA) directs the EPA to oversee and approve all state water quality standards. The SWRCB oversees nine Regional Water Quality Control Boards (RWQCBs); the RWQCBs are responsible for monitoring and enforcing the state and federal plans, policies, and regulations within their regions. The Project Site is located within the jurisdiction of the Central Coast RWQCB (Region 3). Discharging treated wastewater into waters of the state would require a National Pollution Discharge Elimination System (NPDES) permit from the RWQCB. Discharges to land, including sprinkler systems,

would require a Report of Waste Discharge and potentially the adoption of Waste Discharge Requirements.

The Central Coast Region Basin Plan is the master water quality control planning document for the region. It designates beneficial uses and water quality objectives for waters of the state within the Central Coast Region. The Central Coast Region Basin Plan includes Surface Water Quality Objectives (SWQOs) for specific water bodies. The SWQOs are intended to serve as the water quality baseline for evaluating water quality management in the basin. The effluent disposal options for the County Development Plan wastewater treatment facility include direct and indirect discharges into the East Fork of San Luis Obispo Creek, which is designated a water of the state.

The CWA requires states to identify water bodies that do not meet water quality objectives and are not supporting their beneficial use. The East Fork of San Luis Obispo Creek is included on the Central Coast RWQCB's CWA list of water quality limited segments (303d list). By placing the East Fork of San Luis Obispo Creek on the 303d List, the RWQCB has identified specific pollutants that are impairing the water body and require the development of total maximum daily loads (TMDLs). A TMDL is the maximum amount of a pollutant that a body of water can receive while still meeting its water quality objectives. The specific requirements for a TMDL can be a mass loading limit or a maximum concentration limit. Currently, the East Fork of San Luis Obispo Creek has EPA approved TMDLs for nitrates and pathogens. The TMDL for nitrates is 10mg/L. The TMDL for pathogens is no less than five samples for any 30-day period, shall exceed a log mean of 200 MPN per 100ml, nor shall >10 percent of total samples collected exceed 400 MPN per 100ml. TMDLs for sodium, chlorphyrifos, and chloride are expected to be approved in the near future.

Discharges into the East Fork of San Luis Obispo Creek must comply with existing and potentially future TMDLs. Based on the analysis, each treatment process is capable of producing treated effluent that complies with existing RWQCB regulations for wastewater discharges and existing TMDLs and SWQOs for the East Fork of San Luis Obispo Creek if the system is properly designed and operated.

Both technologies can achieve nitrification and denitrification (NDN), by incorporating an anoxic zone and mixed liquor recycle into the suspended growth reactors to ensure that the treated effluent complies with the TMDL requirements for nitrate (10 mg/L as Nitrogen) at the outlet to the East Fork of San Luis Obispo Creek.

If the wastewater treatment system is not adequately designed and operated then impacts to water quality in the East Fork of San Luis Obispo Creek could be significant.

Mitigation Measures

WW-4a *A Registered Civil Engineer shall design the tertiary treatment system for review and approval by the County of San Luis Obispo and State of California RWQCB.*

WW-4b *The tertiary treatment system shall be designed to ensure that the outlet discharge from the treatment facility satisfies and is in compliance with meeting constituent concentration limits outlined in the RWQCB SWQO's.*

WW-4c *A quarterly monitoring program will be established prior to construction. The program shall provide for sampling and testing for all constituent compounds required by the RWQCB SWQO. The testing and monitoring program shall be reviewed and approved by the RWQCB and the County of San Luis Obispo. A Registered Civil Engineer shall perform the quarterly reports that shall be submitted to the RWQCB and the County of San Luis Obispo to ensure compliance.*

Residual Impacts

By requiring the discharge at the outlet from the treatment facility to meet the state and local requirements for constituent compounds, the potential adverse impacts to the East Fork of San Luis Obispo Creek would be reduced or eliminated from exceedance of TMDLs. The regular monitoring program would ensure compliance and identify any system malfunctions or issues. The use of tertiary treatment facilities are well developed and mainstream technology. Therefore, with the implementation of the proposed mitigation measures, impacts would be deemed *less than significant with mitigation (Class II)*.

