

Storm Drain Zone 36/Zone 39 Improvement Project Initial Study/Mitigated Negative Declaration



September 2021

City of Manteca, California
Lathrop 7.5-Minute Quadrangle
Township 02S, Range 06E, Section 11

Submitted to:

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EXECUTIVE SUMMARY

The City of Manteca and the Oakwood Lake Water District (OLWD) propose to construct a stormwater conveyance network through Oakwood Shores to discharge in the San Joaquin River. The proposed project intends to provide a regional drainage solution for Zone 39 and a mechanism to minimize increases in future flows discharged from Zone 36 to the French Camp Outlet Canal (FCOC). The proposed project site is located in the southwest quadrant of Manteca, and would stretch along Woodward Avenue, South Woodward Avenue, Aplicella Court, through Reclamation District 17 (RD-17) land to the OLWD wastewater treatment plant (WWTP). The general setting of the project site is a rural and agricultural community. Woodward Avenue and South Woodward Avenue are two-lane rural roads with on-going agriculture operations on private land fronting the roadways. Aplicella Court leads to Oakwood Shores, a gated, low-density residential subdivision in San Joaquin County. RD-17 parcels are located south of Aplicella Court across from existing private residences in Oakwood Shores. The OLWD WWTP is located west of the RD-17, between Aplicella Court and the San Joaquin River.

Completion of the proposed project would accommodate for planned developments in south Manteca as the current storm drainage system will not be able to support the increase in quantity from new developments. The proposed project consists of a regional gravity drain, a storm drain pump station, a storm drain force main, and a river outfall. The proposed storm water conveyance network would be consistent with the City of Manteca 2013 Storm Drain Master Plan (SDMP). The Zone 39 – Regional Pump Station, FM & Pipeline project is listed as an improvement needed immediately to either solve serious existing deficiencies or to support pending development projects in the SDMP.

The Draft Initial Study/Mitigated Negative Declaration (IS/MND) was submitted to the State Clearinghouse on September 10, 2021 for a 30-day public review period that will end on October 11, 2021. During the public review period, the Draft IS/MND will be available for review on the City of Manteca's website in the Environmental Folder: <https://www.ci.manteca.ca.us/CommunityDevelopment/Planning%20Division/Pages/Planning-Division-Documents.aspx>. It is also available upon request at the City of Manteca Development Department, Planning Division for review.

The IS/MND prepared for the proposed project assesses the potential effects on the environment and the significance of those effects. Based on the results of the IS/MND, the proposed project would not have any significant impacts on the environment once mitigation measures are implemented. This conclusion is supported by the following findings:

- The proposed project would not impact land use and planning, mineral resources, population and housing, and recreation.

- The proposed project would have a less-than-significant impact on aesthetics, agriculture and forestry resources, air quality, energy, greenhouse gas emissions, and utilities and service systems.
- Once mitigation measures are implemented, the proposed project would have a less-than-significant impact on biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, noise, public services, transportation, tribal cultural resources, and wildfire.
- No substantial evidence exists that the proposed project would have a significant negative or adverse effect on the environment.

The proposed project incorporated standard construction measures and all applicable mitigation measures, as described in **Section 4** of the IS/MND. In addition to standard construction measures and other applicable laws, regulations, and policies, the following mitigation measures would be implemented as part of the proposed project to avoid or minimize potential environmental impacts. Implementation of these mitigation measures would reduce the potentially significant environmental impacts of the proposed project to less than significant levels.

Table ES-1. Summary of Impacts, Mitigation Measures, and Level of Significance After Mitigation

Potential Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Aesthetics			
Have a substantial adverse effect on a scenic vista?	No Impact	None	No Impact
Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	Significant	Mitigation Measure BIO-5.	Less than Significant
In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	Significant	<p>Mitigation Measure BIO-5.</p> <p>Mitigation Measure AES-1: During final design, the project engineer shall implement architectural design strategies into the SDPS design to minimize the visual mass of the structure and the contrast with the existing environment. These design strategies can include, but are not limited to:</p> <ul style="list-style-type: none"> • Exterior finishes shall avoid reflective surfaces. • Colors of the visible structures and pumps shall be earth tones to reduce contrasts with the ground plain and increase compatibility with the visual setting. 	Less than Significant
Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area	Significant	<p>Mitigation Measure AES-1.</p> <p>Mitigation Measure AES-2: During Final design, the project engineer shall prepare a lighting plan consistent with Chapter 17.50, Lighting, of the City Zoning Ordinance prior to the City’s approval of the project plans. The City-approved lighting plan shall ensure that the lighting around the SDPS has been designed to minimize light spillage and glare onto surrounding properties and roadways, while still maintaining 1-foot candle of light at a 5-foot radius. The lighting plan shall include the following:</p> <ul style="list-style-type: none"> • All lights installed shall have downward facing shields, with lights directed downward or toward the area to be illuminated, and so that backscatter to the nighttime sky is minimized. 	Less than Significant

Potential Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<ul style="list-style-type: none"> All lighting shall be of minimum necessary brightness consistent with worker safety and Chapter 17.50, Lighting, of the City Zoning Ordinance. High illumination areas not occupied on a continuous basis shall have switches or motion detectors to light the area only when occupied. 	
Agriculture and Forestry Resources			
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?	Less than Significant	None	Less than Significant
Conflict with existing zoning for agricultural use, or a Williamson Act contract?	Less than Significant	None	Less than Significant
Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	No Impact	None	No Impact
Result in the loss of forest land or conversion of forest land to non-forest use?	No Impact	None	No Impact
Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	Less than Significant	None	Less than Significant
Air Quality			
Conflict with or obstruct implementation of the applicable air quality plan?	Less than Significant	None	Less than Significant

Potential Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
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?	Less than Significant	None	Less than Significant
Expose sensitive receptors to substantial pollutant concentrations?	Less than Significant	None	Less than Significant
Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	Less than Significant	None	Less than Significant
Biological Resources			
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?	Significant	<p>Mitigation Measure BIO-1: Incidental Take Minimization Measures (ITMMs) pursuant to the SJMSCP for covered fish species (Delta smelt, longfin smelt, and green sturgeon) shall be implemented prior to, during, and after construction. These measures shall include, but are not limited to, the following (Note that requirements from the USFWS and NOAA Fisheries may supersede or be in addition to any measures outlined below and would be fully implemented by the City):</p> <p><u>Underwater Sound Levels</u></p> <p>To avoid impacts to resident and special-status fish from exceedance of sound thresholds, sound monitoring shall be implemented. It is noted that the below monitoring measures can be superseded by NOAA Fisheries or USFWS Section 7 FESA permits issued for the proposed project. The following noise requirements are consistent with measures required for similar municipal outfalls located downstream on the San Joaquin River.</p> <p>To monitor in-river sound levels, the following acoustic monitoring shall occur during all in-river work:</p> <ul style="list-style-type: none"> A qualified sound monitor shall conduct hydroacoustic monitoring to ensure that noise levels from the pile driving do not exceed 150 dBRMS (decibel root mean squared) in the river measured at a distance of 100 meters from the work area using a NOAA Fisheries-approved device, such as 	Less than Significant

Potential Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>Precision Sound Level Meter.</p> <ul style="list-style-type: none"> • Measurements shall be taken at two locations, one 10 meters from the work area and a second at 100 meters from the work area. • Ambient noise levels shall be measured when there is not any further pile driving activities taking place that particular day • Noise monitoring data shall be recorded and reported on a daily basis for City records. A final report shall be submitted to the City and regulatory agencies in compliance with NOAA Fisheries and USFWS permits. • Pile driving operations shall cease for the day if the results of the underwater sound pressure monitoring show that sound levels upstream and downstream of the pile driving area are higher than the peak threshold of 150 dBRMS. If peak underwater sound pressure levels are exceeded, the qualified biologist shall have the authority to halt impact pile driving and the City shall contact NOAA Fisheries and USFWS to determine if additional measures are necessary. <p><u>Water Quality</u></p> <p>ITMMs for SJMSCP Covered Fish are the same as those included for protection of riparian habitats. Those ITMMs are covered under the following water quality protection measures. To avoid the potential for accidental spills or mobilization of sediment affecting water quality, the following shall be implemented:</p> <ul style="list-style-type: none"> • All equipment and materials shall be stored at least 200 feet from the HTL unless the equipment is on established paved areas or existing roads. • Any equipment or vehicles driven or operated on the levee shall be checked and maintained daily to ensure proper working condition in order to avoid potential impacts (such as leaks). • No fueling, cleaning or maintenance of vehicles or equipment, or placement of construction debris, spoils or 	

Potential Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>trash shall occur within 200 feet of the HTL unless it occurs in designated refueling/staging areas on existing paved surfaces or existing roads with secondary containment in place.</p> <ul style="list-style-type: none"> • All concrete shall be allowed to cure outside of the river environment for 30 days, or a CDFW-approved concrete sealant shall be applied to freshly exposed concrete (when forming boards are removed) and allowed to dry outside of the flow river or areas of inundation for a minimum of 7 days. • A floatable debris curtain shall be installed in the San Joaquin River to capture sedimentation or construction debris. • A coffer dam shall be installed for the length of the work area on the riverbank for the purposes of drying the soils to conduct work below the HTL including installation of the concrete structure/headwall and placement of RSP. This method is very effective at keeping soils dry, especially when work is conducted during low flows. Therefore, the potential for ponded water behind the coffer dam is expected to be minimal because construction shall take place during low flows. Any ponded water shall be pumped and returned to the river within the floatable debris curtain. • The proposed project is required to comply with the terms and conditions of its Section 401 Water Quality Certification from the RWQCB which shall be required for the project. Any water returned to the river shall comply with the terms and conditions of the Section 401 Water Quality Certification. • The proposed project is required to comply with the terms and conditions of its Section 1602 Streambed Alteration Agreement from CDFW which shall be required for the project. • The applicant shall adhere to water quality standards and requirements of the National Pollutant Discharge Elimination System (NPDES) – MS4 Permit Program, which regulates discharge at the outfall. 	

Potential Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p><u>Turbidity</u> To avoid the potential for exceedance of turbidity thresholds for fish and aquatic life in the San Joaquin River, the following shall be implemented:</p> <ul style="list-style-type: none"> • A qualified biologist, or qualified personnel, shall use a held-hand turbidity monitor to conduct water quality monitoring during all in-water construction activities to ensure the turbidity control measures are functioning as intended. • Typical turbidity in the San Joaquin River during the in-water work season is usually less than 50 NTU when measured. 50 NTUs is already above the range at which steelhead experience reduced growth rates (25 NTU) but below the range steelhead shall be expected to actively avoid the work area. Therefore, the turbidity (in NTU) immediately downstream of the boundary already established for the construction noise/pile driving disturbance threshold (100 meters in the river waterway from the northernmost boundary of the construction footprint and cofferdam placement) shall not exceed more than 25 NTU above the turbidity level in the river water measured immediately upstream of project activities. Within the established 100-meter disturbance surrogate, River water shall not exceed 50 NTU above the turbidity level in upstream measurements. <p><u>Fish Habitat/Entrapment</u> To avoid/minimize direct impacts on fish migrating through the area, the following measures, or equivalent measures, shall be implemented:</p> <ul style="list-style-type: none"> • All work shall be limited to daylight hours between 8 AM and 6 PM or as required by environmental permits to provide sufficient periods of time when passage by fish shall be unaffected by construction-related noise. • All in-water work shall be limited to the period between August 1 and October 31 (work window) when Central Valley 	

Potential Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>(CV) steelhead and spring run Chinook salmon are least likely to be present in the San Joaquin River.</p> <ul style="list-style-type: none"> The proposed project shall install a debris curtain and a cofferdam to prevent movement of fish into the work area to be dewatered. <p>Mitigation Measure BIO-2: ITMMs for burrowing owl including preconstruction surveys prior to any ground disturbing activities, in accordance with the SJMSCP, shall be implemented. These are summarized below.</p> <p>A. Breeding season (February 1 through August 31): Pre-construction surveys for burrowing owls [following the Staff Report on Burrowing Owls (CDFG 2012)] shall be performed no less than 14 days prior and again 24-hours prior to initial ground disturbance activities.</p> <ol style="list-style-type: none"> Any occupied burrows shall not be disturbed and shall be provided with a 75-meter protective buffer until and unless the Technical Advisory Committee (TAC), with the concurrence of the Permitting Agencies (representatives on the TAC); or unless a qualified biologist approved by the Permitting Agencies verifies through non-invasive means that either: 1) the birds have not begun egg laying, or 2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. <p>Once the fledglings are capable of independent survival, a Burrowing Owl Exclusion Plan (BOEP) is developed and approved by the applicable Department of Fish and Wildlife SJMSCP representative/office, and habitat is mitigated in accordance with the Staff Report (CDFG 2012), then the burrow can be destroyed. Pre-construction surveys following destruction of burrows and prior to initial construction activities are required (24-hours prior) to ensure owls do</p>	

Potential Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>not re-colonize the Project Area.</p> <p>2. If Project activities are delayed or suspended for more than 15 days during the breeding season, surveys shall be repeated.</p> <p>B. Non-breeding season (September 1 through January 31): Pre-construction surveys following the Staff Report on Burrowing Owls (CDFG 2012) shall be performed prior (no less than 14-days and again 24-hours prior) to initial ground disturbance activities. Burrowing owls may be evicted after a Burrowing Owl Exclusion Plan (BOEP) is developed and approved by the applicable Department of Fish and Wildlife SJMSCP representative/office and habitat is mitigated in accordance with the Staff Report (CDFG 2012).</p> <p>Pre-construction surveys following destruction of burrows and prior to initial construction activities are required (24-hours prior) to ensure owls do not recolonize the Project Area. If owls are found within 50 meters of the Project Area, it is recommended that visual screens or other measures are implemented to limit disturbance of the owls without evicting them from the occupied burrows.</p> <p>Mitigation Measure BIO-3: Surveys for Swainson’s hawk shall be conducted no more than 14 days prior to construction and again 24 hours prior to construction to ensure that there are no nesting birds within the project footprint. If this species is observed nesting on the project site or adjacent to the project site then, in accordance with the SJMSCP, the following ITMMs shall be implemented.</p> <p>A. If a nest tree becomes occupied during construction activities, then all construction activities shall remain a distance of two times the dripline of the tree, measured from the nest.</p> <p>B. If the project proponent elects to remove a nest tree, then nest trees may be removed between September 1 and February 15, when the nests are unoccupied.</p> <p>Mitigation Measure BIO-4: To avoid impacts to nesting birds, a nesting survey should be conducted within 15 days of commencing with</p>	

Potential Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>construction work or tree removal if this work commences between February 1 and August 31. The nesting survey should include an examination of all trees onsite and within 200 feet of the entire project site (i.e., within a zone of influence of nesting birds), not just trees slated for removal. The zone of influence includes those areas outside the project site where birds could be disturbed by earth-moving vibrations and/or other construction-related noise.</p> <p>If birds are identified nesting on or within the zone of influence of the construction project, a qualified biologist shall establish a temporary protective nest buffer around the nest(s). The nest buffer shall be staked with orange construction fencing. The buffer must be of sufficient size to protect the nesting site from construction-related disturbance and should be established by a qualified ornithologist or biologist with extensive experience working with nesting birds near and on construction sites. Typically, adequate non-disturbance nesting buffers are 50 feet from the nest site or nest tree dripline for small birds (songbirds, for example) and up to 300 feet for sensitive nesting birds that include several raptor species known the region of the project site. To determine if the non-disturbance buffer is of adequate size to protect the nesting birds from disturbance, a qualified biologist should monitor the nest site(s) during the first week of construction to observe the adult birds' behavior. If no agitated behaviors are observed, then the established buffer is of sufficient size to protect the nesting attempt and the biologist shall only need to return once a week to monitor the adults and the nesting attempt. However, should the monitoring biologist observe any signs of distress from the adult birds during the first week of monitoring or any other time thereafter, the non-disturbance buffer distance should be increased, as determined by a qualified biologist, to prevent nesting failure.</p> <p>No construction or earth-moving activity should occur within any established nest protection non-disturbance buffer prior to September 1 unless it is determined by a qualified ornithologist/biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones, or that the nesting cycle is otherwise completed.</p>	

Potential Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		In the region of the project site, most species complete nesting by mid-July. This date can be significantly earlier or later and shall have to be determined by the qualified biologist. At the end of the nesting cycle, and fledging from the nest by its occupants, as determined by a qualified biologist, temporary nesting buffers may be removed, and construction may commence in established nesting buffers without further regard for the nest site.	
Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	Significant	Mitigation Measure BIO-5: The City shall compensate for the temporary and permanent loss of riparian habitat and CDFW jurisdictional area through the creation, rehabilitation, and enhancement, either on- or off-site, purchase of credits at a CDFW-approved bank or conservation site, or through funding an equivalent project through a local organization. Compensatory mitigation shall be at a 1:1 ratio (acreage) for temporary impacts to riparian vegetation and, a 2:1 ratio (acreage) for permanent impacts to riparian vegetation, or as required by applicable regulatory permits.	Less than Significant
Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrologic interruption, or other means?	Significant	Mitigation Measure HYD-1. Mitigation Measure BIO-6: The City shall compensate for the impacts to waters of the US/State through the creation, rehabilitation, and enhancement, either on- or off-site, purchase of credits at a Corps-approved and RWQCB-approved bank or conservation site, or through funding an equivalent project through a local organization. Compensatory mitigation shall be at a 1:1 ratio, or as required by applicable regulatory permits. Proof of mitigation shall be provided to the Corps and the RWQCB in advance of grading activities on the project site or as otherwise required by applicable regulatory permits.	Less than Significant
Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	Less than Significant	None	Less than Significant

Potential Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	Significant	Mitigation Measures BIO-1 through BIO-6.	Less than Significant
Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	No Impact	None	No Impact
Cultural Resources			
Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	Less than Significant	None	Less than Significant
Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	Significant	<p>Mitigation Measure CUL-1: If subsurface deposits believed to be cultural or human in origin are discovered during construction, all work must halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior’s Professional Qualification Standards for prehistoric and historic archaeologist, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:</p> <ul style="list-style-type: none"> • If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately, and no agency notifications are required. • If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, he or she shall immediately notify the lead agency. If the find is determined to be eligible for inclusion in the NRHP or CRHR, the lead agency shall consult on a finding of eligibility and implement appropriate treatment measures. Work may not resume within the no-work radius until the lead agency, through consultation as appropriate, determines that the site either: 1) is not eligible 	Less than Significant

Potential Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>for the NRHP or CRHR; or 2) that the treatment measures have been completed to its satisfaction.</p> <ul style="list-style-type: none"> If the professional archaeologist determines that the find includes human remains, or remains that are potentially human, he or she shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the San Joaquin County Coroner (in accordance with § 7050.5 of the Health and Safety Code). The provisions of § 7050.5 of the California Health and Safety Code, § 5097.98 of the California PRC, and AB 2641 shall be implemented. If the Coroner determines the remains are Native American and not the result of a crime scene, the Coroner shall notify the NAHC, the NAHC shall then designate a Native American Most Likely Descendant (MLD) for the project (§ 5097.98 of the PRC). The designated MLD shall have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (§ 5097.94 of the PRC). If no agreement is reached, the landowner must rebury the remains where they shall not be further disturbed (§ 5097.98 of the PRC). This shall also include either recording the site with the NAHC or the appropriate information center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction. 	
Disturb any human remains, including those interred outside of formal cemeteries?	Significant	Mitigation Measure CUL-1.	Less than Significant

Potential Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Energy			
Results in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	Less than Significant	None	Less than Significant
Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	Less than Significant	None	Less than Significant
Geology and Soils			
Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:			
i) Rupture of a known earthquake fault, as delineated on 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.)	Less than Significant	None	Less than Significant
ii) Strong seismic ground shaking	Less than Significant	None	Less than Significant
iii) Seismic-related ground failure, including liquefaction?	Less than Significant	None	Less than Significant
iv) Landslides?	Less than Significant	None	Less than Significant
Result in substantial soil erosion or the loss of topsoil?	Less than Significant	None	Less than Significant
Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	Less than Significant	None	Less than Significant

Potential Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	Less than Significant	None	Less than Significant
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?	No Impact	None	No Impact
Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Significant	<p>Mitigation Measures GEO-1: The proponent should retain a professional certified paleontologist, as defined by the Society of Vertebrate Paleontologists (SVP). This person shall be designated the Project Paleontologist.</p> <p>Mitigation Measure GEO-2: The Project Paleontologist shall attend preconstruction meetings and discuss the significance of paleontological resources with the construction team. The City or primary construction contractor shall provide a copy of the grading plans for the Project Paleontologist before or at the preconstruction meetings.</p> <p>Mitigation Measure GEO-3: All disturbance of in situ Modesto Formation and Dos Palos Alluvium shall be monitored. Disturbance of, or excavations in, previously undisturbed sediments shall be monitored by a qualified Paleontological Monitor, under supervision of the Project Paleontologist. Periodic tests for microvertebrate fossils by wet or dry screening, as appropriate, of undisturbed sediments shall occur during construction. Care must be taken when wet screening, to see if any snail fossils are floating on the water in the container being used. If identifiable microvertebrate fossils are detected, a sediment sample of the producing horizon shall be collected and stored near the project site. If 6,000 pounds of sediment are available on the outcrop/cut, that number is the maximum amount that shall be collected, following SVP guidelines (2010). If 6,000 pounds cannot be derived from the outcrop/cut, the maximum amount that can be collected shall be recovered and stored nearby.</p>	Less than Significant

Potential Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>The sample can be processed there, assuming that a project water source or water truck is available. It may be advantageous to dry screen the sediment samples to reduce the amount of water needed for wet screening. The processing of the screened concentrate is discussed in Mitigation Measure GEO-10, below.</p> <p>Mitigation Measure GEO-4: The qualified Paleontological Monitor shall keep notes on excavations, stratigraphy, and fossils noted in a hardbound notebook and take photographs to record these data.</p> <p>Mitigation Measure GEO-5: The qualified Paleontological Monitor shall provide daily monitoring reports to the Project Paleontologist. The Project Paleontologist shall provide weekly reports on monitoring progress to the City’s representative.</p> <p>Mitigation Measure GEO-6: If large specimens are encountered, all construction work within 40 feet of the specimen shall halt. The qualified Paleontological Monitor or the Project Paleontologist shall designate and flag the appropriate area, as defined by the type of specimen encountered, with caution tape to prevent damage to the resources. The Paleontological Monitor or the Project Paleontologist shall notify the Construction Foreman as soon as possible to temporarily halt or divert earth-moving activities around the monitoring site. Construction work may then resume outside the area delineated.</p> <p>Mitigation Measure GEO-7: The Project Paleontologist shall evaluate the specimen. If the specimen warrants recovery, removal of the fossil shall begin immediately. If the specimen is fragile and cannot be removed without precautionary reinforcement, plaster jacketing shall be used to stabilize the specimen before it is moved. If the specimen is large and additional personnel are necessary for removal, the Paleontological Monitor shall notify the Project Paleontologist. If removal of fossil specimens shall last for more than one day, the Project Paleontologist shall notify the Construction Manager and the City Engineer about the additional salvage time. Once the fossil site has been vacated, the Paleontological Monitor shall allow earth-moving activities to proceed. Large vertebrate specimens shall be</p>	

Potential Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>transported to the Project Paleontologist’s laboratory for further treatment, as outlined below in Mitigation Measure GEO-10.</p> <p>Mitigation Measure GEO-8: If one or more vertebrate specimen is/are found in association with organic remains (e.g., woods, plants, charcoal, organic-rich sediment, or expendable bone) that can be radiocarbon dated, such material shall be kept free from preservatives, finger oils, or other organic contamination, stored in a sterile container that shall not affect the dating, and shall be submitted for a radiocarbon date.</p> <p>Mitigation Measure GEO-9: The synthesis of a clear stratigraphic profile of sediments encountered in the project should be made if possible. This may not be possible because of the limited nature of the project excavations. Nonetheless, detailed notes of sediments and facies encountered must be recorded.</p> <p>Mitigation Measure GEO-10: If larger vertebrate specimens and plant specimens are found, they shall be cleaned of extraneous sediment, hardened with resins and glues for repair and stabilization to the point of identification for curation purposed. If deposits encountered during construction are found to produce microvertebrate fossils, concentrate from the clean screened sediment samples shall be dried and sorted under a binocular microscope. Specimens obtained from sediment samples and from monitoring shall be stabilized. Microvertebrate fossils shall be sorted by taxon, stored in separate vials or capsules, and identified to the lowest possible taxonomic level. The Project Paleontologist shall prepare a final report describing the fossils recovered and their significance. The specimens recovered, as well as field notes and photographs, shall be curated in a recognized scientific paleontology collection such as the University of California Museum of Paleontology collections.</p>	
Greenhouse Gas Emission			
Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Less than Significant	None	Less than Significant

Potential Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Less than Significant	None	Less than Significant
Hazards and Hazardous Materials			
Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Significant	Mitigation Measure HYD-1.	Less than Significant
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?	Significant	Mitigation Measure HYD-1. Mitigation Measure HAZ-1: A Health and Safety Plan (HASP) shall be developed for the project. The HASP shall describe appropriate procedures to follow in the event that any contaminated soil or groundwater is encountered during construction activities. Any unknown substances shall be tested, handled and disposed of in accordance with appropriate federal, state and local regulations.	Less than Significant
Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	No Impact	None	No Impact
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?	No Impact	None	No Impact
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 or excessive noise for people residing or working in the project area?	No Impact	None	No Impact

Potential Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	Significant	Mitigation Measure PUB-1.	Less than Significant
Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	Significant	Mitigation Measure PUB-1 and Mitigation Measure FIRE-1.	Less than Significant
Hydrology and Water Quality			
Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	Significant	<p>Mitigation Measure BIO-1.</p> <p>Mitigation Measure HYD-1: Prior to the start of any ground disturbing activities, the City or primary construction contractor shall prepare a Storm Water Pollution Prevention Plan (SWPPP) detailing measures to control soil erosion, waste discharges, stormwater management program requirements, and measures that implement existing City of Manteca General Plan policies related to drainage and flood control. The City Engineer shall review and approve the completed SWPPP for agency submittal. The City or primary construction contractor shall submit a notice of intent to the Central Valley Regional Water Quality Control Board (RWQCB) for stormwater discharges associated with general construction activity. The City shall require all contractors conducting construction-related work to implement the SWPPP to control soil erosion and waste discharges of other construction-related contaminants. The general contractor(s) and subcontractor(s) conducting the work shall be responsible for constructing or implementing, regularly inspecting, and maintaining the measures in good working order.</p> <p>The SWPPP shall identify the grading and erosion-control best management practices (BMPs) and specifications necessary to avoid and minimize water quality impacts to the extent practicable. Standard erosion control measures (e.g., management, structural, and vegetative controls) shall be implemented for all construction activities that expose soil. Grading operations shall be conducted to eliminate direct routes for conveying potentially contaminated runoff to any nearby water bodies. Erosion control barriers, such as silt fences</p>	Less than Significant

Potential Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>and mulching material, shall be installed, and disturbed areas shall be reseeded with grass or other plants, where necessary.</p> <p>The SWPPP shall contain specific measures for stabilizing soils at the construction site before the onset of the winter rainfall season. These standard erosion-control measures shall be designed to reduce the potential for soil erosion and sedimentation of drainage channels.</p> <p>The following specific BMPs are recommended for implementation:</p> <ul style="list-style-type: none"> • Conduct all work according to site-specific construction plans that identify areas for clearing, grading, and revegetation so that ground disturbance is minimized. • Avoid existing vegetation wherever possible and identify vegetation to be retained for habitat maintenance (i.e., as identified through preconstruction biological surveys); cover cleared areas with mulches; install silt fences, if needed to control erosion and trap sediment; and reseed cleared areas with native vegetation. • Stabilize disturbed soils at all construction sites and staging areas before the onset of the winter rainfall season. • Stabilize and protect stockpiles from exposure to erosion and flooding. <p>The SWPPP also shall specify appropriate hazardous materials handling, storage, and spill response practices to reduce the possibility of adverse impacts from use or accidental spills or releases of contaminants. Specific measures applicable to the proposed project include:</p> <ul style="list-style-type: none"> • Develop and implement strict on-site handling rules to keep construction and maintenance materials out of waterways. • Prevent oil or other petroleum products, or any other substances that could be hazardous to aquatic life, from contaminating the soil or entering watercourses. • Maintain spill clean-up equipment in proper working condition. Clean up all spills immediately in accordance with the spill prevention and response plan, and immediately notify the California Department of Fish and Wildlife (CDFW) 	

Potential Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>and the Central Valley RWQCB of any spills and clean-up procedures.</p> <p>During construction, City construction management staff shall inspect implementation and maintenance of BMPs on a weekly basis to ensure compliance by the contractor. Weekly email reports shall be prepared for City Engineer review and approval. Successful implementation of this mitigation measure shall minimize pollutant loads to the San Joaquin River and nearby drainages impacted temporarily during construction.</p> <p>Mitigation Measure HYD-2: All dewatering discharges shall be required to be tested for trace pollutants by an U.S. EPA certified laboratory prior to discharge into the receiving waters, per the General Water Discharge Requirements/NPDES Permit for Dewatering and Other Low Threat Discharges to Surface Waters. Water samples shall be tested for total suspended solids (TSS), total nitrogen, oil and grease, total petroleum hydrocarbons, and sulfides. Discharged waters shall be required to be visibly clear and sediment control BMPs shall be implemented.</p>	
Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	Less than Significant	None	Less than Significant
Substantially alter the existing drainage pattern of a site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:			
i) Result in substantial erosion or siltation on- or off-site;	Significant	Mitigation Measures HYD-1 and HYD-2	Less than Significant
ii) Substantially increase the rate or amount of surface runoff in a manner	Less than Significant	None	Less than Significant

Potential Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
which would result in flooding on- or off-site;			
iii) 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;	No Impact	None	No Impact
iv) Impede or redirect flows?	Less than Significant	None	Less than Significant
In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	Less than Significant	None	Less than Significant
Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	Less than Significant	None	Less than Significant
Land Use and Planning			
Physically divide an established community?	No Impact	None	No Impact
Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	No Impact	None	No Impact
Mineral Resource			
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?	No Impact	None	No Impact
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?	No Impact	None	No Impact

Potential Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Noise			
<p>Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?</p>	<p>Significant</p>	<p>Mitigation Measure NOI-1: Restrict construction activities to the hours of 7 AM to 7 PM on Monday through Friday, and 8 AM to 6 PM on Saturdays. No construction shall be permitted outside of these hours or on Sundays or federal holidays, without a specific exemption issued by the City.</p> <p>Mitigation Measure NOI-2: A Construction Noise Management Plan shall be prepared and shall include proper posting of construction schedules, appointment of a noise disturbance coordinator, and methods for assisting in noise reduction measures.</p> <p>Noise reduction measures may include, but are not limited to, the following:</p> <ul style="list-style-type: none"> • Equipment and trucks used for project construction shall utilize the best available noise control techniques which include, but are not limited to, improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds. • Impact tools (e.g., jackhammers, pavement breakers, pile drivers, and rock drills) used for project construction shall be hydraulically or electrically powered to avoid noise associated with compressed air exhaust from pneumatically powered tools. If use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used. External jackets on the tools themselves shall be used if such jackets are commercially available. Quieter procedures shall be used, such as drills rather than impact equipment, whenever such procedures are available and consistent with construction procedures. • Stationary noise sources shall be located as far from adjacent properties as possible, and they shall be muffled and enclosed within temporary sheds, incorporate insulation barriers, or other similar noise reduction construction method approved by the City that provides equivalent noise reduction. 	<p>Less than Significant</p>

Potential Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Generation of excessive groundborne vibration or groundborne noise levels?	Less than Significant	None	Less than Significant
For a project located within the vicinity of a private airstrip or airport land use plan area, 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 area to excessive noise levels?	No Impact	None	No Impact
Population and Housing			
Induce substantial unplanned 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)?	No Impact	None	No Impact
Displace substantial numbers of existing people or housing units, necessitating the construction of replacement housing elsewhere?	No Impact	None	No Impact
Public Services			
Would the project result in substantial adverse physical impacts associated with the provision of, or the 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 following public services:			
i) Fire protection?	Significant	Mitigation Measure PUB-1: The construction contractor for the proposed project shall implement a standard traffic management plan	Less than Significant

Potential Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		to minimize traffic disruption and ensure adequate access is maintained to surrounding properties. Prior to the start of construction, the contractor shall coordinate with the City of Manteca Police and Fire departments and local public and private ambulance and paramedic providers in the area, and the Manteca Unified School District to prepare a Construction Period Emergency Access Plan. The Construction Period Emergency Access Plan shall identify phases of the proposed project and construction scheduling and shall identify if alternative emergency access routes are appropriate.	
ii) Police Protection?	Significant	Mitigation Measure PUB-1	Less than Significant
iii) Schools?	Significant	Mitigation Measure PUB-1	Less than Significant
iv) Parks?	No Impact	None	No Impact
v) Other public facilities?	No Impact	None	No Impact
Recreation			
Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?	No Impact	None	No Impact
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?	No Impact	None	No Impact
Transportation			
Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	Significant	Mitigation Measure PUB-1	Less than Significant
Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?	Less than Significant	None	Less than Significant

Potential Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	No Impact	None	No Impact
Result in inadequate emergency access?	Significant	Mitigation Measure PUB-1	Less than Significant
Tribal Cultural Resources			
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resource Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:			
a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	Significant	Mitigation Measure CUL-1	Less than Significant
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resources to a California Native American tribe.	Significant	Mitigation Measure CUL-1	Less than Significant

Potential Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Utilities and Service Systems			
Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relation of which could cause significant environmental effects?	Less than Significant	None	Less than Significant
Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	No Impact	None	No Impact
Result in a determination by the wastewater treatment provider that would serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	No Impact	None	No Impact
Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	Less than Significant	None	Less than Significant
Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	Less than Significant	None	Less than Significant
Wildfire			
Substantially impair an adopted emergency response plan or emergency evacuation plan?	Significant	Mitigation Measure PUB-1	Less than Significant
Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and	Significant	Mitigation Measure FIRE-1: Prior to the start of construction, the contractor shall coordinate with the Manteca Fire Department to	Less than Significant

Potential Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?		<p>prepare a Construction Fire Safety Plan for use during construction. The Construction Fire Safety Plan shall contain notification procedures and emergency fire precautions including, but not limited to, the following:</p> <ol style="list-style-type: none"> 1. All internal combustion engines, stationary and mobile, shall be equipped with spark arresters. Spark arresters shall be in good working order. 2. Light trucks and cars with factory-installed (type) mufflers shall be used only on roads where the roadway is cleared of vegetation. Said vehicle types shall maintain their factory-installed (type) muffler in good condition. 3. Equipment parking areas (staging areas) shall be cleared of all extraneous flammable materials. 4. Personnel shall be trained in the practices of the Fire Safety Plan relevant to their duties. Construction personnel shall be trained and equipped to extinguish small fires in order to prevent them from growing into more serious threats. 5. Smoking shall be prohibited in wildland areas and shall be limited to paved areas or areas cleared of all vegetation. 	
Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	No Impact	None	No Impact
Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	No Impact	None	No Impact

INITIAL STUDY

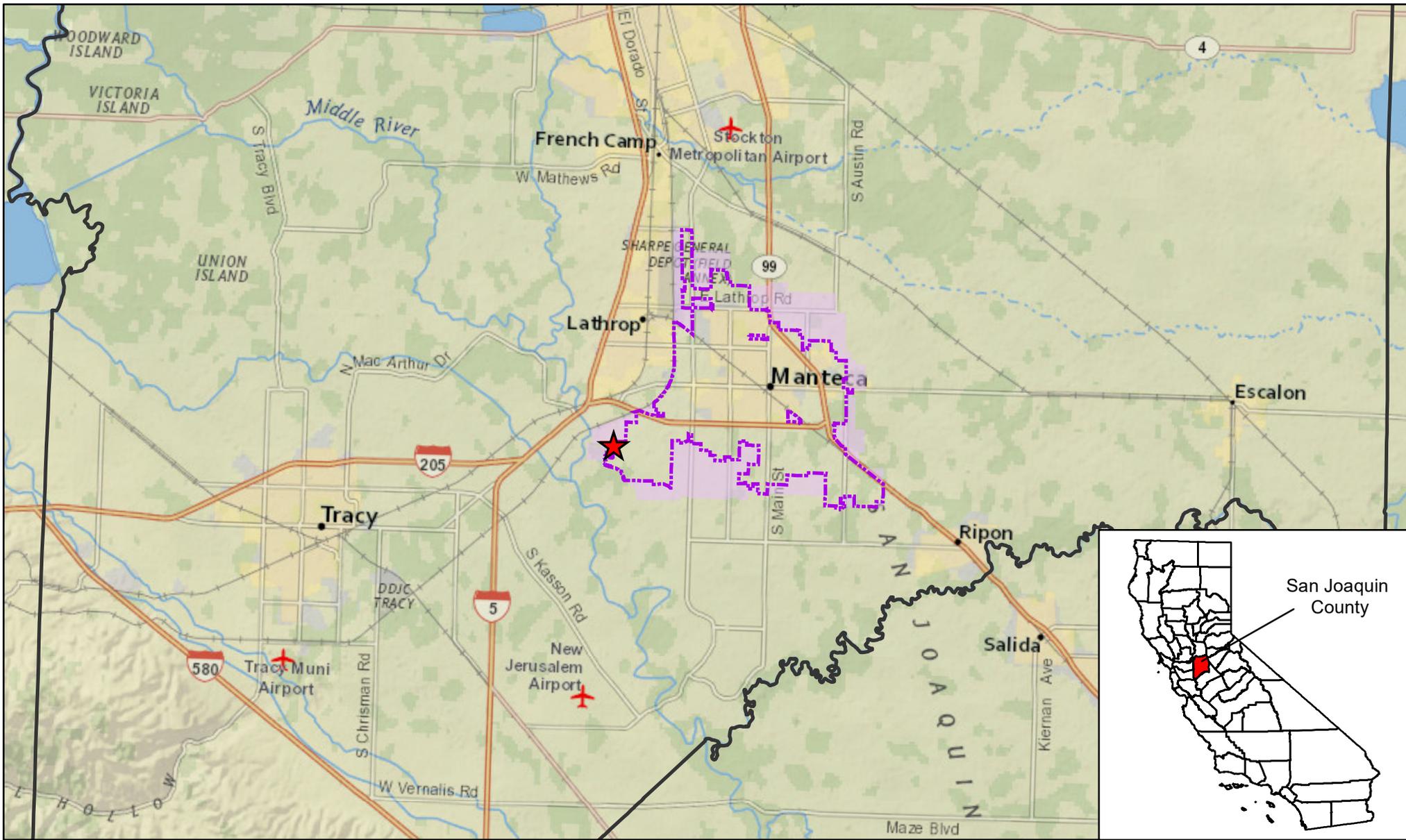
1. **Project Title:** Storm Drain Zone 36/Zone 39 Improvements Project (proposed project)
2. **Lead Agency:** City of Manteca
1215 West Center Street
Manteca, CA 95337
3. **Contact Person** J.D. Hightower, Deputy Director – Planning
jhightower@ci.manteca.ca.us
4. **Project Location:** Manteca, San Joaquin County, California
(Figure 1-1 and 1-2)
5. **Project Sponsor:** City of Manteca
6. **General Plan Designation(s):**

City: Low Density Residential (LDR) and Public right-of-way (ROW). Surrounding designations include: Low Density Residential (LDR), Open Space (OS), Business Industrial Park (BIP), Urban Reserve - Business Industrial Park (UR-BIP), and General Commercial (GC). It should be noted that the City is currently undergoing a General Plan Update and proposed land use designations would eliminate the BIP, UR-BIP, and GC land uses adjacent to the proposed project site and replace them with High Density Residential (HDR), LDR and Public/Quasi-Public (PQP).

County: Urban Reserve and Low Density Residential.
7. **Zoning District(s):**

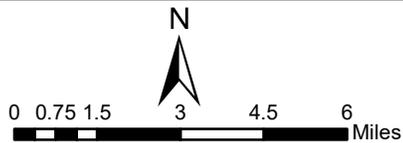
City: Public right-of-way (ROW), R-1 (One-Family Dwelling), OS (Open Space), BIP (Business Industrial Park), and UND (Undesignated).

County (northwest of Woodward Avenue): C-R (Commercial Recreation), AG-40 (General Agriculture), R-L (Low-density Residential), and R-M (Medium-density Residential).



Legend

- Project Location
- City Limit
- City Sphere of Influence
- County Limit



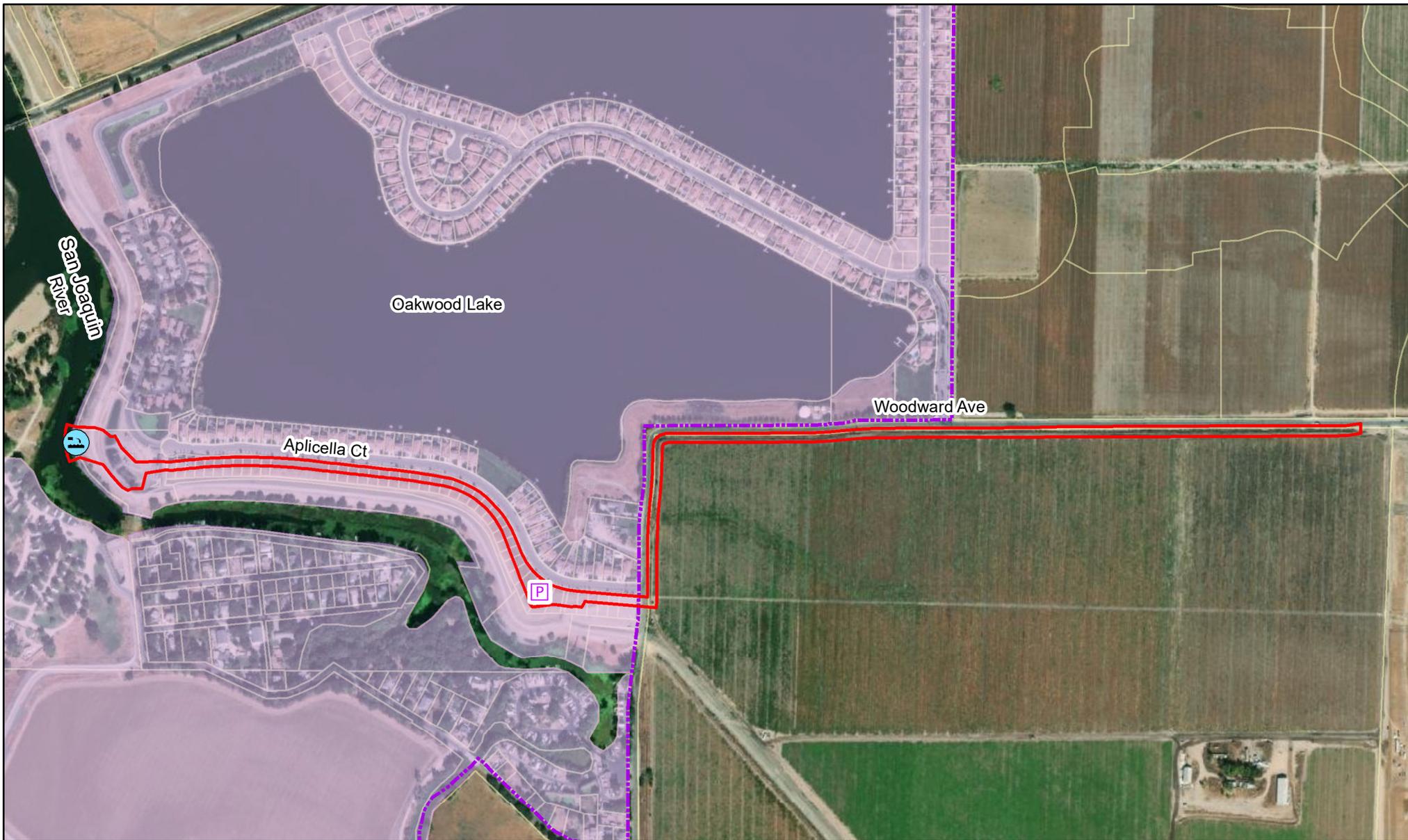
Source: ESRI Online Basemap,
National Geographic Map, San Joaquin
County Coordinate System NAD 83
State Plane California 3 FIPS 0402 Feet

Notes: This map was created for
informational and display purposes only

Storm Drain Zone 36/Zone 39
Improvements Project
City of Manteca, CA

Regional Location

**Figure
1-1**



Legend

- Project Extent
- Proposed Pump Station
- O Proposed Outfall
- City Limit
- City Sphere of Influence



0 375 750 1,500 Feet

Source: ESRI Online Basemap, World Imagery Map, San Joaquin County Coordinate System NAD 83 State Plane California 3 FIPS 0402 Feet

Notes: This map was created for informational and display purposes only.

Storm Drain Zone 36/Zone 39
Improvements Project
City of Manteca, CA

Project Location

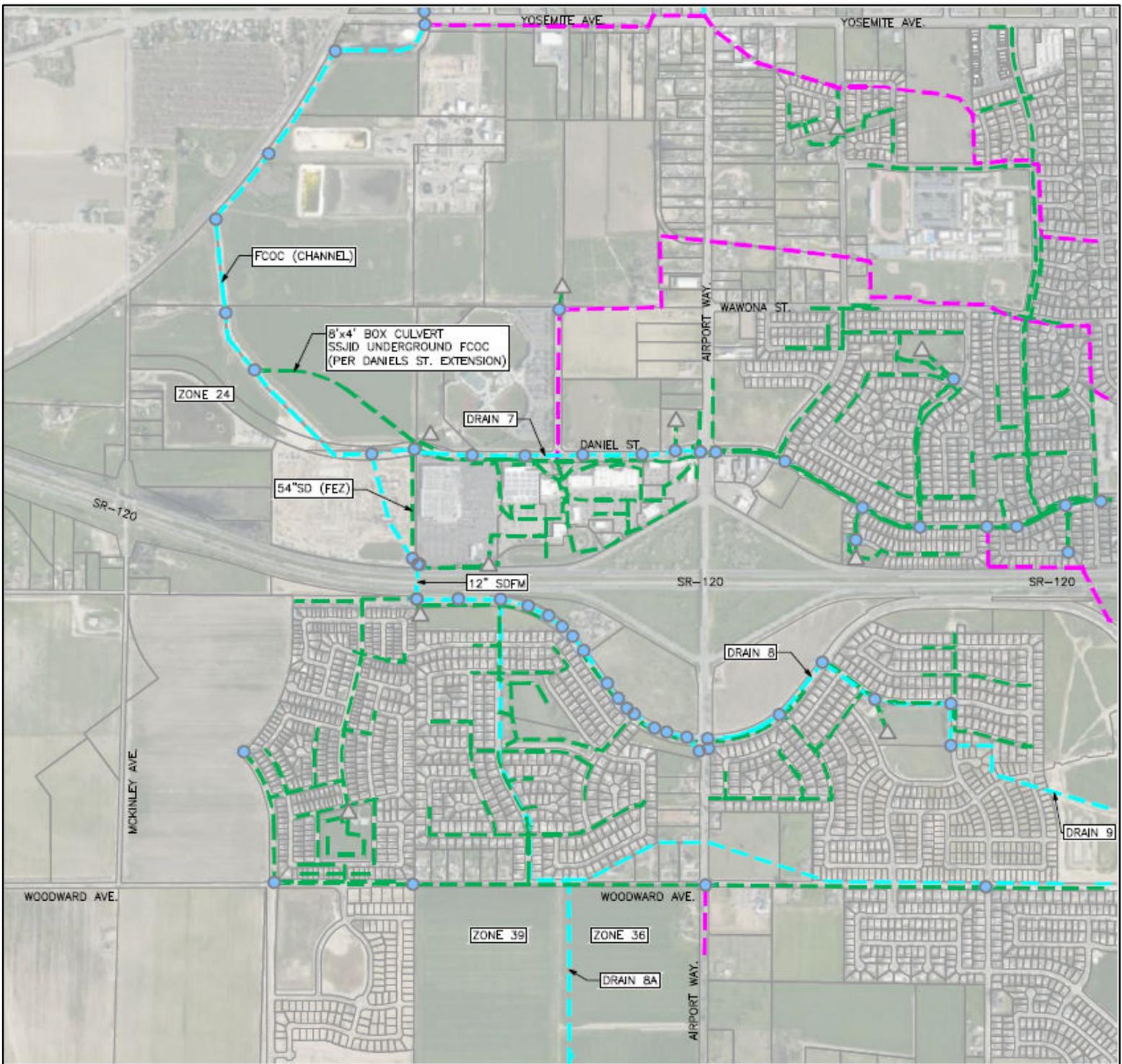
Figure 1-2

1 INTRODUCTION

Considerable development is planned in the southwest quadrant of the City of Manteca (City) spanning Woodward Avenue from South McKinley Avenue west to the Oakwood Shores neighborhood. For drainage planning purposes, this area is referred to as Zone 39. Implementation of a regional drainage solution for Zone 39 would eliminate the need to annex into the South San Joaquin Irrigation District (SSJID) and to participate in upgrades to regional conveyance systems. Stormwater flows from Zone 36 could also be routed to the Zone 39 drainage system, reducing the future capacity requirements for the French Camp Outlet Canal (FCOC), the principal drainage discharge location for large areas of the City. Storm drain zone boundaries and regional drainage facilities are illustrated in **Figure 1-3**.

In support of a Zone 39 regional system, the City has executed an agreement with the Oakwood Lake Water District (OLWD) to facilitate construction of a stormwater conveyance network through the Oakwood Shores neighborhood to discharge to the San Joaquin River in exchange for the City accepting wastewater from OLWD for treatment and disposal. Facilitation efforts by OLWD for the storm drainage system include granting construction easements to the City through OLWD wastewater treatment plant (WWTP) property for pipeline and outfall construction and executing transactional agreements with Reclamation District 17 (RD-17) for areas within the WWTP to support their ongoing Levee Seepage Repair Project. Anticipated cooperation with RD-17 includes granting temporary construction and permanent easements for installation of pipelines through properties along Aplicella Court and approvals for development of a storm drain pump station (SDPS) site within lots owned by RD-17.

The conveyance system to receive flows from Zone 36 and Zone 39 would consist of a large diameter gravity drain within Woodward Avenue with connections from detention basin pump stations serving the various previously approved development projects. Flows would be routed to a 120 cubic foot/sec (cfs) SDPS along Aplicella Court within the Oakwood Shores neighborhood. The SDPS would then convey stormwater through a 48-inch diameter force main to an outfall structure adjacent to the OLWD WWTP. Stormwater from Zone 36 and Zone 39 could then be discharged to the San Joaquin River through twin 30-inch diameter pipelines. Construction of the storm drain force main and outfall structure through OLWD WWTP property would require close coordination with the OLWD to decommission, remove from service, dismantle, demolish, and regrade areas within the WWTP to create a pipeline corridor.



Legend

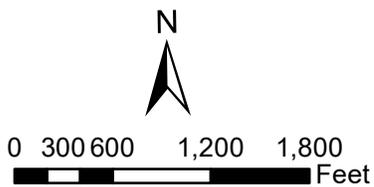
- Existing Storm Drain (City of Manteca)
- Existing Drainage (SSJID)
- Existing SSJID/City of Manteca Dual Use
- Link Node
- ▲ Existing Pump Station



Storm Drain Zone 36/Zone 39
Improvements Project
City of Manteca, CA

**Overview of Regional
Drainage Facilities**

**Figure
1-3**



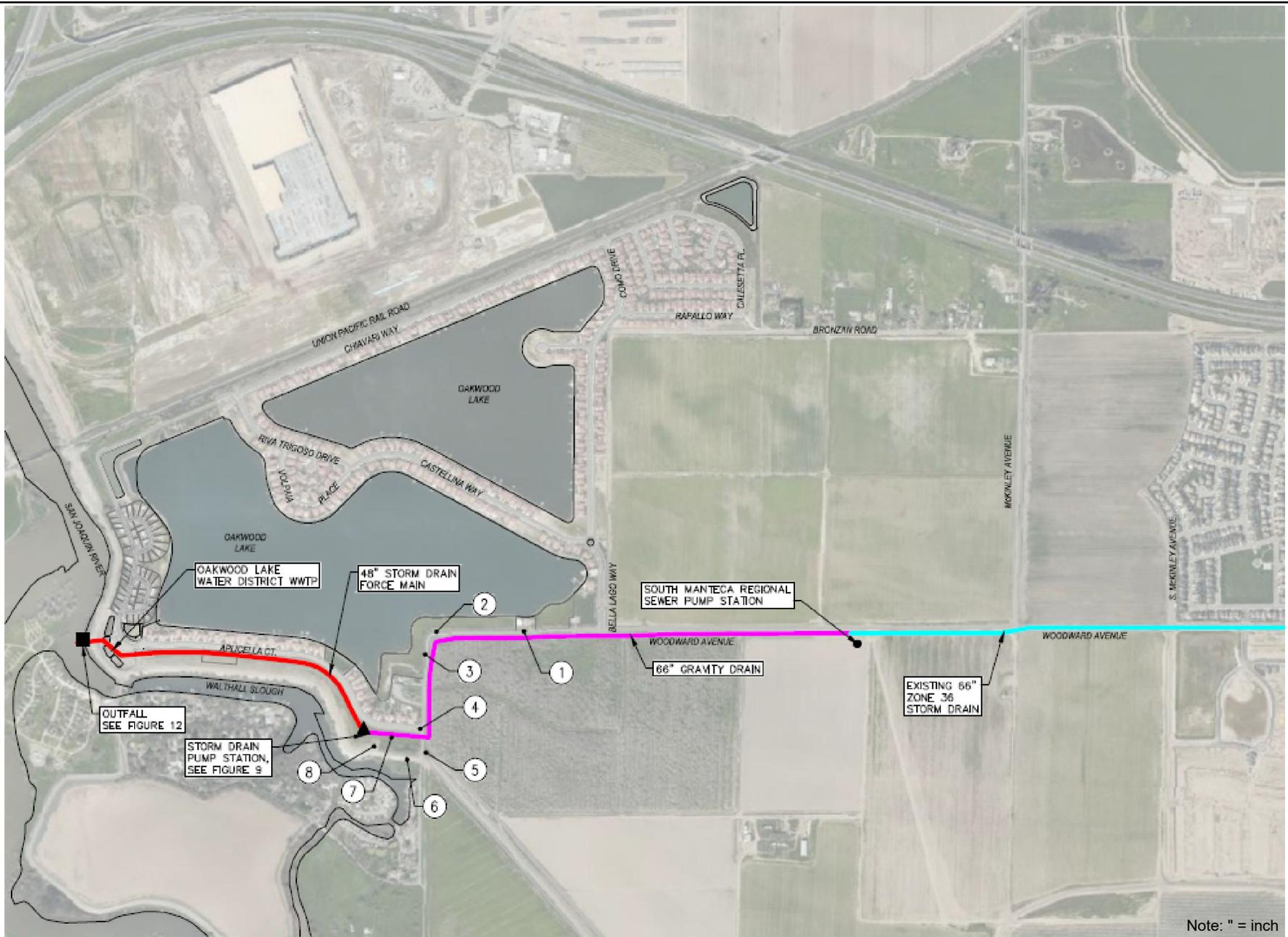
2 PROJECT DESCRIPTION

2.1 Existing Conditions

Photographs along the proposed pipeline alignment, SDPS site, and storm drain outfall area are presented in **Figures 2-1, 2-2, and 2-3**. Woodward Avenue and South Woodward Avenue are two-lane rural roads with on-going agricultural operations on private land fronting the streets. Low-density future residential developments are proposed on either side of Woodward Avenue and along the easterly side of South Woodward Avenue. Oakwood Shores neighborhood, a gated, low-density residential subdivision in San Joaquin County, fronts the west end of Woodward Avenue, the west side of South Woodward Avenue, and the north side of Aplicella Court. Lots owned by RD-17 are located south of a fenced landscaped buffer across from existing private residences in the Oakwood Shores neighborhood along Aplicella Court. The RD-17 lots abut the Walthall Slough levee and San Joaquin River levee. The lots have recently been graded to create a seepage berm toe levee in conjunction with levee improvements constructed by RD-17. Lots closest to South Woodward Avenue/Williamson Road are proposed for future use as a corporation yard by RD-17. Within the OLWD WWTP, ground surfaces are generally aggregate base throughout the site. Ground surfaces along the water and land sides of the San Joaquin River levee are constructed of similar materials to the OLWD WWTP site.

2.2 Project Objectives

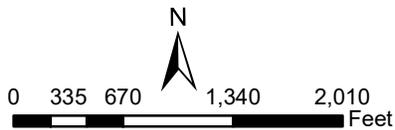
The 2013 Manteca Storm Drain Master Plan assumed construction of a regional gravity drain and stormwater pump station with discharge to Walthall Slough to serve development in Zone 39. Drainage flows from Zone 36 would be routed to a regional pump station south of State Route (SR) 120 for discharge to the FCOC. Permitting of a future discharge to the Walthall Slough has proven problematic, however, because of limitations in existing hydraulic structures and potential flooding concerns. Similarly, increased discharges to the FCOC are not considered prudent considering significant hydraulic deficiencies and limited conveyance capacity. The proposed project is intended to create a regional drainage solution for Zone 39 and a mechanism to minimize increases in future flows discharged from Zone 36 to the FCOC. Construction of the proposed project would allow entitled development in South Manteca to proceed and to provide an outlet for pumped discharges from multiple detention basins planned north and south of Woodward Avenue. Completion of drainage system improvements is also consistent with a previous agreement between the City and OLWD for acceptance of wastewater by the City and assistance by the OLWD in implementing a regional drainage solution for Zone 39.



Note: " = inch

Legend

- 48-inch Storm Drain Force Main
- Existing 66-inch Zone 36 Storm Drain
- 66-inch Gravity Drain



Storm Drain Zone 36/Zone 39
Improvements Project
City of Manteca, CA

Site Photographs Along
66-inch Gravity Storm Drain
Alignment Key Map

Figure
2-1



IMAGE 1

WOODWARD AVENUE LOOKING WEST
 OLIND WATER TREATMENT PLANT AT RIGHT
 JOINT POLE ALONG NORTHERLY SIDE OF ROAD



IMAGE 2

WOODWARD/SOUTH WOODWARD AVENUE TRANSITION LOOKING EAST
 FUTURE TRAILS AT MANTECA DEVELOPMENT AT RIGHT
 JOINT POLE ALONG NORTHERLY SIDE OF ROAD



IMAGE 3

WOODWARD/SOUTH WOODWARD AVENUE TRANSITION LOOKING SOUTH
 FUTURE TRAILS AT MANTECA DEVELOPMENT AT LEFT
 JOINT POLE ALONG EASTERLY SIDE OF ROAD



IMAGE 4

SOUTH WOODWARD AVENUE LOOKING WEST
 OAKWOOD SHORES COMMUNITY/APICELLA COURT GATE AT CENTER



IMAGE 5

SOUTH WOODWARD AVENUE LOOKING NORTH
 OAKWOOD SHORES COMMUNITY AT LEFT
 FUTURE TRAILS AT MANTECA DEVELOPMENT AT RIGHT
 JOINT POLE ALONG EASTERLY SIDE OF ROAD



IMAGE 6

TOP OF RD-17 LEVEE LOOKING EAST
 LEVEE SEEPAGE BERM AT LEFT



IMAGE 7

TOP OF RD-17 LEVEE LOOKING WEST
 OAKWOOD SHORES RESIDENTIAL DEVELOPMENT AT RIGHT
 LEVEE SEEPAGE BERM AT RIGHT



IMAGE 8

LEVEE SEEPAGE BERM LOOKING WEST
 OAKWOOD SHORES RESIDENTIAL DEVELOPMENT AT RIGHT
 RD-17 LEVEE AT LEFT

NOTE:
 1. FOR IMAGE LOCATION, SEE FIGURE 2



IMAGE 1

RD-17 LEVEE ADJACENT TO OLWD WWTP LOOKING NORTHEAST
SAN JOAQUIN RIVER AT THE LEFT



IMAGE 2

RD-17 LEVEE ADJACENT TO OLWD WWTP LOOKING WEST



IMAGE 3

RD-17 LEVEE ADJACENT TO OLWD WWTP LOOKING NORTH
SAN JOAQUIN RIVER AT THE LEFT

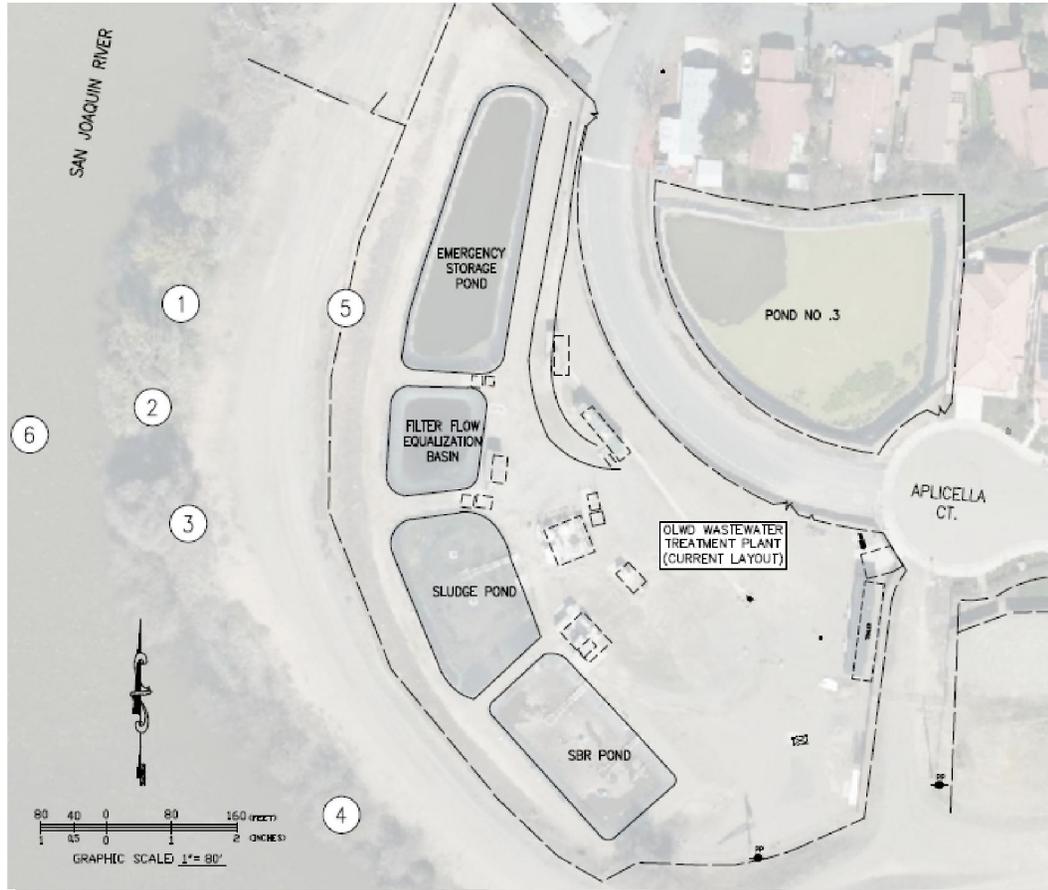


IMAGE 6

WEATHERBEE LAKE LOOKING EAST



IMAGE 4

RD-17 LEVEE ADJACENT TO OLWD WWTP LOOKING NORTHWEST
SAN JOAQUIN RIVER AT THE LEFT



IMAGE 5

RD-17 LEVEE ADJACENT TO OLWD WWTP LOOKING SOUTHEAST
OLWD WWTP AT LEFT

2.3 Proposed Project

The proposed project consists of four principal components:

1. Regional gravity drain that receives stormwater pumped from multiple detention basins in Zone 39 as well as drainage flows from Zone 36.
2. SDPS that conveys drainage from the regional gravity drain to an outfall to the San Joaquin River.
3. Storm drain force main connecting the SDPS with the proposed San Joaquin River outfall.
4. San Joaquin River outfall including dual discharge pipelines and appurtenances.

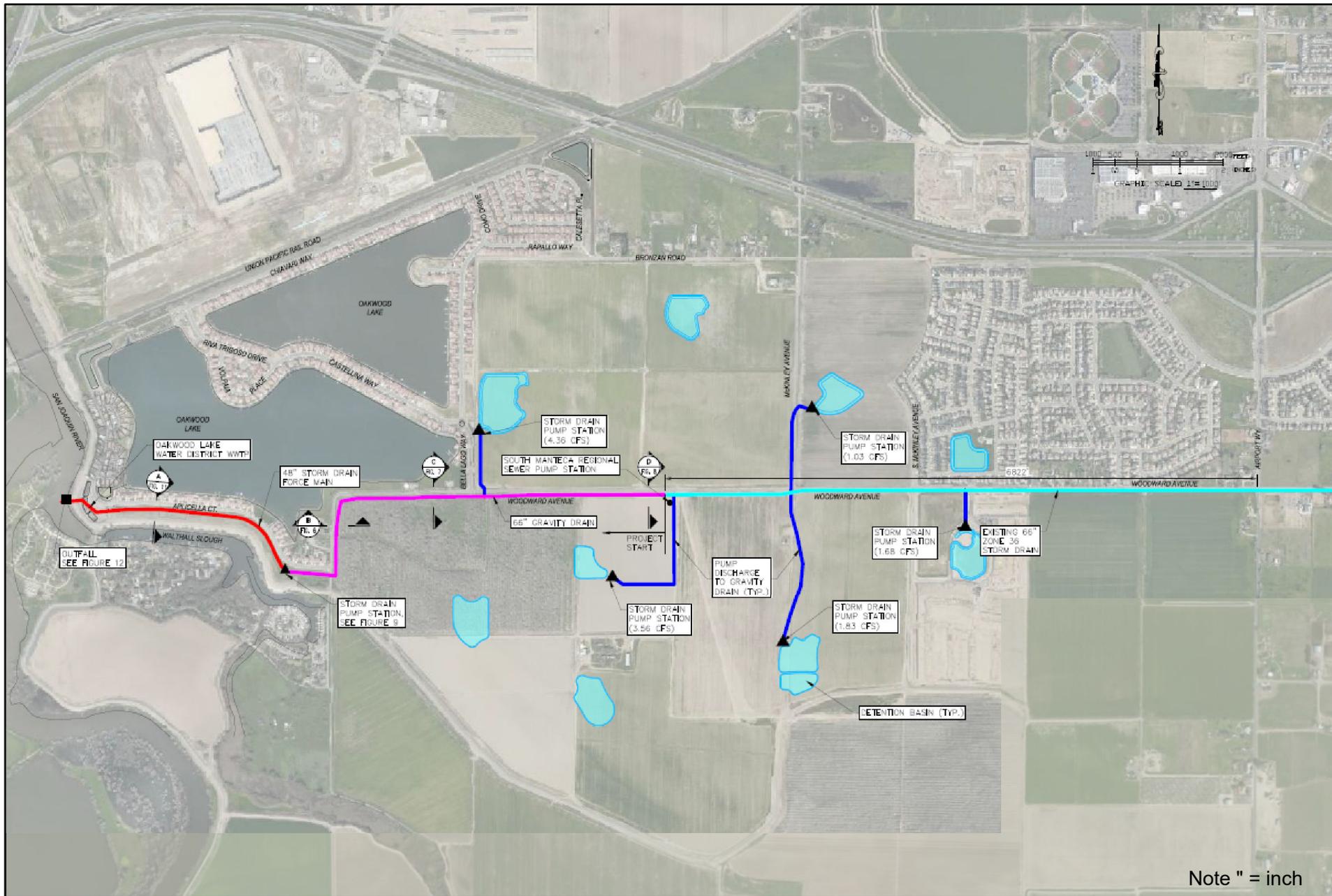
Based on hydraulic modeling, the regional gravity storm drain would be a 66-inch diameter pipeline that would extend approximately 5,200 feet along Woodward Avenue and South Woodward Avenue connecting a 66-inch storm drain adjacent to the Cerri development to the SDPS. The SDPS would have a firm capacity of 120 cfs and would consist of two low flow pumps each with a capacity of 30 cfs and three high flow pumps each with a capacity of 60 cfs. The SDPS would be equipped with two standby generators sized to operate each set of pumps during a power outage. The discharge pipeline from the SDPS would be 48 inches in diameter and would be constructed across properties owned by RD-17 and the OLWD. The 2,600-foot-long force main would be connected to an outfall structure consisting of twin 30-inch diameter pipelines. The outfall structure would be sited along a levee adjacent to the OLWD WWTP. Each of the proposed project components are illustrated in **Figure 2-4**.

2.3.1 Proposed Conditions

A description of each proposed project element is presented as follows.

1. 66-Inch Gravity Storm Drain

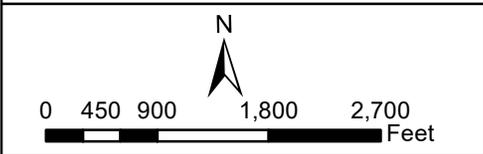
Storm drainage from detention basins within Zone 39 would be conveyed within a 66-inch gravity drain. The 5,200-foot-long pipeline would begin with a connection to an existing 66-inch storm drain constructed as part of frontage improvements for the Cerri development. The pipeline would be constructed along the south side of Woodward Avenue and eastern side of South Woodward Avenue, outside of the existing pavement but within either existing or future public right-of-way (ROW). The location of the gravity drain in relationship to existing/future utilities and road improvements is illustrated in **Figures 2-5, 2-6, and 2-7**. South of the Aplicella Court entrance to the Oakwood Shores neighborhood, the gravity drain would be routed to the west through RD-17 properties, ultimately terminating at a junction structure upstream of the SDPS. Construction materials for the gravity drain would be reinforced concrete pipe in conformance with ASTM C76 specifications.



Note " = inch

Legend

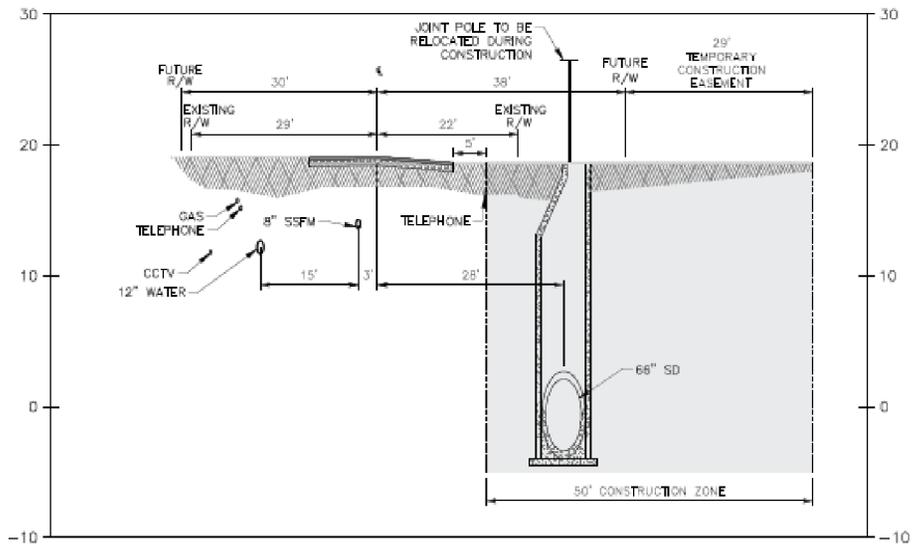
- 48" Storm Drain Force Main
- 66" Gravity Drain
- Existing 66" Zone 36 Storm Drain



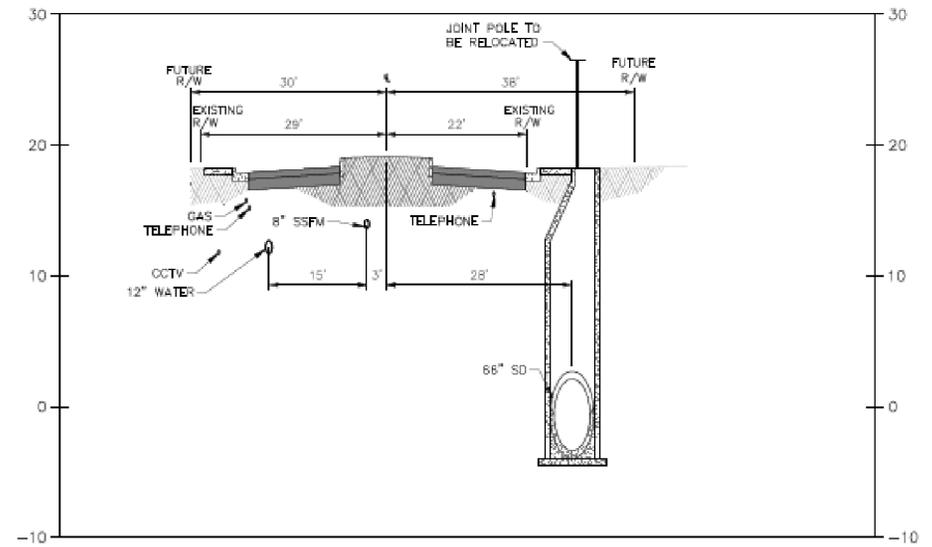
Storm Drain Zone 36/Zone 39
Improvements Project
City of Manteca, CA

Project Overview

**Figure
2-4**

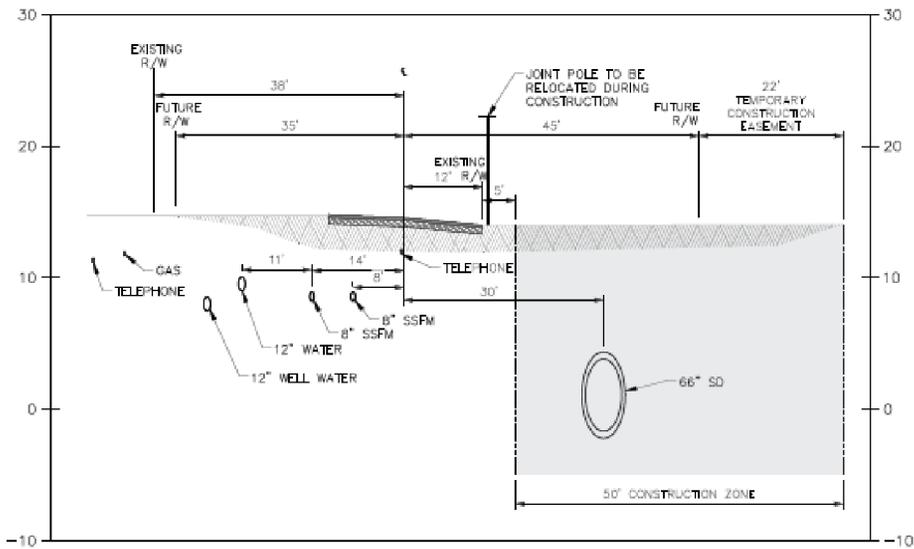


PRE-CONSTRUCTION (B)
 SCALE: 1"=10'H
 1"=5'V
 FIG. 5

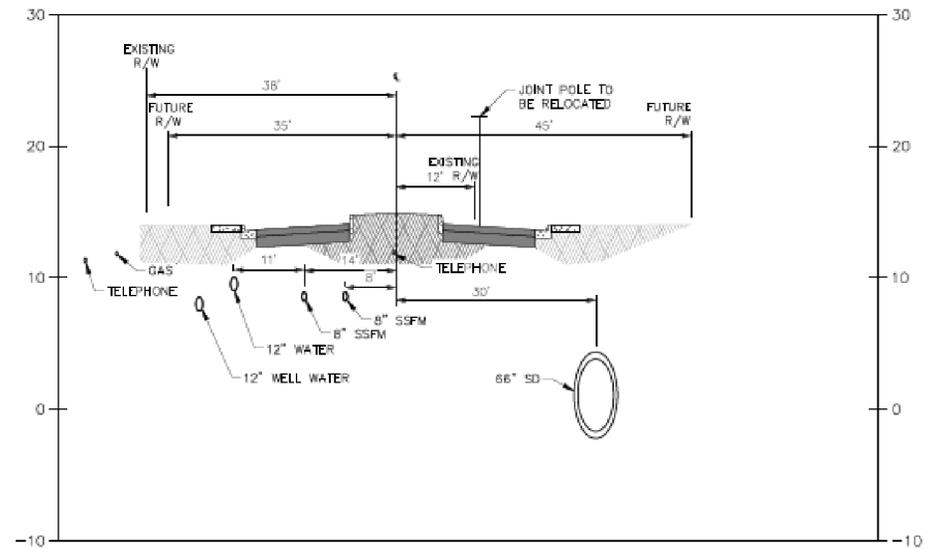


POST-CONSTRUCTION (B)
 SCALE: 1"=10'H
 1"=5'V
 FIG. 5

Notes
 " = inch
 ' = foot



PRE-CONSTRUCTION C
 SCALE: 1"=10'H
 1"=5'V



POST-CONSTRUCTION C
 SCALE: 1"=10'H
 1"=5'V

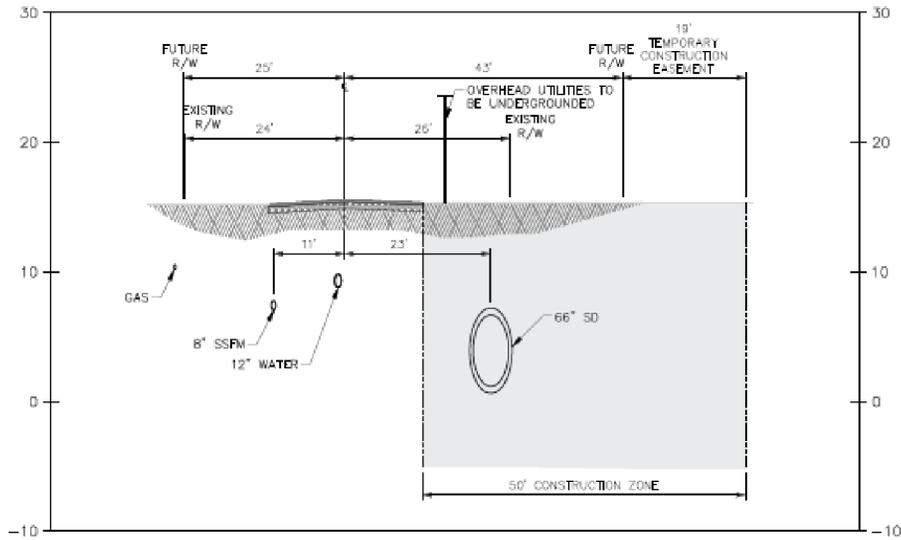
Notes:
 " = inch
 ' = foot



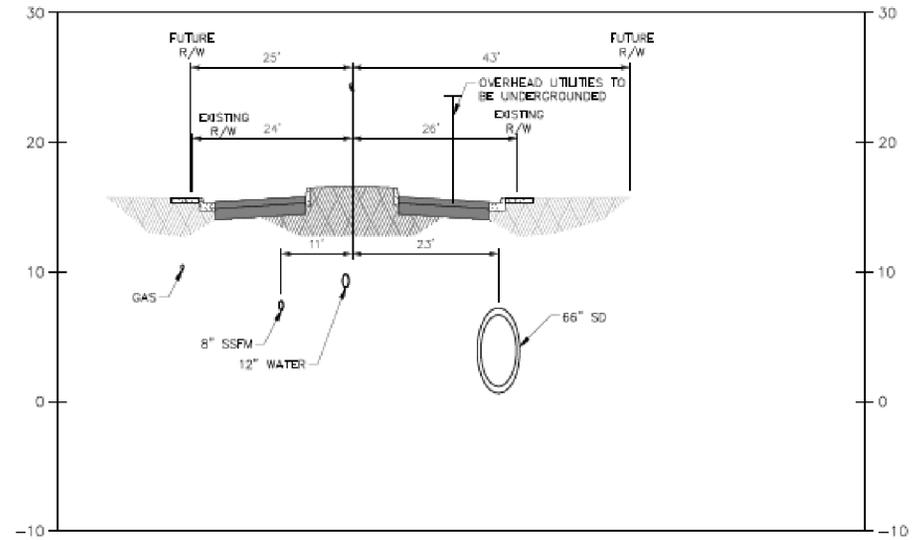
Storm Drain Zone 36/Zone 39
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66-inch Storm Drain
 Sections 2

Figure
 2-6



PRE-CONSTRUCTION (D)
 SCALE: 1"=10'H
 1"=5'V
 FIG. 3



POST-CONSTRUCTION (D)
 SCALE: 1"=10'H
 1"=5'V
 FIG. 3

Notes:
 " = inch
 ' = foot



Storm Drain Zone 36/Zone 39
 Improvements Project
 City of Manteca, CA

66-inch Storm Drain
 Sections 3

Figure
 2-7

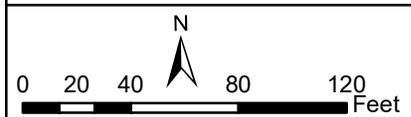
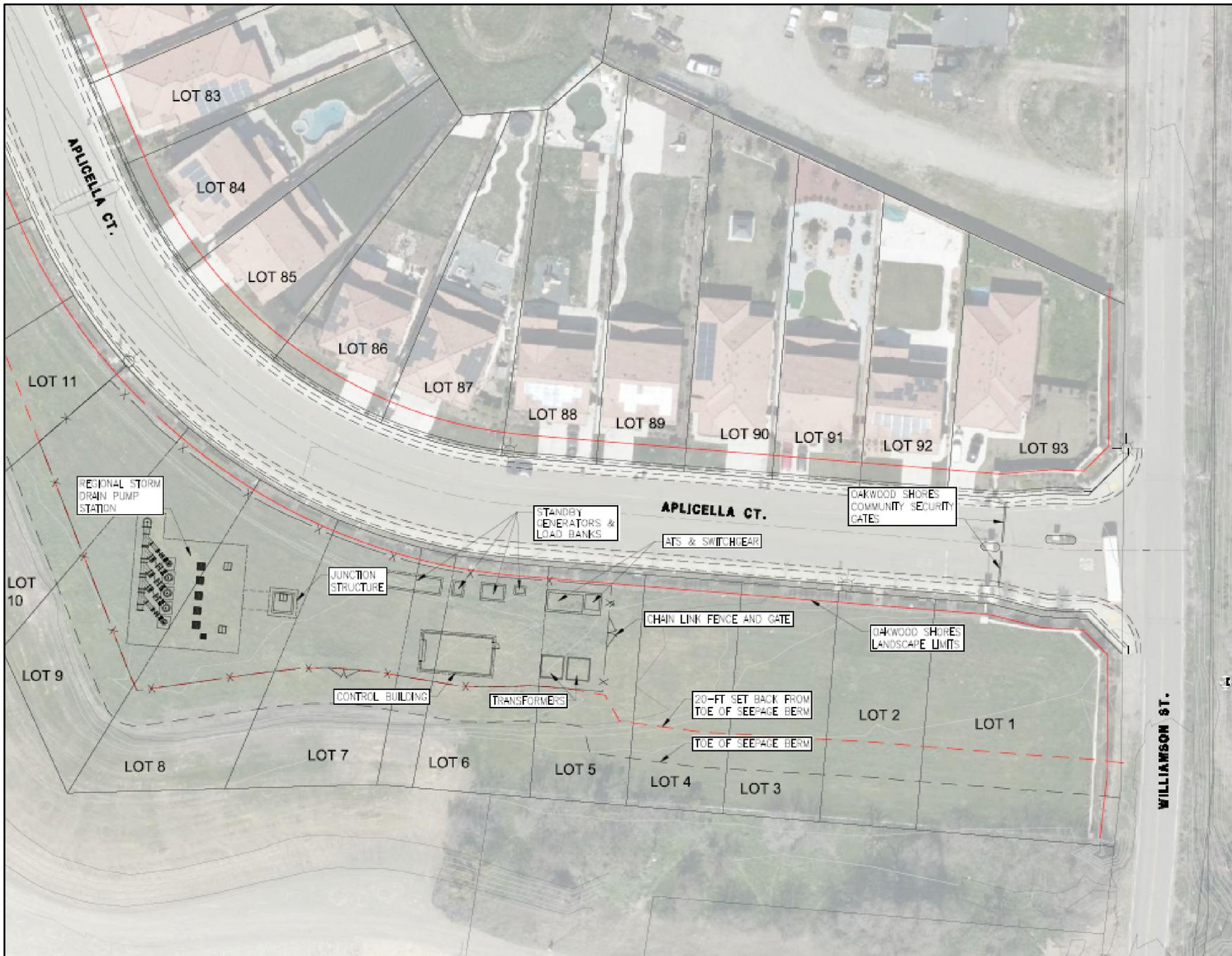
Class III pipe would be furnished for installation in trenches with pipe cover of 17 feet or less while Class IV pipe would be provided for installations with 18 feet of cover or greater. Maximum depth of trench excavation would be up to 25 feet. To facilitate discharge, future connections from detention basins in Zone 39 along with changes in alignment, manholes would be constructed at 400-foot intervals along the gravity drain. Based on the likely location of the detention basin pump discharge line, stub outs for the storm drain manholes would be provided for a future connection.

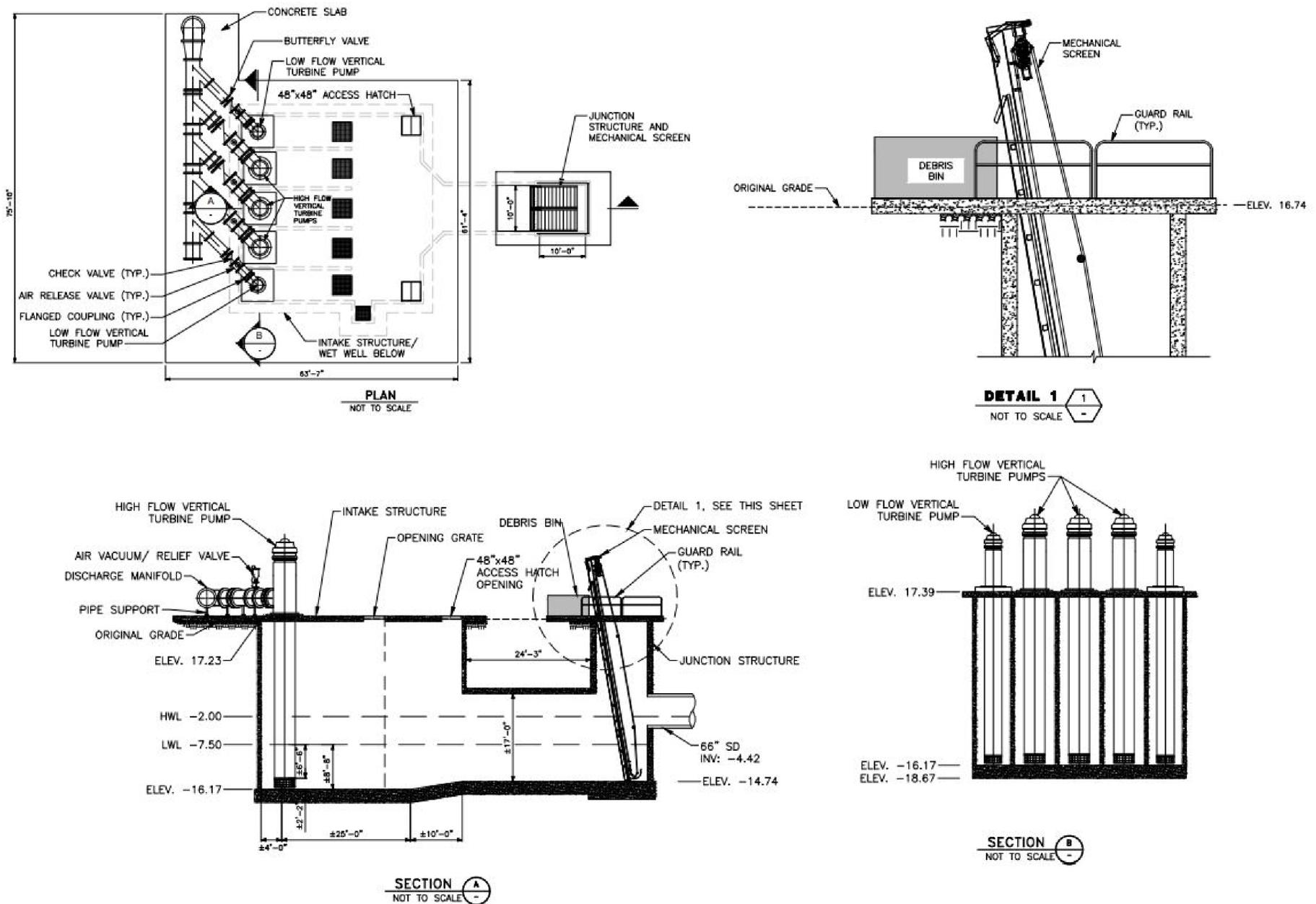
2. Storm Drain Pump Station

The SDPS would be constructed within RD-17 property, south of Aplicella Court within the Oakwood Shores neighborhood. As illustrated in **Figure 2-8**, the station would include a junction structure with a mechanical screen upstream of the pump station wet well, storm drain pumping plant, electrical control building, outdoor switchgear, emergency generators with load banks, automatic transfer switches, and PG&E transformers. Access to the site would be via a levee road/ramp that would be constructed to also provide access to the future corporation yard planned by RD-17. The levee road/ramp is accessible currently from Williamson Street. Structures within the SDPS site would be setback a minimum of 20 feet from the toe of the seepage berm constructed recently by RD-17. North of the SDPS site, a 10-foot setback would be maintained from a fenced landscape strip along Aplicella Court. Site configuration would allow for ingress and egress by a vactor truck for cleaning of the wet well and a mobile crane for removal of the pumps for inspection and maintenance. The pump station reinforced concrete structure would have a footprint of approximately 85 feet by 65 feet and a depth of approximately 40 feet. The structure is sized for five storm drain pumps to convey the 100-year storm inflow rate of 60 cfs with the largest pump out of service. Pump station inventory would include two low flow pumps, each with a capacity of 30 cfs, and three high flow pumps, each with a capacity of 60 cfs. Stormwater flows to the pump station would be pumped in the following manner:

- a. Flows less than 30 cfs: one low flow pump in operation with second low flow pump as a standby.
- b. Flows between 30-60 cfs: two low flow pumps in operation with one high flow pump as a standby.
- c. Flows between 60-120 cfs: two high flow pumps in operation with one high flow pump as a standby. Peak flows could also be conveyed by two low flow pumps and one high flow pump in operation with a second high flow pump as a standby.

Discharge piping from the stormwater pumps is illustrated in **Figure 2-9**. Discharge piping from the low flow and high flow pumps would be 24-inch and 36-inch diameter, respectively.





Notes:
 " = inch
 ' = foot

The combined discharge would be conveyed through a 48-inch diameter force main. Discharge piping for each pump would include an air vacuum/relief valve, check valve, and isolation butterfly valve. Protection for mitigation of pipeline pressure transients triggered by pump station shut-downs would be included with the 48-inch diameter force main. The pump pedestal height would be set such that the discharge manifold centerline is 4 feet above finished grade to facilitate access/maintenance.

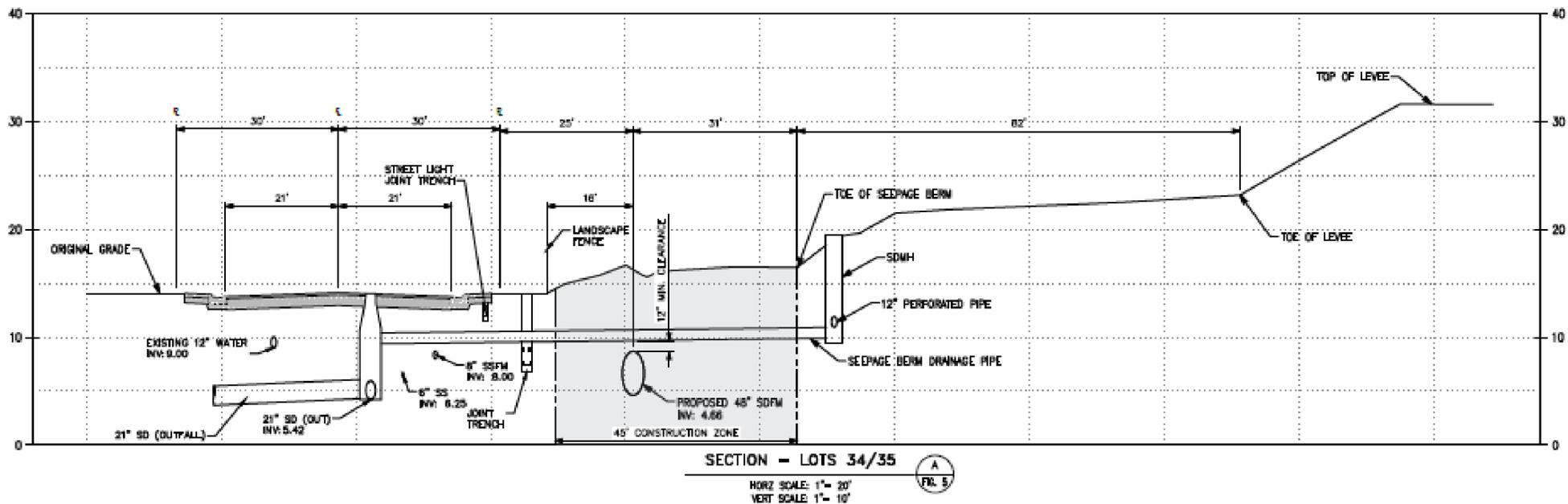
3. 48-Inch Storm Drain Force Main

The storm drain force main pipeline would be fabricated of welded steel pipe. Pipe lining would be coal tar epoxy. For protection against corrosion, pipe coating would be double-wrapped tape coated (50-millimeter minimum thickness). The 48-inch storm drain force main would be routed through property owned by RD-17 to the OLWD WWTP. As shown in **Figure 2-10**, the pipeline would be constructed 29 feet from the toe of the seepage berm and 14 feet from the landscape area fence. Considering the likely excavation equipment, a 45-foot-wide construction zone would be established for pipeline installation including areas for pipe storage, bedding material, backfill material, and other equipment. Within the OLWD WWTP, the pipeline would be constructed through a corridor created for the 48-inch force main through demolition of the OLWD WWTP and regrading of treatment ponds. Clearing of the corridor for pipeline installation would be coordinated with decommissioning/demolition of the OLWD WWTP following completion of the OLWD Wastewater System Improvements Project.

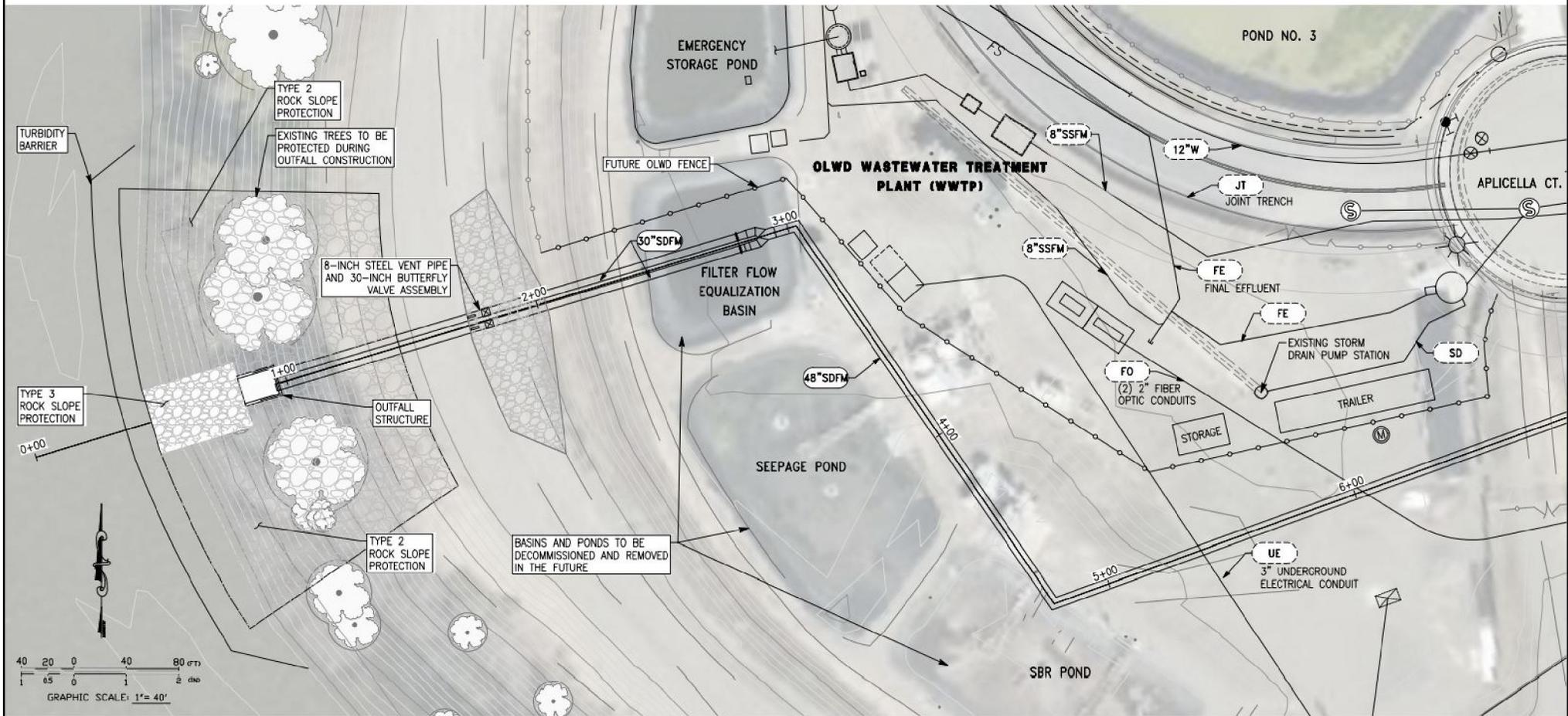
4. Storm Drain Outfall

As shown in **Figure 2-11**, twin 30-inch welded steel discharge pipes would be installed from the 48-inch storm drain force main to the outfall structure. The pipes would be connected to the 48-inch main with a fabricated 48-inch by 30-inch pipe fitting and placed up and over the levee prism above the 200-year water surface elevation of the San Joaquin River (29.8 feet). The pipes would terminate at a concrete outfall structure, approximately 200 feet west of the connection to the 48-inch force main. The discharge pipes would be fitted with rubber check valves at the outfall structure to prevent backflow and would include vents and positive closure valves (butterfly valves) in accordance with federal and state levee design standards.

The levee would be partially excavated to accommodate placement of the pipes. There is an existing cutoff wall through the levee that would also need to be partially excavated to accommodate the pipe placement. The exposed cutoff wall would be covered during the work to retain the moisture level and prevent cracking and would be restored with a clay cap during levee backfill. The bottom of the twin pipes across the levee crown would be above the 200-year water surface elevation of the San Joaquin River in accordance with federal and state levee design standards.



Note: " = inch



Controlled low strength material (CLSM) would be placed as pipe backfill around the twin pipes with a minimum depth of 6 inches below and 12 inches on top and on either side of each 30-inch pipe. A minimum depth of 12 inches of compacted embankment material would be placed over the CLSM to provide a minimum 24 inches of cover over the pipes. On the levee crown, an 8-inch-thick concrete cap would be placed over the CLSM and compacted embankment material for the maintenance road.

The top of the levee at the pipe crossing would be widened to approximately 36 feet to accommodate placement of the positive closure vault adjacent to the maintenance road. Widening of the levee crown and additional cover on the landside slope would require the import of approximately 1,300 cubic yards (CY) of compacted embankment material. Levee side slopes would be graded to a 3:1 slope and the levee crown would be graded to a 10:1 slope from the pipe crossing (i.e., high point) to the existing top-of-levee grade on each side.