4.6.7 Cumulative Analysis

The City Development Plan component of the Project would produce wastewater within the volumes planned for in the Airport Area Specific Plan. The City of San Luis Obispo has adequately planned for the development of the area and has extended the wastewater facilities to incorporate the full proposed build-out. Based on the studies conducted by both the City of San Luis Obispo Utilities Department, the City facilities are adequately sized to meet the wastewater demands of the Project. The cumulative impacts of the City Development Plan are less than significant with the implementation of the proposed mitigation measures.

The County Development Plan component of the Project would require the construction of extensive wastewater facilities including an on-site wastewater treatment plant. Such improvements would require the construction of polishing wetlands or a creek discharge plan. The Applicant must comply with various State and local regulations that address protection of water quality discharges. The current technology is readily available to ensure that the treated effluent is capable of complying with existing RWQCB regulations for wastewater discharges and existing TMDLs and SWQOs for the East Fork of San Luis Obispo Creek. Therefore, the cumulative impacts of the County Development Plan are less than significant with the implementation of the proposed mitigation measures.

4.6.8 Mitigation Monitoring Plan

4.6.8.1 Remediation Project Mitigation Monitoring Plan

Mitigation Measure	Plan Requirements and Timing	Compliance Verification		
		Method	Timing	Responsible Party
WW-1a	Prior to the discharge of any wastewater from remediation activities the Applicant shall provide to the County a copy of the WDR from the RWQCB.	Review of permit	Prior to any wastewater discharge	San Luis Obispo County Planning and Building
WW-1b	Prior to issuance of grading permits for remediation the Applicant shall prepare a Dewatering Contingency Plan that shall be submitted to the RWQCB for review and approval. The Applicant shall provide to the County a copy of the RWQCB approval letter for the Dewatering Contingency Plan.	Review of plan Approval letter	Prior to grading permits	RWQCB San Luis Obispo County Planning and Building

4.6.8.2 City Development Plan Mitigation Monitoring Plan

There are no proposed mitigation measures for wastewater treatment for the City Development Plan.

4.6.8.3 County Development Plan Mitigation Monitoring Plan

Mitigation Measure	Plan Requirements and Timing	Compliance Verification		
		Method	Timing	Responsible Party
WW-3	Prior to recordation of a final map, commencement of tract improvements or issuance of the first building permit for the development phase, the Applicant shall receive a wastewater discharge permit from the State Regional Water Quality Control Board. The Applicant shall also submit, to the County Public Works Department for review and approval, a wastewater discharge plan for the wastewater treatment plant that shall be reviewed and approved by San Luis Obispo Department of Planning and Building and Public Works. The plan shall include the method that would be used to avoid discharges from the wastewater treatment plant that increase flows to the East Fork of San Luis Obispo Creek during rain events that could result in increased flooding. The plan shall include at the	Review of plan Ongoing monitoring	Prior to issuance of building permits for wastewater facility	County of San Luis Planning and Building and Flood Control

Mitigation Measure	Plan Requirements and Timing	Compliance Verification		
		Method	Timing	Responsible Party
	minimum the following: 1. How creek levels would be monitored during rain events. 2. At what flow and water level in the creek would discharges to the creek be halted. 3. The method used to hold wastewater during periods when it cannot be discharged.			
WW-4a	A Registered Civil Engineer shall design the tertiary treatment system for review and approval by the County of San Luis Obispo and State of California RWCB.	Review of facility design	Prior to construction of the wastewater facility	County of San Luis Obispo Public Works RWQCB
WW-4b	The tertiary treatment system design shall be designed to ensure that the outlet discharge from the treatment facility satisfies and is in compliance with meeting constituent concentration limits outlined in the RWQCB SWQO's.	Review of facility design	Prior to construction of the wastewater facility	County of San Luis Obispo Public Works RWQCB
WW-4c	A quarterly monitoring program will be established prior to construction. The program shall provide for sampling and testing for all constituent compounds required by the RWQCB SWQO. The testing and monitoring program shall be reviewed and approved by the RWQCB and the County of San Luis Obispo. A Registered Civil Engineer shall perform the quarterly reports that shall be submitted to the RWQCB and the County of San Luis Obispo to ensure compliance and any additional mitigations measures that may be required.	Plan Review	Prior to construction of the wastewater facility Ongoing during operation	County of San Luis Obispo Public Works RWQCB

4.6.9 References

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