A cast-in-place concrete outfall structure would be constructed on the bank of the San Joaquin River. The floor of the structure would be at the ordinary high-water mark and extend approximately 15 feet inland from the water. Excavation of the shoreline using a temporary cofferdam structure would be required to provide a level surface for the outfall structure floor. Sloped wing walls would be constructed on either side of the floor rising from approximately 2.5 feet to 6.5 feet tall. A 6.5-foot-tall concrete wall would form the back of the outfall structure box. Rubber check valves would be secured to the ends of the discharge pipes terminating at the back wall of the outlet structure. There are existing trees along the shoreline adjacent to and within the proposed outfall structure footprint. Currently, no trees are slated for removal, but trees may need to be removed once plans are finalized. A post and cable guardrail would be installed on the top of the back and wing walls for safety and security reasons.

Thirty (30) inches of rock slope protection (RSP) would be placed for approximately 180 feet along the shoreline in front of, and adjacent to, the outfall structure. The RSP would extend level towards the water for approximately 10 feet and continue down into the water at a 3:1 slope for approximately 25 feet. Type 3 RSP would be placed immediately in front of the outfall structure platform and Type 2 RSP would be placed along the remaining shoreline. Additionally, 18 inches of Type 2 RSP would be placed upslope of, and adjacent to, the outfall structure, extending to the 200-year water surface elevation. This RSP would stabilize the slope around outfall construction to minimize erosion potential that could undermine the structure. The proposed project would require a total of approximately 860 CY of RSP. Barges would be used to transport and place the RSP. A turbidity barrier would be installed in the water approximately 10 feet beyond the edge of the RSP and anchored to the shore upstream and downstream of the outfall. This barrier would serve to prevent sediment from the stormwater discharge from entering

the San Joaquin River. It is anticipated that construction would take up to 3 months. Following construction, disturbed areas including staging and access areas would be restored to pre-project conditions.

2.3.2 Utility Relocations

Overhead electrical and communication systems are located on joint poles (poles that support more than one utility) along the south side of Woodward Avenue and east side of South Woodward Avenue. Overhead electrical and communication systems would require temporary and permanent relocation to avoid future ROW conflicts and to facilitate underground storm drain construction. Undergrounding of electrical/communication cables within the future ROW is anticipated east of the Bella Lago Way entrance to the Oakwood Shores neighborhood but is not part of this proposed project. West of Bella Lago Way, overhead electrical and communication systems would be temporarily relocated within the ROW to allow for pipeline construction.

2.3.3 Right-of-Way

As shown in **Figures 2-5, 2-6, and 2-7**, the 66-inch diameter gravity drain would be installed in either existing or future ROW along Woodward Avenue and South Woodward Avenue. The existing ROW width along Woodward Avenue is 50 feet. As frontage improvements are constructed and the street expanded, ROW widths would also increase to 68-80 feet. Similarly, for South Woodward Avenue, the existing ROW width would be expanded from 51 feet to 68 feet as the roadway is improved. Although the location of the gravity drain would be within the ROW, the 50-foot-wide construction zone would extend beyond the ROW. Temporary construction easements (TCEs) would be required with widths varying from 19 feet to 29 feet. The parcel impacted by the TCEs is APN 241-260-050.

After crossing South Woodward Avenue, the gravity drain would be constructed within properties owned by RD-17 (APN 241-740-010). A TCE of 50 feet in width and a permanent easement 20 feet in width would be required from RD-17 for the 66-inch pipeline. As described earlier, the termination of the 66-inch storm drain is planned at the storm drain pump station site. The pumping facility would be constructed within Lots 6 through 10 along Aplicella Court. Acquisition of the lots by the City from RD-17 is anticipated. From the SDPS, the 48-inch storm drain force main would be constructed through properties owned by RD-17 and the OLWD WWTP. A 45-foot-wide construction zone is planned for the 48-inch storm drain force main through RD-17 properties. Installation of the 48-inch storm drain force main would trigger the need for a 45-foot-wide TCE and a 30-foot-wide permanent easement from RD-17. To facilitate construction of the storm drain force main and outfall structure within the OLWD WWTP site, a TCE would be obtained from OLWD. In the future, RD-17 may acquire portions of the OLWD WWTP property from OLWD for levee maintenance purposes. The City would then obtain a permanent 30-foot-wide easement from RD-17 for the storm drain force main.

2.3.4 Demolition

Demolition of select areas within the OLWD WWTP is required to accommodate construction of the 48-inch storm drain force main for the proposed project. As part of the decommissioning of the OLWD WWTP upon completion of the OLWD Wastewater System Improvements Project, the Sequencing Batch Reactor (SBR) Basin, Sludge Basin, and Filter Flow Equalization Basin would be drained and all solids removed/disposed offsite. Decommissioning and demolition of the OLWD WWTP would be in accordance with requirements established by the Regional Water Quality Control Board (RWQCB). Following draining and removal of solids, basin piping would be demolished, and the basins would be filled with select materials to create a level surface. The site would then be regraded to match existing finished grade, consistent with local drainage patterns.

2.3.5 Construction Activities

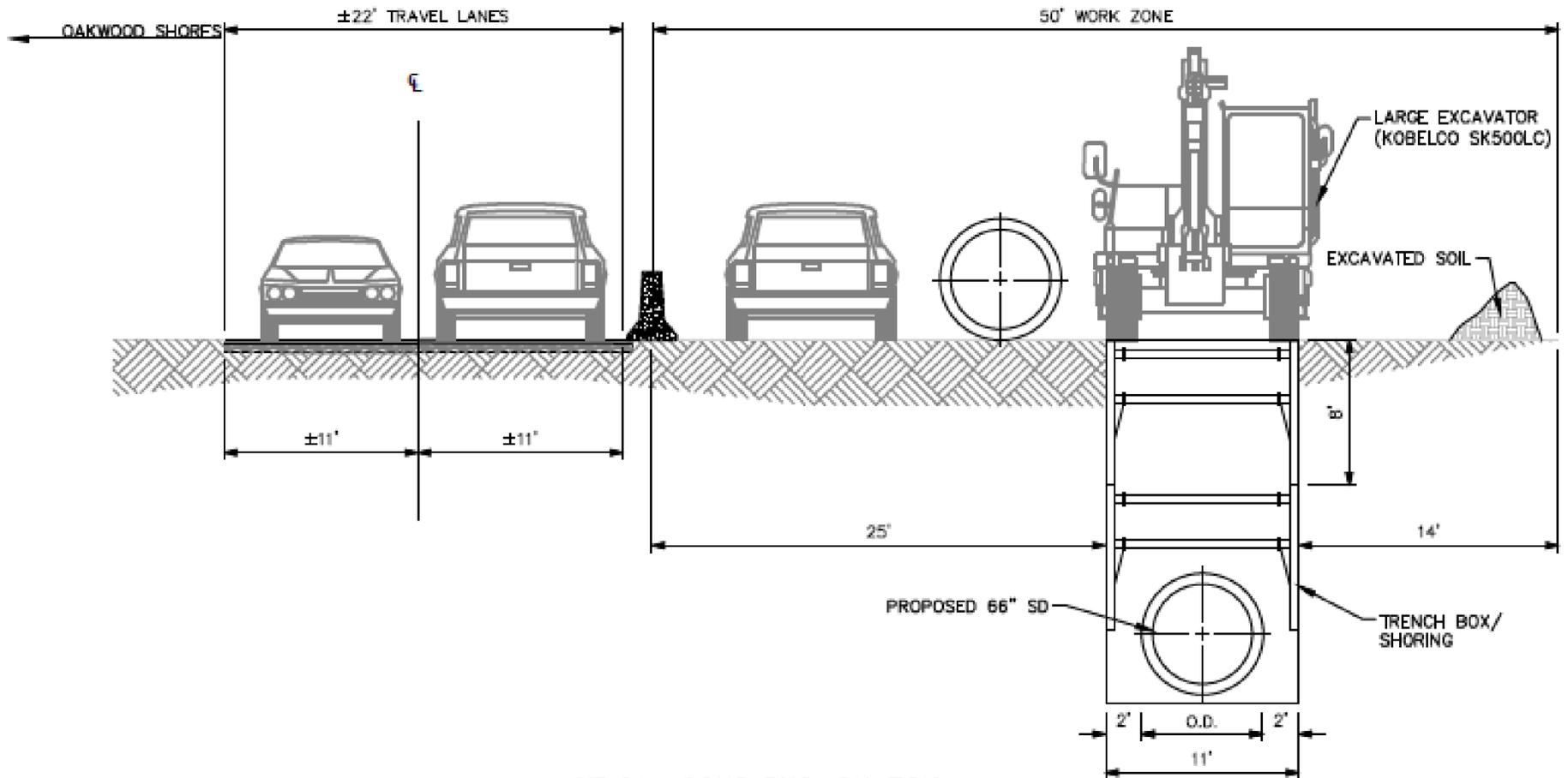
Construction activities for the proposed project improvements are detailed as follows, including likely construction equipment.

Pipeline Construction

Pipelines would be installed through conventional trenching methods. A typical construction zone width of 45 to 50 feet is anticipated as illustrated in **Figure 2-12**. Trenching would occur outside of the paved area so as to minimize impacts to local traffic. Because of the trench depth (up to 25 feet), shoring of the excavation would be required in compliance with the California Division of Occupational Safety and Health (CalOSHA) standards. Dewatering of the pipeline trench is expected and water from would be discharged to surrounding basins on adjacent agricultural lands. A production rate of 100 feet/day for gravity drain installation and 200 feet/day for storm drain force main installation is anticipated.

Storm Drain Pump Station Construction

Construction of the SDPS would require a deep excavation (up to 40 feet) with extensive shoring/sheeting and dewatering to provide a working level for placement of the reinforced concrete foundation. Groundwater from the dewatering operation would be discharged to spreading basins within agricultural land east of Williamson Road. The concrete foundation and walls would be poured and allowed to cure sufficiently prior to the construction of the pump deck and access platform. Openings in the deck would be coordinated closely with the approved pump shop drawings to avoid alignment issues during installation of the stormwater pumps. A portable crane would be onsite to facilitate pump placement and installation of the discharge manifold including valves and supports. Extensive underground electrical work would link pump motors, motor control centers, and switchgear. New electrical service would be coordinated with PG&E to allow for testing, start-up, and commissioning of the SDPS.



TYPICAL CONSTRUCTION ZONE

SCALE: NTS

Notes:
 " = inch
 ' = foot

Outfall Construction

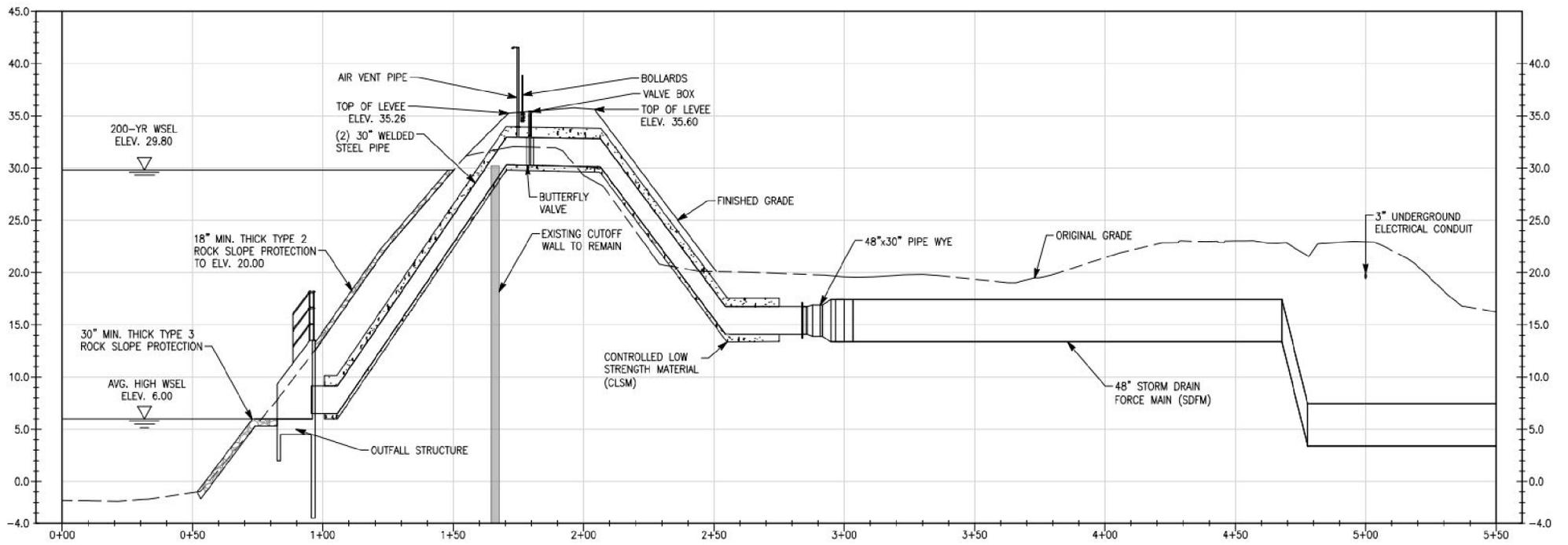
Construction of the dual 30-inch outfall pipes and outfall structure is illustrated in **Figure 2-13**. A cofferdam or comparable system would likely be required to construct the elements of the outfall below the average water surface elevation of the San Joaquin River. Dewatering behind the cofferdam would allow for placement of RSP and reinforced concrete for the outfall outlet. Grading of the top of the levee is anticipated to create sufficient cover for the outfall pipes. Outfall pipes would penetrate the top of an existing concrete slurry wall. Following completion of the pipe penetration, the slurry wall would be restored.

Construction Equipment

A list of potential construction equipment is presented in **Table 2-1**.

Table 2-1. Potential Construction Equipment

Equipment	Construction Purpose
Air compressor	Finishing work
Backhoe	Utility trenching
Bobcat	Fill distribution
Bulldozer/loader	Earthwork construction, clearing
Compaction equipment	Earthwork
Concrete truck and pump	Concrete placement
Crane	Pump/large diameter piping installation
Dump truck	Fill material delivery / excess material transport offsite
Excavator	Deep trench excavation
Flatbed truck	Material handling and delivery
Front-end loader	Material unloading/transport
Generators	Power hand tools
Grader	Ground leveling
Haul truck	Earthwork construction, clearing
Hoe ram	Demolition
Hydraulic hammer	Demolition, concrete removal
Jack hammer	Demolition, concrete removal
Paver	Asphalt concrete construction
Roller/compactor	Earthwork and concrete construction
Rubber-tired boom truck	Lifting
Water truck	Earthwork construction, dust control



Note: " = inch



Storm Drain Zone 36/Zone 39
 Improvements Project
 City of Manteca, CA

Outfall Structure
 Profile

Figure
 2-13

Construction Schedule

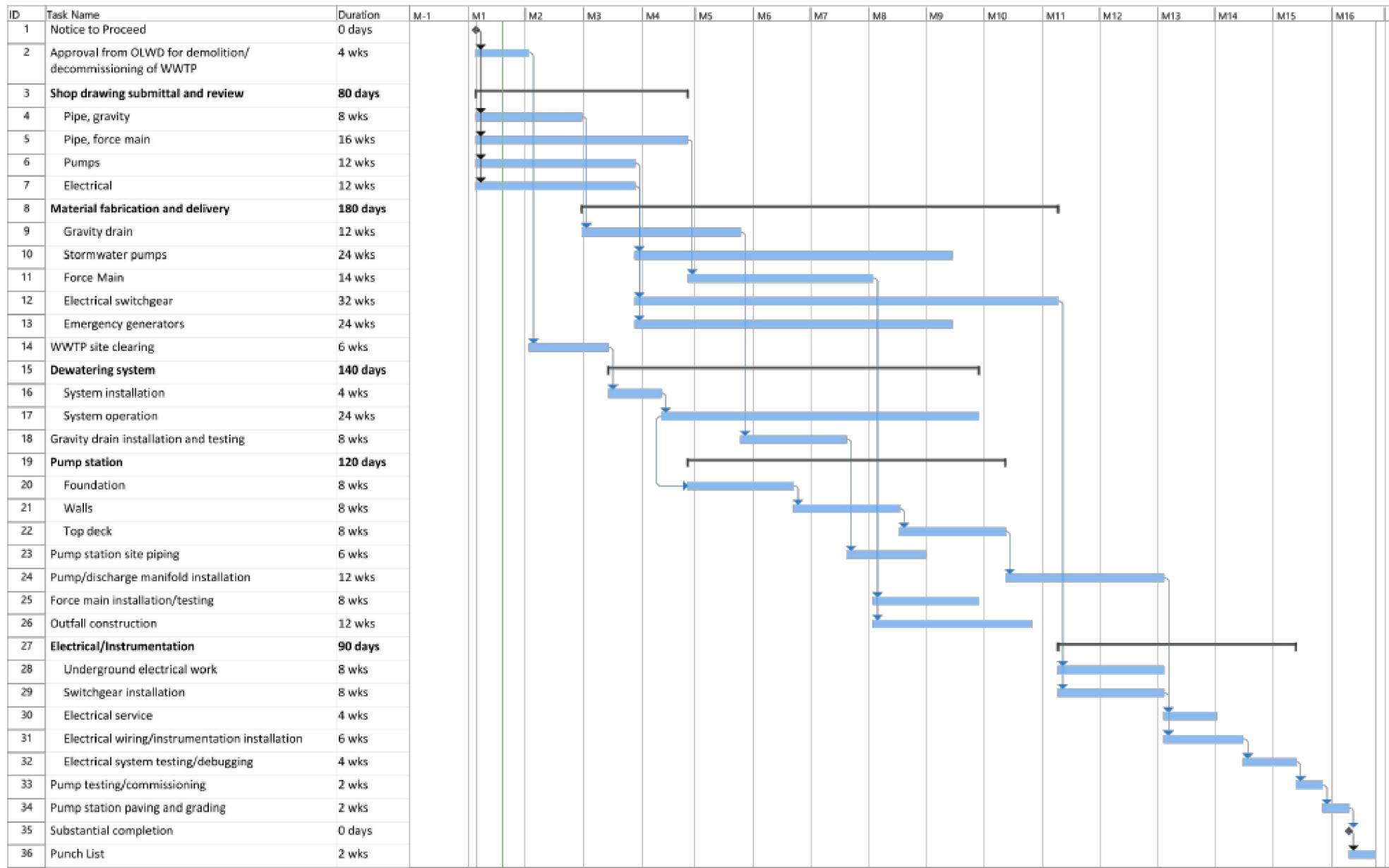
A tentative construction schedule is presented in **Figure 2-14**. A 16-month construction duration is projected for the proposed project, assuming a likely number of parallel construction activities. The schedule may be extended based on outfall construction permit limitations or “black-out” periods.

2.4 Permits and Approvals

Proposed project permits and approvals are summarized in **Table 2-2**.

Table 2-2. Proposed Project Permits and Approvals

Agency	Permit/Approval	Status
US Army Corps of Engineers	Section 404 Nationwide Permit	Nationwide permit application to follow release of IS/MND
US Army Corps of Engineers	Section 408 Permission	Section 408 process to begin following completion of 65% design documents
Central Valley Regional Water Quality Control Board	Section 401 Water Quality Certification	Application to follow release of IS/MND
Central Valley Regional Water Quality Control Board	General construction activity stormwater discharge permit	Notice of Intent filed upon construction contract award
California Department of Fish and Wildlife	Section 1602 Streambed Alteration Agreement	Application to follow release of IS/MND
California Department of Fish and Wildlife	Incidental Take Permit for State Listed Threatened and Endangered Species (for applicable species beyond those covered in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan [SJMSCP])	Application to follow release of IS/MND
U.S. Fish and Wildlife Service	Section 7 Consultation for Federally Listed Threatened and Endangered Species	Biological Assessment (BA) prepared as basis for informal consultation
Central Valley Flood Protection Board	Encroachment permit	Application to be submitted upon completion of 65% design documents and certification of IS/MND
Reclamation District 17	Encroachment permit endorsement – levee; encroachment permit through RD-17 property for storm drain force main	Documentation to be submitted upon completion of 65% design documents
City of Manteca	Encroachment permit	Application to be submitted upon completion of 65% design documents
San Joaquin Council of Governments	SJMSCP inclusion and incidental take permit	Application to follow release of IS/MND
Oakwood Lake Water District	Encroachment permit	Documentation to be submitted upon completion of 65% design documents



Storm Drain Zone 36/Zone 39
Improvements Project
City of Manteca, CA

Preliminary Construction
Schedule

Figure
2-14

3 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The proposed project could potentially affect the environmental factor(s) checked below. The following pages present a more detailed checklist and discussion of each environmental factor.

- | | | |
|---|--|---|
| <input checked="" type="checkbox"/> Aesthetics | <input checked="" type="checkbox"/> Agriculture and Forestry Resources | <input checked="" type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources | <input checked="" type="checkbox"/> Energy |
| <input checked="" type="checkbox"/> Geology and Soils | <input checked="" type="checkbox"/> Greenhouse Gas Emissions | <input checked="" type="checkbox"/> Hazards and Hazardous Materials |
| <input checked="" type="checkbox"/> Hydrology and Water Quality | <input type="checkbox"/> Land Use and Planning | <input type="checkbox"/> Mineral Resources |
| <input checked="" type="checkbox"/> Noise | <input type="checkbox"/> Population and Housing | <input checked="" type="checkbox"/> Public Services |
| <input type="checkbox"/> Recreation | <input checked="" type="checkbox"/> Transportation | <input checked="" type="checkbox"/> Tribal Cultural Resources |
| <input checked="" type="checkbox"/> Utilities and Service Systems | <input checked="" type="checkbox"/> Wildfire | <input type="checkbox"/> Mandatory Findings of Significance |

3.1 Determination

On the basis of this initial study:

- I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find 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. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find 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.
- I find 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 that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, no further environmental documentation is required.

Signature

Date

Printed Name

For

4 ENVIRONMENTAL CHECKLIST

4.1 Aesthetics

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Aesthetics – Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4.1.1 Setting

Visual character is a description (not evaluation) of a site, and includes attributes such as form, line, color, and texture. Visual quality is the intrinsic appeal of a landscape or scene due to the combination of natural and built features in the landscape, and this analysis rates visual quality as high, moderate, or low. Visual sensitivity is the level of interest or concern that the public has for maintaining the visual quality of a particular aesthetic resource and is a measure of how noticeable proposed changes might be in a particular scene and is based on the overall clarity, distance, and relative dominance of the proposed changes in the view, as well as the duration that a particular view could be seen.

The proposed project is located in the City of Manteca (City), the City’s sphere of influence, and San Joaquin County. The current City of Manteca General Plan (General Plan) designates the surrounding land uses as Low Density Residential (LDR), Open Space (OS), Business Industrial Park (BIP), Urban Reserve – Business Industrial Park (UR-BIP), and GC (General Commercial) (City of Manteca 2019a). It should be noted that the City is currently undergoing a General Plan Update and proposed land use designations would eliminate the BIP, UR-BIP, and GC land uses surrounding the proposed project site and replace them with High Density Residential (HDR), LDR and Public/Quasi-Public (PQP). The General Plan designates land uses within the proposed

project site boundaries as public ROW and LDR. The San Joaquin County General Plan (County General Plan) designates the proposed project area as Urban Reserve and Low Density Residential.

The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) characterizes the scenic open space character of the County by the expansive agricultural lands surrounding cities. The SJMSCP also assists in preserving many of these scenic open space values; currently, 100,841 acres of open space lands are protected under the SJMSCP.

The proposed project site is surrounded primarily by low density residential, open space and agricultural land uses. The conveyance network would extend along Woodward Avenue to Aplicella Court. Woodward Avenue and South Woodward Avenue are two-lane rural roads with on-going agricultural operations on private land fronting the streets. Low-density future residential developments (previously approved development projects) are proposed on either side of Woodward Avenue and along the eastern side of South Woodward Avenue. Oakwood Shores neighborhood, a gated, low-density residential subdivision in San Joaquin County, within the City's sphere of influence, fronts the west end of Woodward Avenue, the west side of South Woodward Avenue, and the north side of Aplicella Court. Property owned by Reclamation District 17 (RD-17) is located south of a fenced landscaped buffer along the south side of Aplicella Court, across from existing residences.

Visual Receptors

The residents living in the Oakwood Shores neighborhood on Aplicella Court have existing views of Oakwood Lake to the north, and the existing undeveloped RD-17 land and the levee to the south (**Figures 4.1-1** and **4.1-2**). Currently, there is existing, ornamental vegetation along the southern side of Aplicella Court, and a chain link fence behind the vegetation. The OLWD WWTP is located behind a concrete, ornamental wall that is approximately eight feet tall, shielding public view from ground level.



Figure 4.1-1. Oakwood Shores neighborhood. Photo taken from south side of Aplicella Court facing north.



Figure 4.1-2. Oakwood Shores neighborhood. Photo taken from entrance to Aplicella Court, facing east.

The existing visual environment along Woodward Avenue includes agricultural lands and residential development. Currently, residents and automobilists on Woodward Avenue and South Woodward Avenue have views of existing homes, Oakwood Lake, orchards and other agricultural operations, and some ornamental vegetation along the shoulders of the road.

Turtle Beach RV Resort is located southwest of the proposed project outfall to the San Joaquin River. Existing views from Turtle Beach RV Resort toward the proposed project site include the San Joaquin River, the San Joaquin River Levee, and surrounding campsites.

National Scenic Byways, Designated State Scenic Highways, and Local Scenic Routes

There are no designated National Scenic Byways within the proposed project area (FHWA 2021) nor are there any designated State Scenic Highways within the proposed project area (California Department of Transportation [Caltrans] 2019). The County General Plan designates Austin Road as a Scenic Route; however, the proposed project site is not visible from Austin Road and the closest point from the proposed project to Austin Road is approximately 5.5 miles.

4.1.2 Discussion

- a) **No Impact.** The proposed project site is located in public ROW and LDR General Plan land use designations. According to the City General Plan, no designated scenic resources or scenic vistas are located in the vicinity of the proposed project. The existing views along the proposed project site include the views of agricultural fields along Woodward Avenue and South Woodward Avenue. These views would not be obstructed as a result of the proposed project, as the gravity pipeline would be underground, and conditions would be returned to those similar to the existing conditions after construction is complete. Views along Aplicella Court include that of the undeveloped RD-17 property and residential development. The SDPS would be constructed along Aplicella Court, within RD-17 property, and may be visible to those residents whose second story homes overlook the San Joaquin River Levee and existing OLWD WWTP. Landscaping plans would provide a privacy screen in the form of fencing in order to best block views of the SDPS, lessening the negative visual impact of the proposed project. Existing roadway users and residents on Aplicella Court do not have views of the San Joaquin River.

The Turtle Beach RV Resort located southwest of the proposed outfall site, southwest of the San Joaquin River, may experience some visual change as campers would have views of the proposed outfall structure. The San Joaquin River is heavily vegetated and views from the campground already include the San Joaquin River Levee, including existing boundary fencing around the existing OLWD WWTP, erosion prevention materials, and telecommunication towers and overhead utility lines. Therefore, the proposed project would have no adverse effects on a scenic vista and no mitigation measures would be required.

- b) **Less than Significant with Mitigation.** No State Scenic Highways, National Scenic Byways, or All-American Roads are located within viewable distance of the proposed project site (FHWA 2021). The closest locally designated Scenic Route is Austin Road, designated by San Joaquin County and located approximately 5.5 miles east of the proposed project site. Views of the proposed project would not be visible from this scenic route. No other scenic resources are present within the viewshed of the proposed project. There are no direct views of the San Joaquin River from Woodward Avenue, South Woodward Avenue, or Aplicella Court within the proposed project site. There would be no impacts in this regard.

Turtle Beach RV Resort located southwest of the proposed project outfall, southwest of the San Joaquin River, has direct views of the San Joaquin River and San Joaquin River Levee. The proposed project would create a new outfall structure that would be visible from Turtle Beach RV Resort and the riverfront campsites. At the proposed outfall structure, RSP would be placed to prevent erosion and a turbidity barrier would be installed to protect the water quality at the proposed project site. Although the creation of a new structure would cause a change in the visual environment, the proposed project would implement **Mitigation Measure BIO-5** to require revegetation at the levee, reducing the proposed project impacts and helping to maintain the natural character of the San Joaquin River at the proposed project site. With the implementation of mitigation, impacts to visual resources along the San Joaquin River would be reduced to less than significant.

- c) **Less than Significant with Mitigation.** The proposed project would construct a stormwater conveyance network. The conveyance network would primarily be underground, excluding parts of the SDPS, within public existing or future ROW, as well as RD-17 and OLWD WWTP property, and the outfall structure.

The regional gravity drain would have a maximum depth for trench excavation of up to 25 feet. Manholes would be constructed at 400 feet intervals along the gravity drain. The entirety of the gravity storm drain would be constructed underground, and the manholes would be flush with the existing grade. Because the gravity drain is underground, there would not be long-term adverse visual effects on the surrounding community.

The SDPS would be constructed within RD-17 property, south of Aplicella Court within the Oakwood Shores neighborhood. The SDPS would include a junction structure with mechanical screen upstream of the wet well, storm drain pumping plant, electrical control building, outdoor switch gear, emergency generators with load banks, automatic transfer switches, and transformers. The electrical control building would be a reinforced concrete structure and would be approximately 40 feet long by 22 feet wide, with a height of approximately 12 feet (refer back to **Section 2, Figure 2-8**). The turbine pumps at the SDPS would have above ground elements reaching up to approximately 16 feet in height (refer

to **Section 2, Figure 2-9**. The junction structure with mechanical screen would also have above ground elements reaching up to approximately 12 feet in height (refer to **Section 2, Figures 2-8 and 2-9**).

Although the electrical control building, turbine pumps, and junction structure with mechanical screen would have above ground elements, direct views of the structures would be blocked by the landscaping along the south side of Aplicella Court. In addition, **Mitigation Measure AES-1** would require the implementation of architectural design strategies during final design to reduce the visual mass of the structure and contrast with the existing environment. Therefore, impacts would be less than significant with the implementation of mitigation.

The 48-inch storm drain force main pipeline would be routed underground through RD-17 property to the Oakwood Lake Water District wastewater treatment plant (OLWD WWTP). The entirety of the storm drain force main pipeline would be underground, therefore, there would not be long-term adverse visual effects on the surrounding community.

The outfall structure would consist of twin 30-inch welded steel discharge pipes that connect to the storm drain force main pipeline. The existing levee would be partially excavated to accommodate the outfall pipes. The outfall structure would be protected by the placement of Type 2 and Type 3 RSP upslope of, and adjacent to, the structure. Viewers from Aplicella Court would not experience visual impacts from the outfall structure, as there would be no view of the outfall structure. Residents and campers at the Turtle Beach RV Resort would experience visual changes as a result of the proposed outfall structure because the outfall structure would be a new urban feature on the levee. However, these changes would be mitigated by the revegetation of the surrounding area, required by **Mitigation Measure BIO-5**. In addition, the outfall structure would be designed to conform to the existing environment per **Mitigation Measure AES-1**. Therefore, impacts would be less than significant after implementation of mitigation measures.

Construction of the proposed project would result in temporary changes to local visual conditions. Areas disturbed during construction would be restored to pre-project conditions. Direct views of the construction equipment would be temporary in nature and any obstruction of views of the agricultural fields or levee from the roadways or residences would cease upon construction completion. Therefore, temporary impacts to the visual character and quality of the proposed project site would be less than significant.

- d) **Less than Significant with Mitigation.** Roadway traffic, streetlights, and lighting from private properties are the sources of nighttime light at the proposed project site. Nighttime security lighting would be installed at and around the SDPS. Lights would have

downward facing shields so that the light is angled down to prevent light pollution and to minimize backscatter to the nighttime sky, as required in **Mitigation Measure AES-2**. Turbines and other above-ground structures at the SDPS would be painted with a neutral color and matte finish to reduce the potential for glare as a result of sunlight, as required in **Mitigation Measure AES-2**. **Mitigation Measures AES-1** and **AES-2** would reduce the proposed project's impacts on light and glare. Therefore, impacts of the nighttime security lighting and daytime glare from the above ground structures would be less than significant with the implementation of mitigation measures.

Construction of the proposed project would not require nighttime work; therefore, no nighttime construction lighting would be required. Construction related activities would result in no impact to light and glare.

4.1.3 Mitigation Measures

Implement **Mitigation Measure BIO-5**, as detailed in **Section 4.4, Biological Resources**.

Mitigation Measure AES-1: During final design, the project engineer shall implement architectural design strategies into the SDPS design to minimize the visual mass of the structure and the contrast with the existing environment. These design strategies can include, but are not limited to:

- Exterior finishes shall avoid reflective surfaces.
- Colors of the visible structures and pumps shall be earth tones to reduce contrasts with the ground plain and increase compatibility with the visual setting.

Mitigation Measure AES-2: During Final design, the project engineer shall prepare a lighting plan consistent with Chapter 17.50, Lighting, of the City Zoning Ordinance prior to the City's approval of the project plans. The City approved lighting plan shall ensure that security lighting for the SDPS is designed to minimize light spillage and glare onto surrounding properties and roadways, while still maintaining 1-foot candle of light at a 5-foot radius. The lighting plan shall include the following:

- All lights installed shall have downward facing shields, with lights directed downward or toward the area to be illuminated.
- All lighting shall be of minimum necessary brightness consistent with worker safety and Chapter 17.50, Lighting, of the City Zoning Ordinance.
- High illumination areas not occupied on a continuous basis shall have switches or motion detectors to light the area only when occupied.

4.2 Agriculture and Forestry Resources

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<p>Agricultural and Forest Resources – 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 Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state’s inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.</p>				
Would the project:				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

4.2.1 Environmental Setting

The California Department of Conservation (CDOC) Farmland Mapping and Monitoring Program (FMMP) was established in 1982 to assess the location and quantity of agricultural lands, and the conversion of these lands over time. The CDOC FMMP produces maps and statistical data used for analyzing impacts on California’s agricultural resources based on soil information documented by the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS). The NRCS rates agricultural land according to soil quality and irrigation status. The FMMP maps are updated every two years with the use of a computer

mapping system, aerial imagery, public review, and field reconnaissance. The FMMP's statistical and mapping information syncs with modern soil surveys developed by the USDA. The FMMP designates land into the following categories: Prime Farmland; Farmland of Statewide Importance; Unique Farmland; Farmland of Local Importance; Grazing Land; Urban and Built-Up Land; Other Land; and Water. Lands designated as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance and are collectively known as Important Farmland. The following provides definitions of each of these designations:

- **Prime Farmland** — Farmland with the best combination of physical and chemical features able to sustain long-term agricultural production. Prime Farmland has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Lands designated as Prime Farmland must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- **Farmland of Statewide Importance** — Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Lands with a “Farmland of Statewide Importance” designation must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- **Unique Farmland** — Farmland of lesser-quality soils used for production of the State’s leading agricultural crops. This land is usually irrigated, but it may include non-irrigated orchards or vineyards, as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.
- **Farmland of Local Importance** — Land of importance to the local agricultural economy, as determined by each county’s board of supervisors and a local advisory committee.
- **Grazing Land** — Land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattleman’s Association, the University of California Cooperative Extension, and other groups interested in the extent of grazing activities.
- **Urban and Built-Up Land** — Land occupied by structures with a building density of at least one unit to 1.5 acres, or approximately six structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.
- **Other Land** — Land not included in any other mapping category. Common examples include low-density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines; borrow pits; and water bodies smaller than 40 acres. Vacant and non-agricultural land surrounded on all sides by urban development and greater than 40 acres is mapped under this designation.
- **Water** — Perennial water bodies with an extent of at least 40 acres.

The CDOC conducted the Rural Land Mapping Project to create subdivisions of the Other Land map classification (CDOC 2006). The Rural Land categories include:

- **Rural Residential Land (R)** — Residential areas of one to five structures per 10 acres.
- **Semi-Agricultural and Rural Commercial Land (SAC)** — Farmsteads, agricultural storage and packing sheds, unpaved parking areas, composting facilities, equine facilities, firewood lots, and campgrounds.
- **Vacant or Disturbed Land (V)** — Open-field areas that do not qualify for an agricultural category, mineral and oil extraction areas, off-road vehicle areas, electrical substations, channelized canals, and rural freeway interchanges.
- **Confined Animal Agriculture (CI)** — Poultry facilities, feedlots, dairy facilities, and fish farms.¹
- **Nonagricultural or Natural Vegetation (NV)** — Heavily wooded, rocky, or barren areas; riparian and wetland areas; grassland areas that do not qualify for Grazing Land designation due to their size or land management restrictions; small water bodies; and recreational water ski lakes. Constructed wetlands are also included in this category.

The City is located in an area of rich agricultural resources, including orchards, dairies, vineyards, row crops, and pastureland. One of the guiding principles of the City General Plan is to preserve access to the area’s agricultural and natural characteristics, including green space, farmland and orchards.

Agriculture land use designations in the City include Agricultural Industrial (AI) or Agriculture (AG). Land use for Agricultural Industrial provides for limited industrial uses directly related to agriculture and compatible uses, such as wineries, food packaging and processing, storage of food and beverages processed on-site, agricultural education, agricultural research and development, and agricultural extension services. The Agriculture land use designation provides for agricultural uses, single family homes directly related to the agriculture use of the property, limited industrial uses directly related to the agricultural use of the property, and similar and compatible uses. The majority of AI and AG land uses are located outside of the City’s boundaries, but within the City’s sphere of influence. There is some AG land in the southwestern area of the City limit, however, the land is not in the proposed project’s vicinity.

The proposed project site is located in the southwestern section of the City and the surrounding land uses, as designated by the City, include Low Density Residential (LDR), Open Space (OS), Business Industrial Park (BIP), Urban Reserve – Business Industrial Park (UR-BIP), and General Commercial (GC). It should be noted that the City is currently undergoing a General Plan Update and proposed land use designations would eliminate the BIP, UR-BIP, and GC land uses surrounding the proposed project site and replace them with High Density Residential (HDR), LDR

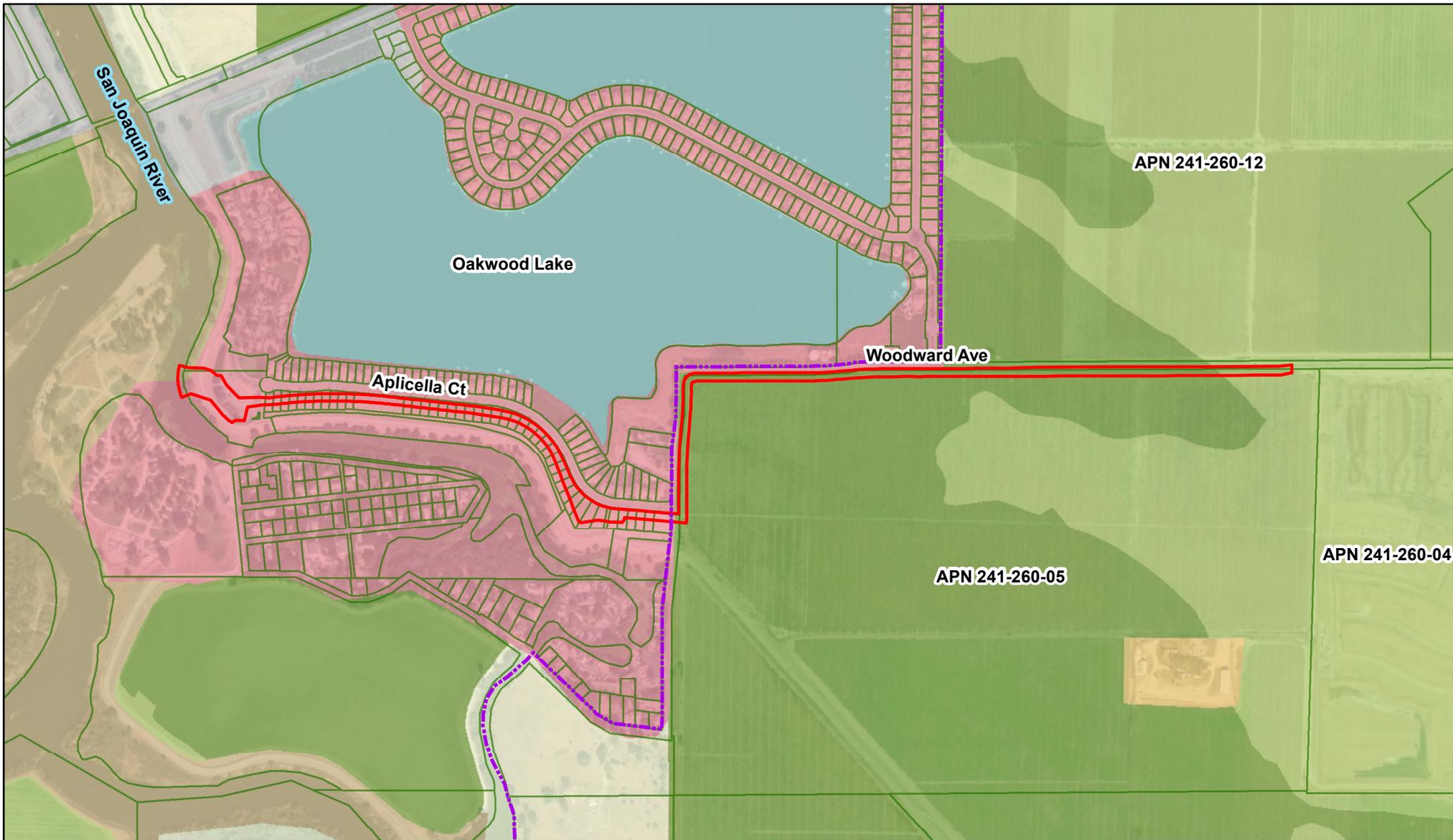
¹ This use may be a component of Farmland of Local Importance in some counties.

and Public/Quasi-Public (PQP). The County General Plan designates the proposed project area as Urban Reserve and Low Density Residential. The zone classifications surrounding the proposed project area, designated by the City, include One-Family Dwelling (R-1) and Open Space (OS). The parcels northwest of Woodward Avenue are zoned as C-R (Commercial Recreation), AG-40 (General Agriculture), R-L (Low-density Residential), and R-M (Medium-density Residential) by San Joaquin County. The CDOC has designated the land surrounding the proposed project site as Farmland of Statewide Importance, Prime Farmland, and Urban and Built-Up Land.

The California Land Conservation Act (Williamson Act) was established after World War II when valuable farmland was rapidly converted to urban use due to pressure from continuous population growth. The Williamson Act provides tax relief to landowners who participate in the program with the condition that their land will not be developed. There are no parcels within City limits under Williamson Act Contracts. The nearest Williamson Act parcel is 0.2 mile south of the proposed project site and lies outside of the City boundaries, but within the City's sphere of Influence.

4.2.2 Discussion

- a) **Less than Significant.** The proposed project would install a gravity drain pipeline along the southerly side of Woodward Avenue and easterly side of South Woodward Avenue, a pump station south of Aplicella Court adjacent to the Oakwood Shores neighborhood, a storm drain force main routed through Reclamation District 17 (RD-17), as well as a storm drain outfall located west of Aplicella Court and adjacent to the San Joaquin River (refer to **Section 2, Figure 2-1**). The gravity drain pipeline would be the only part of the proposed project adjacent to Prime Farmland and Farmland of Statewide Importance. The gravity drain pipeline would be constructed within either existing or future public ROW. The existing ROW width along Woodward Avenue is 50 feet, although, as frontage improvements are constructed and the street expanded due to previously approved development projects, ROW widths would increase to between 68 and 80 ft. Similarly, for South Woodward Avenue, the existing ROW width would be expanded from 51 feet to 68 feet as the roadway is improved due to previously approved development projects. Although the location of the gravity drain pipeline would be within the ROW, the 50-ft-wide construction zone would extend beyond the ROW (refer to **Section 2, Figure 2-12**). TCEs would be required with widths varying from 19 to 29 ft. The parcel impacted by the TCEs is Assessor Parcel Number (APN) 241-260-050, which is designated as Prime Farmland and Farmland of Statewide Importance (**Figure 4.2-1**).



Legend

- Project Extent
- City Limit
- Parcels
- Prime Farmland
- Farmland of Statewide Importance
- Farmland of Local Importance
- Nonagricultural or Natural Vegetation
- Vacant or Disturbed Land
- Semi-agricultural and Rural Commercial Land
- Urban and Built-Up Land
- Water Area



Source: ESRI Online Basemap, World Imagery Map, San Joaquin County Coordinate System NAD 83 State Plane California 3 FIPS 0402 Feet
 ArcGIS Online: Farmland Mapping and Monitoring Program, Division of Land Resource Protection, California Department of Conservation
 Notes: This map was created for informational and display purposes only.

**Storm Drain Zone 36/Zone 39
 Improvements Project
 City of Manteca, CA**

**Mapped Farmlands
 within the Proposed
 Project Vicinity**

**Figure
 4.2-1**



The City's land use designation for APN 241-260-050 is Low Density Residential (LDR) and Open Space (OS). The easements on the parcel would be temporary and would only encroach into the parcel by 19 to 29 feet. There would be no conversion of farmland to non-agricultural uses because upon construction completion, the TCE area would be returned to existing uses.

In addition, the previously approved development project, Trails at Manteca, would develop the parcel. Therefore, the proposed project would have less than significant impacts related to the conversion of farmland to non-agricultural use and no mitigation measures are required.

- b) **Less than Significant.** Parcels surrounding the proposed project site are zoned as R-1 (One-Family Dwelling), OS (Open Space), BIP (Business Industrial Park), and UND (Undesignated). by the City. The parcels to the northwest of Woodward Avenue are zoned as C-R (Commercial Recreation), AG-40 (General Agriculture), R-L (Low-density Residential), and R-M (Medium-density Residential) by San Joaquin County. The proposed project would occur within the existing and future public ROW. As frontage improvements are constructed during previously approved development project implementation, ROW widths would also increase to between 68 and 80 ft. Similarly, for South Woodward Avenue, the existing ROW width would be expanded from 51 feet to 68 feet as the roadway is improved due to previously approved development projects. The proposed project would require a TCE at APN 241-260-050; however, upon construction completion, the property would be returned to existing uses. Therefore, the proposed project would not conflict with existing zoning for agricultural use and the impact would be less than significant. No mitigation is required.

There is one parcel 0.2 miles south of the project site under a Williamson Act Contract; however, the proposed project is not adjacent to this property and would have no impact on property or its existing uses. Therefore, the proposed project would result in less than significant impacts and no mitigation is required.

- c) **No Impact.** The proposed project does not include forestland, timberland, or timberland zoned Timberland Production as defined by the Public Resources Code or the Government Code. Therefore, no impact would occur. No mitigation measures are required.
- d) **No Impact.** There is no designated forestland within or adjacent to the proposed project site. The proposed project would not cause any loss of forestland or the conversion of forestland to non-forest use. No impact would occur. No mitigation measures are required.
- e) **Less than Significant.** As discussed above, under response a, the proposed project would not result in direct or indirect conversion of farmland to non-agricultural use. The area

has multiple previously approved development projects; however, any conversion of agricultural land to non-agricultural land has been analyzed for each previously approved development project.

A TCE would be required for one property (APN 241-260-050) as a result of the proposed project; however, upon construction completion, the TCE area would be returned to existing uses. In addition, the property with the TCE is the location of a previously approved development project, Trails at Manteca. The proposed project would not result in changes to the existing environment that would result in the conversion of farmland. Therefore, the proposed project would result in less than significant impacts and no mitigation is required.

There are no forest lands within, or adjacent to the proposed project site. No impact would occur, and no mitigation is required.

4.2.3 Mitigation Measures

No mitigation measures are required related to agriculture and forestry resources.

4.3 Air Quality

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Air Quality – Where available, the significance criteria established by the applicable air quality management district or air 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Information in this section is summarized from the Air Quality and Greenhouse Gas Study for the Storm Drain Zone 36/Zone 39 Improvement Project (Entech Consulting Group 2021a).

4.3.1 Setting

The proposed project is located within the San Joaquin Valley Air Basin (SJVAB). The SJVAB consists of eight counties, stretching from Kern County in the south to San Joaquin County in the north. The SJVAB is bounded by the Sierra Nevada Mountain Range in the east, the Coast Ranges in the west, and the Tehachapi Mountains in the south. The San Joaquin Valley opens to the sea at the Carquinez Straits, where the San Joaquin-Sacramento Delta empties into San Francisco Bay. The San Joaquin Valley can be characterized as a “bowl” open only to the north.

The surrounding topographic features (i.e., mountain ranges) restrict air movement through and out of the SJVAB and, as a result, impede the dispersion of pollutants from the SJVAB. Inversion layers are formed in the SJVAB throughout the year. During the summer, the San Joaquin Valley experiences daytime temperature inversions at elevations from 2,000 to 2,500 feet above the valley floor. During the winter months, inversions occur from 500 to 1,000 feet above the valley floor (Entech Consulting Group 2021a).

The pollution potential of the San Joaquin Valley is very high. Surrounding elevated terrain in conjunction with temperature inversions frequently restricts lateral and vertical dilution of

pollutants. Abundant sunshine and warm temperatures in summer are ideal conditions for the formation of photochemical oxidants, and the San Joaquin Valley frequently experiences photochemical pollution.

Air quality districts are public health agencies whose mission is to improve the health and quality of life for all residents through effective air quality management strategies. The proposed project is within the San Joaquin Valley Air Pollution Control District (SJVAPCD). Concentrations of ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), lead (Pb), and particulate matter (PM₁₀ and PM_{2.5}) are commonly used as indicators of ambient air quality conditions. These pollutants are known as “criteria pollutants” and are regulated by the U.S. Environmental Protection Agency (EPA) and California Air Resources Board (CARB) through national and California ambient air quality standards (National Ambient Air Quality Standards [NAAQS] and California Ambient Air Quality Standards [CAAQS]), respectively. The NAAQS and CAAQS limit criteria pollutant concentrations to protect human health and prevent environmental and property damage. The SJVAPCD is the local agency with primary responsibility for compliance with NAAQS and CAAQS and ensuring that air quality conditions are maintained. **Table 4.3-1** provides the current NAAQS and CAAQS.

The CARB air quality monitoring program collects accurate real-time measurements of ambient level pollutants at over 40 sites throughout the state. The data generated is used to define the nature and severity of pollution in California, determine which areas of California are in attainment or nonattainment, identify pollution trends in the state, support agricultural burn forecasting, and develop air models and emission inventories.

The closest air monitoring station to the proposed project is the Manteca station, located at 530 Fishback Road in Manteca, approximately 2 miles northeast of the proposed project site. The Manteca monitoring station is operated by the SJVAPCD and only monitors concentrations of PM_{2.5} and PM₁₀ (SJVAPCD 2012). A summary of 2017-2019 monitoring data from this station is included in **Table 4.3-2**. The Stockton-Hazelton station is located approximately 12 miles north of the proposed project at 1601 East Hazelton Avenue in Stockton and is operated by the CARB. The Stockton Hazelton site monitors concentration of PM_{2.5}, PM₁₀, CO, NO₃ and toxins (SJVAPCD 2012). Ambient CO, Ozone, and NO₂ data from the Stockton station is included in **Table 4.3-3**.

The data in **Tables 4.3-2** and **4.3-3** were compiled from the CARB iADAM: Air Quality Data Statistics (Entech Consulting Group 2021a). As shown in **Table 4.3-2**, PM₁₀ levels exceeded the federal 24-hour standard two days in 2017 and 2018, however in 2019 the PM₁₀ levels only exceeded the federal 24-hour standard once. Levels of PM_{2.5} exceeded the federal 24-hour standard on 9.2 days in 2017 and 15.2 days in 2018. As shown in **Table 4.3-3**, ozone levels exceeded the state and federal 8-hour standards for two days or less in 2017 to 2019. CO has not exceeded NAAQs for the past three years.

Table 4.3-1. Ambient Air Quality Standards and Attainment Status

Pollutant	Averaging Time	California Standards (CAAQS)		National Standards (NAAQS)
		Concentration	Attainment Status	Concentration
Ozone	8-hour	0.070 ppm	N	0.070 ppm
	1-hour	0.09 ppm (180 µg/m ³)	N	—
Carbon Monoxide	8-hours	9.0 ppm (10 mg/m ³)	A/U	9.0 ppm (10 m/m ³)
	1 hour	20.0 ppm (23 mg/m ³)	A/U	35.0 ppm (40 µg/m ³)
Nitrogen Dioxide	annual average	0.030 ppm (56 µg/m ³)	A	53 ppb
	1-hour	0.18 ppm (338 µg/m ³)	A	100 ppb
Sulfur Dioxide ¹	annual average	—	—	Revoked
	24-hour	0.04 ppm (105 µg/m ³)	A	Revoked
	1-hour	0.25 ppm (655 µg/m ³)	A	75 ppb
Particulate Matter (PM ₁₀)	annual arithmetic mean	20 µg/m ³	N	revoked
	24-hour	50 µg/m ³	N	150 µg/m ³
Particulate Matter – Fine (PM _{2.5})	annual arithmetic mean	12µg/m ³	N	12.0 µg/m ³
	24-hour	—	—	35 µg/m ³
Sulfates	24-hour	25 µg/m ³	A	—
Lead	calendar quarter	—	A	1.5 µg/m ³
	30-day average	1.5 µg/m ³	A	—
	Rolling 3-month Average	—	A	0.15 µg/m ³
Hydrogen Sulfide	1-hour	0.03 ppm (42 µg/m ³)	U	—
Vinyl Chloride (chloroethene)	24-hour	0.010 ppm (26 µg/m ³)	A	—
Visibility Reducing Particles	8-hour (1000 to 1800 PST)		A	—

Source: SJVAPCD 2012.

A=Attainment; N=Nonattainment; U=Unclassified; A/U=Attainment/Unclassified; NA-T=Nonattainment-Transitional; – = No Standard; mg/m³=milligrams per cubic meter; ppm=parts per million; µg/m³=micrograms per cubic meter

Table 4.3-2. Air Quality Concentrations for the Past 3 Years Measured at Manteca Station

Pollutant	Standard	2017	2018	2019
<i>PM₁₀ Max 24-hour concentrations</i>				
Number of days exceeded: State	50 µg/m ³	N/D	N/D	N/D
Federal	150 µg/m ³	2	2	1
<i>PM_{2.5} Max 24-hour concentrations</i>				
Number of days exceeded: State	None	N/D	N/D	N/D
Federal	35 µg/m ³	9.2	15.2	N/D
Source: Entech Consulting Group 2021a PM ₁₀ =particulate matter 10 microns or less in diameter; PM _{2.5} =particulate matter 2.5 microns or less in diameter; µg/m ³ =micrograms per cubic meter; N/D=no data				

Table 4.3-3. Air Quality Concentrations for the Past 3 Years Measured at Stockton Station

Pollutant	Standard	2017	2018	2019
<i>Ozone Max 8-hour concentration</i>				
No. days exceeded: State	0.070 ppm	2	2	2
Federal	0.070 ppm	2	1	2
<i>Carbon Monoxide Max 1-hour concentration</i>				
No. days exceeded: State	20 ppm	N/D	N/D	N/D
Federal	35 ppm	0	0	0
<i>Carbon Monoxide Max 8-hour concentration</i>				
No. days exceeded: State	9 ppm	N/D	N/D	N/D
Federal	9 ppm	0	0	0
<i>Nitrogen Max 8-hour concentration</i>				
No. days exceeded: State	0.070 ppb	N/D	N/D	N/D
Federal	100 ppb	N/D	N/D	N/D
Source: Entech Consulting Group 2021a ppm=parts per million; µg/m ³ =micrograms per cubic meter; N/D=no data				

The EPA and the CARB designate air basins where ambient air quality standards are exceeded as “nonattainment” areas. If standards are met, then the area is designated as an “attainment” area. If there is inadequate or inconclusive data to make a definitive attainment designation, the air basin is considered “unclassified”. Federal nonattainment areas are further designated marginal, moderate, serious, severe, or extreme as a function of deviation from standards. The current attainment designations for the SJVAB are shown below in **Table 4.3-4**. The SJVAB is designated in federal nonattainment for ozone 8-hour and PM_{2.5} and in state nonattainment for ozone, PM₁₀, and PM_{2.5}.

Table 4.3-4. San Joaquin Valley Air Basin Attainment Status

Pollutant	State Status	Federal Status
Ozone – One hour	Nonattainment/Severe	No Standard
Ozone – Eight hour	Nonattainment	Nonattainment/Extreme
Carbon Monoxide	Attainment/Classified	Attainment (San Joaquin County)
Nitrogen Dioxide	Attainment	Attainment/Unclassified
Sulfur Dioxide	Attainment	Attainment/Unclassified
PM ₁₀	Nonattainment	Attainment
PM _{2.5}	Nonattainment	Nonattainment
Lead	Attainment	No Designation
Source: Entech Consulting Group 2021a		

Sensitive Receptors

Land uses surrounding the proposed project include Low Density Residential (LDR), Open Space (OS), and General Commercial (GC). The City of Manteca General Plan (General Plan) designates the proposed project site as public ROW and LDR. The City’s General Plan identifies sensitive receptors as homes, schools, and hospitals. It should be noted that the City is currently undergoing a General Plan Update and proposed land use designations would eliminate the BIP and GC land uses adjacent to the proposed project site and replace them with HDR (High Density Residential) and PQP (Public/Quasi-Public). Sensitive receptors to the proposed project would be surrounding residential areas. There are multiple residential areas located in the vicinity of the proposed project site.

4.3.2 Discussion

- a) **Less than Significant.** The proposed project would construct a stormwater conveyance network. The conveyance network would primarily be underground, excluding parts of the storm drain pump station (SDPS), within public existing or future ROW, as well as Reclamation District 17 (RD-17) and OLWD WWTP property. Implementation of the proposed project would not exceed the SJVAPCD significance thresholds for criteria pollutant emissions, because the SDPS pumps would be tied into the existing electrical grid and thus would not generate criteria pollutants. The SDPS would be equipped with two standby generators sized to operate each set of pumps during a power outage. These generators are anticipated to be electric, thus no new emissions would be generated. Therefore, the operations of the proposed project would not conflict with or obstruct the implementation of applicable air quality plans (AQP).

Construction emissions would not exceed the SJVAPCD significance thresholds for criteria pollutant emissions, as discussed in detail in response b, below, and shown in **Table 4.3-5**. During proposed project construction, best management practices (BMPs), as outlined in response b, below, would also be implemented. Therefore, the construction of the proposed project would not conflict with or obstruct the implementation of AQPs.

The implementation of control measures with current AQPs would further ensure that the proposed project is consistent with current AQPs. In addition, the proposed project is consistent with the SDMP. The SDMP lists the construction of a regional gravity drain and storm water pump station in Zone 39 as a recommended future storm drain improvement. Thus, the proposed project would be consistent with AQPs and impacts would be less than significant. No mitigation is required.

- b) **Less than Significant.** The proposed project would construct a stormwater conveyance network. The conveyance network would primarily be underground, excluding parts of the SDPS, within existing or future public ROW, as well as RD-17 and OLWD WWTP property. The proposed project would not increase capacity along Woodward Avenue or Aplicella Court, nor would it increase traffic and congestion. The SDPS pumps would be tied into the existing electrical grid and thus would not generate GHG emissions. The SDPS would be equipped with two standby generators sized to operate each set of pumps during a power outage. These generators are anticipated to be electric, thus no new emissions would be generated. The proposed project would have no impact related to criteria air pollutant emissions during operations.

The SJVAB is designated in federal nonattainment for ozone 8-hour and PM_{2.5} and in State nonattainment for ozone, PM_{2.5}, and PM₁₀, as shown in **Table 4.3-4**. Temporary impacts resulting from the proposed project on air quality would be construction related. Construction emissions were modelled using the CalEEMod version 2016.3.2². The model included the following assumptions: 1) the types and quantities of construction equipment based on construction equipment list provided in **Table 2-1, Section 2, Project Description**; 2) default values were used to estimate the number of general materials deliveries and haul trucks; 3) default CalEEMod trip distance for construction vehicles was assumed as a one-way distance of 10.8 miles for worker trips, 7.3 miles for vendor trips, and 20 miles for haul trips; and 4) the proposed project would have a 16-month construction schedule. The proposed project would contribute temporary incremental increases in emissions; however, the emissions would not exceed the SJVAPCD significance thresholds. The results of the annual construction emission levels for the proposed project are provided in **Table 4.3-5**.

Table 4.3-5. Estimated Maximum Annual Construction Emissions (tons/yr)

Pollutant	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Total Construction Emissions	0.42	1.78	14.77	0.028	1.3	0.64
SJVAPCD Construction Significance Threshold	10	10	100	27	15	15
Exceed threshold	No	No	No	No	No	No

Source: Entech Consulting Group 2021a

² CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform to quantify potential criteria pollutant and GHG emissions associated with both construction and operation activities. The model is a comprehensive tool for quantifying air quality impacts (CAPCOA 2017).

The proposed project would not exceed any of the SJVAPCD construction significance thresholds. Air quality impacts related to construction would be temporary and would cease upon construction completion. Therefore, construction related impacts are considered less than significant. While mitigation measures are not required, BMPs would be implemented during construction to comply with applicable SJVAPCD fugitive dust rules and regulations and to reduce annual construction emissions further. These BMPs would be implemented by the lead contractor and would include the following:

- Pre-Activity
 - Pre-water site sufficient to limit Visible Dust Emissions (VDE) to 20 percent opacity, and
 - Phase work to reduce the amount of disturbed surface area at any one time.
- During Active Operations
 - Apply water or chemical/organic stabilizers/suppressants sufficient to limit VDE to 20 percent opacity, or construct and maintain wind barriers sufficient to limit VDE to 20 percent opacity. If utilizing wind barriers, the control measure above shall also be implemented.
 - Apply water or chemical/organic stabilizers/suppressants to unpaved haul/access roads and unpaved vehicle/equipment traffic areas sufficient to limit VDE to 20 percent opacity and meet the conditions of a stabilized unpaved road surface.
 - Cover or water, as needed, any on-site stockpiles of debris, dirt, or other dusty material.
 - Use adequate water and/or other dust palliatives on all disturbed areas in order to avoid particle blow-off.
 - Wash down or sweep paved streets as necessary to control trackout or fugitive dust.
 - Cover or tarp all vehicles hauling dirt or spoils on public roads if sufficient freeboard is not available to prevent material blow-off during transport.
 - Use gravel bags and catch basins during ground-disturbing operations.
 - Maintain appropriate soil moisture, apply soil binders, and/or plant stabilizing vegetation.
- Temporary Stabilization During Periods of Inactivity
 - Restrict vehicular access to the area; and
 - Apply water or chemical/organic stabilizers/suppressants sufficient to comply with the conditions of a stabilized surface. If an area having 0.5 acres or more of the disturbed surface area remains unused for seven or more days, the area must comply with the conditions for a stabilized surface area as defined in section 3.58 or Rule 8011.
- All diesel-fueled construction equipment shall be equipped with Tier 4 diesel engines.

- The engine size of construction equipment shall be the minimum size suitable for the required job.
- Construction equipment shall be maintained in accordance with the manufacturer's specifications.

The proposed project would implement BMPs as discussed above, which would keep construction emissions below SJVAPCD construction significance thresholds. Therefore, impacts to air quality from the proposed project would be less than significant.

- c) **Less than Significant.** The City General Plan identifies sensitive receptors as homes, schools, and hospitals. Individuals particularly vulnerable to diesel particulate matter are children and the elderly. Sensitive receptors to the proposed project include surrounding residential areas. The SDPS pumps would be tied into the existing electrical grid or operated by electric generators, thus no new emissions would be generated. Impacts to nearby sensitive receptors would occur primarily during proposed project construction.

For criteria pollutants, impacts to receptors located outside of the proposed project are based on the highest emissions during any construction year. Construction emissions generated from the proposed project are less than the SJVAPCD construction significance thresholds. BMPs would be implemented to further minimize potential impacts to receptors in vicinity of the proposed project, as detailed above under response b. Therefore, proposed project emissions during operation and construction activities would be less than significant.

- d) **Less than Significant.** The proposed project would not change the operations on surrounding roads, thus, odors and other emissions upon completion of the proposed project would be similar to existing conditions. Odors would be generated from vehicles and/or equipment exhaust emissions during the construction of the proposed project facilities. Odors produced during construction would be attributable to concentrations of unburned hydrocarbons from tailpipes of construction equipment and architectural coatings. Such odors would be temporary, and for the types of construction activities anticipated for proposed project components, would generally occur at magnitudes that would not affect substantial numbers of people. Therefore, impacts associated with other emissions causing odors would be considered less than significant.

4.3.3 Mitigation Measures

No mitigation measures are required related to air quality.

4.4 Biological Resources

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Biological Resources - Would the project:				
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The following information is summarized from the Biological Resources Analysis (BRA) prepared for the proposed project (Monk and Associates, Inc. 2021).

4.4.1 Setting

Record Searches and Site Reconnaissance

Data for the area was obtained from the California Department of Fish and Wildlife (CDFW) Natural Diversity Database (CNDDDB), California Native Plant Society (CNPS), US Fish and Wildlife Service (USFWS), and National Oceanic and Atmospheric Administration (NOAA) Fisheries. Maps and aerial photographs of the proposed project site and surrounding areas were reviewed (Monk and Associates, Inc. 2021). Special-status plant surveys were conducted on the proposed project site on November 18, 2019 and May 27, 2020. General reconnaissance surveys were conducted on November 18, 2019 and May 27, 2020 to record biological resources and to assess the likelihood of resource agency regulated areas within the proposed project site.

Habitats

RUDERAL HERBACEOUS

There is one terrestrial habitat type within the proposed project area: ruderal herbaceous. Ruderal (weedy) communities are assemblages of plants that thrive in waste areas, roadsides, and other sites that have been disturbed by human activity. Typically, hardpacked soils of roadsides, parking lots, industrial areas and construction sites support communities of ruderal plant species. Ruderal vegetation is adapted to high levels of disturbance and persists almost indefinitely in areas with continuous disturbance.

The proposed locations for the storm drain alignment and pump station along Aplicella Court are entirely characterized by ruderal herbaceous habitat as well as a portion of the alignment along South Woodward and Woodward Avenues, adjacent to the roadways and the agricultural fields to the east and the south of the proposed project site. These ruderal areas are dominated by non-native annual grasses including European wild oats (*Avena barbata*), Bermuda grass (*Cynodon dactylon*), riggut brome (*Bromus diandrus*), foxtail brome (*Bromus madritensis*), rattail six weeks grass (*Festuca myuros*), and Italian ryegrass (*Festuca perennis*). Other non-native forb species that were present include velvetleaf (*Abutilon theophrasti*), yellow star thistle (*Centaurea solstitialis*), Italian thistle (*Cardus pycnocephalus*), milk thistle (*Silybum marianum*), cheeseweed (*Malva parviflora*), tumbleweed (*Salsola tragus*), annual yellow sweetclover (*Melilotus indicus*), hoary mustard (*Hirschfeldia incana*), and broad-leaf filaree (*Erodium botrys*). Non-native tree tobacco (*Nicotiana glauca*) occurred in isolated patches along the east side of South Woodward Avenue. The few native species observed in this plant community included jimsonweed (*Datura wrightii*), common fiddleneck (*Amsinckia intermedia*), horseweed (*Erigeron canadensis*) and telegraph weed (*Heterotheca grandiflora*).

Ruderal habitats typically provide suitable environments for common animals that are adapted to living in association with humans, for example the northern mockingbird (*Mimus polyglottos*),

which was observed onsite. Other common wildlife species associated with ruderal communities and observed moving through these areas of the proposed project site included killdeer (*Charadrius coviferus*), rock pigeon (*Columbia livia*), mallard (*Anas platyrhynchos*), house finch (*Haemorhous mexicanus*), great-tailed grackle (*Quiscalus mexicanus*), and white crowned sparrow (*Zonotrichia leucophrys*). Black-tailed jackrabbit (*Lepus californicus*) and Audubon's cottontail (*Sylvilagus audubonii*) were also observed.

SAN JOAQUIN RIVER

Aquatic habitat types within the proposed project area include the San Joaquin River and its associated riparian habitat. The far western portion of the proposed project site is located on the eastern bank of a fork of the San Joaquin River, where the proposed outfall would be installed. The Turtle Beach RV Park (clearly in active use as a recreation area) on the opposite bank of the river has also resulted in bank disturbance and as such there is a paucity of natural habitat overall in this general area. The eastern levee itself is comprised of approximately two-thirds compacted earth with existing rock slope protection on the lower third of the levee slope extending down into the river.

An intermittent, narrow riparian canopy occurs in association with the San Joaquin River, but its dominance and continuity are curtailed by necessary levee maintenance and management that is ongoing. The overstory, where it is allowed to grow, is dominated by mature Gooding's willow (*Salix gooddingii*), valley oak (*Quercus lobata*) and Oregon ash (*Fraxinus latifolia*) in addition to common buttonbush (*Cephalanthus occidentalis*). The understory along the waterside levee slope is dominated by European wild oats, riggut brome and Bermuda grass. Subdominants in the understory included a mix of native and non-native species such as Italian thistle (*Carduus pycnocephalus*), willow herb (*Epilobium brachycarpum*), and curly dock (*Rumex crispus*). Other species present included sow thistle (*Sonchus oleraceus*), hoary mustard (*Hirschfeldia incana*), prickly lettuce (*Lactuca serriola*), common lippia (*Phyla nodiflora*), Jersey cudweed (*Pseudognaphalium luteoalbum*), rabbit's foot grass (*Polypogon monspeliensis*) and bindweed (*Convolvulus arvensis*). There is virtually no shrub layer to speak of other than sparse occurrences of California blackberry (*Rubus ursinus*).

The mixture of coast and valley oaks, willows, Oregon ash and Fremont's cottonwood coupled with the herbaceous understory proximate to a perennial water source provides forage and nesting opportunities for many wildlife species. Wildlife associated with this habitat observed onsite included Botta's pocket gopher (*Thomomys bottae*), western fence lizard (*Sceloporus occidentalis*), northern mockingbird (*Mimus polyglottos*), great blue heron (*Ardea herodias*), great-horned owl (*Bubo virginianus*), belted kingfisher (*Megaceryle alcyon*), white-throated swift (*Aeronautes saxatalis*) and a Swainson's hawk (*Buteo swainsonii*) observed as a fly over. Striped bass (*Morone saxatilis*) were observed in the river itself. During the spring and fall months

migrants such as warblers, sparrows and flycatchers can be expected to move through this habitat, stop, rest and forage in the trees on insects and vegetation.

Special-Status Plant Species

No special-status plants have been mapped on or found adjacent to the proposed project site based on recent CDFW CNDDDB and USFWS Information for Planning and Consultation (IPaC) record searches. The BRA identified five special-status plant species that are known to occur in the region; however, due to a lack of suitable habitat, none of these species are expected to occur within the proposed project site or vicinity. Biologists conducted two surveys on the proposed project site for special-status plants, in November 2019 and May 2020; no special-status plant species were found during the surveys. The proposed project area is highly disturbed.

Special-Status Wildlife Species

No special-status wildlife species have ever been mapped on the proposed project site (Monk and Associates, Inc. 2021). Thirteen (13) special-status wildlife species and one critical habitat have the potential to occur within the proposed project vicinity (Monk and Associates, Inc. 2021). Based on the presence of suitable habitat on, or adjacent to, the proposed project site or due to their sensitivity and legal status, the following special status species are discussed in detail below: Central Valley (CV) steelhead (*Oncorhynchus mykiss ssp. irideus*), longfin smelt (*Spirinchus thaleichthys*), delta smelt (*Hypomesus transpacificus*), spring-run Central Valley (CV) Chinook salmon (*Oncorhynchus tshawytscha*), green sturgeon (*Acipenser medirostris*), Swainson's hawk, western burrowing owl (*Athene cunicularia hypugaea*), loggerhead shrike (*Lanius ludovicianus*), giant gartersnake (*Thamnophis gigas*), and riparian brush rabbit (*Sylvilagus bachmani riparius*). In addition to these species known to occur in the area based on CNDDDB records, the proposed project area is also located within delta smelt designated critical habitat as well as being adjacent to green sturgeon, spring-run CV Chinook salmon and CV steelhead critical habitat (Monk & Associates, Inc. 2021).

Central Valley Steelhead. The CV steelhead was designated as federally threatened in all naturally spawned populations (and their progeny) in the Sacramento and San Joaquin Rivers and their tributaries on June 17, 1998 (Federal Register 63: 32996-32998). Critical habitat was designated for this species on February 16, 2000 (Federal Register 65: 7764-7787) and includes the following areas (except for Indian Lands):

- Sacramento, San Joaquin, Stanislaus, American, Feather, Merced, Mokelumne, Tuolumne, and Yuba Rivers
- Battle, Butte, Big Chico, Beegum, Cache, Deer, Mill, Antelope, Putah, Stony, and Cottonwood Creeks
- Honker, Grizzly, Suisun, and San Francisco Bays

Steelhead are the anadromous (i.e., fish species born in the stream that migrate to the ocean for their adult phase) form of rainbow trout, a salmonid species native to western North America and the Pacific Coast of Asia. Steelhead are similar to some Pacific salmon in their life cycle and ecological requirements. They are born in freshwater streams, where they spend their first 1-3 years of life. They then emigrate to the ocean where most of their growth occurs. After spending between one to four growing seasons in the ocean, steelhead return to their native freshwater stream to spawn. Unlike Pacific salmon, steelhead do not necessarily die after spawning, and are able to spawn more than once. In North America, steelhead are found in Pacific Ocean drainages from southern California through Alaska. In California, known populations occur in coastal rivers and streams from Malibu Creek in Los Angeles County up to the Smith River near the Oregon border, and in the Sacramento River system. Steelhead were once abundant in coastal and Central Valley rivers and streams. A rough estimate of the total statewide steelhead population is 250,000 adults. This is less than half the population of 30 years ago. The major factor causing steelhead population decline is freshwater habitat loss and degradation.

The proposed project site is located outside but adjacent to critical habitat for the CV steelhead. The reach of the San Joaquin River that flows adjacent to the proposed project site does not contain the essential habitat features (adequate substrate, water quality, quantity, temperature and velocity, cover/shelter, food, riparian vegetation, space and safe passage conditions) that define the numerous critical habitat types (juvenile rearing areas and migration corridors, areas for growth and development to adulthood, adult migration corridors and spawning areas) needed by the species. There is a paucity of Shaded Riverine Aquatic (SRA) habitat at the proposed project's outfall location, the principal attributes of which are (1) that the adjacent bank is composed of natural, eroding substrates supporting riparian vegetation that either overhang or protrude into the water and (2) that the water contains variable amounts of woody debris, such as leaves, logs, branches, and roots and has variable depths, velocities, and currents.

Annual monitoring at the Mossdale sampling station in the San Joaquin River documented 3 steelheads in 2010, 4 in 2011, 10 in 2012, and 11 in 2013. The Mossdale sampling station is located 1.5 miles northwest of the proposed project site and the closest recorded occurrence is directly adjacent to the proposed project from 2013.

Central Valley Chinook. The CV spring-run Chinook salmon evolutionarily significant unit (ESU) was designated as federally threatened in all naturally spawned spring-run populations from the Sacramento and San Joaquin River mainstems and their tributaries on December 29, 1999 (Federal Register 64: 72960-72961). Critical habitat was designated for this species on February 16, 2000 (Federal Register 65: 7764-7787) and includes the following areas:

- Sacramento River, Feather River, Yuba River
- Bic Chico, Beegum, Deer, Mill, Butte, Clear, Battle, and Antelope Creeks
- Sacramento-San Joaquin River Delta

- Honker, Grizzly, Suisun, and San Francisco Bays

The Chinook salmon is one of the most important sport and commercial fish native to the Pacific coast of North America. It is the largest of all Pacific salmon, with weights of individual fish commonly exceeding 30 pounds. Like all species of Pacific salmon, Chinook salmon are anadromous. They hatch in fresh water, spend part of their life in the ocean, and then spawn in fresh water. Chinook salmon are found from the Bering Strait south to Southern California. Historically, they ranged as far south as the Ventura River, California. Chinook salmon are one of a growing number of salmon populations rapidly decreasing in the wild. The cold, clear, gravel-bedded spawning streams that Chinook and other salmon species require to reproduce are being destroyed by silt from nearby logging, mining, ranching, agriculture, and development.

The proposed project feature nearest to San Joaquin River is the proposed outfall, which is located outside but adjacent to designated critical habitat and outside EFH for the chinook salmon. Further, the site does not contain the essential habitat features that define the numerous critical habitat types needed by the species. Specifically, there is a lack of SRA habitat which entails a natural bank with erodible substrate critical for spawning and the presence vegetation that provides high-value feeding areas and escape cover. SRA overall facilitates the environmental variability with respect to water depth, velocity, and currents and is generally rare in the San Joaquin River which has been channelized over much of its extent and is characterized by levees as opposed to natural banks and specifically, where the outfall is proposed for the proposed project (Monk and Associates, Inc. 2021).

Longfin smelt (*Spirinchus thaleichthys*) were State listed as threatened on March 5, 2009 but have no federal status. They have a relatively short cycle, typically spawning at two years of age with most adults perishing before spawning. Longfin smelt have long pectoral fins, an incomplete lateral line, and lower jaws that project forward past the upper jaw when the mouth is closed. They generally reach a standard length ranging from 90 to 110 millimeters. The longfin smelt is an anadromous species and its range extends from near shore along the northern California coast to the upper reaches of the San Joaquin Delta, spending most of their adult life in bays, estuaries, and nearshore coastal areas. Longfin smelt are found in the middle or near the bottom of the water column and are most active at night. Adult longfin smelt migrate into low salinity or freshwater reaches of rivers and tributary systems to spawn. Larvae are buoyant and after hatching, drift downstream with the current and congregate in the zone where out-flowing freshwater mixes with incoming seawater (Monk and Associates, Inc. 2021).

No longfin smelt have been collected at Mossdale under the Kodiak trawl program since 2013 and the proposed project site is upstream of this occurrence, outside the known range of the species and therefore not a primary species of concern for this impact analysis (Monk and Associates, Inc. 2021).

Delta smelt (*Hypomesus transpacificus*) are listed as threatened under both the California Endangered Species Act (CESA) and Federal Endangered Species Act (FESA), as well as having designated Critical Habitat (Monk and Associates, Inc. 2021). Delta smelt are endemic to the upper Sacramento-San Joaquin estuary. They occur primarily in open, surface waters of Suisun Bay, in the Sacramento River upstream to Isleton, and in the San Joaquin River downstream of the Mossdale sampling station. Since the early 1980s, they have been most abundant in the northwestern Delta in the channel of the Sacramento River (Monk and Associates, Inc. 2021). Delta smelt spawn at one year of age and most adults die after spawning. They generally reach a maximum size of approximately two to three inches. Delta smelt spawn in freshwater but at other times can tolerate salinity up to approximately 10 to 12 parts per thousand (ppt) (a level considered to be approximately 1/3 that of ocean water). Spawning occurs between February and June. Most spawning appears to occur in dead-end sloughs and shallow edge-waters of the channels in the upper Delta and in the Sacramento River above Rio Vista (Monk and Associates, Inc. 2021). After hatching, larvae drift downstream with the currents and congregate in the zone where out-flowing freshwater mixes with incoming seawater. They feed primarily on zooplankton.

The proposed project site is near the eastern limit of known distribution of delta smelt and located within critical habitat for this species in the San Joaquin River area. Historically, delta smelt ranged as far up the San Joaquin River as Mossdale, which is approximately 0.2-mile downstream of the proposed project site. No delta smelt have historically been collected between March and early July at Mossdale in years (i.e., 1994, 1996, 1997, 1999, 2000, 2002, 2004, 2005, 2007, and 2010). No delta smelt have been collected at Mossdale under the Kodiak trawl program since June 2010, when a single larva was collected (Monk and Associates, Inc. 2021).

North American green sturgeon (*Acipenser medirostris*) is found in coastal waters from Ensenada, Mexico, to Southeast Alaska. This anadromous species spawns in several west coast rivers. There are two Distinct Population Segments (DPS) of green sturgeon. The northern DPS consists of populations in coastal watersheds northward of and including the Eel River. The southern DPS consists of coastal and Central Valley populations south of the Eel River (the only known population occurs in the Sacramento River). The proposed project site is within the southern DPS boundaries. The southern DPS was listed as federally threatened on April 6, 2005 and critical habitat was designated for the southern DPS in 2009 (Monk and Associates, Inc. 2021).

One occurrence of North American green sturgeon was sighted in the Stanislaus River near Knight's Ferry and its identity was genetically confirmed by genetic analysis of environmental DNA of green sturgeon in the surrounding water. This is the first confirmed sighting of a green sturgeon in a San Joaquin River tributary. Since only one adult was located and spawning activities in the San Joaquin River basin have never been recorded, the production of juveniles is

highly unlikely. The proposed project site is not located within designated critical habitat for North American green sturgeon (Monk and Associates, Inc. 2021).

Swainson's hawk (*Buteo swainsonii*) is a State-listed threatened species under CESA. Swainson's hawks, their nests, eggs, and young are also protected under California Fish and Game Code (§3503, §3503.5 and §3513). Swainson's hawk inhabits open to semi-open areas at low to middle elevations in valleys, dry meadows, foothills, and level uplands (Monk and Associates, Inc. 2021). It nests almost exclusively in trees, and in 2005, CDFW reported that most nest trees were between 48 and 58 feet tall, with most nests ranging between 39 and 48 feet above the ground (Monk and Associates, Inc. 2021). Nests are constructed in isolated trees that are dead or alive along drainages and in wetlands, or in windbreaks in fields and around farmsteads ((Monk and Associates, Inc. 2021). Swainson's hawks occasionally nest in shrubs, on telephone poles, and on the ground. In the Central Valley, the majority of nests were located on telephone poles and on the ground; the majority of Swainson's hawk nests and territories are associated with riparian systems. Nests are most commonly found in valley oaks (*Quercus lobata*), but cottonwood (*Populus fremontii*) and willow (*Salix* sp.), black walnut (*Juglans hindsii*), black locust (*Robinia pseudoacacia*), almond (*Prunus* sp.), Osage orange (*Maclura pomifera*), Arizona cypress (*Cupressus arizonica*) and pine (*Pinus* spp.) are also known to be used (CNDDDB records) (Monk and Associates, Inc. 2021).

The proposed project area provides suitable Swainson's hawk nesting habitat along the San Joaquin River which runs adjacent to the western portion of the proposed project's stormdrain alignment and within the proposed project's outfall location. Monk and Associates' biologists observed Swainson's hawk flying over the proposed project area during site surveys (Monk and Associates, Inc. 2021).

Western burrowing owl (*Athene cunicularia hypugaea*) is a California "species of special concern". Its nests, eggs, and young are also protected under California Fish and Game Code (§3503, §3503.5, and §3800). Based upon this species' rarity status, any unmitigated impacts to rare species would be considered a "significant effect on the environment" pursuant to §21068 of the California Environmental Quality Act (CEQA) Statutes and §15382 of the CEQA Guidelines. Thus, this owl species must be considered in any project that undergoes CEQA review, and/or that would obtain environmental permit(s) from a public or regulatory agency.

Burrowing owl habitat is usually found in annual and perennial grasslands, characterized by low-growing vegetation. Often the burrowing owl utilizes rodent burrows, typically ground squirrel burrows (*Otospermophilus beechyi*), for nesting and cover. They may also on occasion dig their own burrows or use human-made objects such as concrete culverts or rip-rap piles for cover. They exhibit high site fidelity, reusing burrows year after year. Occupancy of suitable burrowing owl habitat can be verified at a site by observation of these owls during the spring and summer months or, alternatively, its molted feathers, cast pellets, prey remains, eggshell fragments, or

excrement (whitewash) at or near a burrow. Burrowing owls are typically not observed in grasslands with tall vegetation or wooded areas because the vegetation obscures their ability to detect avian and terrestrial predators. Since burrowing owls spend the majority of their time at the entrances of their burrows, grazed grasslands tend to be their preferred habitat because it allows them to view the surrounding area without obstructions (Monk and Associates, Inc. 2021).

No burrowing owls or their sign (e.g., pellets, feathers, whitewash) were observed onsite during the field reconnaissance or subsequent surveys, and no burrows or ground squirrels have been observed (Monk and Associates, Inc. 2021). The area just north of the recently graded seepage berm and just south of Aplicella Court on the proposed project site provides marginally suitable habitat as it is a mix of barren and ruderal habitat with short vegetation (Monk and Associates, Inc. 2021).

Loggerhead shrike (*Lanius ludovicianus*) is a California “species of special concern”. It is also protected under California Fish and Game Code (§3503 and §3800) that protects birds, their nests, eggs, and young. This small, predaceous bird of open and often arid habitats prefers areas with scattered shrubs, trees, posts, fences, utility lines, and other acceptable perching locations. This shrike preys mostly upon large insects, but also takes small birds, mammals, amphibians, reptiles, fish, carrion, and various invertebrates. It typically constructs a stick nest on a stable branch in a densely foliated tree or shrub. Blackberry (*Rubus* spp.), rose (*Rosa* spp.), and willows (*Salix* spp.) provide nest sites. Site selection is apparently based on the degree of protective cover rather than on a particular plant species. Although nest height varies from 1.5 to 30 feet above ground, it is rarely less than 3 feet above ground. There has been a national decline in this species and the conversion of rural areas into subdivisions or commercial areas steadily reduces the available habitat for this small, predaceous bird.

The ruderal herbaceous vegetation on the proposed project site provides suitable hunting ground for loggerhead shrikes, and the willows, valley oak, and ash at the proposed outfall location provide potentially suitable nesting habitat (Monk and Associates, Inc. 2021).

Giant garter snake (*Thamnophis gigas*) was federally listed as threatened in its entire range on October 20, 1993 (Federal Register 58: 54053-54066). The USFWS has not designated critical habitat for this species. Giant garter snake is also listed as threatened under CESA (Monk and Associates, Inc. 2021).

The giant garter snake is one of the largest garter snakes, reaching a total length of at least 63 inches (more than 5 feet). Dorsal background coloration varies from brownish to olive with a checkered pattern of black spots, separated by a yellow dorsal stripe and two light-colored lateral stripes. Giant garter snakes feed primarily on small fish, tadpoles, and frogs. Habitat requirements consist of (1) adequate water during the snake’s active season (early-spring through mid-fall) to provide food and cover; (2) emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat during the active season; (3)

grassy banks and openings in waterside vegetation for basking; and (4) higher elevation uplands for cover and refuge from flood waters during the snake's dormant season in the winter.

Giant garter snakes are typically absent from large rivers because of the lack of suitable habitat and emergent vegetative cover, and from wetlands with sand, gravel, or rock substrates. Riparian woodlands typically do not provide suitable habitat because of excessive shade, lack of basking sites, and absence of prey populations. Although the branch of the San Joaquin River where the proposed project is located is not subject to fast-moving flows, giant garter snake is typically known to be absent from rivers and is vulnerable to predatory warmwater fish which are known to occur in the proposed project area (Monk and Associates, Inc. 2021). The proposed project site is not within the SJMSCP known occupied habitat for giant garter snake. Further, there is no suitable habitat for giant garter snake within the proposed project area as the proposed outfall is located on a steep levee bank with existing RSP. While there is intermittent riparian overstory, there is no emergent vegetative cover (for example, cattails or bulrushes) or sand/gravel bars at the water's edge on the proposed project site, that could provide cover/foraging/basking habitat. The adjacent upland habitats of the proposed project site provide no suitable refuge sites for snakes during the winter dormant season due to it being an actively managed levee lacking in small mammal burrows and other soil crevices above prevailing flood elevations.

Riparian brush rabbit (*Sylvilagus bachmani riparius*) was federally listed as endangered in its entire range on February 23, 2000 (Federal Register 65: 8881-8890). Critical habitat has not yet been designated for this species. The riparian brush rabbit is a medium to small cottontail. Its colors vary from dark brown to gray above to white underneath. The riparian subspecies can be distinguished by its relatively pale color, gray sides, and darker back.

The riparian brush rabbit is one of 13 subspecies of the brush rabbit, 8 of which are found in California. Riparian brush rabbits feed at the edges of shrub cover rather than in large openings. Their diet consists of herbaceous vegetation, such as grasses, sedges, clover, forbs, and buds, bark, and leaves of woody plants. The approximate breeding season of riparian brush rabbits occurs from January to May. Riparian brush rabbits are active throughout the year, and especially during twilight hours near dawn and dusk. For the most part, riparian brush rabbits remain hidden under protective shrub cover. They seldom venture more than a few feet from cover and refrain from too much movement.

The proposed project site has a moderate to open canopy of trees comprised of cottonwood, willow and ash with an herbaceous understory dominated by non-native annual grasses. The proposed project site contains an actively managed levee with existing riprap on the bottom third of the levee slope. In addition, due to this active disturbance, the riparian vegetation has not been allowed to fully establish. Thus, there is virtually no contiguous shrub layer to provide cover for rabbits or other small animals.

Critical Habitat and Essential Fish Habitat

The proposed project site is located outside but adjacent to critical habitat for the CV steelhead and essential fish habitat for the CV spring run Chinook salmon. Further, the reach of the San Joaquin River that flows adjacent to the proposed project site does not contain the essential habitat features (adequate substrate, water quality, quantity, temperature and velocity, cover/shelter, food, riparian vegetation, space, and safe passage conditions) that define the numerous critical habitat types (juvenile rearing areas and migration corridors, areas for growth and development to adulthood, adult migration corridors and spawning areas) needed by the species. Additionally, there is a paucity of SRA habitat; the principal attributes of which are (1) that the adjacent bank is composed of natural, eroding substrates supporting riparian vegetation that either overhang or protrude into the water and (2) that the water contains variable amounts of woody debris, such as leaves, logs, branches, and roots and has variable depths, velocities, and currents. Often, much of the instream vegetation in SRA habitat consists of dead woody debris that has fallen from the overhanging riparian vegetation. These attributes provide high value feeding areas and escape cover for salmonids. Such habitat is entirely missing from the reach of the San Joaquin River next to the proposed project site, which includes the proposed project's outfall location. The stretch of San Joaquin River at the proposed project site is characterized by limited amounts of overhead vegetation, minimal bank cover, and relatively steep banks with existing RSP. Such conditions are typical of the San Joaquin River due to the extensive urbanization within the Central Valley over the last 100 years, resulting in the river being leveed and channelized in long stretches thus eliminating essential habitat such as complex channel and floodplain areas. The San Joaquin River in the vicinity of the proposed project site provides low value habitat, at best, for juvenile Chinook salmon and steelhead migrating through the area. There is no fry rearing habitat as there are no riffles or gravel bars that provide this habitat (Monk and Associates, Inc. 2021).

The proposed project site is near the eastern limit of known distribution of delta smelt and located within critical habitat for this species in the San Joaquin River area. Historically, delta smelt ranged as far up the San Joaquin River as Mossdale, which is approximately 0.2 mile downstream of the proposed project site. Delta smelt are euryhaline (a species that tolerates a wide range of salinities) fish that generally occur in water with less than 10-12 parts per thousand (ppt) salinity (USFWS 2004). Constituent elements that are essential to the conservation of the species, which are defining characteristics for designated critical habitat areas, include: physical habitat, water, river flow, and salinity concentrations required to maintain delta smelt habitat for spawning, larval and juvenile transport, rearing, and adult migration (USFWS 2004). Specific areas that have been identified as important delta smelt spawning habitat include Barker, Lindsey, Cache, Prospect, Georgiana, Beaver, Hog, and Sycamore sloughs and the Sacramento River in the Delta, and tributaries of northern Suisun Bay (USFWS 2004). The reach of the San Joaquin River at the proposed project site is not included in the list of important delta smelt spawning habitat.

4.4.2 Discussion

- a) **Less than Significant with Mitigation.** Listed fish species and their critical habitat, western burrowing owl, Swainson’s hawk, and nesting birds and raptors may be impacted by construction and implementation of the proposed project. This impact is considered a significant; however, with the implementation of **Mitigation Measures BIO-1** through **BIO-4**, impacts would be reduced to less than significant, as discussed below.

Special-Status Fish Species

CV STEELHEAD

CV steelhead could be impacted by proposed project construction. Further, the construction and operation of the proposed outfall is located within designated critical habitat in the San Joaquin River for delta smelt and adjacent to CV steelhead and Green sturgeon designated critical habitat.

The majority of the proposed project site is outside of the San Joaquin River and riparian area, with the exception of the proposed outfall (refer to **Section 2 Figure 2-1**). The proposed project’s outfall construction activities have the potential to introduce noise, vibration, artificial light, and other physical disturbances into the immediate environment around the construction zone that can result in the harassment of fish by disrupting or delaying their normal behaviors and use of areas, and in extreme cases, causing injury or mortality. The construction of the proposed project’s outfall includes vibratory pile driving to install a cofferdam (or comparable system), which would be dewatered to allow construction in-the-dry below the high tide line (HTL). General construction and cofferdam installation associated with the proposed outfall is anticipated to take up to 12 weeks; however, pile driving activities would only occur when installing the cofferdam. These construction activities could alter normal fish behaviors. These actions would produce underwater noise and have the potential to increase water turbidity from the disturbance. Fish are expected to avoid the immediate area or experience increased stress levels. Vibratory pile driving is expected to increase background ambient noise levels in the San Joaquin River and produce underwater pressure levels over 150 decibel root mean square (dB RMS) out to 100 meters from the location of the pile driving sites³ during the installation of the cofferdam. This would exceed what is known as “effective quiet” (i.e., the background RMS sound pressure levels) and the acoustic impact area is the area where the predicted RMS sound pressure level generated by pile driving exceeds this threshold. Once the pressure waves attenuate below this level, fish are assumed to

³ Pile driving for outfall construction would be limited to use of a vibratory hammer, which is expected to produce pressure exposure levels below the interim thresholds for injury identified by the Fisheries Hydroacoustic Working Group (FHWG).

no longer be adversely affected by pile driving sounds. This potential noise and predicted RMS sound pressure level generated from pile driving activities is considered a significant impact to resident and anadromous fish in the San Joaquin River. The City intends to conduct pile driving during the allowable construction windows defined by NOAA Fisheries and USFWS to avoid or reduce the probability of impacts to special-status fish. In addition, implementation of **Mitigation Measure BIO-1** would implement best management practices (BMPs) that would reduce direct and indirect impacts to less than significant levels. Noise monitoring has been required by NOAA Fisheries for similar drainage projects in the San Joaquin River as part of previous FESA compliance consultations and therefore the City is committed to performing monitoring. Sound monitoring may keep sound and vibration at levels not to exceed 150 dB RMS in the San Joaquin River measured at a distance of 100 meters from the work area.

The most appropriate threshold for impacts consisting of fish disturbance and effects associated with elevated in-river turbidity plumes is the equivalent of the amount of the amount of increase in downstream in-river turbidity generated by dewatering or cofferdam pile driving activities. In-river pile driving, and in-river pile removal, may mobilize fine sediment and increase water turbidity beyond natural levels. Water trapped inside the small cofferdam area would be discharged to nearby agricultural fields to avoid increasing San Joaquin River turbidity levels. The San Joaquin River in the vicinity of the proposed project is a relatively turbid water body due to upstream construction activities, agricultural drainage, and urban stormwater runoff. Fish are exposed to a range of natural turbidity conditions with changing river flows and velocities. Turbidity levels can vary widely depending on upstream releases from dams and rainfall conditions. Increased turbidity levels generated during pile driving activities are expected to potentially cause elevated stress levels to adult and juvenile CV steelhead that may be residing in this section of river, resulting in disruption of normal habitat use. Fish can escape to areas outside the immediate construction zone to avoid turbidity plumes generated during pile driving or pile removal activities. These temporary responses are linked to decreased growth, survivorship, and overall reduced fitness for both turbidity and underwater noise avoidance.

The threshold for turbidity increase would be based on CV steelhead sensitivity to elevated turbidity levels. Typical turbidity in the San Joaquin River during the allowed in-water work season by NOAA Fisheries and CDFW is usually less than 50 Nephelometric Turbidity Units (NTU). Baseline turbidities in the San Joaquin River are considered unfavorably high for steelhead. 50 NTUs is above the range at which steelhead experience reduced growth rates (25 NTU) but below the range steelhead would be expected to actively avoid the area. Therefore, the turbidity (in NTU) immediately downstream of the boundary already established for the construction noise/pile driving disturbance surrogate (100 meters in the San Joaquin River waterway from the

northernmost boundary of the construction footprint and cofferdam placement) cannot exceed 25 NTU above the turbidity level in San Joaquin River. River monitoring of allowable turbidity levels in the San Joaquin River during in-water construction activities would be set by the Central Valley RWQCB as part of the Clean Water Act (CWA) Section 404/401 permitting process.

In summary, short-term, outfall construction-related impacts to CV steelhead and other fish species may include turbidity and noise from pile driving as the primary stressors, both of which have the potential to disrupt juvenile and adult fish feeding, predator avoidance behavior, and migration patterns. However, there is no appreciable loss of local SRA habitat or reduction in available feeding and resting areas for fish anticipated from the proposed outfall construction or RSP placement as this stretch of the San Joaquin River is already highly modified and the proposed outfall has been designed to retain all trees within the footprint (refer to the below special-status species discussions as well as response b, for further detail regarding riparian habitat). No direct mortality to CV steelhead is anticipated. Impacts to CV steelhead from the proposed project are considered to be less than significant with mitigation. Implementation of **Mitigation Measure BIO-1** would reduce impacts to CV steelhead to less than significant levels.

The outfall discharge pipes are located above the flood elevation at the crown of the levee. In the event of flood flows, the outfall structure includes rubber check valves on the end of the discharge pipes to prevent backflow into the pipes. In addition, there are positive closure valves on top of the levee that can be operated from the top of the levee to prevent backflow into the pipes. This would prevent mortality of fish due to attractive nuisance water during high-flow discharge periods postconstruction.

There would be no tree removal. All mature tall trees would be retained and RSP would be placed around the trees to armor the bank. While there is no SRA habitat at the outfall location, as discussed in sections above, tree retention as part of the outfall design would ensure that the riparian canopy currently present remains intact. Smaller quarry rock would be placed within the RSP below the water line to fill gaps where predatory fish could hide. Further, Section 7 consultation with the NOAA Fisheries would be required as part of the process of obtaining a Section 404 CWA permit from the US Army Corps of Engineers (Corps). A Biological Assessment would be submitted as part of the application to the Corps to initiate Section 7 consultation by and between the NOAA Fisheries, as necessary, to address listed anadromous fish. Similarly, Section 7 consultation with the USFWS would also be required as part of the process to obtain a Section 404 permit from the Corps via preparation of a BA to address non-anadromous fish among other federally listed species. The Applicant would comply with any required mitigation or avoidance and minimization measures outlined in the NOAA Fisheries or USFWS BOs should they be warranted.

Operational impacts of the proposed project may occur during periods of high rainfall/storm-like conditions. The proposed project includes construction of a storm drain system that would ultimately flow into the San Joaquin River at the location of the proposed outfall. Impacts may include increased turbidity, reduced water quality, and changing water velocities. The aquatic habitat on the banks of the San Joaquin River at the outfall location may have an increase in sediment during periods of rain; however, previously approved development projects in the proposed project vicinity are required to have detention basins (i.e., bioretention basins) (refer to **Section 2, Figure 2-4**) to allow for water treatment and some percolation and evaporation. Stormwater discharges would be contained within the detention basins and water quality BMPs would be implemented by the approved development projects to reduce sediment loads to the San Joaquin River. The proposed project is subject to several water quality protection permitting processes including the SWRCB General Construction Permit and the City's Municipal Stormwater Program that requires the implementation of BMPs to avoid or reduce stormwater pollution. This minimizes the amount of sediment in the water that is discharge at the proposed outfall location. In addition, stormwater discharge at the outfall location would be directly related to natural storm events, or within 48 hours of a storm event. Therefore, stormwater runoff impacts are anticipated to be less than significant. No mitigation measures are required.

CV SPRING RUN CHINOOK SALMON

Spring-run Chinook salmon are not found in the San Joaquin River based on best available survey information, but efforts are underway to establish a natural self-sustaining population. The closest record of CV spring run Chinook salmon to the proposed project site is a 1997 record approximately 56 miles north of the proposed project site in Big Chico Creek. There are no proximate records for this species, and the proposed project site is not located within or adjacent to designated critical habitat. According to the most recent status review, the US Bureau of Reclamation and NOAA Fisheries San Joaquin River Restoration Program (SJRRP) has been reintroducing spring run Chinook salmon incrementally back into the mainstem of the San Joaquin River far upstream of the proposed project; thus, this ESU would not be expected to be affected by the proposed project. These reintroduced salmon are designated as a non-essential experimental population within the experimental population area (in the San Joaquin River between Friant Dam and its confluence with the Merced River). The proposed project is downstream of the experimental population area but includes the migration corridor the reintroduced fish must take to reach the ocean or return to the experimental population area. Additionally, there are no riffles or gravel bars suitable for redd or fry-rearing habitat in the location of the proposed project and the proposed project site's reach of river would act solely as a potential migration corridor.

Due to the lack of known records, and the lack of essential fish habitat, no impacts are anticipated to CV spring run Chinook salmon. No mitigation measures are required.

LONGFIN SMELT

The closest known record of longfin smelt to the proposed project site is located 1.6 miles north of the proposed project site in the San Joaquin River from Dos Reis Road to the bend just north of Mossdale in Lathrop. This reach of the San Joaquin River includes two USFWS monitoring sites: 1) Dos Reis which is sampled weekly by beach seine, and 2) Mossdale Crossing which is sampled 3 times per week by trawl since 1994. The only detections from this reach were one adult caught in 1996 by beach seine and two young-of-year (YOY) caught in 2012. Historically, longfin smelt ranged as far up the San Joaquin River as Mossdale, which is approximately 1.6-miles downstream of the proposed project. The USFWS and CDFW conduct a variety of sampling programs in the San Joaquin River near Mossdale, including Kodiak trawls (1994-2020) and beach seines (1976-2020) to monitor Chinook salmon and “pelagic organism decline” species which include longfin smelt. Kodiak trawls conducted at this location indicate that small numbers (i.e., fewer than nine individuals) of longfin smelt have historically been collected between March and early July at Mossdale. No longfin smelt have been collected at Mossdale under the Kodiak trawl program since 2014 and the proposed project site is upstream of this occurrence, outside of the known range of this species. In addition, the proposed project would not result in a water diversion, but rather, would introduce clean treated water to the San Joaquin River under operation. Further, there would be no threat of entrainment to adults or fry from any diversion.

Due to the lack of known records in recent years and the minor proposed impacts to the river edge from construction of the proposed outfall, no impacts to longfin smelt are anticipated. No mitigation measures are required.

DELTA SMELT

Based on survey results and the lack of CNDDDB records for delta smelt at the proposed project location, this species is not anticipated to occur at or around the proposed outfall location; however, the proposed project site is within designated critical habitat. Specifically, based on the survey data, occurrence within the San Joaquin River in reaches outside of the proposed project site boundaries would be limited to spawning (December through May), incubation of eggs (May through June), and larvae outmigration (June and early July) which is outside of the proposed project work window for the in-water work associated with installation of the outfall in addition to these activities likely occurring outside of the proposed project site’s river reach based on available data. Provided that all BMPs to protect salmonids are implemented and that the work windows for allowed delta smelt work as detailed in the USFWS’ Delta Smelt Programmatic Biological Opinion

prepared for the Corps (2004) are followed, no impacts to delta smelt are anticipated. No additional mitigation measures are required.

NORTH AMERICAN GREEN STURGEON

The only occurrence of North American green sturgeon listed in the CNDDDB records is in Humboldt County in 2007. However, one occurrence was sighted in the Stanislaus River near Knight's Ferry and its identity was genetically confirmed by genetic analysis of environmental DNA of green sturgeon found in the surrounding water. This is the first confirmed sighting of a green sturgeon in a San Joaquin River tributary. Since only one adult was located and spawning activities in the San Joaquin River have never been recorded, the production of juveniles is highly unlikely. Nonetheless, while the San Joaquin River Basin may not produce juvenile green sturgeon, juveniles may use both estuarine and freshwater portions of the Delta to rear for 1 to 3 years prior to exiting the system and entering the Pacific Ocean. While there are no CNDDDB records for green sturgeon in the vicinity of the proposed project site, the main branch of the San Joaquin River falls within designated green sturgeon – southern DPS critical habitat and this is adjacent to the proposed outfall location. No impacts to green sturgeon are anticipated and no mitigation measures are required.

Western Burrowing Owl

As discussed above, the western burrowing owl is a California “species of special concern.” Construction activities could result in nest site disturbance if found on or within an area of influence (i.e., 250 feet) of the proposed project site. Nest site disturbance which results in: (1) nest abandonment; (2) loss of young; (3) reduced health and vigor of eggs and/or nestlings (resulting in reduced survival rates); and (4) may ultimately result in the take (killing) of nestling or fledgling owls incidental to otherwise lawful activities, would be considered a “take” by CDFW.

The majority of this linear proposed project site is highly disturbed, comprised of managed levee bank, the OLWD WWTP, paved roadway, the edge of a managed and maintained agricultural field and associated ruderal areas. No burrowing owls or sign were observed on the proposed project site and no burrows or ground squirrels were observed on the proposed project site. The RD-17 property, a level area north of the recently graded seepage berm and south of Aplicella Court on the proposed project site, provides marginally suitable habitat as it is a mix of barren and ruderal habitat with short vegetation (refer to **Section 2, Figures 2-2 and 2-3**). Since the western burrowing owl is a mobile species and known to occur in the area, if ground squirrels colonize this portion of the proposed project site, which is unlikely given RD 17 levee maintenance program, this owl could potentially move onto the proposed project site in the future now that the re-grading for the RD-17 seepage berm is complete.

The closest burrowing owl record is approximately 2.5 miles northeast of the proposed project site. Based on this species' rarity status, any unmitigated impacts to rare species would be considered a "significant effect on the environment" pursuant to §21068 of the CEQA Statutes and §15382 of the CEQA Guidelines. Because of the owl's rarity and because the western burrowing owl is a mobile species that could move into the proposed project area at any time, impacts are considered significant and preconstruction surveys are required under **Mitigation Measure BIO-2**. If burrowing owls are observed, during pre-construction surveys incidental take coverage would be addressed through the SJMSCP permit and implementation of all SJMSCP Incidental Take Minimization Measures (ITMMs). Impacts to western burrowing owl would be reduced to less than significant with the implementation of **Mitigation Measure BIO-2**. The proposed project would have no operational impacts to western burrowing owl.

Swainson's Hawk

The Swainson's hawk (*Buteo swainsonii*) is a state-listed threatened species pursuant to CESA. Further, Swainson's hawks, their nests, eggs, and young are also protected under California Fish and Game Code (§3503, §3503.5 and §3513). The closest known Swainson's hawk record to the proposed project site is from 2009, located in a valley oak along the proposed stormdrain alignment, on what is now Woodward Avenue (Occurrence No. 2402). That nesting tree has since been removed and the area has been graded, thus removing any suitable habitat and any possibility of that location providing nesting habitat in the future. The next closest Swainson's hawk record to the proposed project site is approximately 0.6-mile to the southeast (CNDDDB Occurrence No. 1668). There are two nest locations associated with this record: 1) a nest observed within a willow at the northwest end of Walthall Slough in 2003, and 2) a nest observed within a valley oak at the northwest end of the proposed project in 2009. Note that there is suitable Swainson's hawk nesting habitat in tall trees along the San Joaquin River that runs adjacent to the western portion of the proposed stormdrain alignment and within the proposed outfall location and a single Swainson's hawk was observed flying over the area during each of the surveys (November 2019 and May 2020).

If Swainson's hawks were nesting on or near the proposed project site, implementation of the proposed project, primarily via construction noise from pipeline trenching and outfall construction, could impact nesting Swainson's hawks. Potential indirect noise impacts are considered a significant impact to nesting birds in the tall trees adjacent to the outfall location on San Joaquin River and pipeline in RD-17 levee. Nest site disturbance can result in: (1) nest abandonment; (2) loss of young; (3) reduced health and vigor of eggs and/or nestlings (resulting in reduced survival rates); and (4) may ultimately result in the take (killing) of nestling or fledgling Swainson's hawks incidental to otherwise lawful activities, would be considered a "take" under CESA and considered a significant impact.

The taking of Swainson's hawks in this manner is viewed by CDFW as a violation of the Section 2080 of the California Fish and Game Code. This interpretation of take has been judicially affirmed by the landmark appellate court decision pertaining to CESA (Department v. ACID, 8 CA App. 4, 41554) (Monk and Associates, Inc. 2020). Typically, CDFW requires that any impact to a Swainson's hawk nest be permitted through a Fish and Game Section 2081 management authorization. In this case, if an active nest is found during pre-construction surveys (refer to **Mitigation Measure BIO-3**) on or adjacent to the proposed project site, incidental take coverage would be addressed through participation in the SJMSCP and in accordance with all SJMSCP ITMMs. Impacts to Swainson's hawk would be reduced to less than significant with the implementation of **Mitigation Measure BIO-3**. The proposed project would have no operational impacts to Swainson's hawk.

Loggerhead Shrike

The closest known record for this species is from 2016 and was located 1.6 miles north of the proposed project site. The ruderal herbaceous vegetation on the proposed project site provides suitable hunting ground for loggerhead shrikes, and the willows, valley oak, and ash at the proposed outfall location provide potentially suitable nesting habitat. While the proposed project has been designed to retain all trees, the proposed outfall construction would require the placement of RSP within the dripline of several trees (which constitute suitable nesting habitat for loggerhead shrike). Such activity could result in nesting failure due to noise and disturbance if a shrike nests at the outfall location or immediately adjacent to the proposed project footprint. The implementation of **Mitigation Measures BIO-2, BIO-3, and BIO-4**, would reduce potential construction impacts to loggerhead shrike to less than significant. The proposed project would have no operational impacts to loggerhead shrike.

Giant Garter Snake

Although the segment of the San Joaquin River where the proposed project is located is not subject to fast-moving flows, giant garter snake is typically known to be absent from rivers and is considered vulnerable to predatory warmwater fish which are known to occur in the area. The proposed project site is not within SJMSCP known occupied habitat for giant garter snake. Rather, White Slough is more than 19 miles northwest of the proposed project site and the transition zone between the Primary Zone and the Central Zone of the Delta are well west of the proposed project site. Further, there is no suitable habitat for giant garter snake within the proposed project area, as the proposed outfall is located on a steep levee bank with minimal vegetation and existing RSP. While there is an intermittent riparian overstory along the river, there is no emergent vegetative cover (i.e., cattails or bulrushes) or sand/gravel bars at the water's edge on the proposed project site.

for cover/foraging/basking habitat, and the adjacent upland habitats of the proposed site provide no suitable refuge sites for snakes during the winter dormant season due to it being a managed levee lacking in small mammal burrow and other soil crevices above prevailing flood elevations. Therefore, no impacts to giant garter snake are anticipated as a result of construction or operation of the proposed project and no mitigation measures are required.

Riparian Brush Rabbit

The riparian brush rabbit is not expected to occur within the proposed project site due to an absence of suitable riparian habitat and therefore would not be impacted by the proposed project construction or operation. The proposed project site and vicinity do not provide the dense understory habitat associated with riparian brush rabbit and given their exceedingly high fidelity to such protective cover, this species would not be found at the proposed project site or migrate to the proposed project site. No impacts are anticipated, and no mitigation measures are required.

Migratory Bird Treaty Act Protected Bird Species/California Fish and Game Code §3503, 3503.5, 3511, and 3513

Nesting birds and raptors protected under the Migratory Bird Treaty Act⁴ and the California Fish and Game Code §3503, 3503.5, 3511, and 3513 may be present in the vicinity of the proposed project site. Red-tailed hawk (*Buteo jamaicensis*) and red-shouldered hawk (*Buteo lineatus*), as well as special-status birds including loggerhead shrike (are known to occur in the area and could nest on or near the trees within or adjacent to the proposed project site, including trees along the San Joaquin River. Common songbirds (passerine birds) could also nest in the trees located on and around the entire proposed project footprint. All of these birds are protected under California Fish and Game Code Sections 3503, 3503.5. Construction activities could result in nest site disturbance if nests are found on or within an area of influence (i.e., 250 feet) of the proposed project site. Nest site disturbance which results in: (1) nest abandonment; (2) loss of young; (3) reduced health and vigor of eggs and/or nestlings (resulting in reduced survival rates); and (4) may ultimately result in the take (killing) of nestling or fledgling birds incidental to otherwise lawful activities, would be considered a “take” by CDFW. Any proposed project-related impacts to these species would be considered a significant impact. Impacts to nesting raptors and songbirds from the proposed project would be less than significant with the implementation of **Mitigation Measure BIO-4**. The proposed project would have no operational impacts to nesting raptors and songbirds.

⁴ The Migratory Bird Treaty Act has recently been amended and is undergoing legal review; therefore, we mention both the Migratory Bird Treaty Act as well as the California Fish and Game Code.

- b) **Less than Significant with Mitigation.** A small area of riparian habitat would be impacted primarily at the proposed project's outfall location. The proposed project would impact riparian habitat that is under the jurisdiction of CDFW pursuant to Section 1602 of the California Fish and Game Code.

The proposed project would result in approximately 0.58-acre of impacts to the waterside of the levee (below top of bank) along the San Joaquin River and the riparian understory vegetation along the San Joaquin River. The outfall element of the proposed project would entail the placement of RSP within the dripline and to the base of the following native trees on the waterside of the levee (below top of bank): two Fremont cottonwoods, two black willows, nine Oregon ash, one valley oak, and four button willows. While the understory would be removed for proposed outfall RSP placement, this area is comprised primarily of non-native upland grass species growing through existing RSP. While there is no specific tree protection ordinance for the City aside from landscape trees within a multi-family or non-residential development (City Municipal Code), the City General Plan contains policies (RC-P-31, RC-P-31 and RC-I-35) that restrict activities in native habitat and require that a project be conditioned to protect riparian habitat and heritage trees. As designed, this proposed outfall meets these requirements. In addition, CDFW has jurisdiction over the bed, bank, and channel of the San Joaquin River and its associated riparian vegetation. The City has selected the proposed outfall location to expressly avoid impacts to large trees and SRA habitat. With the current design, no trees are slated for removal. In the unlikely event that the final design changes and trees may need to be removed, the City would mitigate accordingly for loss of trees. Impacts to riparian trees and understory vegetation on the bank of the San Joaquin River would be less than significant with the implementation of **Mitigation Measure BIO-5**.

- c) **Less than Significant with Mitigation.** The proposed project site does not have wetland features on or located within the zone of influence of the proposed project site. Impacts to the wetted area (i.e., below the high tide line) of the San Joaquin River are proposed which, as an A1 traditional navigable water, would be considered an "other waters" of the US/State.

The proposed project would impact areas that are within Corps jurisdiction pursuant to Sections 404 of the Clean Water Act and Section 10 of the River and Harbors Act, and Central Valley RWQCB jurisdiction pursuant to Section 401 of the Clean Water Act. According to the current overall site plan (refer to **Section 2, Figure 2-11**), the proposed outfall would result in direct impacts to 250 linear feet to waters along the east bank (levee) of the San Joaquin River below HTL (approximately 0.27-acre) within Corps jurisdiction due to alterations of the levee to accommodate outfall construction and RSP placement. Similarly, the proposed outfall would result in direct impacts to a 0.58-acre

area within the RWQCB jurisdiction. Implementation of **Mitigation Measures BIO-6** and **HYD-1** would reduce impacts to Waters of the US/State to less than significant levels.

- d) **Less than Significant.** The San Joaquin River in the proposed project area is estimated to be approximately 120 and 130 feet wide at its active flow channel during proposed construction. Outfall construction would extend to the edge of the San Joaquin River, therefore allowing a substantial pathway for fish and wildlife to migrate up and down the river during the construction period. While the proposed project would result in minor temporary impacts to the San Joaquin River, which is a dispersal corridor for various fish species, BMPs would be required in the Clean Water Act Section 404/401 permits, as well as FESA Section 7 Conservation Measures, thus minimizing the level of disturbance resulting from proposed project activities. The river would remain open as a fish movement corridor throughout proposed project construction. Therefore, the proposed project would have a less than significant impact to the movement of native resident or migratory fish or wildlife species.
- e) **Less than Significant with Mitigation.** The proposed project would construct a stormwater conveyance network. The conveyance network would primarily be underground, excluding parts of the SDPS, within public existing or future ROW, as well as RD-17 and OLWD WWTP property. The proposed project is identified in the 2013 Manteca Storm Drain Master Plan. In addition, the City's General Plan and Municipal Code include policies and ordinances protecting heritage trees, riparian habitat, and special-status species. No trees would be removed by the proposed project. As discussed in responses a through d, above, the proposed project would mitigate for impacts to biological resources (**Mitigation Measures BIO-1** through **BIO-6**). In addition, all appropriate resource agency permits would be acquired prior to the start of proposed project construction and permit measures and requirements would be implemented. This would include coordination with NOAA Fisheries, USFWS, Corps, Central Valley Flood Protection Board (CVFPB), Central Valley RWQCB, and CDFW. With the implementation of permit requirements and the implementation of mitigation measure, the proposed project would not conflict with local policies or ordinances. Impacts would be less than significant with the implementation of mitigation.
- f) **No Impact.** The SJMSCP provides coverage in San Joaquin County for any project that may result in incidental take of SJMSCP Covered Species. As the proposed project site is located within the SJMSCP "covered area", the applicant would participate in the SJMSCP and, thus, be required to adhere to the conservation measures in the SJMSCP. Therefore, no impacts regarding a conflict with the existing SJMSCP are anticipated.

4.4.3 Mitigation Measures

Implement **Mitigation Measure HYD-1**, as detailed in **Section 4.10, Hydrology and Water Quality**.

Mitigation Measure BIO-1: Incidental Take Minimization Measures (ITMMs) pursuant to the SJMSCP for covered fish species (delta smelt, longfin smelt, and green sturgeon) shall be implemented prior to, during, and after construction. These measures shall include, but are not limited to, the following (Note that requirements from the USFWS and NOAA Fisheries may supersede or be in addition to any measures outlined below and would be fully implemented by the City):

Underwater Sound Levels

To avoid impacts to resident and special-status fish from exceedance of sound thresholds, sound monitoring shall be implemented. It is noted that the below monitoring measures can be superseded by NOAA Fisheries or USFWS Section 7 FESA permits issued for the proposed project. The following noise requirements are consistent with measures required for similar municipal outfalls located downstream on the San Joaquin River.

To monitor in-river sound levels, the following acoustic monitoring shall occur during all in-river work:

- A qualified sound monitor shall conduct hydroacoustic monitoring to ensure that noise levels from the pile driving do not exceed 150 dBRMS (decibel root mean squared) in the river measured at a distance of 100 meters from the work area using a NOAA Fisheries-approved device, such as Precision Sound Level Meter.
- Measurements shall be taken at two locations, one 10 meters from the work area and a second at 100 meters from the work area.
- Ambient noise levels shall be measured when there is not any further pile driving activities taking place that particular day
- Noise monitoring data shall be recorded and reported on a daily basis for City records. A final report shall be submitted to the City and regulatory agencies in compliance with NOAA Fisheries and USFWS permits.
- Pile driving operations shall cease for the day if the results of the underwater sound pressure monitoring show that sound levels upstream and downstream of the pile driving area are higher than the peak threshold of 150 dBRMS. If peak underwater sound pressure levels are exceeded, the qualified biologist shall have the authority to halt impact pile driving and the City shall contact NOAA Fisheries and USFWS to determine if additional measures are necessary.

Water Quality

ITMMs for SJMSCP Covered Fish are the same as those included for protection of riparian habitats. Those ITMMs are covered under the following water quality protection measures. To avoid the potential for accidental spills or mobilization of sediment affecting water quality, the following shall be implemented:

- All equipment and materials shall be stored at least 200 feet from the HTL unless the equipment is on established paved areas or existing roads.
- Any equipment or vehicles driven or operated on the levee shall be checked and maintained daily to ensure proper working condition in order to avoid potential impacts (such as leaks).
- No fueling, cleaning or maintenance of vehicles or equipment, or placement of construction debris, spoils or trash shall occur within 200 feet of the HTL unless it occurs in designated refueling/staging areas on existing paved surfaces or existing roads with secondary containment in place.
- All concrete shall be allowed to cure outside of the river environment for 30 days, or a CDFW-approved concrete sealant shall be applied to freshly exposed concrete (when forming boards are removed) and allowed to dry outside of the flow river or areas of inundation for a minimum of 7 days.
- A floatable debris curtain shall be installed in the San Joaquin River to capture sedimentation or construction debris.
- A coffer dam shall be installed for the length of the work area on the riverbank for the purposes of drying the soils to conduct work below the HTL including installation of the concrete structure/headwall and placement of RSP. This method is very effective at keeping soils dry, especially when work is conducted during low flows. Therefore, the potential for ponded water behind the coffer dam is expected to be minimal because construction shall take place during low flows. Any ponded water shall be pumped to the river within the floatable debris curtain.

Turbidity

To avoid the potential for exceedance of turbidity thresholds for fish and aquatic life in the San Joaquin River, the following shall be implemented:

- A qualified biologist, or qualified personnel, shall use a held-hand turbidity monitor to conduct water quality monitoring during all in-water construction activities to ensure the turbidity control measures are functioning as intended.
- Typical turbidity in the San Joaquin River during the in-water work season is usually less than 50 NTU when measured. 50 NTUs is already above the range at which steelhead experience reduced growth rates (25 NTU) but below the range steelhead shall be

expected to actively avoid the work area. Therefore, the turbidity (in NTU) immediately downstream of the boundary already established for the construction noise/pile driving disturbance threshold (100 meters in the river waterway from the northernmost boundary of the construction footprint and cofferdam placement) shall not exceed more than 25 NTU above the turbidity level in the river water measured immediately upstream of project activities. Within the established 100-meter disturbance surrogate, River water shall not exceed 50 NTU above the turbidity level in upstream measurements.

Fish Habitat/Entrapment

To avoid/minimize direct impacts on fish migrating through the area, the following measures, or equivalent measures, shall be implemented:

- All work shall be limited to daylight hours between 8 AM and 6 PM or as required by environmental permits to provide sufficient periods of time when passage by fish shall be unaffected by construction-related noise.
- All in-water work shall be limited to the period between August 1 and October 31 (work window) when CV steelhead and spring run Chinook salmon are least likely to be present in the San Joaquin River.
- The proposed project shall install a debris curtain and a cofferdam to prevent movement of fish into the work area to be dewatered.

Mitigation Measure BIO-2: ITMMs for burrowing owl including preconstruction surveys prior to any ground disturbing activities, in accordance with the SJMSCP, shall be implemented. These are summarized below.

- A. **Breeding season (February 1 through August 31):** Pre-construction surveys for burrowing owls [following the Staff Report on Burrowing Owls (CDFG 2012)] shall be performed no less than 14 days prior and again 24-hours prior to initial ground disturbance activities.
1. Any occupied burrows shall not be disturbed and shall be provided with a 75-meter protective buffer until and unless the Technical Advisory Committee (TAC), with the concurrence of the Permitting Agencies (representatives on the TAC); or unless a qualified biologist approved by the Permitting Agencies verifies through non-invasive means that either: 1) the birds have not begun egg laying, or 2) juveniles from the occupied burrows are foraging independently and are capable of independent survival.

Once the fledglings are capable of independent survival, a Burrowing Owl Exclusion Plan (BOEP) is developed and approved by the applicable Department of Fish and Wildlife SJMSCP representative/office, and habitat is mitigated in accordance with the Staff Report (CDFG 2012), then the burrow can be destroyed.

Pre-construction surveys following destruction of burrows and prior to initial construction activities are required (24-hours prior) to ensure owls do not re-colonize the Project Area.

2. If Project activities are delayed or suspended for more than 15 days during the breeding season, surveys shall be repeated.
- B. Non-breeding season (September 1 through January 31):** Pre-construction surveys following the Staff Report on Burrowing Owls (CDFG 2012) shall be performed prior (no less than 14-days and again 24-hours prior) to initial ground disturbance activities. Burrowing owls may be evicted after a Burrowing Owl Exclusion Plan (BOEP) is developed and approved by the applicable Department of Fish and Wildlife SJMSCP representative/office and habitat is mitigated in accordance with the Staff Report (CDFG 2012).

Pre-construction surveys following destruction of burrows and prior to initial construction activities are required (24-hours prior) to ensure owls do not recolonize the Project Area. If owls are found within 50 meters of the Project Area, it is recommended that visual screens or other measures are implemented to limit disturbance of the owls without evicting them from the occupied burrows.

Mitigation Measure BIO-3: Surveys for Swainson's hawk shall be conducted no more than 14 days prior to construction and again 24 hours prior to construction to ensure that there are no nesting birds within the project footprint. If this species is observed nesting on the project site or adjacent to the project site then, in accordance with the SJMSCP, the following ITMMs shall be implemented.

- A. If a nest tree becomes occupied during construction activities, then all construction activities shall remain a distance of two times the dripline of the tree, measured from the nest.
- B. If the project proponent elects to remove a nest tree, then nest trees may be removed between September 1 and February 15, when the nests are unoccupied.

Mitigation Measure BIO-4: To avoid impacts to nesting birds, a nesting survey should be conducted within 15 days of commencing with construction work or tree removal if this work commences between February 1 and August 31. The nesting survey should include an examination of all trees onsite and within 200 feet of the entire project site (i.e., within a zone of influence of nesting birds), not just trees slated for removal. The zone of influence includes those areas outside the project site where birds could be disturbed by earth-moving vibrations and/or other construction-related noise.

If birds are identified nesting on or within the zone of influence of the construction project, a qualified biologist shall establish a temporary protective nest buffer around the nest(s). The nest

buffer shall be staked with orange construction fencing. The buffer must be of sufficient size to protect the nesting site from construction-related disturbance and should be established by a qualified ornithologist or biologist with extensive experience working with nesting birds near and on construction sites. Typically, adequate non-disturbance nesting buffers are 50 feet from the nest site or nest tree dripline for small birds (songbirds, for example) and up to 300 feet for sensitive nesting birds that include several raptor species known the region of the project site. To determine if the non-disturbance buffer is of adequate size to protect the nesting birds from disturbance, a qualified biologist should monitor the nest site(s) during the first week of construction to observe the adult birds' behavior. If no agitated behaviors are observed, then the established buffer is of sufficient size to protect the nesting attempt and the biologist shall return once a week to monitor the adults and the nesting attempt. However, should the monitoring biologist observe any signs of distress from the adult birds during the first week of monitoring or any other time thereafter, the non-disturbance buffer distance should be increased, as determined by a qualified biologist, to prevent nesting failure.

No construction or earth-moving activity should occur within any established nest protection non-disturbance buffer prior to September 1 unless it is determined by a qualified ornithologist/biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones, or that the nesting cycle is otherwise completed. In the region of the project site, most species complete nesting by mid-July. This date can be significantly earlier or later and shall be determined by the qualified biologist. At the end of the nesting cycle, and fledging from the nest by its occupants, as determined by a qualified biologist, temporary nesting buffers may be removed, and construction may commence in established nesting buffers without further regard for the nest site.

Mitigation Measure BIO-5: The City shall compensate for the temporary and permanent loss of riparian habitat and CDFW jurisdictional area through the creation, rehabilitation, and enhancement, either on- or off-site, purchase of credits at a CDFW-approved bank or conservation site, or through funding an equivalent project through a local organization. Compensatory mitigation shall be at a 1:1 ratio (acreage) for temporary impacts to riparian vegetation and, a 2:1 ratio (acreage) for permanent impacts to riparian vegetation, or as required by applicable regulatory permits.

Mitigation Measure BIO-6: The City shall compensate for the impacts to waters of the US/State through the creation, rehabilitation, and enhancement, either on- or off-site, purchase of credits at a Corps-approved and RWQCB-approved bank or conservation site, or through funding an equivalent project through a local organization. Compensatory mitigation shall be at a 1:1 ratio, or as required by applicable regulatory permits. Proof of mitigation shall be provided to the Corps and the RWQCB in advance of grading activities on the project site or as otherwise required by applicable regulatory permits.

4.5 Cultural Resources

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Cultural Resources - Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Information in this section is summarized from the Cultural Resources Inventory and Evaluation report prepared for the proposed project by ECORP Consulting, Inc. (ECORP Consulting 2021a). Due to confidentiality requirements, all cultural reports are maintained in confidentiality at the City Planning and Environmental Review Department and may be accessed only upon demonstrated need.

4.5.1 Setting

A cultural resource includes archaeological and historic sites, architectural resources, and traditional cultural properties, as well as the physical evidence of past human activity on the landscape. Cultural resources, along with Native American and historic human remains and associated grave goods, must be considered under various federal, state, and local regulations, including CEQA and the National Historic Preservation Act of 1966. In general, any trace of human activity more than 50 years in age is required to be treated as a potential cultural resource.

History

EARLY HISTORIC AREA CONTACT

Contact with nonnatives occurred rather early in the San Joaquin Valley. As early as 1772, Captain Fages visited Yokuts on Buena Vista Lake while seeking army deserters. In 1776, Father Garcés visited Yokuts on the Kern River and distributed glass beads and tobacco to the people after being hospitably received by them (ECORP Consulting 2021a). It is known that the native people in the proposed project area had contact with non-indigenous people by at least 1805 when the Chulamni began appearing on Mission records from San Francisco, Santa Clara, and San Jose. It is also known that Central Valley tribes made direct contact with the Spanish during Gabriel

Moraga's expedition through the valley in 1806. Cook reports that people in some of the villages fled from Moraga's men because, they reported, they expected the soldiers to kill them (ECORP Consulting 2021a). This implies they had previous encounters or knowledge of the Spanish.

French Camp, located approximately seven miles north of the proposed project, was first occupied in 1832 by French-Canadian hunters employed by the Hudson's Bay Company to trap beaver, mink, bear, and other fur-bearing animals then numerous along the San Joaquin River and adjoining sloughs (ECORP Consulting 2021a).

REGIONAL HISTORY

The first European to visit California was Spanish maritime explorer Juan Rodriguez Cabrillo in 1542. Cabrillo was sent north by the Viceroy of New Spain (Mexico) to look for the Northwest Passage. Cabrillo visited San Diego Bay, Catalina Island, San Pedro Bay, and the northern Channel Islands. The English adventurer Francis Drake visited the Miwok Native American group at Drake's Bay or Bodega Bay in 1579. Sebastian Vizcaíno explored the coast as far north as Monterey in 1602. He reported that Monterey was an excellent location for a port (ECORP Consulting 2021).

Colonization of California began with the Spanish Portolá land expedition. The expedition, led by Captain Gaspar de Portolá of the Spanish army and Father Junipero Serra, a Franciscan missionary, explored the California coast from San Diego to the Monterey Bay Area in 1769. As a result of this expedition, Spanish missions to convert the native population, presidios (forts), and pueblos (towns) were established. The Franciscan missionary friars established 21 missions in Alta California (the area north of Baja California) beginning with Mission San Diego in 1769 and ending with the mission in Sonoma established in 1823. The purpose of the missions and presidios was to establish Spanish economic, military, political, and religious control over the Alta California territory. No missions were established in the Central Valley. The nearest missions were in the vicinity of San Francisco Bay and included Mission San Francisco de Asis (Dolores) established in 1776 on the San Francisco Peninsula, Mission Santa Clara de Asis at the south end of San Francisco Bay in 1777, Mission San Jose in 1797, Mission San Rafael, established as an asistencia in 1817 and a full mission in 1823, and Mission San Francisco Solano in Sonoma in 1823 (ECORP Consulting, 2021). Presidios were established at San Francisco and Monterey. The Spanish took little interest in the area and did not establish any missions or settlements in the Central Valley.

After Mexico became independent from Spain in 1821, what is now California became the Mexican province of Alta California with its capital at Monterey. The Mexican Period includes the years 1821 to 1848.

Gold was discovered at Coloma on the South Fork of the American River in January 1848 (ECORP Consulting, 2021). The discovery of gold initiated the 1849 California Gold Rush, which brought thousands of miners and settlers to the Sierra foothills east and southeast of Sacramento. The

American period began when the Treaty of Guadalupe Hidalgo was signed between Mexico and the US in 1848. As a result of the treaty, Alta California became part of the US as the territory of California. Rapid population increase occasioned by the Gold Rush of 1849 allowed California to become a state in 1850.

LOCAL HISTORY

The proposed project is located on the northern end of the San Joaquin Valley, south of State Route 120 (SR-120) and east of the San Joaquin River. Historically, the proposed project area land was swamp and overflow land along the river until it was used for farmland. The western extent of the proposed project area consisted of the Oakwood Lake Resort. The resort opened in March 1974 by Budge and Arlene Brown after their gravel pit filled in with water. The Brown family owned 170 acres of farmland southeast of the interstate and when farming was not profitable due to a high amount of sand, they switched their operation to selling the sandy soil (ECORP Consulting, 2021). The Brown family's sand mining operation was known as Brown Sand Incorporated. The Brown Sand Incorporated company began dredging sandy soil and sold it to help construct nearby highways. The Brown Sand Incorporated company remains in business today and sells fine sand to golf courses around the country. The Brown family used the dredged pit to create the Oakwood Lake recreational resort with campgrounds, picnic areas, a lake, amphitheater, and large water slides, which opened in the 1970s (ECORP Consulting, 2021). The resort was known as the Oakwood Lake Resort and more commonly the Manteca Waterslides. The resort closed in 2004 and the land was redeveloped to the Oakwood Shores neighborhood, which includes lakefront properties. In the 2000s, the farmland east of the proposed project area, along Woodward Avenue, was redeveloped into suburban residential properties.

A search of historic General Land Office (GLO) land patent records from the Bureau of Land Management's (BLM's) patent information database revealed the proposed project area was part of the El Pescadero Grimes Land Grant for which Francis Grimes, Hiram Grimes, and William McKee received a patent in 1858 (ECORP Consulting, 2021). The land grant consisted of almost 36,000 acres of land within San Joaquin and Stanislaus counties. The western half of Section 12, the eastern portion of the proposed project area, was included in 7,000 acres granted to the State of California as swamp land in 1870.

DELTA LEVEE HISTORY

The land in the proposed project area passed from the public domain to private ownership in the 1850s and 1860s. Although there were sporadic attempts at commercial farming around 1850, successful endeavors were limited, especially along the banks of the San Joaquin River where vast tracts of land were overgrown with tule and prone to flooding. In 1861 the California State Legislature created the Board of Swamp and Overflowed Land Commissioners to oversee a swampland distribution policy and fulfill the State's responsibilities to reclaim swamp and overflowed land. The Board authorized formation of swampland districts and in 1862 allowed

each district to tax its members to create a special swampland fund. Among the earliest districts was Swampland District 17, later named Reclamation District 17 (RD-17). The petition to the Board of Commissioners for funds to create the district and build a levee to reclaim the swamp land was filed by engineer J.P. Handy on September 18, 1861 and consisted of the land on the eastern side of the San Joaquin River from Walthall Slough to French Camp Creek on the north. This tract embraced 10,615 acres including the proposed project Area.

In December 1861, RD-17 embarked upon one of the first large-scale cooperative reclamation projects in San Joaquin County. Duncan Beaumont, a civil engineer, designed a 16-mile-long levee for the eastern bank of the San Joaquin River. The first contracts completed to specifications were completed in January 1864 and included the portion of the levee in the proposed project area. In the fall of 1868, the landowners of RD-17 abandoned the original levee, which was situated too close to the river's edge, and began construction of a new, large embankment set back two rods (33 feet) from the eastern bank. It was built to uniform dimensions of 3.5 feet tall, 3 feet wide across the top, and 12 feet wide at the base. In 1876, a year after the San Joaquin River broke through the RD-17's levee in four places, resulting in "the greatest flood to hit the interior of California since it had been settled" (ECORP Consulting, 2021) RD-17 raised the levee by 0.5 foot and increased its crest and base widths to 4 and 21 feet, respectively. In 1893, the Pless Dredging and Reclamation Company assigned the dredges Nevada and Empire to erect a cross-levee at the Moss Tract (ECORP Consulting, 2021). Since then, the levee system in the proposed project area has remained basically the same with upkeep and repairs still utilizing the dredged silt from the river.

Record Search

A records search was performed at the Central California Information Center (CCIC), California State University, Stanislaus. The confidential record search of the proposed project's cultural resources study area and 0.5-mile radius for resources was conducted on April 14, 2020. The purpose of the records search was to (1) determine whether known cultural resources have been recorded within or adjacent to the proposed project; (2) assess the likelihood for unrecorded cultural resources to be present based on historical references and the distribution of nearby sites; and (3) develop a context for the identification and preliminary evaluation of cultural resources.

A Sacred Lands search request was submitted to the Native American Heritage Commission (NAHC) for the proposed project in May 2020. The purpose of this record search was to determine whether or not Sacred Lands have been recorded by California Native American tribes within the cultural resources study area, because the Sacred Lands File is populated by members of the Native American community who have knowledge about the locations of tribal resources. The NAHC replied on May 29, 2020 regarding the proposed project, stating that the search was negative for sacred lands in the proposed project area.

Field Survey

On May 27, 2020 an intensive pedestrian survey was conducted under the guidance of the *Secretary of the Interior's Standards for the Identification of Historic Properties* (ECORP Consulting, 2021) using transects spaced 15 meters apart. The ground surface was examined for indications of surface or subsurface resources. The general morphological characteristics of the ground surface were inspected for indications of subsurface deposits that may be manifested on the surface, such as circular depressions or ditches.

The western portion of the proposed project consisted of the Oakwood Lake Water District (OLWD) Wastewater Treatment Plant (WWTP) and a segment of the San Joaquin River/Walthall Slough levee. The surface of the levee and OLWD WWTP were completely graveled. Areas of exposed light brown soil on the levee caused by rodent burrowing were observed but contained no cultural materials or culturally modified soil indicators. East of the OLWD WWTP, the proposed project consisted of a graded area located south of Aplicella Court and north of the levee.

The eastern portion of the proposed project area consists of rural roadways and the adjacent agricultural parcels. Overall, the surface visibility throughout the proposed project area was good due primarily to short grasses and exposed soil with an average surface visibility of 60 to 70 percent in most areas.

Consultation

Letters were sent to the San Joaquin County Historical Society and the Manteca Historical Society and Museum on April 9, 2020 to solicit comments or obtain historical information that the repository might have regarding events, people, or resources of historical significance in the area. No responses, to date, have been received from either of these places. In addition, Native American consultation letters under Assembly Bill (AB) 52 were sent to contacts of the North Valley Yokuts Tribe and The Confederated Villages of Lisjan on March 15, 2021. To date, no responses have been received from either of the tribes.

A records search was conducted for the proposed project at the CCIC of the California Historical Resources Information System (CHRIS) at California State University – Stanislaus on April 14, 2020. The purpose of the records search was to determine the extent of previous surveys within a 0.5-mile radius of the proposed project location, and whether previously documented pre-contact or historic archaeological sites, architectural resources, or traditional cultural properties exist within the area. The records search consisted of a review of previous research and literature, records on file with the CCIC for previously recorded resources, and historical aerial photographs and maps of the vicinity. Sixteen previous cultural resource investigations have been conducted within 0.5-mile of the proposed project area, covering approximately 90 percent of the total area surrounding the proposed project area within the cultural resources study area. The records search also revealed that one previously recorded cultural resource is located within 0.5-mile of

the proposed project area. The resource is a pre-contact and historic site located 0.3 mile north of the proposed project area but has been destroyed due to Oakwood Lake. No cultural resources have been previously recorded within the proposed project area.

In addition to the above record search, a record search of the NAHC Sacred Lands File (SLF) was completed for the proposed project. No Native American cultural resources were found. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Resources

Three cultural resources were identified within the proposed project area: MZ-001, Woodward Avenue; MZ-002, Williamson Road; and MZ-003, a segment of the San Joaquin River Levee (ECORP Consulting, 2021). MZ-001, Woodward Avenue is a historic period resource. The road is currently a maintained and heavily trafficked paved two-lane road about 25 ft wide in fair condition. The recorded portion within the project area is a 0.72-mile-long, east-to-west trending segment. MZ-002 is also a historic period resource. It is currently a maintained and heavily trafficked paved two-lane road and is approximately 25 ft wide in fair condition. The recorded portion within the project area is a 0.20-mile-long, north-to-south trending segment of the road. Woodward Avenue transects Williamson Road within the proposed project area. These roads were not identified in available historical documentation as having any significant historical associations nor do they meet the eligibility criteria for inclusion in the National Register of Historic Places (NRHP) or California Register of Historic Places (CRHR) as individual resources. Neither of the resources contribute to any known or suspected district.

MZ-003 is an approximately 190-ft-long segment of the RD-17 San Joaquin River East Levee located on Walthall Slough. Its early construction in the 1861 promoted focused agricultural development for the entire region which continues to today as the primary economic activity for central California. The levee retains integrity of location, design, setting, and association. It maintains its association with creation of RD-17 and is still a part of and maintained by the district. It has been determined that the segment of the RD-17 levee within the proposed project APE is eligible to the NRHP under Criterion A⁵ and eligible to the CRHR under Criterion 1⁶.

⁵ National Register of Historic Places Eligibility Criteria A: is associated with events that have made a significant contribution to the broad patterns of our history.

⁶ California Register of Historic Resources Eligibility Criteria 1: it is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.

The records search also revealed that one previously recorded cultural resource is located within 0.5 mile of the proposed project area. Site P-39-282 is a pre-contact and historic site located 0.3 mile north of the proposed project area but has been destroyed due to Oakwood Lake.

4.5.2 Discussion

- a) **Less than Significant.** Three historic-period cultural resources were recorded inside the proposed project area: MZ-001, a segment of historic-period Woodward Avenue; MZ-002, a segment of historic-period Williamson Road; and MZ-003, a segment of the RD-17 San Joaquin River East Levee. MZ-001 and MZ-002 were evaluated and found not eligible for inclusion in the NRHP and CRHR. MZ-003 was evaluated and found eligible for inclusion in the NRHP under Criterion A and eligible for listing in the CRHR under Criterion 1. A Finding of Effect/Impact Statement was prepared, which concluded that the proposed project would not have an adverse effect on or significant impact on the resource.

Because the proposed project would not adversely affect the qualities that make MZ-003 important, a determination of No Adverse Effect to Historic Properties under Section 106 and a finding of no impact under CEQA was made (ECORP Consulting 2021a). Therefore, impacts are considered less than significant, and no mitigation is required.

- b) **Less than Significant with Mitigation.** The Cultural Resources Inventory and Evaluation (ECORP Consulting 2021a) does not indicate a high potential for the presence of buried historic-period archaeological deposits. The Holocene age of the underlying geomorphology, the presence of alluvium in and around the proposed project area, and the nature of levees themselves suggests that there remains a moderate potential for deeply buried pre-contact resources to be uncovered during ground disturbing activities. **Mitigation Measure CUL-1** provides that unanticipated (or post-review) discoveries found during the proposed project's construction would be managed through a procedure designed to assess and treat the find as quickly as possible and in accordance with applicable State and Federal law. Impacts to the significance of an archaeological resources pursuant to §15064.5 would be less than significant with the incorporation of mitigation.
- c) **Less than Significant with Mitigation.** No formal cemeteries or human remains were identified during the field investigation and no burial sites are likely to be encountered during construction activities. However, in the event of an unanticipated discovery of human remains, **Mitigation Measure CUL-1** provides a procedure designed to assess and treat unanticipated buried human remains as quickly as possible and in accordance with applicable State and Federal law. Therefore, the proposed project would have less than significant impacts with the incorporation of mitigation.

4.5.3 Mitigation Measures

Mitigation Measure CUL-1: If subsurface deposits believed to be cultural or human in origin are discovered during construction, all work must halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior’s Professional Qualification Standards for prehistoric and historic archaeologist, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:

- If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately, and no agency notifications are required.
- If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, he or she shall immediately notify the lead agency. If the find is determined to be eligible for inclusion in the NRHP or CRHR, the lead agency shall consult on a finding of eligibility and implement appropriate treatment measures. Work may not resume within the no-work radius until the lead agency, through consultation as appropriate, determines that the site either: 1) is not eligible for the NRHP or CRHR; or 2) that the treatment measures have been completed to its satisfaction.
- If the professional archaeologist determines that the find includes human remains, or remains that are potentially human, he or she shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the San Joaquin County Coroner (in accordance with § 7050.5 of the Health and Safety Code). The provisions of § 7050.5 of the California Health and Safety Code, § 5097.98 of the California PRC, and AB 2641 shall be implemented. If the Coroner determines the remains are Native American and not the result of a crime scene, the Coroner shall notify the NAHC, the NAHC shall then designate a Native American Most Likely Descendant (MLD) for the project (§ 5097.98 of the PRC). The designated MLD shall have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (§ 5097.94 of the PRC). If no agreement is reached, the landowner must rebury the remains where they shall not be further disturbed (§ 5097.98 of the PRC). This shall also include either recording the site with the NAHC or the appropriate information center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.

4.6 Energy

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Energy –Would the project:				
a) Results in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

4.6.1 Setting

In 1975, the California State Legislature adopted Assembly Bill (AB) 1575 in response to the oil crisis of the 1970s. Public Resources Code Section 21100(b)(3) and CEQA Guidelines Appendices F and G require a description of the wasteful, inefficient, and unnecessary consumption of energy caused by a project. CEQA Guidelines Appendix F provides guidance for assessing potential impacts within Environmental Impact Reports (EIRs) that a project could have on energy supplies. Appendix G provides guidance related to energy resources within the context of the Initial Study (IS). Both aim to focus on conservation energy by ensuring projects consider efficiency of energy use.

Electricity and Natural Gas

Pacific Gas & Electric Company (PG&E) provides electrical and natural gas services to the City of Manteca. PG&E currently provides service to approximately 16 million people throughout a 70,000-square-mile service area in northern and central California from Eureka in the north to Bakersfield in the south, and from the Pacific Ocean in the west to the Sierra Nevada Mountain Range in the east. The service area includes 106,681 circuit miles of electric distribution and 6,438 miles of transportation pipelines. PG&E is regulated by the California Public Utilities Commission (CPUC). In San Joaquin County, PG&E reported an annual electrical consumption of approximately 5,583 million kilowatt hours (kWh) in 2019, with 3,690 million kWh for non-residential uses and 1,893 million kWh for residential use (California Energy Commission [CEC], 2021a). The California Energy Commission (CEC) does not provide data for the City.

According to the U.S. Energy Information Administration (EIA), California used approximately 2,093,641 cubic feet of natural gas in 2019 (EIA 2021a). The majority of California’s natural gas customers are residential and small commercial customers (core customers). These customers account for approximately 35 percent of the natural gas delivered by California utilities (CPUC

2020). Large consumers, such as electric generators and industrial customers, (noncore customers), account for approximately 65 percent of the natural gas delivered by California utilities (CPUC 2020). The CPUC regulates California natural gas and natural gas services, including in-state transportation over transmission and distribution pipeline systems, storage, procurement, metering, and billing. Most of the natural gas used in California comes from out-of-state natural gas basins. Biogas (e.g., from wastewater treatment facilities or dairy farms) is just beginning to be delivered into the gas utility pipeline systems, and the State has been encouraging its development (CPUC 2020).

In 2019, PG&E had delivered approximately 259 million therms to San Joaquin County, with 170 million therms delivered to non-residential uses, and 89 million therms delivered to residential use (CEC 2021b). The CEC does not provide data for the City.

Petroleum

According to the EIA, California used approximately 662 million barrels of petroleum in 2019, with the majority (565 million barrels) used for the transportation sector (EIA 2021b). This total annual consumption equates to a daily use of approximately 1.9 million barrels of petroleum. There are 42 US gallons in a barrel, thus, California consumes approximately 78.4 million gallons of petroleum per day, resulting in an annual consumption of 29 billion gallons of petroleum. In California, petroleum fuels refined from crude oil are the dominant source of energy for transportation sources. Petroleum usage in California includes petroleum products such as motor gasoline, distillate fuel, liquefied petroleum gases, and jet fuel. California has implemented policies to improve vehicle efficiency and to support use of alternative transportation and electric vehicles.

4.6.2 Discussion

a) Less than Significant.

Construction-Related Energy Consumption

Implementation of the proposed project would increase the consumption of energy for the duration of the proposed project's construction in the form of electricity and fossil fuels (e.g., gasoline, diesel fuel). Energy in the form of gasoline and diesel fuel would be consumed during this period by construction vehicles and worker vehicles during the construction period. Energy in the form of gasoline and diesel fuel would also be required to transport excavated materials to disposal locations. Energy in the form of electricity would also be used for construction equipment during this phase, including the construction of the SDPS.

Energy use would be required, as well, for any demolition within select areas of the OLWD WWTP. The demolition of select areas of the OLWD WWTP would be in accordance with the 2016 Green Building Code (Title 24, Part 11 of the California Code of Regulations), which requires all construction contractors to reduce construction waste and demolition debris by 65 percent. Depending on the energy required for recycling compared to disposal, these requirements could help make energy use for demolition more efficient.

The energy needs for the construction of the proposed project would be temporary and are not anticipated to require additional capacity or to substantially increase peak or base period demands for electricity and other forms of energy. The one-time energy expenditure required to construct the proposed project would be nonrecoverable. There is no atypical construction-related energy demand associated with the proposed project. Nonrenewable energy would not be consumed in a wasteful, inefficient, or unnecessary manner when compared to other construction activity in the region. Moreover, this one-time energy expenditure would facilitate the proposed project's objectives to create a regional drainage solution for Zone 39 and a mechanism to minimize future flows discharged from Zone 36 to the FCOC. Construction of the proposed project would allow previously approved development projects in South Manteca to proceed and to provide an outlet for pumped discharges from multiple detention basins planned north and south of Woodward Avenue. Therefore, construction energy consumption would not be wasteful, inefficient, or unnecessary. Impacts would be less than significant, and no mitigation is required.

Operational Energy Consumption

The proposed project would not introduce energy consumption from increased electricity consumption beyond that required to power a SDPS. While the SDPS would require maintenance crews to periodically come to check the SDPS, the energy consumption impacts from this would be minimal. Underground electrical work is anticipated linking pump motors, motor control centers, and switchgear. New electrical service would be provided by PG&E to allow for testing, start-up, and commissioning of the pump station. While new electrical service would be required at the SDPS, the proposed project would not require the extension of electrical services, because PG&E already services the existing OLWD WWTP and the residences on Aplicella Court. Maintenance crews would need to visit the SDPS periodically, but the impact on energy consumption from their trips would be negligible. Therefore, the energy consumption required for the operation of the SDPS would not result in wasteful, inefficient, or unnecessary energy use. Impacts are considered less than significant for proposed project operation. No mitigation is required.

- b) **Less than Significant.** As indicated in response a, above, energy consumption would increase for the duration of the proposed project's construction in the form of electricity

and fuel. The energy needs for the construction of the proposed project would be temporary and are not anticipated to require additional capacity or to substantially increase peak or base period demands for electricity and other forms of energy. This one-time energy expenditure would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency, which generally focus on reducing operational energy demand, not construction-related energy consumption.

While operation of the SDPS would result in energy consumption, it would not require consumption beyond that required to power a SDPS. The proposed project would not require the extension of electrical services, because PG&E already services the existing OLWD WWTP and the residences on Aplicella Court. Maintenance crews would need to visit the SDPS periodically, but the impact on energy consumption from their trips would be negligible. The energy consumption required for the operation of the SDPS and maintenance crews would not result in wasteful, inefficient, or unnecessary energy use. In addition, the operation of the SDPS is necessary to support previously approved development projects in the area. The proposed project does not conflict with any state or local plan for renewable energy or energy efficiency. Therefore, this impact would be less than significant. No mitigation is required.

4.6.3 Mitigation Measures

No mitigation measures regarding impacts to energy are required.

4.7 Geology and Soils

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Geology and Soils –Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on 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.)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The following information has been summarized from the Paleontological Assessment and Paleontological Resources Monitoring and Mitigation Plan (ECORP Consulting 2021b).

4.7.1 Setting

Seismicity

The potential for seismic ground shaking in California is expected. As a result, the State requires special design considerations for all structural improvements in accordance with the seismic design provisions in the California Building Code. The proposed project site is located in the City of Manteca, San Joaquin County, California. San Joaquin County is considered to be within an area that is predicted to have a 10 percent probability that a seismic event would produce horizontal ground shaking of 10 to 20 percent within a 50-year period (City of Manteca 2017b). The City is not located in an Alquist-Priolo Fault Zone, nor does it have surface expression of active faults.

Soil liquefaction is a phenomenon in which saturated soil loses shear strength and deforms from ground shaking during an earthquake. The potential for liquefaction in the City's Planning Area ranges from low to high given that many soils are high in sand and the water table is moderately high. The City's Planning Area is essentially flat, therefore, the potential for landslides is low (City of Manteca 2017b).

Geomorphic and Geologic Setting

The proposed project lies within the Great Valley geomorphic zone. The Great Valley is an alluvial plain, about 50 miles wide and 400 miles long, between the Coast Ranges and Sierra Nevada. The Great Valley is drained by the Sacramento and San Joaquin rivers, which join and enter San Francisco Bay. The eastern border of the Great Valley is underlain by the west-sloping Sierran bedrock surface, which continues westward beneath alluvium and older sediments. The western border of the Great Valley is underlain by east-dipping Cretaceous and Cenozoic strata that form a deeply buried synclinal trough. The southern portion of the Great Valley is known as the San Joaquin Valley. Its great oil fields follow anticlinal uplifts that mark the southwestern border of San Joaquin Valley and its southern basin. To the north, the Sacramento Valley plain is interrupted by the Marysville Buttes, an isolated Pliocene volcanic plug approximately 2,000 feet high.

The San Joaquin Valley basin has been filled over time with up to a six-mile-thick sequence of interbedded clay, silt, sand, and gravel deposits. The sediments range in age from more than 144 million years (Jurassic Period) to less than 10,000 radiocarbon years (Holocene). The most recent sediments consist of coarse-grained (sand and gravel) deposits along river courses and fine-grained (clay and silt) deposits located in low-lying areas or flood basins and are referred to as alluvial deposits. These deposits are loose and not well consolidated soils.

The proposed project lies in the southwestern corner of the City of Manteca, which lies on the east bank of the San Joaquin River. The proposed project site is underlain by Dos Palos Alluvium (Qdp) of Holocene age to the north and west and the Modesto Formation (Qm) of late

Pleistocene age to the southeast (ECORP Consulting 2021b). As the proposed project lies on a flood plain, the topography is very subdued, with less than 10 feet of relief along the alignment.

Soils

The NRCS classifies soils in the area of the proposed project as shown below in **Table 4.7-1**:

Table 4.7-1. Soil Types within the Proposed Project Area

Soil Map Symbol & Name	Description	Source Material	Drainage	Slopes	Shrink Swell Potential	Acres in Project Area	Percent of Project Area
130: Columbia	Fine sandy loam, drained, MLRA 17	Alluvium derived from igneous, metamorphic and sedimentary rock	Somewhat poorly drained	0-2%	low	1.3	12.3%
145: Dello	Loamy sand, drained	Alluvium derived from granitic rock sources	Very poorly drained	0-2%	low	0.6	5.1%
153: Egbert	Silty clay loam, partially drained, MRLA 16	Alluvium derived from mixed rock sources	Poorly drained	0-2%	Moderate-high	3.7	33.5%
169: Guard	Clay Loam, drained	Alluvium derived from mixed rock sources	Poorly drained	0-2%	moderate	2.3	21.3%
197: Merritt	Silty clay loam, partially drained	Alluvium derived from mixed rock sources	Poorly drained	0-2%	low	2.9	26.5%

Source: NRCS 2021; City of Manteca 2003c

Paleontological Setting

The proposed project site lies in the Modesto Formation (Qm) and the Dos Palos Alluvium (Qdp). The Modesto Formation (Qm) is of Pleistocene age and has produced vertebrate fossils. The Dos Palos Alluvium is of Holocene and probably Pleistocene age. It is old enough to produce significant paleontological resources (ECORP Consulting, 2021b). No significant paleontological discoveries have been found within eight miles of the proposed project site. There are no paleontological localities from the Dos Palos Alluvium (Qdp) in the University of California Museum of Paleontology collections. The Modesto Formation is known to have produced paleontological localities, including several vertebrate fossils, and has a high paleontological potential. It is unknown at what depth the Modesto Formation underlies the Dos Palos Alluvium.

4.7.2 Discussion

ai-iv) **Less than Significant.** The proposed project is located in the San Joaquin Valley. The City is not located within an Alquist-Priolo Fault-Rupture Hazard Zone, nor is it located within or adjacent to any known active surface fault ruptures (City of Manteca 2003c). The proposed project area is located approximately three miles east of the Vernalis Fault and approximately nine miles south of the Stockton Fault. The Vernalis Fault is a

Quaternary Fault and the Stockton Fault is a Pre-Quaternary Fault. The nearest active fault to the proposed project site is the Greenville Fault, located approximately 25 miles west (California Department of Conservation 2021).

The proposed project would comply with all the seismic design provisions in the California Building Code to reduce seismic ground shaking impacts. The proposed project would not increase the risk of loss, injury, or death beyond what already exists because the proposed project would construct a stormwater conveyance network. The conveyance network would primarily be underground, excluding parts of the SDPS, within public existing or future ROW, as well as RD-17 and OLWDWWTP property.

The potential for liquefaction in the City's planning area ranges from low to high, depending on the groundwater level and the soil components. Most of the fresh groundwater in the City is encountered at depths of less than 1,000 feet, and most of the shallow groundwater is unconfined (City of Manteca 2017b). The potential for liquefaction at the proposed project site exists. Adhering to the California Building Code would provide for sound structural integrity of the proposed project; thus, minimizing risks regarding liquefaction.

The proposed project site and vicinity have nearly level topography that would not be subject to landslide hazards. The proposed project would employ standard construction practices and comply with the California Building Code requirements for the State of California. Standard design, construction, and safety procedures would limit seismic, soil liquefaction, and landslide hazards to levels deemed acceptable in the state and the region. Thus, the proposed project would not directly or indirectly expose people or structures to potential substantial adverse effects above existing conditions. This would be a less than significant impact and no mitigation is required.

- b) **Less than Significant.** The proposed project would construct a stormwater conveyance network. The conveyance network would primarily be underground, excluding parts of the SDPS, within public existing or future ROW, as well as RD-17 and OLWD WWTP property. The majority of the proposed project site has been previously developed, either for roadway use, levee construction, residential development, or the OLWD WWTP. While construction of the proposed project could result in temporary soil erosion and the loss of topsoil, the location of the proposed project is generally level from previous grading and paving, with less than 10 feet of relief across the entire proposed project footprint, excluding the levee. The RD-17 lots have recently been graded to create a seepage berm toe levee in conjunction with levee improvements completed by RD-17. Elevation at the OLWD WWTP is approximately 20 feet above mean sea level (amsl), and quickly increases to approximately 35 feet amsl at the top of the levee. At the proposed outfall structure

location, the elevation decreases from 35 feet amsl to 5 feet amsl. These are the steepest slopes in the proposed project area.

Minimal modification to the site's existing topography or ground surface relief would be required. The majority of work for the proposed project would include trenching to install the storm water drain below ground and the excavated soil would be backfilled into the trench upon pipeline placement. The existing levee would be partially excavated to accommodate the construction of the outfall pipes. RSP would be placed at the outfall structure to prevent erosion. BMPs would be in place to reduce impacts regarding soil erosion and loss of topsoil, including the BMPs, including BMPs to comply with applicable SJVAPCD fugitive dust rules (refer to **Section 4.3, Air Quality**, for details), which would also reduce soil erosion and loss of topsoil. Therefore, the impact to erosion or loss of topsoil would be less than significant and no mitigation would be required. For a discussion of potential effects due to sedimentation during the construction period of the proposed project, please refer to **Section 4.10, Hydrology and Water Quality**.

- c) **Less than Significant.** Subsidence is the settling or sinking of parts of the earth's surface layer due to the removal of subsurface support. Subsidence is not a characteristic of the twenty-two (22) soil series found within the City's Planning Area (City of Manteca 2003c). In addition, the proposed project would not rely on the removal of subsurface resources, such as water or minerals, but rather would provide a regional drainage solution for Zone 39. Thus, potential impacts from subsidence would be less than significant, and no mitigation would be required.
- d) **Less than Significant.** The proposed project is located in an area with known expansive soils. The proposed project would employ standard construction practices and comply with California Building Code requirements for the State of California. Standard design, construction and safety procedures would limit impacts associated with expansive soils to levels deemed acceptable in the state and region. This would be a less than significant impact and no mitigation would be required.
- e) **No Impact.** The proposed project would construct a stormwater conveyance network. The proposed project does not include the use of septic tanks or alternative wastewater disposal systems. No impacts from or to soil and groundwater from septic systems would occur. There would be no impact, and no mitigating would be required.
- f) **Less than Significant with Mitigation.** The proposed project lies in the Modesto Formation and the Dos Palos Alluvium. The Modesto Formation maintains a high paleontological potential as it is of Pleistocene age and has produced vertebrate fossils. The Dos Palos Alluvium has an unknown paleontological potential. The Dos Palos Alluvium is of Holocene and probably Pleistocene age and is old enough to produce significant paleontological resources (ECORP Consulting 2021b). Proposed project construction

could result in the destruction or degradation of paleontological resources. Therefore, all disturbance of previously undisturbed Modesto Formation and Dos Palos Alluvium should be monitored. Implementation of **Mitigation Measures GEO-1** through **GEO-10** would reduce potential impacts to less than significant.

4.7.3 Mitigation Measures

Mitigation Measure GEO-1: The proponent should retain a professional certified paleontologist, as defined by the Society of Vertebrate Paleontologists (SVP). This person shall be designated the Project Paleontologist.

Mitigation Measure GEO-2: The Project Paleontologist shall attend preconstruction meetings and discuss the significance of paleontological resources with the construction team. The City or primary construction contractor shall provide a copy of the grading plans for the Project Paleontologist before or at the preconstruction meetings.

Mitigation Measure GEO-3: All disturbance of in situ Modesto Formation and Dos Palos Alluvium shall be monitored. Disturbance of, or excavations in, previously undisturbed sediments shall be monitored by a qualified Paleontological Monitor, under supervision of the Project Paleontologist. Periodic tests for microvertebrate fossils by wet or dry screening, as appropriate, of undisturbed sediments shall occur during construction. Care must be taken when wet screening, to see if any snail fossils are floating on the water in the container being used. If identifiable microvertebrate fossils are detected, a sediment sample of the producing horizon shall be collected and stored near the project site. If 6,000 pounds of sediment are available on the outcrop/cut, that number is the maximum amount that shall be collected, following SVP guidelines (2010). If 6,000 pounds cannot be derived from the outcrop/cut, the maximum amount that can be collected shall be recovered and stored nearby. The sample can be processed there, assuming that a project water source or water truck is available. It may be advantageous to dry screen the sediment samples to reduce the amount of water needed for wet screening. The processing of the screened concentrate is discussed in **Mitigation Measure GEO-10**, below.

Mitigation Measure GEO-4: The qualified Paleontological Monitor shall keep notes on excavations, stratigraphy, and fossils noted in a hardbound notebook and take photographs to record these data.

Mitigation Measure GEO-5: The qualified Paleontological Monitor shall provide daily monitoring reports to the Project Paleontologist. The Project Paleontologist shall provide weekly reports on monitoring progress to the City's representative.

Mitigation Measure GEO-6: If large specimens are encountered, all construction work within 40 feet of the specimen shall halt. The qualified Paleontological Monitor or the Project Paleontologist shall designate and flag the appropriate area, as defined by the type of specimen

encountered, with caution tape to prevent damage to the resources. The Paleontological Monitor or the Project Paleontologist shall notify the Construction Foreman as soon as possible to temporarily halt or divert earth-moving activities around the monitoring site. Construction work may then resume outside the area delineated.

Mitigation Measure GEO-7: The Project Paleontologist shall evaluate the specimen. If the specimen warrants recovery, removal of the fossil shall begin immediately. If the specimen is fragile and cannot be removed without precautionary reinforcement, plaster jacketing shall be used to stabilize the specimen before it is moved. If the specimen is large and additional personnel are necessary for removal, the Paleontological Monitor shall notify the Project Paleontologist. If removal of fossil specimens shall last for more than one day, the Project Paleontologist shall notify the Construction Manager and the City Engineer about the additional salvage time. Once the fossil site has been vacated, the Paleontological Monitor shall allow earth-moving activities to proceed. Large vertebrate specimens shall be transported to the Project Paleontologist's laboratory for further treatment, as outlined below in **Mitigation Measure GEO-10**.

Mitigation Measure GEO-8: If one or more vertebrate specimen is/are found in association with organic remains (e.g., woods, plants, charcoal, organic-rich sediment, or expendable bone) that can be radiocarbon dated, such material shall be kept free from preservatives, finger oils, or other organic contamination, stored in a sterile container that shall not affect the dating, and shall be submitted for a radiocarbon date.

Mitigation Measure GEO-9: The synthesis of a clear stratigraphic profile of sediments encountered in the project should be made if possible. This may not be possible because of the limited nature of the project excavations. Nonetheless, detailed notes of sediments and facies encountered must be recorded.

Mitigation Measure GEO-10: If larger vertebrate specimens and plant specimens are found, they shall be cleaned of extraneous sediment, hardened with resins and glues for repair and stabilization to the point of identification for curation purposes. If deposits encountered during construction are found to produce microvertebrate fossils, concentrate from the clean screened sediment samples shall be dried and sorted under a binocular microscope. Specimens obtained from sediment samples and from monitoring shall be stabilized. Microvertebrate fossils shall be sorted by taxon, stored in separate vials or capsules, and identified to the lowest possible taxonomic level. The Project Paleontologist shall prepare a final report describing the fossils recovered and their significance. The specimens recovered, as well as field notes and photographs, shall be curated in a recognized scientific paleontology collection such as the University of California Museum of Paleontology collections.

4.8 Greenhouse Gas Emissions

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Greenhouse Gas Emissions –Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Information in this section is summarized from the Air Quality and Greenhouse Gas Study for the Storm Drain Zone 36/Zone 39 Improvement Project (Entech Consulting Group [Entech] 2021a).

4.8.1 Setting

The earth’s atmosphere naturally contains a number of gases, including CO, methane (CH₄), and nitrous oxide (N₂O), which are collectively referred to as greenhouse gases (GHGs). GHG emissions are numerically depicted as carbon dioxide equivalents (CO₂e). CO₂e represents CO₂ plus the additional warming potential from CH₄ and N₂O. The common unit of measurement for CO₂e is metric tons (MTCO₂e).

These gases trap solar radiation and the earth’s own radiation, preventing it from passing through the earth’s atmosphere and into space. GHGs are vital to life on earth; however, increasing GHG concentrations are warming the planet. In general, CH₄ has 21 times the warming potential of CO₂ and N₂O has 310 times the warming potential of CO₂. As the average temperature of the earth increases, weather may be affected, including changes in precipitation patterns, accumulation of snowpack, and intensity and duration of spring snowmelt, as well as increased intensity in low precipitation and droughts. Human-made GHG emissions occur primarily through the combustion of fuels, mainly associated with transportation, residential energy, and agriculture.

California’s primary legislation for reducing GHG emissions is the California Global Warming Solutions Act (AB 32), which set a goal for the State to reduce GHG emissions to 80 percent of 1990 emission levels by 2050. The CARB, among other State agencies, has enacted regulation in order to achieve these targets. The 2017 Scoping Plan identifies how the State can reach the 2030 climate target to reduce GHG emissions by 40 percent from 1990 levels, and substantially advance toward the 2050 climate goal to reduce GHG emissions by 80 percent below 1990 levels.

The City adopted a Climate Action Plan (CAP) in October 2013, which is designed to reduce community-related and City operations-related GHG emissions in order to achieve the AB 32 GHG emission targets. The CAP identifies policies within the City General Plan that would decrease the City's emissions of GHGs. It also lists Implementation Strategies that add more details and specific actions to the General Plan policies and clarifies how the reductions would occur.

The SJVAPCD is the local agency with primary responsibility for compliance with the federal and State standards (National Ambient Air Quality Standards [NAAQS] and California Ambient Air Quality Standards [CAAQS]) and ensuring that air quality conditions are maintained. They do this through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. Related to the GHG, the SJVAPCD Governing Board approved a Climate Change Action Plan (CCAP) in 2008 that included goals and actions for complying with AB 32. In December 2009, the SJVAPCD Governing Board adopted the Guidance for Valley Land Use Agencies in Addressing GHG Emission Impacts for New Project under CEQA. The SJVAPCD found that to best address climate change, all projects are required to reduce their GHG emissions, whether through project design elements or mitigation (Entech 2021a).

4.8.2 Discussion

- a) **Less than Significant.** The proposed project would construct a stormwater conveyance network. The conveyance network would primarily be underground, excluding parts of the SDPS, within public existing or future ROW, as well as RD-17, and OLWD WWTP property. The proposed project would not increase capacity along Woodward Avenue, South Woodward Avenue, or Aplicella Court, nor would it increase traffic and congestion. The SDPS pumps would be tied into the existing electrical grid. The SDPS would be equipped with two standby generators sized to operate each set of pumps during a power outage. These generators are anticipated to be electric, thus no GHG emissions would be generated. Therefore, operation of the proposed project would not generate GHG emissions beyond what currently exists. The proposed project would have no operational impacts associated with GHG emissions.

Construction GHG emissions are anticipated to occur with the proposed project. Construction activities, such as site preparation, site grading, on-site heavy-duty construction vehicles, equipment hauling materials to and from the site, and motor vehicles transporting the construction crew would produce combustion emissions from various sources. During proposed project construction, GHGs would be emitted through the operation of construction equipment and from worker and builder supply vendor vehicles, each of which typically uses fossil-based fuels to operate. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change.

GHG emissions from construction activities were estimated using CalEEMod Version 2016.3.2 (Entech 2021a). The model used for the proposed project included the following assumptions: 1) the types and quantities of construction equipment based on construction equipment list provided in **Table 2-1, Section 2, Project Description**; 2) default values were used to estimate the number of general materials deliveries and haul trucks; 3) default CalEEMod trip distance for construction vehicles was assumed as a one-way distance of 10.8 miles for worker trips, 7.3 miles for vendor trips, and 20 miles for haul trips; and 4) the proposed project would have a 16-month construction schedule. CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform to quantify potential criteria pollutant and GHG emissions associated with both construction and operation activities, as well as indirect emissions. The model is a comprehensive tool for quantifying air quality impacts from land use projects located throughout California (CAPCOA 2017).

Construction activities associated with the proposed project are estimated to result in total GHG emissions of 2,497 MTCO₂e/year for the year 2022. The SJVAPCD does not have specific thresholds for reducing GHG emissions from construction. However, other jurisdictions, such as the South Coast Air Quality Management District and the Sacramento Metropolitan Air Quality Management District, have concluded that construction emissions should be included since they may remain in the atmosphere for years after construction is complete. In order to account for the construction emissions, the amortization of the total emissions generated during construction would be 83 MTCO₂e/year, based on the life of the development of 30 years. SJVAPCD states that an individual project cannot generate enough GHG emissions to cause a discernible change in global climate. SJVAPCD requires each project to reduce GHG emissions by design or through mitigation. The proposed project would implement BMPs as outlined in **Section 4.3, Air Quality**, that would reduce emissions generated from diesel engines that would lower GHG emissions. Therefore, the proposed project construction activities would result in a less than significant impact. No mitigation would be required.

- b) **Less than Significant.** As discussed in **Section 4.3, Air Quality**, above, the proposed project would not exceed the SJVAPCD significance thresholds for criteria pollutant emissions. As discussed in response a, above, the proposed project would result in a maximum of approximately 2,497 MTCO₂e/year for the year 2022. The SJVAPCD does not have any specific thresholds for reducing GHG emissions from construction, however, it states that every project should reduce GHG emissions by design or through mitigation. The proposed project would implement BMPs that would reduce emissions generated from diesel engines that would lower GHG emissions. These BMPs are consistent with the City's CAP (Entech 2021a). Given the levels of emissions during construction, and the implementation of BMPs, along with compliance with federal, State, and local regulations

and policies, the proposed project would be consistent with the City's CAP. Therefore, the impacts would be less than significant, and no mitigation would be required.

4.8.3 Mitigation Measures

No mitigation measures are required related to greenhouse gas emissions. BMPs would be implemented, as discussed in detail in **Section 4.3, Air Quality**.

4.9 Hazards and Hazardous Materials

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Hazards and Hazardous Materials –Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 or excessive noise for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

This section is based in part on the City General Plan and the Manteca General Plan 2023 Draft Environmental Impact Report (City of Manteca 2003b; City of Manteca 2003c).

4.9.1 Setting

The proposed project is located in the southwestern portion of the City of Manteca and San Joaquin County, within the City's sphere of influence. The proposed project site is located within existing and future public ROW, as well as ReclRD-17 and OLWD WWTP property, and Low Density Residential land uses. Surrounding land use designations include: Low Density Residential (LDR), Open Space (OS), Business Industrial Park (BIP), Urban Reserve - Business Industrial Park (UR-BIP), and General Commercial (GC). It should be noted that the City is currently undergoing a General Plan Update and proposed land use designations would eliminate the BIP, UR-BIP, and GC land uses adjacent to the proposed project site and replace them with High Density Residential (HDR), LDR and Public/Quasi-Public (PQP).

The proposed project site is relatively flat and ranges in elevation from approximately 16 feet to 31 feet. The NRCS Web Soil Survey indicates the presence of five soil series occurring within the proposed project vicinity. These are discussed in detail in **Section 4.7, Geology and Soils**, and **Table 4.7-1**. The proposed project is not in an area identified by the California Geological Survey as having soils that are likely to contain naturally occurring asbestos (NRCS 2021).

Site Reconnaissance

Site reconnaissance was conducted in April 2021. The proposed project site was observed to be currently used for existing and future ROW and the existing OLWD WWTP. There was no obvious indication of spillage or staining observed. There are no known underground storage tanks within the proposed project site.

Historical Use Information

Historical information was reviewed to develop a history of the previous uses on the proposed project site and surrounding area in order to identify Recognized Environmental Conditions (RECs). Standard historical sources reviewed during the preparation of this report included the following, as available: Aerial Photographs, Environmental Records, and Databases.

AERIAL PHOTOGRAPHS

Aerial photographs of the proposed project site and general vicinity were reviewed. Oakwood Lake was created between 1968 and 1975, and since 1975 the area has seen significant residential development. It appears the residential development began after 1965 and development north of the proposed project site began around 1982. Prior to this, the areas surrounding the proposed project site were agricultural lands and many parcels continue to serve as agricultural land uses today. Since 2009, several of the parcels have transitioned from agricultural to residential (EDR 2021a).

ENVIRONMENTAL RECORDS

A search of local, State, and federal agency databases for the proposed project site and known contaminated sites in the vicinity was performed. None of the parcels in the proposed project area were found to contain any known contamination.

The US Environmental Protection Agency (EPA) Toxic Release Inventory (TRI) does not list data on the disposal or other releases of toxic chemicals in the proposed project site (EPA 2021d). There are no TRI sites in the City of Manteca. The nearest TRI site is located at 18260 Harlan Road in Lathrop, approximately 1.79 miles north of the proposed project.

The California Department of Toxic Substances Control (DTSC) maintains the *Envirostor Data Management System*, which provides information on hazardous waste facilities (both permitted and corrective action) as well as any available site cleanup information. There are two sites listed in the Envirostor database within the proposed project site (EDR 2021b). The first site, Oakwood Lake Unit No 4, was a residential property located on Aplicella Court and has a status of “Terminated”. The second site, Tara Park Elementary School, is located at 2401 East Woodward Avenue. The status is “No Further Action” and was a school investigation project (EDR 2021b). The next closest Envirostor site to the proposed project is located at 19589 South McKinley Avenue and is the Tara Park Elementary School Alternative Location. The site is located approximately 0.4-mile northeast of the proposed project and the status is “No Further Action”; the site was a school investigation (EDR 2021b).

GeoTracker is the State Water Resources Control Board’s (SWRCB’s) Internet-accessible database system used by the SWRCB, regional boards, and local agencies to track and archive compliance data from authorized or unauthorized discharges of waste to land, or unauthorized releases of hazardous substances from underground storage tanks (USTs). **Table 4.9-1** and **Table 4.9-2** list the sites identified by GeoTracker as being located within one and two miles of the proposed project site.

Table 4.9-1. GeoTracker Hazardous Material Release Sites within 1.0 Mile of Proposed Project

Site Name	Type	Cleanup Status	Address
MBP Mossdale	LUST Cleanup Site*	Completed – Case Closed	444 Mossdale St.
Source: SWRCB GeoTracker 2021 * LUST = Leaking Underground Storage Tank			

Table 4.9-2. GeoTracker Hazardous Material Release Sites within 2.0 Miles of Proposed Project

Site Name	Type	Cleanup Status	Address
D’Arcy Parkway Road Extension	Cleanup Program Site	Completed – Case Closed	400-500 D’Arcy Pkwy.
Sundance Subdivision Units 2 and 3	LUST Cleanup Site*	Completed – Case Closed	1633 West Woodward Ave.
Frank’s One Stop	LUST Cleanup Site*	Open – Verification Monitoring	2072 Yosemite Ave W.
ABF Freight	LUST Cleanup Site*	Completed – Case Closed	2427 Yosemite Ave W.
Ted Peters Trucking	LUST Cleanup Site*	Completed – Case Closed	1985 Yosemite Ave W.
Source: SWRCB GeoTracker 2021 * LUST = Leaking Underground Storage Tank			

The Solid Waste Information System (SWIS) is a database of solid waste facilities that is maintained by the California Integrated Waste Management Board. The SWIS data identifies active, planned, and closed sites. The proposed project vicinity does not have any active or planned solid waste facilities in the database. The nearest active facility, Windeler Ranch Glass Disposal Site, is located approximately one-mile northwest of the proposed project (CalRecycle 2021).

None of the records reviewed for the proposed project site indicate that a REC is associated with the proposed project site.

DATABASES

There is a broad list of federal and state databases that provide information for sites with varying potential for risk from the possible existence of hazardous materials. The proposed project site is not listed in the following databases: National Priorities List (NPL) of Superfund Sites and Proposed NPL Sites (EPA 2021b); Resource Conservation and Recovery Information System (RCRIS); Superfund Enterprise Management System (SEMS) (formerly CERCLIS [Comprehensive Environmental Response, Compensation, and Liability Information System]); Corrective Action Report (CORRACTS); State of California Hazardous Waste and Substances Site List (Cortese); and MINES List (EDR 2021a; EDR 2021b; GeoTracker 2021).

Two databases identified two sites within 0.25 mile of the proposed project site:

- a) RCRA NonGen/NLR site – Reclamation District No. 17 is located at 20611 South Woodward Ave and its status is “Not Reported” (EDR 2021b); and

- b) MINES site – Oakwood Lake Pit is located at 1575 Spinnaker Drive Suite 205 and the status of the mining operation is “Closed – Reclamation Certified Complete by Lead Agency” (EDR 2021b).

Hazardous Materials Sites

Based on the record searches, there are no hazardous material sites within 0.5-miles of the proposed project known to handle and store hazardous materials that are associated with a hazardous material related release or occurrence. **Table 4.9-1**, above, provides the hazardous material sites within 1.0 mile of the proposed project with a description of the hazards provided and **Table 4.9-2**, above, provides known hazardous material sites within 2.0 miles of the proposed project with a description of the hazards provided. As noted previously, none of the parcels in the proposed project site were found to contain any known contamination. The nearest open case is located approximately 1.6 miles northeast of the proposed project site, and contaminants are not known to encroach into the proposed project site boundaries.

In addition to the sites listed above, the proposed project site and the surrounding areas do not contain identified oil and gas monitoring wells.

Airports

The San Joaquin Council of Governments (SJCOG) has developed an Airport Land Use Compatibility Plan (ALUCP) for the Stockton Metropolitan Airport in the City of Stockton. Located approximately 8.5 miles to the south of the airport, the proposed project is not situated in any flight zones identified in the ALUCP (SJCOG 2018). The New Jerusalem Airport is located approximately 6.5 miles to the south of the proposed project site. There are no private airstrips in the vicinity of the proposed project.

Emergency Access Routes

The San Joaquin County Office of Emergency Services has developed a Neighborhood Evacuation Map for the proposed project area (San Joaquin County 2018). Woodward Avenue is a designated evacuation route for the residents of the Oakwood Shores neighborhood.

Fire Hazards

Wildfires are a major hazard in the State of California. Wildfires burn natural vegetation on developed and undeveloped lands and include timber, brush, woodland, and grass fires. While low intensity wildfires have a role in the County’s ecosystem, wildfires put human health and safety, structures (e.g., homes, schools, businesses, etc.), air quality, recreation areas, water quality, wildlife habitat and ecosystem health, and forest resources at risk.

Wildland fire hazards exist in varying degrees in the foothill portion of San Joaquin County (County) located to the east and southwest of the proposed project site. The proposed project site is located in the valley floor, which is predominantly under agricultural and urban use. This area has a low fire hazard risk.

4.9.2 Discussion

- a) **Less than Significant with Mitigation.** The proposed project would construct a stormwater conveyance network. The conveyance network would primarily be underground, excluding parts of the SDPS, within public existing or future ROW, as well as RD-17 and OLWD WWTP property. Operation of the proposed project would not involve the routine transport, use, or disposal of hazardous materials. There would be no increased likelihood of the “routine” transport, use, or disposal of hazardous materials once the proposed project is complete. The proposed project would be a conveyance system for stormwater, which includes a gravity pipeline, SDPS, a force pipeline, and the stormwater outfall structure; thus, it not a facility that transports or disposes of hazardous materials.

Construction of the proposed project would potentially require the use of various types and quantities of hazardous materials. Hazardous materials that are typically used during construction include, but are not limited to, hydraulic oil, diesel fuel, grease, lubricants, solvents, and adhesives. Although equipment used during construction activities could contain various hazardous materials, these materials would be used in accordance with the manufacturer’s specifications and all applicable regulations. Minor fuel or oil spills could occur during construction activities. The release, even if accidental, of hazardous materials into the environment is regulated through existing federal, state, and local laws. These regulations require emergency response from local agencies to contain hazardous materials in the event of an accidental release. The use of handling of hazardous materials during construction activities would occur in accordance with applicable federal, state, and local laws, including the CalOSHA requirements. Implementation of construction BMPs, compliance with vehicle manufacturer’s specifications, and compliance with applicable regulations would result in impacts that are less than significant. **Mitigation Measure HYD-1** would reduce impacts from routine transport and handling of hazardous substances during the construction period to less than significant.

- b) **Less than Significant with Mitigation.** The proposed project would construct a stormwater conveyance network. The conveyance network would primarily be underground, excluding parts of the SDPS, within public existing or future ROW, as well as RD-17 and OLWD WWTP property. The proposed project would not change the use of Woodward Avenue, South Woodward Avenue, or Aplicella Court, nor would it increase the number of vehicles using the roadway. The proposed project would include a gravity

pipeline, SDPS, a force pipeline, and the stormwater outfall structure. These structures do not require hazardous materials to operate. Thus, the potential for release of hazardous materials into the environment would be similar to existing conditions and impacts would be less than significant.

Construction activities for the proposed project have the potential to use a variety of hazardous materials during construction activities. These materials would be stored, handled, and transported per federal, state, and local regulatory requirements. Implementation of construction BMPs, compliance with vehicle manufacturer's specifications, compliance with applicable regulations, and implementation of **Mitigation Measures HAZ-1** and **HYD-1** would result in impacts that are less than significant.

- c) **No Impact.** The proposed project site is not located within 0.25 mile of a school. Mossdale Elementary School in the City of Lathrop is the nearest school to the proposed project site and is located approximately two miles northwest of the proposed project site. The proposed project would not result in hazardous emissions nor involve the handling of hazardous substances within the vicinity of a school. Construction activities for the proposed project have the potential to use a variety of hazardous materials during construction activities. These materials would be stored, handled, and transported per federal, state, and local regulatory requirements. The Contractor would implement construction BMPs, comply with vehicle manufacturer's specifications, and comply with applicable regulations. No impact would occur, and no mitigation would be required.
- d) **No Impact.** According to the DTSC Envirostor database, the proposed project would not be located on a site identified on a list of hazardous materials sites compiled pursuant to California Government Code Section 65962.5 (DTSC 2021; EDR 2021b). The two Envirostor sites listed as occurring within the proposed project site are currently listed as "Terminated" and "No Further Action Required". As of April 30, 2021, there are no sites listed on the Cortese List occurring in the proposed project area, or in the City (Envirostor 2021), pursuant to California Government Code Section 65962.5. Implementation of the proposed project would not create a significant hazard to the public or the environment as it is not located on a hazardous materials site. There is no indication that the proposed project would create a significant hazard to the public or to the environment as a result of existing hazardous material contamination. No impact would occur, and no mitigation would be required.
- e) **No Impact.** The Stockton Metropolitan Airport is located approximately 8.5 miles north of the proposed project site. The proposed project site is not located in the Stockton Metropolitan Airport Influence Area (San Joaquin County 2018b). The New Jerusalem Airport is located approximately 6.5 miles to the south of the proposed project site. The proposed project site would not be exposed to or contribute to safety hazards because

the proposed project is located more than five miles from the nearest airport. The proposed project site is not located in an area of landing or take off hazards nor would it include structures that would interfere with flight patterns. Because the proposed project site is not within two miles of an airport, nor is it within and ALUCP, no aspect of the proposed project would result in a safety hazard or excessive noise. There would be no impact and no mitigation would be required.

- f) **Less than Significant with Mitigation.** The proposed project would construct a stormwater conveyance network. The conveyance network would primarily be underground, excluding parts of the SDPS, within public existing or future ROW, as well as RD-17 and OLWD WWTP property. The City designates Woodward Avenue as an evacuation route (San Joaquin County 2019); however, the construction of the proposed project would not affect the existing conditions of the surrounding roads. Operations would be the same as existing conditions upon construction completion. The proposed project would not increase capacity along Woodward Avenue, South Woodward Avenue, or Aplicella Court that could increase traffic and congestion. The proposed project would not impair an adopted emergency response plan or emergency evacuation plan, as Woodward Avenue and Aplicella Court operations would be similar to existing conditions.

The proposed project is not expected to require any temporary lane closures and/or detours. Temporary construction activities and staging areas would be confined to the proposed project site and would not physically impair access to other existing roadways within the proposed project vicinity. Construction traffic control is not anticipated to significantly interfere with an emergency response plan or emergency evacuation plan. The proposed project would be coordinated with the Manteca Fire Department (MFD), City of Manteca Police Department (MPD), and other law enforcement or emergency service providers within the area through a standard Construction Period Emergency Access Plan, as required under **Mitigation Measure PUB-1**. The implementation of **Mitigation Measure PUB-1** would ensure that the proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Impacts would be less than significant with mitigation measures.

- g) **Less than Significant with Mitigation.** According to the CalFire Fire Hazard Severity Zones (FHSZ) Map, the City of Manteca, is not located in a State Responsibility Area or Local Responsibility Area classified as a “Very High” FHSZ. No cities or communities within San Joaquin County are categorized as “Very High” FHSZ by CalFire (Office of the State Fire Marshall 2007).

The proposed project site is not located in a critical fire danger zone or adjacent to wildlands subject to wildfires. The threat of wildfire in the proposed project area has been

determined unlikely from CalFire's FHSZ Maps. The proposed project would not result in an increase of the number of people within the project site once construction is complete. Therefore, project construction would not expose people or structures to a significant risk from wildland fires, beyond what is currently present. Impacts would be less than significant in this regard.

During construction, workers would be present on site; however, this increase in workers would be temporary in nature. The proposed project would be coordinated with the Manteca Fire Department, as well as the City of Manteca Police Department and other law enforcement or emergency service providers within the area, through a standard Construction Period Emergency and School Access Plan, as required under **Mitigation Measure PUB-1**. In addition, **Mitigation Measure FIRE-1** requires the preparation of a Construction Fire Safety Plan prior to the start of construction. With the implementation of mitigation measures, impacts would remain less than significant regarding wildland fire threat.

4.9.3 Mitigation Measures

Implement **Mitigation Measure HYD-1** in **Section 4.10, Hydrology and Water Quality**, **Mitigation Measure PUB-1** in **Section 4.15 Public Services**, and **Mitigation Measure FIRE-1** in **Section 4.20, Wildfire**.

Mitigation Measure HAZ-1: A Health and Safety Plan (HASP) shall be developed for the project. The HASP shall describe appropriate procedures to follow in the event that any contaminated soil or groundwater is encountered during construction activities. Any unknown substances shall be tested, handled and disposed of in accordance with appropriate federal, state and local regulations.

4.10 Hydrology and Water Quality

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Hydrology and Water Quality – Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially alter the existing drainage pattern of a site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i. result in substantial erosion or siltation on- or off-site;	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii. 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; or	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv. impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The following information is summarized from the Biological Resources Analysis (BRA) (Monk and Associates, Inc. 2021) and the Flood Hazards, Hydrology, and Hydraulics Study (Dewberry | Drake Haglan 2021) prepared for the proposed project.

4.10.1 Setting

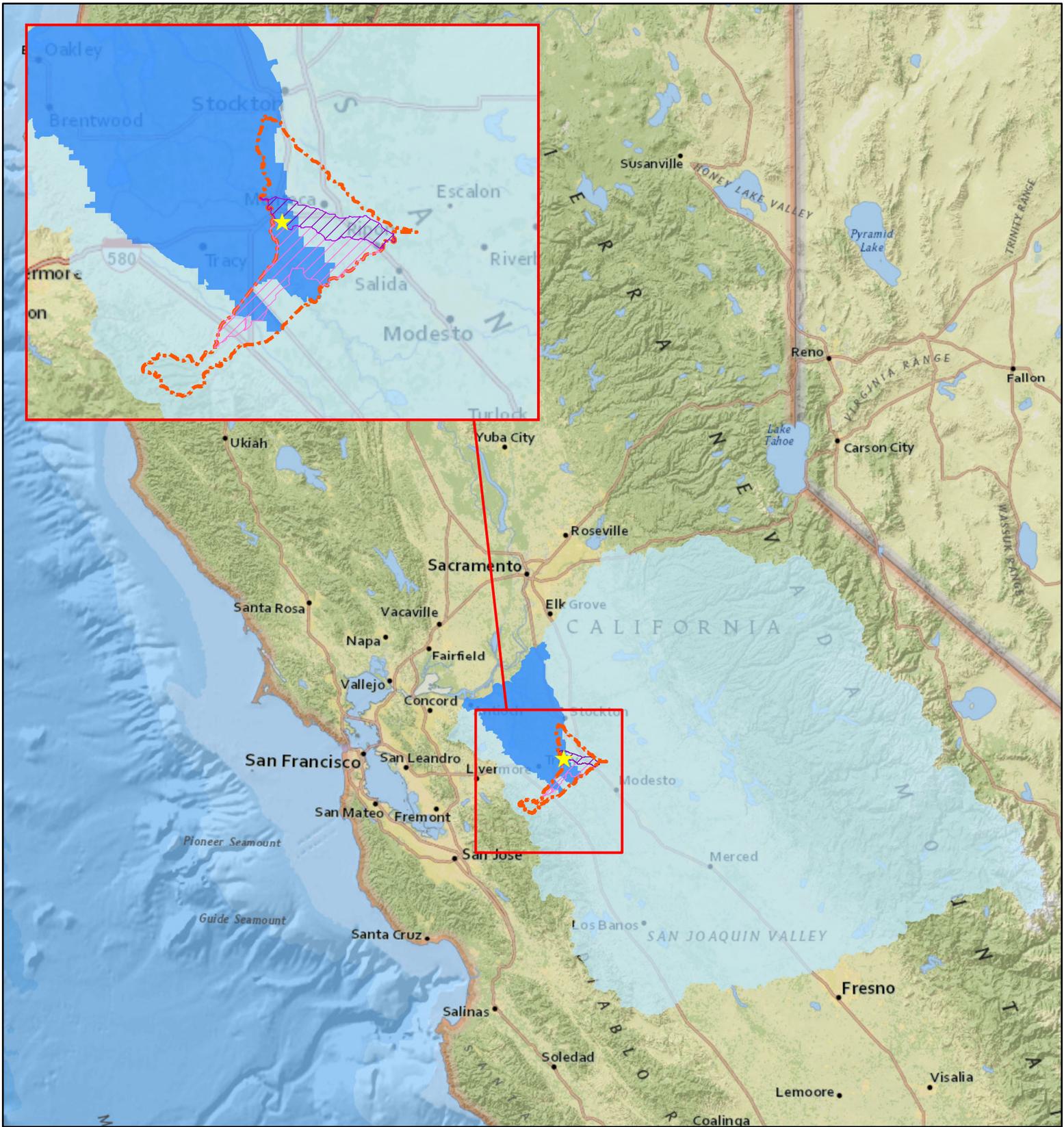
Regional Hydrology

The City of Manteca City is located in the Great Valley of California. The Great Valley is a sedimentary basin, approximately 50 miles wide and 400 miles long, with the Coast Ranges to the west and the Sierra Nevada Range to the east. The Great Valley is drained by the Sacramento and San Joaquin rivers, which join and enter San Francisco Bay. The southern portion of the Great Valley is known as the San Joaquin Valley. Drainage into the San Joaquin Valley is mainly from the Sierra Nevada Range. The San Joaquin River and the Stanislaus River border the southwest and southern edge of the City's Sphere of Influence (City of Manteca 2003b).

The proposed project is located in the San Joaquin Delta hydrologic unit (HU) within the San Joaquin hydrologic region (HR). The portion of the San Joaquin River within the proposed project site is located in the Walthall Slough-San Joaquin River subwatershed and the Oakwood Lake-San Joaquin River subwatershed within the Lone Tree Creek-San Joaquin River watershed (**Figure 4.10-1**). The San Joaquin Delta HU drains an area of approximately 677 square miles. The San Joaquin HR drains an area of approximately 15,314 square miles. The Walthall Slough-San Joaquin River and Oakwood Lake-San Joaquin River subwatersheds collectively drain approximately 79 square miles within the Lone Tree Creek-San Joaquin River watershed, which drains approximately 168 square miles.

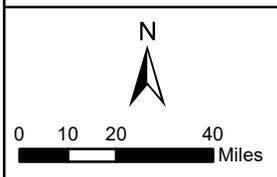
Local Hydrology

A fork of the San Joaquin River crosses the western boundary of the proposed project site, approximately 0.13-mile south of its confluence with the main portion of the San Joaquin River, where it flows north toward the Delta (**Figure 4.10-2**). The tributary, where the proposed project's outfall is located, ranges between 120 and 130 feet wide at its active flow channel (Monk & Associates, Inc 2021). The San Joaquin River's average high-water surface elevation in the direct vicinity of the proposed project is 6.0 feet. The 200-year water surface elevation is 29.80 feet. The San Joaquin River and its tributaries are tidally influenced. In the location of the proposed project's outfall, the average HTL is calculated to be approximately 7.25 feet North American Vertical Datum based on field markers identified by Monk & Associates on August 13, 2021.



Legend

- ★ Proposed Project Location
- San Joaquin Delta Hydrologic Unit
- ▨ Oakwood Lake-San Joaquin River Subwatershed
- San Joaquin Hydrologic Region
- ▨ Lone Tree Creek-San Joaquin River Watershed
- ▨ Walthall Slough-San Joaquin River Subwatershed



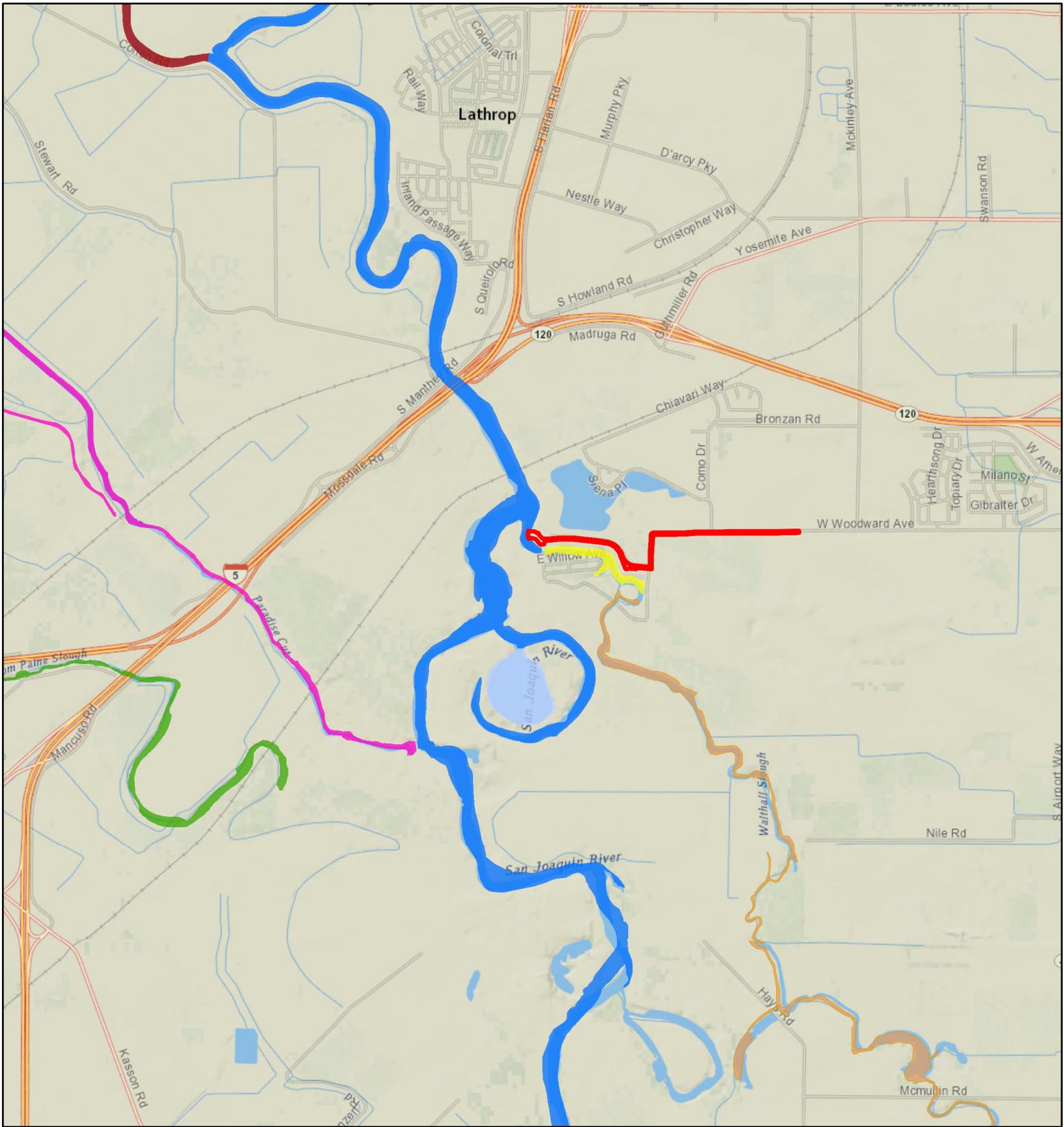
Source: ESRI Online Basemap, World Imagery Map, San Joaquin County Coordinate System NAD 83 State Plane California 3 FIPS 0402 Feet

Notes: This map was created for informational and display purposes only.

**Storm Drain Zone 36/Zone 39
Improvements Project
City of Manteca, CA**

Watershed

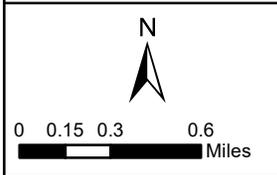
**Figure
4.10-1**



Legend

- Project Extent
- Old River
- San Joaquin River
- Walthall Slough
- Circle Lake
- Paradise Cut
- Tom Paine Slough
- Weatherbee Lake

Dewberry | drake haglan



Source: ESRI Online Basemap, World Imagery Map, San Joaquin County Coordinate System NAD 83 State Plane California 3 FIPS 0402 Feet

Notes: This map was created for informational and display purposes only.

**Storm Drain Zone 36/Zone 39
Improvements Project
City of Manteca, CA**

**Surface
Waters**

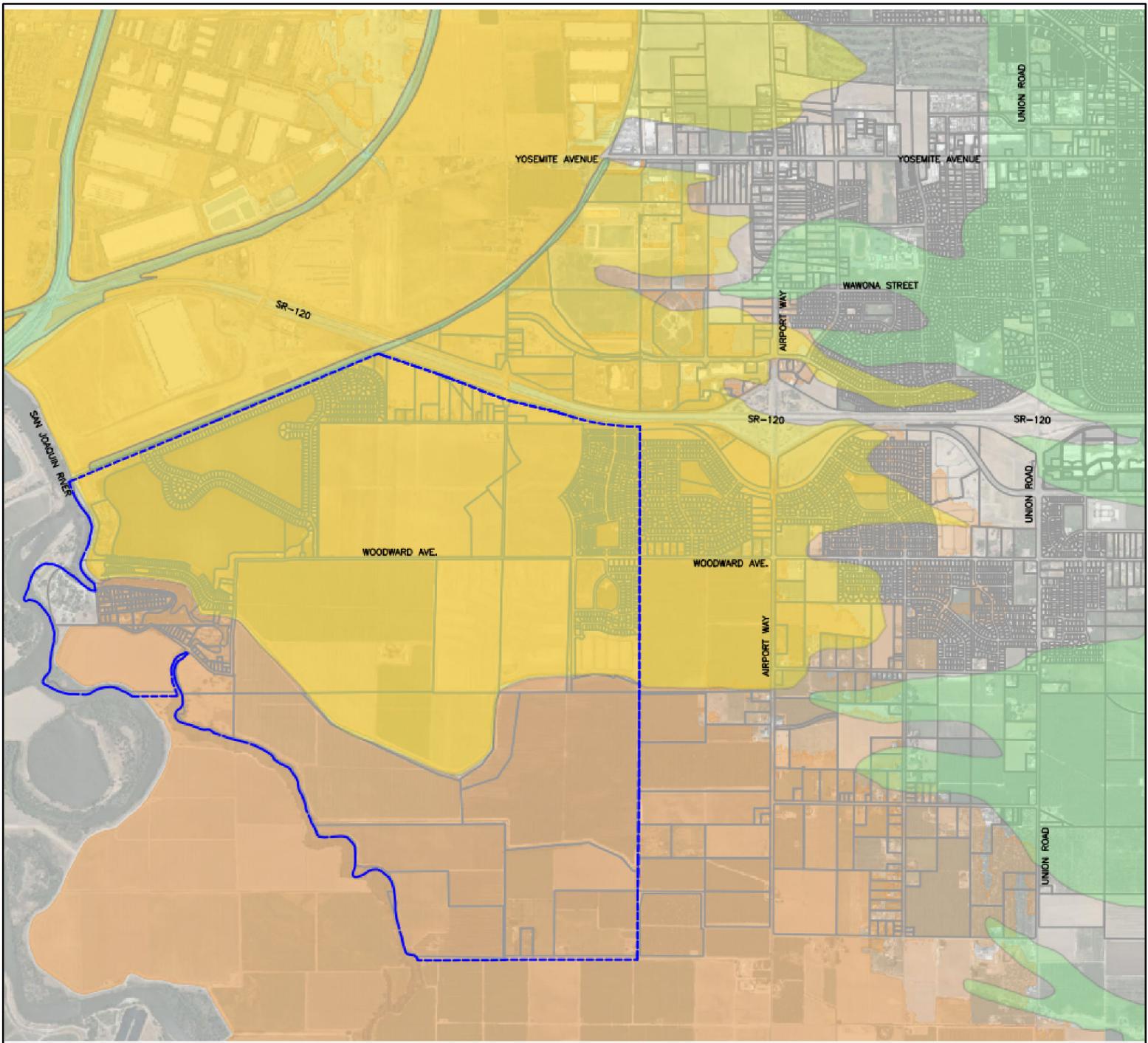
**Figure
4.10-2**

The remainder of the proposed project is largely level except the portion north of where South Woodward Avenue crosses over the San Joaquin River and its levees. Along Aplicella Court, any overland flows move from the toe of the recently created seepage berm at the toe of the levee toward Aplicella Court which has drain inlets associated with the street and adjacent development, Oakwood Shores neighborhood. Along South Woodward Avenue, overland flows (i.e., road runoff) move south and then east/west toward the roadsides. Overland flows along Woodward Avenue flow to the south. There is a tertiary irrigation ditch along South Woodward Avenue. An excavated ditch in uplands along Woodward Avenue, associated with the adjacent agricultural fields, is currently used for agricultural drainage. It clearly is not in use as an irrigation ditch and is entirely dominated by upland vegetation (Monk and Associates 2021). The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panel 06077C0620F identified the proposed project as located within Zone X, protected from the one percent annual chance flood hazard by a levee system that has been provisionally accredited (**Figure 4.10-3**) (FEMA 2020). The proposed project site is located in an area with a flood depth less than 3-ft for the 200-year flood event (**Figure 4.10-4**) (FEMA 2020).

Groundwater

The proposed project is located within the San Joaquin Valley – Eastern San Joaquin Valley Groundwater Basin, a High Priority basin (**Figure 4.10-5**). The Eastern San Joaquin Valley Groundwater Basin is approximately 1,195 square miles and serves approximately 573,142 people as of 2010 (Groundwater Exchange 2021). This basin hosts approximately 13,668 wells, of which approximately 415 are water supply wells. Groundwater accounts for approximately 35 percent of the basin’s water supply. According to the Groundwater Exchange, the basin is critically over drafted and crosses Calaveras, San Joaquin, and Stanislaus counties.

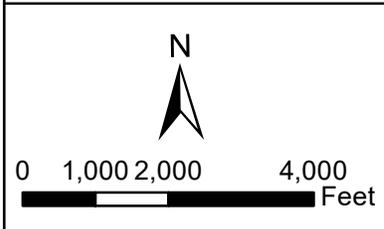
The City has 15 active municipal wells that provide water for urban use and 31 agricultural wells used to irrigate City landscaping. Agricultural land near the City is irrigated by the SSJID diversion from Stanislaus River (Diversion #17). Starting in water year 2005, the City began receiving water from the South County Water Supply Project (Diversion #20). Since the City began receiving surface water, its supply mix has steadily decreased its reliance on groundwater, from 100 percent of the urban demand before water year 2005 to an average of 62 percent of the demand after (San Joaquin County 2018c).



Legend

- Zone 39 Boundary
- Area with Reduced Risk due to Levee
- 200 - Year Floodplain
- Area with Minimal Flood Hazard

Dewberry | drake haglan



Storm Drain Zone 36/Zone 39
Improvements Project
City of Manteca, CA

**200-Year
Floodplain Map**

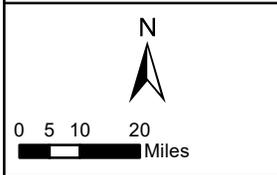
**Figure
4.10-4**



Legend

- ★ Proposed Project Location
- ▭ Project Extent
- San Joaquin Valley Groundwater Basins
- Eastern San Joaquin Groundwater Basin

Dewberry | drake haglan



Source: ESRI Online Basemap, World Imagery Map, San Joaquin County Coordinate System NAD 83 State Plane California 3 FIPS 0402 Feet

Notes: This map was created for informational and display purposes only.

**Storm Drain Zone 36/Zone 39
Improvements Project
City of Manteca, CA**

**Groundwater
Basins**

**Figure
4.10-5**

Climate

Summers in the City are warm and dry, ranging from an average high in July of 93 degrees Fahrenheit (°F) to an average low of approximately 59°F. Winters are cool and mild, with an average high of 53°F and a low of 37°F in January. The average annual precipitation is approximately 13.81 inches. Precipitation occurs as rain most of which falls between the months of November and April, peaking in January at an average of 2.85 inches (City of Manteca 2017a).

Existing Drainage Systems

The City's 2013 SDMP provides a comprehensive planning document to guide improvement and expansion of the City's storm drainage system to meet current and future needs in a safe and reliable manner while maintaining compliance with all applicable regulations (City of Manteca 2013b). The City operates and maintains the Storm Drain System, which serves the community. The City's Storm Drainage System consists of approximately 170 miles of pipeline, 36 pump stations, and 35 detention basins. When it rains, the runoff flows through this system, into SSJID drains and laterals, and eventually into the San Joaquin River. Five planning zones have been identified to define the improvements needed to serve future planned growth in the City: Zones 30, 32, 34, 36 and 39. With the exception of drainage Zone 39, all drainage zones are located in the SSJID service area. The proposed project is located in Zone 39 and would serve zones 36 and 39.

Section 1, Figure 1-3 provides an illustration of existing drainage facilities in the proposed project vicinity. The proposed project is within the drainage area of Zone 39. Apart from Drain 11 near the southern boundary of Zone 39, there are no regional drainage facilities within this zone. However, there are several local storm drains within the Oakwood Shores neighborhood ranging in diameter from 12 to 30 inches. These storm drains discharge to the two lakes within the neighborhood. A 36-inch diameter cross connection between the two lakes helps maintain comparable water levels. A storm drain outfall constructed along Chiavari Way discharges to the San Joaquin River and can be used in conjunction with an emergency pump station to drain the lakes in the event of high-water levels. The outfall has previously been permitted by the State, but recently expired and requires renewal. The emergency pump station is used rarely and has a capacity of between five and seven cfs.

To the east and northeast of Zone 39, there is considerable drainage infrastructure jointly used by the City and SSJID in Zones 24 and 36. Drains 7, 8, and 9 ultimately converge north of State Route 120 (SR-120) forming the FCOC, a large drainage ditch that receives agricultural tailwater during the irrigation season and significant volumes of stormwater during the winter. Undergrounding of select reaches of Drain 7, Drain 8, and the FCOC is currently planned across City property north of SR-120 in support of development of the Family Entertainment Zone. Based on an agreement between the City and SSJID, discharge of local stormwater to the joint use facilities is restricted to controlled pumping from detention basins.

Existing Water Quality Conditions

Water quality in the City is governed by the Central Valley RWQCB, which sets water quality standards in their Water Quality Control Plan for the respective basins (Basin Plans). Section 303(d) of the federal CWA requires states to identify waters that do not meet water quality standards or objectives and thus, are considered "impaired." Once listed, Section 303(d) mandates prioritization and development of a Total Maximum Daily Load (TMDL). The purpose of TMDLs is to ensure that beneficial uses are restored and that water quality objectives are achieved. According to the California Water Quality Control Monitoring Council, which is part of California Environmental Protection Agency, Natural Resources, there are many areas within San Joaquin County which are considered Section 303(d) impaired waterbodies. Impaired waters in the vicinity of the City and the City's Sphere of Influence are referred to as Delta Waterways (Southern Portion) and include 3,125 acres listed for Chlorpyrifos (Agriculture, Urban Runoff/Storm Sewers), DDT (Agriculture), Diazinon (Agriculture, Urban Runoff/Storm Sewers), Electrical Conductivity (Agriculture), Group A Pesticides (Agriculture), Invasive Species (Source Unknown), Mercury (Resource Extraction), and Unknown Toxicity (Source Unknown) (Central Valley RWQCB 2018).

Flood Control and Drainage Regulatory Agencies

The primary agencies with responsibility for drainage and flood control operations in the proposed project area include the City, RD-17, Corps Sacramento District, and the CVFPB. These four agencies work together to provide sufficient local drainage and regional flood control facilities in place to protect the City and surrounding region.

Reclamation District 17 Flood Control Project

RD-17 is comprised of landowners and Board members that manage the irrigation, drainage service and levee maintenance for several islands in the Delta and in San Joaquin County. RD-17 has been working since 2010 on the San Joaquin River Early Implementation Project (EIP) 100-Year Levee Seepage Area Project (LSAP). This project provides for the design, repair and construction of 16 miles of existing levee system in three phases to make progress towards the goal of providing 100-Year level of protection and ultimately the 200-year level of protection on the east bank of the San Joaquin River. The overall purpose of the LSAP is to reduce the risk of flooding by implementing improvements to portions of the approximately 19-mile RD-17 levee system to meet applicable federal and State design recommendations for levees protecting urban areas. Phase 3 is a component of the LSAP proposed by RD-17 and would construct landside improvements to 23 subreaches of 10 levee reaches involving approximately 8.4 miles of the RD-17 levee system starting near the southern boundary of the city of Stockton, through the city of Lathrop, and continues south to the boundary of the City. Phase 3 of the LSAP will increase the level of flood protection to the cities of Stockton, Lathrop, Manteca and unincorporated San Joaquin County. The project will provide a setback levee, seepage berms and slurry walls where

necessary to provide the required level of flood protection. This project is part of the strategy to provide 200-year flood protection to the surrounding area. RD-17 has been working on Phase 3 of the LSAP and is nearing completion.

4.10.2 Discussion

- a) **Less than Significant with Mitigation.** The proposed project would construct a stormwater conveyance network. The conveyance network would primarily be underground, excluding parts of the SDPS, within public existing or future ROW, as well as RD-17 and OLWDWWTP property. The proposed project would temporarily remove asphalt from Woodward Avenue and South Woodward Avenue, moderate grading, involve earth moving and trenching activities for the new pipelines, SDPS, and the outfall. Construction of the proposed project has the potential to expose bare soil and potentially generate other water quality pollutants that could be exposed to precipitation and subsequent entrainment in surface runoff to the San Joaquin River. Construction activities involving soil disturbance, excavation, cutting/filling, grading activities, and demolition activities at the OLWD WWTP could result in increased erosion and sedimentation into the San Joaquin River or surrounding drainage areas, such as the two lakes of Oakwood Shores neighborhood and lake. Construction materials, such as asphalt and concrete, and equipment fluids could be exposed to precipitation and subsequent runoff. If precautions are not taken to contain contaminants, construction could produce contaminated stormwater runoff and contribute to the degradation of water quality. Construction activities are planned for the summer and fall when precipitation is generally low, thus reducing the chances of runoff and water quality impacts.

The lower San Joaquin River is an impaired river for many pollutants, thus, any incremental increases in turbidity, suspended sediment, and other pollutants generated during construction would be considered a significant impact. The water is generally fairly turbid and can have floating algae and invasive floating plant growths along the shoreline during low flow conditions. The proposed project's outfall construction would involve in-water work. The construction of the proposed project's outfall includes vibratory pile driving to install a cofferdam (or comparable system), which would be dewatered to allow construction in-the-dry below the HTL. General construction and cofferdam installation associated with the proposed outfall is anticipated to take up to 12 weeks; however, pile driving activities would only occur when installing the cofferdam. In-river pile driving, and in-river pile removal, may mobilize fine sediment and increase water turbidity beyond natural levels. Water trapped inside the small cofferdam area would be discharged to nearby agricultural fields to avoid increasing San Joaquin River turbidity levels. The San Joaquin River in the vicinity of the proposed project is a relatively turbid water body due to upstream construction activities, agricultural drainage, and urban stormwater runoff. Turbidity levels can vary widely depending on upstream releases from dams and rainfall

conditions. Increased turbidity levels generated during pile driving activities could result in temporarily reducing water quality. River monitoring of allowable turbidity levels in the San Joaquin River during in-water construction activities would be set by the Central Valley RWQCB as part of the CWA Section 404/401 permitting process. In addition, **Mitigation Measures BIO-1** and **HYD-1**, provide measures to avoid potential spills and mobilization of sediment affecting water quality. **Mitigation Measure HYD-2** provides measures during any dewatering activities to ensure that the proposed project construction adheres to waste discharge requirement and would not substantially degrade surface or groundwater quality.

The use of construction equipment could result in minor fuel or oil spills could occur during construction activities. The release, even if accidental, of hazardous materials into the environment is regulated through existing federal, state, and local laws. These regulations require emergency response from local agencies to contain hazardous materials in the event of an accidental release. The use of handling of hazardous materials during construction activities would occur in accordance with applicable federal, State, and local laws, including the CalOSHA requirements. Implementation of construction BMPs, compliance with vehicle manufacturer's specifications, and compliance with applicable regulations would reduce the chances of impacting surface water and groundwater quality.

The proposed project would implement BMPs in the City's existing stormwater management plan for construction and water quality and prepare the SWPPP. In addition, the proposed project would implement **Mitigation Measures BIO-1, HYD-1, and HYD-2**. Impacts would be less than significant during construction with the implementation of mitigation.

Operational Impacts

As mentioned above, the proposed project would construct a stormwater conveyance network that would discharge treated water to the San Joaquin River. Runoff that occurs as overland flow across yards, driveways, and public streets is intercepted by the storm water drainage system and conveyed to local drainages before eventually being routed to the San Joaquin River, which eventually drains to the Pacific Ocean. This storm water can carry pollutants that can enter the local waterways and result in the types of water quality impairments described above. Common sources of storm water pollution in urban areas, such as the City, include litter, trash, pet waste, paint residue, organic material (yard waste), fertilizers, pesticides, sediments, construction debris, metals from automobile brake pad dust, air pollutants that settle on the ground or attach to rainwater, cooking grease, illegally dumped motor oil, and other harmful fluids. Potential hazards to surface water quality include the following nonpoint pollution problems: high turbidity

from sediment resulting from erosion of improperly graded construction projects, concentration of nitrates and dissolved solids from agriculture or surfacing septic tank failures.

Previously approved development projects in the proposed project vicinity are required to have detention basins (i.e., bioretention basins) (refer to **Section 2, Figure 2-4**) to allow for water treatment and some percolation and evaporation. Stormwater discharges would be contained within the detention basins and water quality BMPs would be implemented by the approved development projects to reduce pollutant loads to the San Joaquin River. The proposed project is subject to several water quality protection permitting processes including the SWRCB General Construction Permit and the City's Municipal Stormwater Program that requires the implementation of BMPs to avoid or reduce stormwater pollution. Implementation of the City's General Plan policies would result in less than significant impact levels during propose project operations.

- b) **Less than Significant.** The proposed project would construct a stormwater conveyance network. The conveyance network would primarily be underground, excluding parts of the SDPS, within public existing or future ROW, as well as RD-17 and OLWD WWTP property. Dewatering of shallow groundwater encountered during construction near the levee, such as the SDPS or pipeline, may be needed. Dewatering operations would pump clean groundwater to a nearby farm field for evaporation and percolation back into the aquifer.

Non-potable water use would be required for fugitive dust control during construction of the proposed project, as discussed in **Section 4.3, Air Quality**. Water supplies during construction are typically trucked to the site from outside sources that supply water to construction projects. Potable water would be required during construction for workers. Typically, potable water is brought to the site in bottles or other potable water vessels. This use of water would occur during the construction period of the proposed project and would cease upon construction completion. Therefore, construction activities would not deplete groundwater supplies. Construction activities would not be within a groundwater recharge area; thus, the proposed project construction activities would not substantially interfere with groundwater recharge. The construction of the proposed project would not impede sustainable groundwater management of the basin. No impact to groundwater supplies would occur during construction activities and no mitigation is required.

Operations of the proposed project would not require the use of water; therefore, groundwater supplies would not be depleted as a result of the proposed project. In addition, the proposed project would not be within a groundwater recharge area; therefore, the proposed project would not substantially interfere with groundwater

recharge. The proposed project would not impede sustainable groundwater management of the basin. No impact would occur in this regard and no mitigation is required.

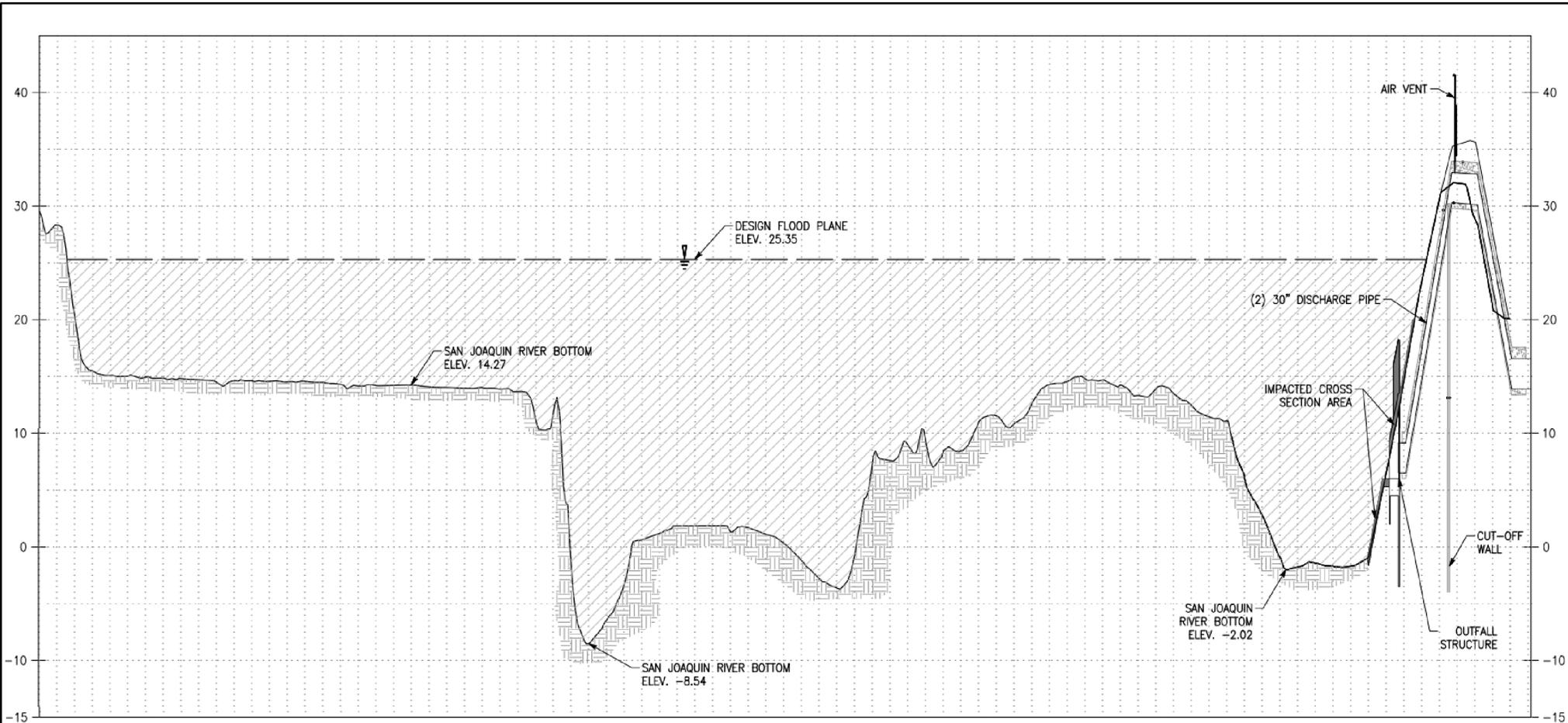
- ci) **Less than Significant with Mitigation.** The proposed project would construct a stormwater conveyance network. The conveyance network would primarily be underground, excluding parts of the SDPS, within public existing or future ROW, as well as RD-17 and OLWD WWTP property. The construction of the proposed project would have the potential to incrementally increase soil erosion and sedimentation into nearby local drainages and the San Joaquin River. The San Joaquin River is generally fairly turbid during the summer and fall months from upstream discharges and therefore any incremental increases from the proposed project would be considered significant and adding to existing baseline conditions. Construction activities involving soil disturbance, excavation, cutting/filling, and grading activities could result in increased erosion and sedimentation to the San Joaquin River and waters downstream. In addition, the use of large construction equipment may compress soil within the staging areas, which could lead to a redirection in permeability, an increase in site water runoff, and an increase in erosion or siltation to occur. As discussed in response a, above, the proposed project's outfall construction would involve in-water work. The construction of the proposed project's outfall includes vibratory pile driving to install a cofferdam (or comparable system), which would be dewatered to allow construction in-the-dry below the high tide line. General construction and cofferdam installation associated with the proposed outfall is anticipated to take up to 12 weeks; however, pile driving activities would only occur when installing the cofferdam. In-river pile driving, and in-river pile removal, may mobilize fine sediment and increase water turbidity beyond natural levels. Water trapped inside the small cofferdam area would be discharged to nearby agricultural fields to avoid increasing San Joaquin River turbidity levels. The San Joaquin River in the vicinity of the proposed project is a relatively turbid water body due to upstream construction activities, agricultural drainage, and urban stormwater runoff. Turbidity levels can vary widely depending on upstream releases from dams and rainfall conditions. Increased turbidity levels generated during pile driving activities could result in temporarily reducing water quality.

The proposed project would comply with City, CVFPB, Corps, RWQCB, and CDFW requirements and BMPs pertaining to erosion control measures, such as the use of temporary large sediment barriers, and fiber rolls, through the development of a SWPPP. The proposed project would be required to prepare a SWPPP, which would also comply with NPDES General Construction, Sections 408, 404, and 401 permitting requirements for preventing erosion and siltation at the construction site. The proposed project would be constructed following the requirements in the City's Municipal Stormwater Program which requires implementation of various soil erosion practices and BMPs to avoid or

substantially reduce the amount of sediment that could be transported to area water ways. Implementation of **Mitigation Measures HYD-1** and **HYD-2** would reduce construction impacts to less than significant levels.

During operation, the proposed project would provide a stormwater conveyance network that would outfall to the San Joaquin River. The proposed project is identified in the SDMP. The proposed project's outfall would include RSP around the opening of the pipes to reduce erosion and siltation during storm events. The proposed project would comply with the City's SDMP, General Plan, Municipal Codes, Municipal Stormwater Program, and regulatory permits. Therefore, impacts related to erosion and siltation as a result of the operations of the proposed project would be less than significant. Impacts related to the water quality of the outfall are discussed above in response a.

cii, iv) **Less than Significant.** The proposed project would construct a stormwater conveyance network. The conveyance network would primarily be underground, excluding parts of the SDPS, within public existing or future ROW, as well as RD-17 and OLWD WWTP property. The proposed project would not alter the course of the San Joaquin River. The proposed project would not generate significant amounts of new impervious surfaces that would degenerate additional stormwater runoff or change the rate of runoff to the San Joaquin River because the proposed project would be primarily underground within existing and future ROW. The previously approved development projects being served by the proposed project include detention/retention basins for both water quality protection and flood control. Stormwater discharges as a result of the proposed project would be held in these detention basins and water would be pumped to the proposed SDPS and outfall to the San Joaquin River. These operations would be controlled by the City Public Works Department using real time control systems (i.e., SCADA technologies). The proposed project would have a maximum discharge of approximately 120 cfs (Dewberry | Drake Haglan 2021). The proposed project was analyzed against the Federal Project Design Flood Flow of 37,000 cfs. The maximum discharge rate of 120 cfs from the proposed project would be 0.17 percent of the flood flow and the ratio of discharge to the flood flow would be 0.3 percent (**Figure 4.10-6**). Stormwater discharge as a result of the proposed project would vary with relative size of rainfall events; however, discharges would not exceed 120 cfs.



SAN JOAQUIN CROSS-SECTION

	RIVER CROSS SECTION AREA (PRE OUTFALL CONSTRUCTION)	RIVER CROSS SECTION AREA (POST OUTFALL CONSTRUCTION)	IMPACTED CROSS SECTION AREA	PERCENT OF IMPACT TO EXISTING CROSS SECTION	FEDERAL PROJECT DESIGN FLOOD FLOW, USACE 1955	MAXIMUM DISCHARGE RATE	RATIO OF DISCHARGE TO FLOOD FLOW
DESIGN FLOOD PLANE	31,784 SF	31,730 SF	53.32 SF	0.17%	37,000 CFS	120 CFS	0.3%

Legend

 River Cross Section Area
  Impacted Cross Section Area



Storm Drain Zone 36/Zone 39
Improvements Project
City of Manteca, CA

**River Cross-Section
at Proposed Outfall**

**Figure
4.10-6**

Therefore, even though the proposed project would result in direct discharge into the San Joaquin River, the maximum discharge rate would generate minor amounts of stormwater runoff (Dewberry | Drake Haglan 2021). The proposed project would not result in a significant increased rate or amount of runoff in a manner that would result in flooding. Impacts from stormwater discharges to the San Joaquin River are considered less than significant.

- ciii) **No Impact.** Refer to response a, above, for a detailed discussion on water quality. The proposed project is identified in the City SDMP. It would be designed to accommodate approved urban growth as outlined in the City's General Plan, including previously approved development projects in the vicinity of the proposed project. The proposed project design would provide an efficient and safe network to convey stormwater runoff to the San Joaquin River. The proposed project would comply with the City's SDMP, General Plan, and Municipal Code and, as well as State and federal rules and regulations. Therefore, no impact would occur in this regard.
- d) **Less Than Significant.** The proposed project would construct a stormwater conveyance network. The conveyance network would primarily be underground, excluding parts of the SDPS, within public existing or future ROW, as well as RD-17 and OLWD WWTP property. The proposed project design and stormwater discharges would not by itself alter the current course of the San Joaquin River, or cause meandering of the San Joaquin River. The proposed project's SDPS is not located within a flood hazard area as mapped on FEMA FIRM panel 06077C0620F. Specifically, the proposed project, on the land side of the levee, is located within Zone X, protected from the one percent annual chance flood hazard by a levee system that has been provisionally accredited (**Figure 4.10-3**). As shown in **Figure 4.10-4**, the proposed project site is located in an area with a flood depth less than 3-ft for the 200-year flood event. Therefore, proposed project facilities such as the SDPS are not expected to be inundated and or cause secondary water pollution from release of chemicals routinely used in pump station operations (lubricating oils, greases, etc.). The proposed project's outfall structure, on the waterside of the levee, would have features that would be constructed within the 100-year or 200-year water surface elevation (refer to **Section 2, Figure 2-13**). The proposed project's outfall structure would provide outlets for two 30-inch diameter discharge pipes. Rubber check valves would be installed for each discharge pipe to prevent backflow and entry (Dewberry | Drake Haglan 2021). Therefore, the proposed project site, even if the outfall structure is inundated by flood, would not release pollutants into the water. Impacts would be less than significant, and no mitigation is required.

The proposed project would be in compliance with Senate Bill (SB) 5. SB 5 was established in 2007 to reduce flood risk and improve floodplain management for urban and urbanizing areas in California. This is referred to as an Urban Level of Protection flood standard and it requires additional flood protection for developing areas that would experience 3 feet

of flooding or more during the 200-year flood event. The Cities of Lathrop and Manteca have adopted this requirement into pertinent City regulations, including zoning and planning. In compliance with SB 5, the proposed project would require that the invert elevation of the discharge is the same elevation or higher than the Mean High-Water Level within the San Joaquin River (200-yr water surface elevation).

- e) **Less than Significant.** The proposed project would construct a stormwater conveyance network. The conveyance network would primarily be underground, excluding parts of the SDPS, within public existing or future ROW, as well as RD-17 and OLWD WWTP property. The proposed project is regulated by the Central Valley RWQCB and the Basin Pan, along with the City, CDFW, Corps, CVFPB, and RD-17. The proposed project is identified in the City's General Plan and SDMP and would comply with the City's Municipal Stormwater Program, General Plan, and Municipal Code. The proposed project would coordinate and comply with regulatory organizations and their regulations such as the Central Valley RWQCB CWA Section 401 Water Quality Certification, the Corps CWA Section 404 permit, the Corps CWA Section 408 permit, the CDFW California Fish and Game Code Section 1602, as well as encroachment permits for CVFPB and RD-17. Therefore, the proposed project would comply with applicable regulations and policies that pertain to protecting water resources in the region. Impacts would be less than significant, and no mitigation is required.

4.10.3 Mitigation Measures

Mitigation Measure HYD-1: Prior to the start of any ground disturbing activities, the City or primary construction contractor shall prepare a Storm Water Pollution Prevention Plan (SWPPP) detailing measures to control soil erosion, waste discharges, stormwater management program requirements, and measures that implement existing City of Manteca General Plan policies related to drainage and flood control. The City Engineer shall review and approve the completed SWPPP for agency submittal. The City or primary construction contractor shall submit a notice of intent to the Central Valley Regional Water Quality Control Board (RWQCB) for stormwater discharges associated with general construction activity. The City shall require all contractors conducting construction-related work to implement the SWPPP to control soil erosion and waste discharges of other construction-related contaminants. The general contractor(s) and subcontractor(s) conducting the work shall be responsible for constructing or implementing, regularly inspecting, and maintaining the measures in good working order.

The SWPPP shall identify the grading and erosion-control BMPs and specifications necessary to avoid and minimize water quality impacts to the extent practicable. Standard erosion control measures (e.g., management, structural, and vegetative controls) shall be implemented for all construction activities that expose soil. Grading operations shall be conducted to eliminate direct routes for conveying potentially contaminated runoff to any nearby water bodies. Erosion control

barriers, such as silt fences and mulching material, shall be installed, and disturbed areas shall be reseeded with grass or other plants, where necessary.

The SWPPP shall contain specific measures for stabilizing soils at the construction site before the onset of the winter rainfall season. These standard erosion-control measures shall be designed to reduce the potential for soil erosion and sedimentation of drainage channels.

The following specific BMPs are recommended for implementation:

- Conduct all work according to site-specific construction plans that identify areas for clearing, grading, and revegetation so that ground disturbance is minimized.
- Avoid existing vegetation wherever possible and identify vegetation to be retained for habitat maintenance (i.e., as identified through preconstruction biological surveys); cover cleared areas with mulches; install silt fences, if needed to control erosion and trap sediment; and reseed cleared areas with native vegetation.
- Stabilize disturbed soils at all construction sites and staging areas before the onset of the winter rainfall season.
- Stabilize and protect stockpiles from exposure to erosion and flooding.

The SWPPP also shall specify appropriate hazardous materials handling, storage, and spill response practices to reduce the possibility of adverse impacts from use or accidental spills or releases of contaminants. Specific measures applicable to the proposed project include:

- Develop and implement strict on-site handling rules to keep construction and maintenance materials out of waterways.
- Prevent oil or other petroleum products, or any other substances that could be hazardous to aquatic life, from contaminating the soil or entering watercourses.
- Maintain spill clean-up equipment in proper working condition. Clean up all spills immediately in accordance with the spill prevention and response plan, and immediately notify the California Department of Fish and Wildlife (CDFW) and the Central Valley RWQCB of any spills and clean-up procedures.

During construction, City construction management staff shall inspect implementation and maintenance of BMPs on a weekly basis to ensure compliance by the contractor. Weekly email reports shall be prepared for City Engineer review and approval. Successful implementation of this mitigation measure shall minimize pollutant loads to the San Joaquin River and nearby drainages impacted temporarily during construction.

Mitigation Measure HYD-2: All dewatering discharges shall be required to be tested for trace pollutants by an U.S. EPA certified laboratory prior to discharge into the receiving waters, per the General Water Discharge Requirements/NPDES Permit for Dewatering and Other Low Threat Discharges to Surface Waters. Water samples shall be tested for total suspended solids, total nitrogen, oil and grease, total petroleum hydrocarbons, and sulfides. Discharged waters shall be required to be visibly clear and sediment control BMPs shall be implemented.

4.11 Land Use and Planning

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Land Use and Land Use Planning – Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.11.1 Setting

The proposed project is located in the City of Manteca and San Joaquin County, within the City's sphere of influence. The City General Plan designates the surrounding land uses as Low Density Residential (LDR), Open Space (OS), Business Industrial Park (BIP), Urban Reserve – Business Industrial Park (UR-BIP), and GC (General Commercial). Land uses within the proposed project site are designated as public ROW, and LDR. It should be noted that the City is currently undergoing a General Plan Update and proposed land use designations would eliminate the BIP, UR-BIP, and GC land uses surrounding the proposed project site and replace them with High Density Residential (HDR), LDR and Public/Quasi-Public (PQP). The Oakwood Shores neighborhood is located adjacent to the proposed project site, on the north side of Aplicella Court. The OLWD wastewater treatment plant is located at the west end of Aplicella Court, and it currently in the process of being decommissioned and removed. In addition, there are two previously approved development projects along Woodward Avenue that would be adjacent to the proposed project site. Oakwood Trails is a planned development north of Woodward Avenue, while Trails at Manteca is a planned development south of Woodward Avenue. The proposed project is identified in the City's 2013 SDMP.

The eastern end of the proposed project site is currently adjacent to the jurisdiction of the SJMSCP. The proposed project is in the process of gaining inclusion in the SJMSCP covered area. The proposed project would be consistent with the SJMSCP.

4.11.2 Discussion

- a) **No Impact.** The proposed project would construct a stormwater conveyance network. The conveyance network would primarily be underground, excluding parts of the storm drain pump station (SDPS), within public existing or future ROW, as well as Reclamation District 17 (RD-17) and OLWD WWTP property. The SDPS would be located on the south

side of Aplicella Court, on undeveloped RD-17 property, adjacent to the San Joaquin River levee (refer to **Section 2, Figure 2-8**). The proposed project would also traverse the OLWD WWTP, which is currently in the process of being decommissioned and removed (refer to **Section 2, Figure 2-11**). The proposed project would serve existing and previously approved planned development projects in the area, as identified in the SDMP, thus supporting the communities around the proposed project site. Therefore, the additions of the stormwater conveyance network would not change the physical arrangement of the area or physically divide an established community. During construction, access to all nearby properties would be maintained. Construction related activities would not divide an existing established community. No impacts would occur in this regard and no mitigation is required.

- b) **No Impact.** The proposed project would construct a stormwater conveyance network. The conveyance network would primarily be underground, excluding parts of the SDPS, within public existing or future ROW, as well as RD-17 and OLWD WWTP property. In support of a Zone 39 regional system, the City has made agreements with both the OLWD and RD-17 to facilitate the construction of the stormwater conveyance system. Therefore, the proposed project would not require changes to any land use designations or zoning.

The City SDMP is in place to provide a plan for storm drainage control, disposal and regulatory compliance meets all stormwater regulatory requirements. The SDMP identified the need to construct a regional pump station and pipeline for Zone 39 as well as pipeline construction in Zone 36 in order to support previously approved planned development projects, and the buildout of the City's General Plan. The SDMP lists the proposed project in the Capital Improvement Program priority group 1. Priority group 1 improvements are needed immediately to solve serious existing deficiencies and to support previously approved development projects.

The proposed project is consistent with the City's General Plan and SDMP. Therefore, with regards to conflicting with any applicable land use plan, policy or regulation, no impacts are anticipated. No mitigation is required.

4.11.3 Mitigation Measures

No mitigation measures are required with regard to land use and planning.

4.12 Mineral Resources

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Mineral Resources – 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.12.1 Setting

The proposed project is located in the City of Manteca and San Joaquin County, within the City’s sphere of influence. Sand, gravel, and natural gas are the primary mineral resources found in the County, as well as limited amounts of peat, gold, and silver. The proposed project site falls within the Stockton-Lodi Production-Consumption Region and was assessed by the California Geological Survey to determine the availability of Portland cement concrete aggregate. The proposed project site is located adjacent to Mineral Resource Zone (MRZ) 2. MRZ-2 is defined as areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood for their presence exists.

4.12.2 Discussion

- a) **No Impact.** The proposed project site is located adjacent to MRZ-2 for Portland cement concrete aggregate, which indicates that significant mineral deposits are present, or it is judged that there is a high likelihood that their presence exists. No known mining developments are planned within the proposed project site or the surrounding area. There are previously approved development projects within the proposed project vicinity; however, these development projects include residential and commercial uses and not mining facilities. The proposed project site is within existing or future ROW, RD-17 property, as well as the soon-to-be decommissioned OLWD WWTF; therefore, it would not encroach upon the MRZ-2 area. Thus, the proposed project would not 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. The proposed project would have no impacts, and no mitigation is required.
- b) **No Impact.** The proposed project site is not on or adjacent to a locally important mineral resource recovery site delineated on a local General Plan, Specific Plan, or other land use plan. No impact would occur, and no mitigation is required.

4.12.3 Mitigation Measures

No mitigation measures are required related to impacts to mineral resources.

4.13 Noise

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Noise – Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) For a project located within the vicinity of a private airstrip or airport land use plan area, 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 area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The following information is summarized from the Noise and Vibration Study prepared for the proposed project (Entech Consulting Group 2021b).

4.13.1 Setting

Noise is defined as loud, unwanted, or annoying sound; thus, it is a subjective reaction to characteristics of a physical phenomenon. A frequency weighting measure that simulates human perception is commonly used to describe noise environments and to assess impacts on noise-sensitive areas. It has been found that A-weighting of sound levels best reflects the human ear's reduced sensitivity to low frequencies, and correlates well with human perceptions of the annoying aspects of noise. The A-weighted decibel scale (dBA) is cited in most noise criteria. The decibel (dB) notation used for sound levels describes a logarithmic relationship of acoustical energy. For example, a doubling of acoustical energy results in an increase of three dB, which is considered barely perceptible, while a ten-fold increase in acoustical energy equals a ten-dB change, which is subjectively like a doubling of loudness. **Table 4.13-14.13-1, Typical A-Weighted Noise Levels**, identifies decibel levels for common sounds heard in the environment.

Table 4.13-1. Typical A-Weighted Noise Levels

Common Outdoor Noise	Noise Level (dBA)	Common Indoor Noise
	110	Rock band
Jet flyover at 1,000 feet		
	100	
Gas lawnmower at three feet		
	90	
Diesel truck at 50 feet at 50 mph		Food blender at three feet
	80	Garbage disposal at three feet
Noisy urban area, daytime		
Gas lawnmower, 100 feet	70	Vacuum cleaner at ten feet
Commercial area		Normal speech at three feet
Heavy traffic at 300 feet	60	
		Large business office
Quiet urban daytime	50	Dishwasher in neighboring room
Quiet urban nighttime	40	Theater, large conference room (background)
Quiet suburban nighttime		
	30	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	20	
		Broadcast/recording studio
	10	
Lowest threshold of human hearing	0	Lowest threshold of human hearing

Source: Entech Consulting Group 2021b

Several time-averaged scales represent noise environments and consequences of human activities. The most commonly used noise descriptors are equivalent A-weighted sound level over a given time period (L_{eq}); average day-night 24-hour average sound level with a nighttime increase of 10 dBA to account for sensitivity to noise during the nighttime; and community noise equivalent level (CNEL), also a 24-hour average that includes both an evening and a nighttime weighting. When a 5 dB penalty is applied to levels occurring between 7 PM to 10 PM and a 10 dB penalty is applied to levels occurring between 10 PM and 7 AM, the energy average of the A-weighted sound levels is also called the CNEL.

Noise levels are generally considered low when ambient levels are below 45 dBA, moderate in the 45 to 60 dBA range, and high above 60 dBA. Although people often accept the higher levels associated with very noisy urban residential and residential-commercial zones, they nevertheless are considered to be adverse levels of noise with respect to public health because of sleep interference if these levels occur during nighttime hours. In general, a 3 dBA change in community noise levels is noticeable, while 1-2 dBA changes are generally not perceived.

The City of Manteca regulates construction-related noise impacts on adjacent land uses and has set performance standards for stationary noise sources or projects affected by stationary noise sources, which are provided in **Table 4.13-2**.

Table 4.13-2. City Performance Standards for Stationary Noise Sources

Noise Level	Daytime	Nighttime
	7 AM to 10 PM	10 PM to 7AM
Hourly L_{eq} , dB	50	45
Maximum Level, dB	70	65
Source: Entech Consulting Group 2021b dB = decibel, L_{eq} = A-weighted sound level over a given time period		

The City’s municipal code prohibits the operation of tools or construction equipment between the hours of 7 PM and 7 AM, when the sound creates a noise disturbance across a residential property line. An exception would be made for emergency work of public service utilities (City of Manteca 2021c).

Vibration is energy transmitted in waves through the ground or man-made structures. These energy waves generally dissipate with distance from the vibration source. Familiar sources of ground-borne vibration are trains, buses on rough roads, and construction activities such as blasting, pile-driving, and operation of heavy earth-moving equipment. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is more frequently used to describe the effect of impacts to buildings, while the root mean square (RMS) amplitude is most commonly used to describe the effect of vibration on the human body, which is commonly measured in decibel notation (VdB) (Entech Consulting Group 2021b). The Federal Transit Authority’s (FTA) guidance, 2018 Transit Noise and Vibration Impact Assessment, was used to evaluate vibration levels resulting from proposed project’s construction activities on human annoyance and structural damage. The detailed vibration criteria are based on generic cases when people are standing, or equipment is mounted on the floor in a conventional manner. Based on the FTA guidance, the vibration standards are presented in **Table 4.13-3** and **Table 4.13-4**.

Table 4.13-3. Ground-Borne Vibration Criteria: Human Annoyance

Land Use Category	Max Lv (VdB)	Description
Workshop	90	Distinctly felt vibration. Appropriate to workshops and non-sensitive areas.
Office	84	Felt vibration. Appropriate to offices and non-sensitive areas.
Residential – Daytime	78	Barely felt vibration. Adequate for computer equipment.
Residential – Nighttime	72	Vibration is not felt, but ground-borne noise may be audible inside quiet rooms.
Source: Entech Consulting Group 2021b Max Lv (VdB): Lv is the velocity level in decibels, measured in 1/3-octave bands of frequency over the frequency ranges of 8 to 80 Hz.		

Table 4.13-4. Ground-Borne Vibration Criteria: Architectural Damage

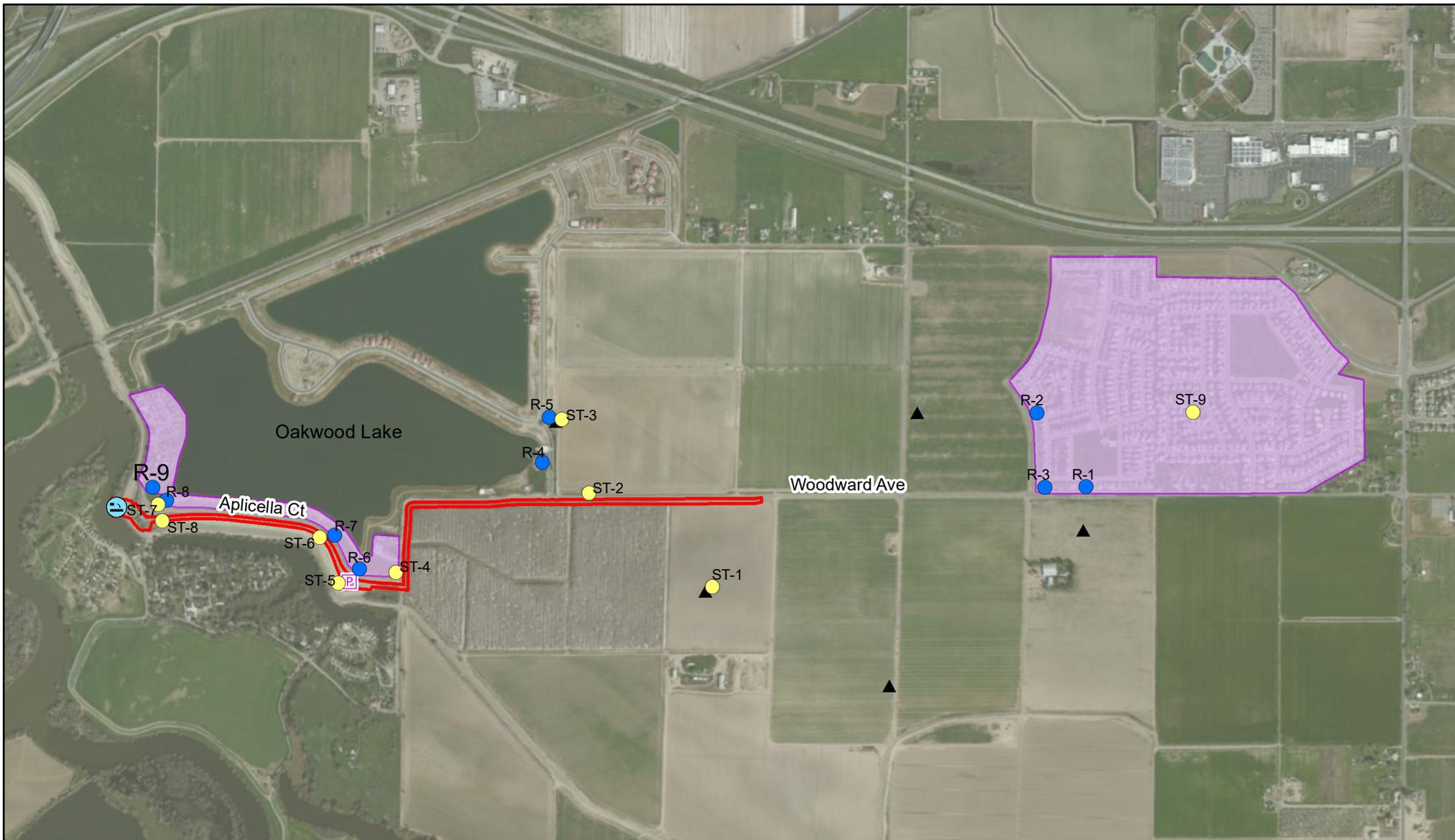
Building Category	PPV (in/sec)
I. Reinforced-concrete, steel or timber (no plaster)	0.5
II. Engineered concrete and masonry (no plaster)	0.3
III. Non-engineered timber and masonry buildings	0.2
IV. Buildings extremely susceptible to vibration damage	0.12
Source: Entech Consulting Group 2021 b in/sec = inches per second; PPV = peak particle velocity	

Existing Noise Setting

Nine short term measurements were conducted around the proposed project site to determine the existing noise environment, ST-1 through ST-9. The sound levels were measured as A-weighted, slow-time weighted (1-minute period) sound pressure level variables. The existing L_{eq} noise level around the proposed project site is below 69 dBA (Entech Consulting Group, 2021b). The nine short term measurement locations are identified in **Figure 4.13-1**.

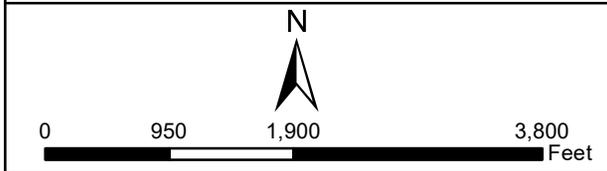
Sensitive Receptors

Surrounding land uses include Low Density Residential (LDR), Open Space (OS), Business Industrial Park (BIP), Urban Reserve – Business Industrial Park (UR-BIP), and GC (General Commercial). The City General Plan designates the proposed project site as public ROW and LDR. The City’s General Plan lists sensitive receptors as homes, schools, and hospitals. Sensitive receptors to the proposed project would be nearby residential areas. Nine residential receiver locations, R-1 through R-9, were identified (Entech Consulting Group 2021b) and are shown in **Figure 4.13-1**. Receivers R-1, R-2, and R-3 are the furthest receivers from any part of the proposed project, located approximately 3,000 feet east of the proposed gravity drain. Receivers R-4 and R-5 are located on Bella Lago Way, approximately 400 feet and 900 feet north of the proposed gravity drain, respectively. Receivers R-6 and R-7 are located on Aplicella Court, near residences, approximately 180 feet north of the proposed SDPS and storm drain force main. Receivers R-8 and R-9 are located on the western side of the proposed project, approximately 200 feet north of the proposed outfall structure.



Sensitive Receptors	Proposed Project Feature -Pump Station	Project Extent
Short Term Measurement Locations (ST)	Proposed Project Feature -Outfall	
Receiver Locations (R)	Proposed Pump Stations (for Previously Approved Development Projects)	

|



Source: ESRI Online Basemap, World Imagery Map, [County Name] County Coordinate System NAD 83 State Plane California [#] FIPS 0402 Feet

Notes: This map was created for informational and display purposes only.

Storm Drain Zone 36/Zone 39
Improvements Project
City of Manteca, CA

Sensitive Receptors

Figure 4.13-1

4.13.3 Discussion

- a) **Less than Significant with Mitigation.** The proposed project would construct a stormwater conveyance network. The conveyance network would primarily be underground, excluding parts of the SDPS, within public existing or future ROW, as well as RD-17 and OLWD WWTP property. Long-term noise impacts would result from the operation of the SDPS. Noise measurements were taken at a similar, existing pump station in the City, and it is assumed that the proposed SDPS would have similar noise levels during operation. The existing pump station was measured at 49.1 dBA L_{eq} and 62 dBA L_{max} . Given attenuation rates, the noise levels would be within the City's permissible noise levels by the time they reach the nearest receptors, the residences on the north side of Aplicella Court. In addition, the storm water pumps at the SDPS would be oil lubricated and the noise would be intermittent as the SDPS would only operate when storm water runoff reaches a certain elevation inside of the intake structure. During the dry season, the pumps would be operated approximately once a month for maintenance. Therefore, the long-term noise levels are within the City's performance standards for stationary noise levels and thus, impacts from proposed project operation would be less than significant.

During construction of the proposed project, noise from construction activities may intermittently dominate the noise environment in the immediate area of the proposed project site. A worst-case scenario was developed utilizing the loudest pieces of equipment for each construction phase (Entech Consulting Group 2021b). Portions of the construction phase would have overlapping construction activity during several months of the construction schedule. For example, construction activities such as fill distribution, excavation, and earthwork required for building the force main storm drain, SDPS, pipelines, and the outfall structure may occur concurrently during months 4 through 6. During month 8, the remainder of the earthwork, building construction, and finishing work activities would occur. It is anticipated that operating several earthmoving equipment, which has the highest L_{max} values, would generate high construction noise levels.

The Roadway Construction Noise Model (RCNM) was used to determine which phase and associated construction activity for the proposed project would generate the greatest construction noise level at each of the sensitive receiver locations R1 through R9. The RCNM model assumed that the proposed project would be constructed at the same time as the five pump stations associated with the previously approved development projects. **Table 4.13-5** presents the total noise level at each of the sensitive receiver locations, R-1 through R-9, during months 4 through 8 of construction.

Table 4.13-5. Total Construction Noise Levels Hourly Leq

Construction Phase Months	Hourly Leq by Receiver Location (dBA)								
	R1	R2	R3	R4	R5	R6	R7	R8	R9
Months 4 through 6	61.8	62.6	59.3	61.9	87.2	81.2	70.9	66.6	68.6
Month 8	67.2	61.9	64.6	67.2	92.6	86.6	67.0	68.0	71.6
Source: Entech Consulting Group 2021b									

The maximum noise levels for receivers R-1 through R-4, R-8, and R-9 would not exceed the City’s maximum noise level of 70 dBA Leq. The Maximum noise levels for receiver R-7 would exceed the City’s maximum noise level by 0.9 dBA during construction months 4 through 6. The modeled noise levels from construction at receivers R-5 and R-6 would exceed the City’s maximum noise level by more than 10 dBA. Typical noise attenuation within residential structures with open windows is approximately 17 dBA, while the noise attenuation with closed windows is approximately 25 dBA (Entech Consulting Group 2021b). Considering these attenuation factors, maximum interior noise levels during construction at R-5 and R-6 are anticipated to be approximately 68 dBA in structures with closed windows. Noise levels at R-5 and R-6 would exceed the exterior noise level thresholds during construction. At locations R-1 through R-4 and R-7 through R-9, interior noise levels are expected to be at or below 45 dBA Leq and exterior noise levels would not exceed the City’s thresholds during construction.

Construction noise impacts would be periodic during the construction period, occurring when heavy construction equipment is operating near the perimeter of the proposed project site. Actual construction noise levels may be lower than predicted noise levels depending upon construction phasing and the implementation of typical BMPs. Construction BMPs would reduce construction interior noise levels within acceptable maximum allowable levels at sensitive receptors., In addition, the proposed project would implement **Mitigation Measures NOI-1** and **NOI-2**, which would restrict the hours of construction and would require a Construction Noise Management Plan. With the implementation of BMPS and **Mitigation Measures NOI-1** and **NOI-2**, generation of temporary noise increases above the ambient noise environment would be less than significant.

- b) **Less than Significant.** Ground-borne vibration levels resulting from construction activities within the proposed project site were analyzed using FTA data (Entech Consulting Group 2021b). The proposed project would construct a stormwater conveyance network. The conveyance network would primarily be underground, excluding parts of the SDPS, within public existing or future ROW, as well as RD-17 and OLWD WWTP property. There would be no ground-borne vibration activities generated during the operation of the stormwater conveyance system.

Construction activities that would occur within the proposed project site include excavation, grading, tank construction, and paving. These activities have the potential to generate low levels of ground-borne vibration.

Using the vibration source level for a large bulldozer and the FTA’s construction vibration assessment methodology, it is possible to estimate the proposed project vibration impacts. **Table 4.13-6** presents the anticipated project-related vibration levels at 50 feet to the nearest residential property.

Table 4.13-6. Construction Equipment Vibration Levels

Noise Receiver	Distance to Property Line	Large Bulldozer Reference Vibration Level PPV (in/sec) at 25 feet	Peak Vibration PPV (in/sec) at 160 feet	Significant Impact
Closest residence to project site	50 feet	0.089	0.031	No
Source: Entech Consulting Group 2021b in/sec = inches per second, PPV = peak particle velocity				

A large bulldozer represents the peak source of vibration with a reference level of 0.089 inches per second (in/sec) at a distance of 25 feet at 50 feet, construction vibration levels are expected to approach 0.031 in/sec (Entech Consulting Group 2021b). This is below the construction vibration assessment annoyance criteria provided by the FTA of 0.2 in/sec. Impacts related to construction activities at the closest sensitive receptors are anticipated to be below the FTA threshold and therefore are considered less than significant.

Demolition activities at the OLWD WWTP would generate the greatest source of vibration. Based on the FTA’s reference vibration levels, the peak source reference level for demolition is 1.518 in/sec at a distance of 25 feet (Entech Consulting Group 2021b). **Table 4.13-7** shows a blasting vibration level at 800 feet near R-8 and R-9 would approach 0.0084 in/sec. Blasting is the highest vibration construction activity and is below the construction vibration assessment annoyance criteria provided by the FTA of 0.2 in/sec.

Table 4.13-7. Construction Equipment Vibration Levels – Demolition Only

Noise Receiver	Distance to Property Line	Blasting Reference Vibration Level PPV (in/sec) at 25ft	Peak Vibration PPV (in/sec) at 800 ft	Significant Impact
Closest residence to project site	800 feet	1.518	0.0084	No
Source: Entech Consulting Group 2021b				

Impacts related to demolition activities at the closest sensitive receptor are anticipated to be below the FTA threshold and therefore are considered less than significant.

In addition, construction and demolition activities at the proposed project site would be restricted to daytime hours as required by the City's Municipal Code, thereby eliminating potential vibration impacts during the sensitive nighttime hours. Thus, the proposed project's generation of ground-borne vibration is determined to be less than significant. No mitigation is required.

- c) **No Impact.** The Stockton Metropolitan Airport is located approximately 8.5 miles north of the proposed project site. The proposed project site is not located in the Stockton Metropolitan Airport Influence Area (San Joaquin County 2018b). The New Jerusalem Airport is located approximately 6.5 miles to the south of the proposed project site. The proposed project does not lie within two miles of an airport or within an airport land use plan, therefore, no impacts would occur. No mitigation is required.

4.13.4 Mitigation Measures

Mitigation Measure NOI-1: Restrict construction activities and delivery of materials to the hours of 7 AM to 7 PM on Monday through Friday, and 8 AM to 6 PM on Saturdays. No construction shall be permitted outside of these hours or on Sundays or federal holidays, without a specific exemption issued by the City.

Mitigation Measure NOI-2: A Construction Noise Management Plan shall be prepared and shall include proper posting of construction schedules, appointment of a noise disturbance coordinator, and methods for assisting in noise reduction measures. Noise reduction measures include, but are not limited to, the following:

- Equipment and trucks used for project construction shall utilize the best available noise control techniques which include, but are not limited to, improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds.
- Impact tools (e.g., jackhammers, pavement breakers, pile drivers, and rock drills) used for project construction shall be hydraulically or electrically powered to avoid noise associated with compressed air exhaust from pneumatically powered tools. If the use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used. External jackets on the tools themselves shall be used if such jackets are commercially available. Quieter procedures shall be used, such as drills rather than impact equipment, whenever such procedures are available and consistent with construction procedures.
- Stationary noise sources shall be located as far from adjacent properties as possible, and they shall be muffled and enclosed within temporary sheds, incorporate insulation barriers, or other similar noise reduction construction method approved by the City that provides equivalent noise reduction.

4.14 Population and Housing

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Population and Housing – Would the project:				
a) Induce substantial unplanned 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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing people or housing units, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.14.1 Setting

As mentioned previously, the proposed project is located in the City and San Joaquin County, within the City’s sphere of influence. Surrounding General Plan land use designations include Low Density Residential (LDR), Open Space (OS), Business Industrial Park (BIP), Urban Reserve - Business Industrial Park (UR-BIP), and GC (General Commercial). Adjacent General Plan land use designations include Low Density Residential (LDR), Open Space (OS), and General Commercial (GC). It should be noted that the City is currently undergoing a General Plan Update and proposed land use designations would eliminate the BIP, UR-BIP, and GC land uses surrounding the proposed project site and replace them with High Density Residential (HDR), LDR and Public/Quasi-Public (PQP).

According to the 2019 American Community Survey (ACS) Demographic and Housing Estimates, the City has a total population of 83,037 individuals and a total of 27,147 housing units (US Census Bureau 2019⁷). The proposed project site is located along the boundary of Census Tracts 51.22 and 51.06. Census Tract 51.22 has a population of 5,644 people and a total of 1,685 housing units and Census Tract 51.06 has a population of 6,158 people and a total of 1,875 housing units according to the 2020 Federal Financial Institutions Examinations Council Geocode Census Report. The populations of the City and each census tract are included in **Table 4.14-1**.

Table 4.14-1. Project Area Population

Geography/Jurisdiction	Population	Housing Units
City of Manteca	83,037	27,147
Census Tract 51.22	5,644	1,685
Census Tract 51.06	6,158	1,875

Source: 2019 ACS Demographic and Housing Estimates; 2020 FFEIC Geocode Census Report

⁷ The most recent data release from the ACS was in 2019. Data for 2020 is scheduled to be released in October of 2021.

4.14.2 Discussion

- a) **No Impact.** The proposed project would not directly induce growth in the City because it does not propose the development of new homes and businesses. No impact would occur in this regard and no mitigation is required.

The proposed project is being developed to support the drainage needs of existing and previously approved development projects in the southwest quadrant of the City. Construction of the proposed project would provide an outlet for pumped stormwater discharges from multiple existing and planned detention basins north and south of Woodward Avenue (refer to **Section 2, Figure 2-4**). The proposed project would be sized to support the storm drain needs of these existing and previously approved development projects. It would not indirectly induce population growth by increasing the storm drain infrastructure beyond what is currently planned in the City General Plan. Therefore, the proposed project would not induce unplanned substantial population growth in the area. No impact would occur, and mitigation is not required.

During construction, the proposed project would introduce construction personnel to the proposed project area. It is anticipated that these construction personnel would come from the City, or nearby cities such as Lathrop, Stockton, Tracy, or Modesto. The construction personnel would likely commute to the proposed project site, returning home in the evenings. Thus, it is anticipated that construction personnel would not relocate to the City for work. The proposed project would not temporarily increase the population in the surrounding area as a result of construction and no impact would occur.

- b) **No Impact.** The proposed project site would be in existing or future public ROW. Although residential areas are located in the proposed project vicinity, project implementation would not result in the acquisition of residential properties. The proposed project would not displace people residing in these residential areas or the housing units. The proposed project would use one property for the SDPS and during construction, the proposed project would require a TCE from one property. The SDPS property is owned by RD-17 and the TCE property is currently identified as the approved planned development Trails at Manteca. No existing residential units are located on either property and no people would be displaced by the SDPS or the TCE. Therefore, no impact would occur, and no mitigation measures are required.

4.14.3 Mitigation Measures

No mitigation measures regarding impacts to population and housing are required.

4.15 Public Services

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Public Services —				
a) Would the project result in substantial adverse physical impacts associated with the provision of, or the 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 following public services:				
i) Fire protection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ii) Police protection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iii) Schools?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iv) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
v) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The information in this section is primarily derived from the City of Manteca General Plan (2021), City of Manteca General Plan Environmental Impact Report (2003), and the Draft Manteca Municipal Services Review and Sphere of Influence Plan (2014).

4.15.1 Setting

City of Manteca Police Department

Police protection services in the City of Manteca are provided by the MPD. The MPD operates out of its headquarters, and only station, located at 1001 West Center Street, approximately six miles east of the proposed project. In 2019, the MPD had 74 sworn officers (City of Manteca 2021g).

The MPD classifies calls for service as priority 1, priority 2, or priority 3. Priority 1 calls are calls where a threat is posed to life or a crime of violence. Priority 2 calls are calls for service where there is an urgency or suspicious behavior. Priority 3 calls are for service where no emergency or serious problem is involved. The average response times by priority call for 2016, the most recent data available, are listed below (City of Manteca 2021g).

- Priority 1 calls: 4 minutes and 27 seconds.
- Priority 2 calls: 27 minutes and 2 seconds.
- Priority 3 calls: 50 minutes and 22 seconds.

City of Manteca Fire Department

The MFD is responsible for the primary provision of fire service and emergency medical response for the City and its residents, covering approximately 17 square miles within the City limits (US Census Bureau, 2019; City of Manteca, 2017a). The MFD operates out of five facilities located throughout the City (City of Manteca, 2020). Station 242, located at 1154 South Union Road, serves as MFD headquarters and the Fire Prevention Bureau (City of Manteca, 2017a). Station 242 is the closest MFD station to the proposed project, located approximately four miles northeast of the proposed project.

The MFD maintains a goal for the initial company of three firefighters to arrive on scene for fire and emergency medical service incidents within five minutes, 90 percent of the time for fire and emergency calls. The most recent response data available is from 2016 and 2017. In 2016, the MFD averaged a 4-minute 20-second (4:20) response time City-wide. In 2017, the MFD averaged a 4-minute 22-second (4:22) response time City-wide. Additionally, in 2016, 6,737 calls were made to the MFD, and in 2017, MFD handled an average of 7,579 emergency calls (City of Manteca 2021g).

City of Manteca Parks and Recreation Department

A detailed discussion of parks is provided below in **Section 4.16, Recreation**. The City has more than 50 public park spaces totaling more than 400 acres. Park and recreation amenities include baseball and softball diamonds, sports fields, picnic areas, barbecues, playgrounds and tot lots, a more than 3-mile Class I bike and pedestrian path, lighted tennis courts, a BMX bicycle track, a skate park, an 18-hole municipal golf course, and a public swimming pool (with tot pool) (City of Manteca 2021e). Existing rental facilities include:

- Northgate: full picnic shelter; half picnic shelter
- Lincoln Picnic Shelter
- Woodward: full picnic shelter; half picnic shelter
- Library Park Gazebo
- Lincoln Pool
- Sports Fields

The City has adopted the goal of providing an overall minimum of 5 acres of parkland for every 1,000 residents (City of Manteca 2019b). The City currently has the equivalent of 6.63 acres per 1,000 residents, which successfully meets the City's existing recreational needs overall (City of Manteca 2016).

Schools

The proposed project site is located within the service boundaries of the Manteca Unified School District (MUSD). MUSD provides school services for grades Kindergarten (K) through 12 within the cities of Manteca, Lathrop, Stockton, and French Camp. The MUSD encompasses

approximately 113 square miles and serves more than 23,000 students. MUSD operates 14 elementary and middle schools (grades K-8), four high schools (grades 9-12), one community day school (grades 7-12), and one vocational academy (grades 11-12).

Mossdale Elementary School in the City of Lathrop is the nearest school to the proposed project site and is located approximately two miles northwest of the proposed project site on Brookhurst Boulevard.

4.15.2 Discussion

- ai-iii) **Less than Significant with Mitigation.** The proposed project would construct a stormwater conveyance network. The conveyance network would primarily be underground, excluding parts of the SDPS, within public existing or future ROW, as well as RD-17 and OLWD WWTP property. The proposed project would not increase population (refer to **Section 4.14, Population and Housing**, for details), therefore, would not result in the need for additional or expanded fire, police, or school facilities. Long-term operational demands of the proposed project on fire, police, or school facilities would be minimal, as the proposed project is a stormwater conveyance network, located primarily underground. The stormwater conveyance network would not increase the need for fire or police protection, as service needs would be similar to existing conditions. The proposed project would not increase the need for additional school facilities, as it would not increase the population of school age children beyond existing conditions. This impact would be less than significant.

Construction of the proposed project could result in accident or emergency incidents that would require emergency response, such as MPD or MFD services; however, construction activities would be short in duration, lasting approximately 16 months. Any increase in fire or law enforcement services due to construction activities would be temporary, ceasing upon completion of the proposed project. This impact would be less than significant.

Woodward Avenue, South Woodward Avenue, and Aplicella Court would remain open to through traffic during construction. Temporary construction activities and staging areas would be confined to the existing and proposed public ROW, as shown in **Section 2, Figure 2-12**. Construction of the SDPS and the outfall structure would occur within RD-17 and OLWD WWTP property and would not impede into Aplicella Court. Therefore, proposed project site would not physically impair access to other existing roadways within the proposed project vicinity. Construction of the SDPS and the outfall structure would occur within RD-17 and OLWD WWTP property and would not impede into Aplicella Court. Therefore, proposed project site would not physically impair access to other existing roadways within the proposed project vicinity. Implementation of a Standard Construction Period Traffic and Emergency Access Plan, as outlined in **Mitigation Measure PUB-1**, would ensure that traffic disruption impacts are minimized to a less than significant level and that fire and law enforcement services, as well as school

transportation services, are not impacted by the construction of the proposed project. This impact would be less than significant with the incorporation of mitigation.

aiv-v) **No Impact.** The proposed project would not increase the population and, thus, would not result in an increase in demand on parks and recreational facilities (refer to **Section 4.16, Recreation**, for further details). Therefore, the proposed project would not require the construction or expansion of recreational facilities beyond what is already proposed. In addition, the proposed project would not increase the use of existing parks or other recreational facilities such that substantial adverse physical impacts would result.

It is anticipated that construction personnel would come from the City, or surrounding areas. The construction personnel would likely commute to the proposed project site, and thus not relocate (refer to **Section 4.16, Recreation**, for further details). Therefore, construction personnel would not result in a temporary increase in population that would use the City's recreational facilities. There would not be an increased demand on parks resulting in the need for new or improved facilities. No impact would occur, and no mitigation is required.

The proposed project would construct a stormwater conveyance network. The conveyance network would primarily be underground, excluding parts of the SDPS, within public existing or future ROW, as well as RD-17 and OLWD WWTP property. Because the proposed project would not result in an increase in population, other public services, such as libraries, public health services, senior centers, and other community services, would not be affected by the construction or operation of the proposed project. There would not be an increased demand on parks resulting in the need for new or improved facilities. No impact would occur, and no mitigation is required.

Public services can also include utilities. The proposed project impacts to utilities and service systems are discussed and analyzed in **Section 4.10, Utilities and Service Systems**.

4.15.3 Mitigation Measures

Mitigation Measure PUB-1: The construction contractor for the proposed project shall implement a standard traffic management plan to minimize traffic disruption and ensure adequate access is maintained to surrounding properties. Prior to the start of construction, the contractor shall coordinate with the City of Manteca Police and Fire departments and local public and private ambulance and paramedic providers in the area, and the Manteca Unified School District to prepare a Construction Period Emergency Access Plan. The Construction Period Emergency Access Plan shall identify phases of the proposed project and construction scheduling and shall identify if alternative emergency access routes are appropriate.

4.16 Recreation

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Recreation —				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.16.1 Setting

The proposed project is located in the City of Manteca and San Joaquin County, within the City's sphere of influence. The City of Manteca Parks and Recreation Department oversees more than 600 acres of neighborhood and community parks, maintenance districts, urban forest, the Tidewater Bikeway, skate park, swimming pool, senior center, library services, and an 18-hole golf course. The closest recreational facility to the proposed project site is a neighborhood park, Dutra Estates Park, and is more than one mile east of the proposed project site.

4.16.2 Discussion

- a) **No Impact.** The proposed project would consist of the construction of a stormwater conveyance network to accommodate the existing and previously approved development projects in the area. The proposed project would not result in a permanent or temporary increase in population (refer to Section 4.14). Therefore, the proposed project would not increase the use of existing parks or other recreational facilities such that substantial physical deterioration would occur or be accelerated. The proposed project would have no impact in this regard and no mitigation is required.
- b) **No Impact.** The proposed project does not include recreational facilities. The proposed project, as discussed above in response a, would not require the construction of new, or expansion of existing, recreational facilities because the proposed project would not increase the use of these facilities or increase population requiring additional facilities. The proposed project would have no impact in this regard and no mitigation is required.

4.16.3 Mitigation Measures

No mitigation measures regarding impacts to recreational facilities are required.

4.17 Transportation

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Transportation – Would the project:				
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in inadequate emergency access?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4.17.1 Setting

Roadways within the proposed project area include Woodward Avenue, South Woodward Avenue, and Aplicella Court. Interstate (I) 5 and State Route (SR) 120 provide regional access to the proposed project area.

The existing ROW width along Woodward Avenue is 50 feet. As frontage improvement are constructed and the street expanded as part of the previously approved development projects in the area, ROW widths would increase to 68 to 80 feet. For South Woodward Avenue, the existing ROW width would be expanded from 51 feet to 68 feet as the roadway is improved. TCEs would be required on neighboring parcels, not the roadway.

Woodward Avenue is a two-lane road with an Average Daily Traffic of 4,200 and Level of Service C (City of Manteca 2017a). Woodward Avenue is a collector road that provides significant east-west links in the City. South Woodward Avenue is a collector road that provides north-south links to Williamson Road and Woodward Avenue. Aplicella Court is a gated street that leads to the Oakwood Shores neighborhood. Woodward Avenue, within the proposed project area, is designated as an evacuation route by both the San Joaquin County Office of Emergency Services and the City General Plan. According to the City of Manteca Bicycle Master Plan, the segment of Woodward Avenue within the proposed project area is identified as a proposed Class I Bike Path. There are no other congestion management plans, or adopted policies, plans, or programs supporting alternative transportation in the project vicinity.

4.17.2 Discussion

- a) **Less than Significant with Mitigation.** The proposed project would construct a stormwater conveyance network. The conveyance network would primarily be underground, excluding parts of the SDPS, within public existing or future ROW, as well as RD-17 and OLWD WWTP property. The gravity drain would be constructed along the south side of Woodward Avenue and east side of South Woodward Avenue, within either existing or future public ROW. The SDPS would be constructed within RD-17 property, south of Aplicella Court. The SDPS site would be set back 10 feet from the fenced landscape along Aplicella Court. The storm drain force main would be constructed through RD-17 parcels and the OLWD WWTP. The storm drain outfall would connect the storm drain force main to the outfall structure on the levee, for stormwater to discharge to the San Joaquin River.

The proposed project does not involve the construction of new roadways or any improvements to existing roadways. As the proposed project would not affect existing roadways, it would not result in a conflict with a program plan, ordinance, or policy addressing the circulation system in the City. Therefore, the proposed project would have no long-term impacts.

During construction, access for vehicles, pedestrians, and bicyclists along Woodward Avenue, South Woodward Avenue, and Aplicella Court would be maintained throughout the proposed construction period. All adjacent properties would maintain access throughout the construction period. The construction equipment would need to use the roads to get to the project site; however, the equipment would not disrupt mobility on the roadways. The proposed project could result in temporary traffic disruptions; however, it would be coordinated with the MFD, MPD, and other law enforcement or emergency service providers within the area through the implementation of **Mitigation Measure PUB-1**, which requires a Standard Construction Period Traffic and Emergency Access Plan. Therefore, proposed project construction would not conflict with a program plan, ordinance, or policy addressing the circulation system. The proposed project would have less than significant impact with the implementation of mitigation.

- b) **Less than Significant.** The proposed project would construct a stormwater conveyance network. The conveyance network would primarily be underground, excluding parts of the SDPS, within existing and future public ROW, as well as on RD-17 and OLWD WWTP property. Operations of Woodward Avenue, South Woodward Avenue, and Aplicella Court would be the same as existing conditions upon construction completion. The proposed project would not increase capacity along Woodward Avenue, South Woodward Avenue, or Aplicella Court, nor would it increase traffic and congestion. The SDPS and outfall structure would be constructed on RD-17 and OLWD properties, and thus, would not be

within roadway ROW. Therefore, the proposed project would not increase vehicle miles traveled (VMT) on the surrounding roadways.

Access for vehicles, pedestrians, and bicyclists along Woodward Avenue, South Woodward Avenue, and Aplicella Court would be maintained throughout the proposed project construction period. Access to all adjacent properties would be maintained throughout the construction period as well. Thus, no detours would be required during construction for vehicular traffic. Because the roadways would maintain existing capacity and no detours would be necessary during construction, the proposed project construction activities would not result in an increase in VMT. Construction personnel would be required to commute to the proposed project site; however, it is assumed that construction personnel would come from the City and surrounding areas. In addition, by nature, construction personnel commute to various construction sites for their job. Therefore, it is not anticipated that the proposed project would increase VMT because of construction personnel.

As stated in State CEQA Guidelines Section 15064.3, subdivision (b), transportation projects that reduce, or have no impact on, VMT should be presumed to cause a less than significant transportation impact. Therefore, because the proposed project would not increase VMT, the proposed project would not conflict with CEQA Guidelines Section 15064.3. Impacts would be less than significant, and no mitigation measures are required.

- c) **No Impact.** The proposed project would construct a stormwater conveyance network. The conveyance network would primarily be underground, excluding parts of the SDPS, within public existing or future ROW, as well as RD-17 and OLWD WWTP property. Thus, the proposed project would not change existing roadways and does not include design features such as sharp curves or dangerous intersections, or any incompatible uses that would increase hazards along the roadway above existing conditions. Therefore, the proposed project would have no impact in this regard and mitigation would not be required.
- d) **Less than Significant with Mitigation.** The proposed project would construct a stormwater conveyance network. The conveyance network would primarily be underground, excluding parts of the SDPS, within public existing or future ROW, as well as RD-17 and OLWD WWTP property. Woodward Avenue, South Woodward Avenue, and Aplicella Court would remain open to vehicular, bicycle, and pedestrian traffic during construction. Temporary construction activities and staging areas would be confined to the existing and future public ROW, as shown in **Section 2, Figure 2-12**. Construction of the SDPS and the outfall structure would occur within RD-17 and OLWD WWTP property and would not impede into Aplicella Court. Therefore, proposed project site would not physically impair access to other existing roadways within the proposed project vicinity. The proposed

project would be coordinated with the MFD, MPD, and other law enforcement or emergency service providers within the area through the implementation of **Mitigation Measure PUB-1**, which requires a Standard Construction Period Traffic and Emergency Access Plan. Impacts during construction would be less than significant with the implementation of mitigation.

4.17.3 Mitigation Measures

Implement **Mitigation Measure PUB-1**, as detailed in **Section 4.15, Public Services**.

4.18 Tribal Cultural Resources

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<p>Tribal Cultural Resources — Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resource Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:</p>				
<p>a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resources to a California Native American tribe.</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

This section incorporates the analysis, findings, and recommendations in the Cultural Sources Inventory and Evaluation (ECORP Consulting 2021a). This report is also discussed in **Section 4.5, Cultural Resources**, above. Due to confidentiality requirements, all cultural reports are maintained in confidentiality at the City Planning and Environmental Review Department and may be accessed only upon demonstrated need.

4.18.1 Setting

A tribal cultural resource (TCR) is defined as a site, feature, place, cultural landscape, or sacred place or object that has cultural value to California Native American tribes. In order to be considered a TCR, the resource must be included in or determined eligible for inclusion in the CRHR or is included in a local register of historical resources. Pursuant to Public Resource Code (PRC) §2107, a TCR is defined as either:

1. A site, feature, place, cultural landscape, sacred place, or object that has cultural value to California Native American Tribes that is included or determined to be eligible for inclusion in the CRHR or a local register of historical resources.
2. A resource determined by the lead agency to be significant and is supported by substantial evidence.
3. A geographically defined cultural landscape that meets the criteria set forth in PRC §21074.

4. A historical resource described in PRC §21084.1, a unique archeological resource or “nonunique archaeological resource” described in PRC §21083.2 (g) and (h).

It is generally believed that human occupation of California began at least 10,000 years before present (BP); however, it was not until approximately 5,000 BP when people began to move into the San Joaquin and Sacramento valleys (ECORP Consulting 2021a). The earliest permanent settlement of the Delta region of the Sacramento River is called the Windmill Tradition and it reflects the amplification of cultural trends such as finished projectile points, shell beads and pendants, and highly polished charmstones. Stone mortars and pestles, milling stones, bone tools such as fishhooks, awls, and pins are also present. The majority of the Windmill sites were discovered in the Sacramento-San Joaquin Delta near the Mokelumne and Cosumnes rivers; however, there are known sites from the San Joaquin Valley.

Linguistic evidence suggests that Windmill culture was ancestral to several historic tribes in the Central Valley, including the Penutian-speaking Northern Valley Yokuts, whose territory included the proposed project area. Unfortunately, the ethnography of the northern, or lower, San Joaquin Valley is poorly known, due to the fact that native inhabitants were for the most part gone by the time studies were undertaken (ECORP Consulting 2021a). Disease, flight from missionization, and conflicts with the miners and settlers who suddenly entered the area in large numbers reduced the native population to small, isolated remnants.

Record Search

In order to determine the location and nature of previously recorded cultural resources, including TCR, within or near the proposed project, a records search was performed at the CCIC, California State University, Stanislaus. The confidential record search of the proposed project’s archaeological study area and ½ mile radius for resources was conducted on April 14, 2020. The purpose of the records search was to (1) determine whether known cultural resources have been recorded within or adjacent to the proposed project; (2) assess the likelihood for unrecorded cultural resources to be present based on historical references and the distribution of nearby sites; and (3) develop a context for the identification and preliminary evaluation of cultural resources.

A sacred lands search request was submitted to the NAHC for the proposed project on May 29, 2020. The NAHC replied on May 29, 2020 regarding the proposed project, stating that the search was negative for sacred lands in the proposed project area and provided a list of Native American tribes who may have knowledge of cultural resources.

Field Survey

On May 27, 2020 an intensive pedestrian survey under the guidance of the *Secretary of the Interior’s Standards for the Identification of Historic Properties* (ECORP Consulting 2021a) using

transects spaced 15 meters apart. The ground surface was examined for indications of surface or subsurface resources. The general morphological characteristics of the ground surface were inspected for indications of subsurface deposits that may be manifested on the surface, such as circular depressions or ditches.

The western portion of the proposed project consisted of the OLWDWWTP and a segment of the San Joaquin River/Walthall Slough levee. The surface of the levee and OLWD WWTP were completely graveled. Areas of exposed light brown soil on the levee caused by rodent burrowing were observed but contained no cultural materials or culturally modified soil indicators. East of the OLWD WWTP, the proposed project consisted of a graded area located south of Aplicella Court and north of the levee.

The eastern portion of the proposed project area consists of rural roadways and the adjacent agricultural parcels. Overall, the surface visibility throughout the proposed project area was good due primarily to short grasses and exposed soil with an average surface visibility of 60 to 70 percent in most areas.

Tribal Consultation

The CEQA Guidelines state that California Native American tribes traditionally and culturally affiliated with a geographic area may have expertise concerning their TCRs. Lead agencies shall consult with these tribes who respond in writing and requests the consultation within 30 days of receipt of the formal notification of the project (PRC §21080.3.1). Traditionally and culturally affiliated tribes of a project area may suggest mitigation measures, including, but not limited to, those recommended in §21084.3. The City, acting as lead CEQA agency, mailed formal notification letters on March 15, 2021, by certified mail with the proposed project description, location, and lead City contact to the North Valley Yokuts Tribe and The Confederated Villages of Lisjan, Tribes that are culturally and traditionally affiliated with the proposed project area (Public Resources Code §21080.3.1(b); Assembly Bill [AB] 52). To date, no responses have been received from either of the tribes.

4.18.2 Discussion

- a,b) **Less than Significant with Mitigation.** As mentioned above, the NAHC was contacted on May 29, 2020 requesting a search of their Sacred Lands File and a list of Native Americans that may have knowledge of the proposed project area. The NAHC replied on May 29, 2020 that the search was negative for sacred lands and provided a list of Native American tribes who may have knowledge of cultural resources.

The field survey conducted in April 2020 did not identify any tribal cultural resources, artifacts, or culturally modified soil indicators.

No tribal cultural resources were identified as a result of the field survey or record searches. The record search results indicated that six previous cultural resource studies have been conducted within the proposed project area and no resources have been previously recorded as a result of those studies. Due to the nature of the proposed project, there is the potential to encounter previously unknown tribal cultural resource. Therefore, through the implementation of **Mitigation Measure CUL-1**, the proposed project would have a less than significant impact on tribal cultural resources.

4.18.3 Mitigation Measures

Implement **Mitigation Measure CUL-1**, as described in **Section 4.5, Cultural Resources**, above.

4.19 Utilities and Service Systems

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Utilities and Service Systems – Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relation of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

4.19.1 Setting

The proposed project area is served by the existing OLWD WWTP. Water facilities in the City consist primarily of water wells and transmission mains (City of Manteca 2003b). Water distribution facilities in the City have the capacity to serve the existing development plus the future infill development. Current stormwater, sewer, and solid waste services are provided by the City (City of Manteca 2003b). The nearest landfill to the proposed project site is the Waste Management – Altamont Landfill and Resource Recovery Site, located approximately 25 miles west of the proposed project. Overhead electrical and communication systems are located on joint poles (poles that support more than one utility) along the south side of Woodward Avenue and east side of South Woodward Avenue. Natural gas and electricity are supplied in the City by

Pacific Gas & Electric (PG&E). Electric utilities are described in further detail in **Section 4.6, Energy**.

4.19.2 Discussion

- a) **Less than Significant.** In support of the Zone 39 regional system, the City of Manteca has executed an agreement with the OLWD to facilitate construction of a stormwater conveyance network through Oakwood Shores to discharge to the San Joaquin River in exchange for the City accepting wastewater from OLWD for treatment and disposal. The proposed project is also identified in the City's 2013 SDMP.

The proposed project would consist of a large diameter gravity drain within Woodward Avenue with connections from detention basin pump stations serving the previously approved development projects (refer to **Section 2, Figure 2-4**). Flows would be routed to the 120 cfs SDPS along Aplicella Court, located within the Oakwood Shores neighborhood. The SDPS would then convey stormwater through a 48-inch diameter force main to an outfall structure adjacent to the existing OLWD WWTP. Stormwater from Zone 36 and Zone 39 would be discharged to the San Joaquin River through twin 30-inch diameter pipes. Construction of the storm drain force main and outfall structure through OLWD WWTP property would require close coordination with the OLWD to decommission, remove from service, dismantle, demolish, and regrade areas within the OLWD WWTP to create a pipeline corridor.

Implementation of the proposed project would not generate new stormwater or wastewater. No new wastewater treatment plant capacity would be necessary to service the proposed project. Implementation of the proposed project would convey existing and planned stormwater capacity through a new system identified in the SDMP in order to reduce environmental degradation and support the stormwater needs of previously approved development projects in the proposed project area.

Electrical service would be provided by PG&E to allow for testing, start-up, and commissioning of the SDPS. While new electrical service would be required at the SDPS, the proposed project would not require the extension of electrical services because PG&E already services the existing OLWD WWTP and the residences on Aplicella Court. The electrical use required for the operation of the SDPS would not result in increased electrical use beyond the capacity of existing infrastructure (refer to **Section 4.6, Energy**, for further details). Therefore, the proposed project would not require the relocation, expansion, or creation of new facilities to provide this power to the SDPD. Impacts are considered less than significant for proposed project operations and no mitigation is required.

Construction of the proposed project would increase electrical use for the duration of the proposed project's construction. Electricity would be used for construction equipment, including the construction of the SDPS and demolition of existing facilities at the OLWD WWTP. The electrical use required for proposed project construction would not result in increased electrical use beyond the capacity of existing infrastructure (refer to **Section 4.6, Energy**, for further details). Electricity consumed during construction would be temporary in nature and would not exceed the capacity of existing infrastructure.

Overhead electrical and communication systems along Woodward Avenue and South Woodward Avenue would require temporary and permanent relocation to avoid future ROW conflicts and to facilitate underground storm drain construction. West of Bella Lago Way, overhead electrical and communication systems would be temporarily relocated within the ROW to allow for pipeline construction. Thus, impacts related to utility relocation would be less than significant.

Non-potable water use would be required for fugitive dust control during project construction. See the **Section 4.3, Air Quality**, for more information regarding fugitive dust control BMPs. Water supplies during construction are typically trucked to the site from outside sources that supply water for construction activities. This use of water would occur during the construction period and would cease upon construction completion. Potable water would be required during construction for workers. Typically, potable water is brought to the site in bottles or other potable water vessels. Water use at the proposed project site would cease upon completion of construction. No new or expanded water facilities would be required. During construction, port-a-potties are typically used at construction sites; however, they are removed once construction is completed. These facilities are operated by private companies that provide cleaning services; thus, the proposed project would not increase wastewater service demand during construction. No new or expanded facilities would be required. The proposed project would not result in the need for new or expanded water, wastewater treatment, or other utility facilities. Impacts from the proposed project would be less than significant. No mitigation is required.

The proposed project would have a less-than-significant impact in this regard and no mitigation would be required.

- b) **No Impact.** The proposed project would construct a stormwater conveyance network. The conveyance network would primarily be underground, excluding parts of the SDPS, within public existing or future ROW, as well as RD-17 and OLWD WWTP property. Operations of the proposed project would not require the use of water; therefore, no water supplies would be depleted as a result of the proposed project. No impact would occur in this regard.

Non-potable water use would be required for fugitive dust control during construction of the proposed project. See **Section 4.3, Air Quality**, for more information regarding fugitive dust control BMPs. Water supplies during construction are typically trucked to the site from outside sources that supply water to construction activities. Potable water would be required during construction for workers. Typically, potable water is brought to the site in bottles or other potable water vessels. This use of water would occur during the construction period of the proposed project and would cease upon construction completion. No impact would occur to existing water supplies.

- c) **No Impact.** The proposed project would construct a stormwater conveyance network. The conveyance network would primarily be underground, excluding parts of the SDPS, within public existing or future ROW, as well as RD-17 and OLWD WWTP property. The City executed an agreement with OLWD to facilitate construction of a stormwater conveyance network through Oakwood Shores to discharge to the San Joaquin River in exchange for the City accepting wastewater from OLWD for treatment and disposal. Therefore, the existing OLWD WWTP would be decommissioned and demolished as part of this agreement. The operations of the proposed project would not generate wastewater. Therefore, the proposed project would have no impact in this regard. No mitigation measures are required.

During construction of the proposed project, port-a-potties would be used; however, they would be removed once construction is completed. These facilities are operated by private companies that provide cleaning services; thus, the proposed project would not increase wastewater service demand during construction. There would be no impact to wastewater treatment facilities or their capacity. and no mitigation is required.

- d,e) **Less than Significant.** The City executed an agreement with OLWD to facilitate construction of a stormwater conveyance network through Oakwood Shores to discharge to the San Joaquin River in exchange for the City accepting wastewater from OLWD for treatment and disposal. Therefore, the existing OLWD WWTP would be decommissioned and demolished as part of this agreement. Demolition of select areas within the OLWD WWTP is required to accommodate construction of the 48-inch storm drain force main. In conjunction with decommissioning the OLWD WWTP upon completion of the OLWD Wastewater System Improvements Project (a separate project), the SBR Basin, Sludge Basin, and Filter Flow Equalization Basin would be drained, and all solids removed/disposed of offsite. Decommissioning and demolition of the OLWD WWTP would be in accordance with requirements established by the RWQCB.

As mentioned above, the nearest landfill to the proposed project site is the Waste Management – Altamont Landfill and Resource Recovery site. The Altamont Landfill and Resource Recovery site is covers approximately 2,063 acres and has a total landfill

capacity of approximately 124,400,000 cubic yards. As of the last survey of remaining capacity on June 30, 2016, the Altamont Landfill and Resource Recovery site has approximately 65,400,000 cubic yards remaining. The Contractor would be responsible for preparing a demolition plan prior to construction, including determining the disposal location for demolished materials. Solid waste generation would cease upon construction completion.

The proposed project would comply with all federal, State, and local statutes and regulations related to solid waste, including compliance with the 1989 California Integrated Waste Management Act (AB 939) requiring specific waste diversion goals for local agencies. All recyclables and organics collected from the project site would be properly disposed of at a location determined by the Contractor.

The proposed project's impact on solid waste generation would be less than significant and no mitigation measures are required. In addition, the proposed project would comply with all federal, state, and local statutes and regulations related to solid waste, therefore, impacts in this regard are less than significant and no mitigation measures are required.

4.19.3 Mitigation Measures

No mitigation measures are required related to impacts to utilities and services.

4.20 Wildfire

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Wildfire –				
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.20.1 Setting

The proposed project site is served by the MFD. The MFD operates five staffed fire stations. Fire Station 242, located at 1154 South Union Road, approximately three miles northeast of the proposed project site, serves as MFD headquarter and is the closest station to the proposed project.

According to the California Department of Forestry and Fire Protection (CalFire) Fire Hazard Severity Zones Map, the proposed project is not located in a State Responsibility Area classified as a “Very High” Fire Hazard Severity Zone (FHSZ). The proposed project is located in a Local Responsibility Area classified as “Unzoned”. No cities or communities within San Joaquin County are categorized as “Very High” FHSZ by CalFire (CalFire 2007a, 2007b).

The project site is located in lies in the southwestern corner of the City of Manteca, which lies on the east bank of the San Joaquin River. The proposed project topography is very subdued, with less than 10 feet of relief along the alignment, excluding the levee. The RD-17 lots have recently been graded to create a seepage berm toe levee in conjunction with levee improvements completed by RD-17. Elevation at the OLWDWWTP is approximately 20 feet amsl, and quickly increases to approximately 35 feet amsl at the top of the levee. At the proposed outfall structure location, the elevation decreases from 35 feet amsl to 5 feet amsl. These are the steepest slopes in the proposed project area.

4.20.2 Discussion

Although this CEQA topic only applies to areas within a State Responsibility Area or Very High FHSZ, out of an abundance of caution, these checklist questions are analyzed below.

- a) **Less than Significant with Mitigation.** The proposed project would construct a stormwater conveyance network. The conveyance network would primarily be underground, excluding parts of the SDPS, within public existing or future ROW, as well as RD-17 and OLWD WWTP property. Operations of Woodward Avenue, South Woodward Avenue, and Aplicella Court would be the same as existing conditions upon construction completion. The proposed project would not increase capacity along Woodward Avenue, South Woodward Avenue, or Aplicella Court nor would it increase traffic and congestion. The SDPS and outfall structure would be constructed on RD-17 and OLWD properties, and thus would not be within an emergency route. Therefore, the proposed project would not impair an adopted emergency response plan or emergency evacuation plan, as Woodward Avenue and Aplicella Court operations would be similar to existing conditions. The proposed project would have no impact to emergency response plans or emergency evacuation plans during proposed project operations.

Woodward Avenue, South Woodward Avenue, and Aplicella Court would remain open to through traffic during construction. Temporary construction activities and staging areas would be confined to the existing and proposed public ROW, as shown in **Section 2, Figure 2-12**. Construction of the SDPS and the outfall structure would occur within RD-17 and OLWD property and would not impede into Aplicella Court. Therefore, proposed project site would not physically impair access to other existing roadways within the proposed project vicinity. The proposed project would be coordinated with the MFD, MPD, and other law enforcement or emergency service providers within the area through a standard Construction Period Traffic and Emergency Access Plan, as required under **Mitigation Measure PUB-1**. The implementation of mitigation would reduce the proposed project's potential to impair emergency access during construction. Therefore, impacts during construction would be less than significant with the incorporation of mitigation.

- b) **Less than Significant with Mitigation.** The proposed project would construct a stormwater conveyance network. The conveyance network would primarily be underground, excluding parts of the SDPS, within public existing or future ROW, as well as RD-17 and OLWD WWTP property. Land use and roadway operations within and adjacent to the proposed project site would be the same as existing conditions upon construction completion. Thirty inches of RSP would be installed along the shoreline of the San Joaquin River in front of and adjacent to the outfall structure. RSP would stabilize the slope around the outfall construction, minimize erosion potential, and reduce vegetation within the outfall footprint. The SDPS would include a maintenance building. RD-17 currently maintains the undeveloped parcels at the top of slope to the levee. The

addition of impervious surfaces would reduce the vegetation within the undeveloped property. These changes would not exacerbate wildfire risks, and therefore would not expose personnel at the SDPS maintenance facility or residents on Aplicella Court or Woodward Avenue to pollutants due to wildfire or the uncontrolled spread of wildfire. The proposed project would have a less than significant impact in this regard.

Construction activities involving vehicles, heavy machinery, and personnel smoking at the proposed project site could result in the ignition of a fire. During construction, heavy equipment and passenger vehicles driving on vegetated areas prior to clearing and grading could increase the risk of fire. Heated mufflers and improper disposal of cigarettes could potentially ignite surrounding vegetation. Implementation of **Mitigation Measure FIRE-1** would reduce the potential for construction activities to result in severe fires by requiring fire-safe construction and maintenance practices. Impacts would remain less than significant after implementation of mitigation measures.

- c) **No Impact.** The proposed project would require temporary relocation of overhead utility and communication line joint poles; however, these poles would be placed in similar locations to existing conditions upon construction completion. The proposed project would not have any effect on other existing infrastructure; therefore, the proposed project would not require the installation or maintenance of additional infrastructure that may exacerbate fire risk or result in temporary or ongoing impacts to the environment. Impacts from proposed project implementation would have no impacts relative to this topic.
- d) **No Impact.** The proposed project would construct a stormwater conveyance network. The conveyance network would primarily be underground, excluding parts of the SDPS, within public existing or future ROW, as well as RD-17 and OLWD WWTP property. Roadway operations would be the same as existing conditions upon construction completion. RD-17 currently maintains the undeveloped parcels at the top of slope to the levee. The addition of impervious surfaces would reduce the vegetation within the undeveloped property. These changes would not exacerbate wildfire risks, and therefore would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. The proposed project would not increase storm water runoff or result in drainage pattern changes, or result in a population increase that would ultimately expose people or structures to significant post-fire risks.

The proposed project site is located in Flood Zone X, Area with Reduced Flood Risk Due to Levee, designated by FEMA on the FIRM Panel 06077C0620F (FEMA 2020). Due to the urbanized nature of the site, and its distance from hilly/mountainous terrain, the proposed project has a low susceptibility to downslope or downstream flooding, landslides, or runoff, as a result from postfire slope instability, or drainage changes.

During construction, construction workers would be present on site; however, this increase in workers would be temporary in nature as it would last approximately 16 months. The risks associated with runoff, slope instability, and drainage changes within the proposed project site during construction would be similar to existing conditions. Therefore, the proposed project would have a less than significant impact in this regard and no mitigation measures are required.

4.20.3 Mitigation Measures

Implement **Mitigation Measure PUB-1**, as described in **Section 4.15, Public Services**, above.

Mitigation Measure FIRE-1: Prior to the start of construction, the contractor shall coordinate with the Manteca Fire Department to prepare a Construction Fire Safety Plan for use during construction. The Construction Fire Safety Plan shall contain notification procedures and emergency fire precautions including, but not limited to, the following:

1. All internal combustion engines, stationary and mobile, shall be equipped with spark arresters. Spark arresters shall be in good working order.
2. Light trucks and cars with factory-installed (type) mufflers shall be used only on roads where the roadway is cleared of vegetation. Said vehicle types shall maintain their factory-installed (type) muffler in good condition.
3. Equipment parking areas (staging areas) shall be cleared of all extraneous flammable materials.
4. Personnel shall be trained in the practices of the Fire Safety Plan relevant to their duties. Construction personnel shall be trained and equipped to extinguish small fires in order to prevent them from growing into more serious threats.
5. Smoking shall be prohibited in wildland areas and shall be limited to paved areas or areas cleared of all vegetation.

4.21 Mandatory Findings of Significance

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Mandatory Findings of Significance –				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) 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, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4.21.1 Discussion

- a) **Less than Significant with Mitigation.** The information in **Section 4.4, Biological Resources**, of this IS/MND analyzes the potential effects of the proposed project on biological resources, including habitats, special-status plant species, and special-status wildlife species, including CV steelhead, longfin smelt, delta smelt, spring-run Central Valley Chinook salmon, green sturgeon, Swainson’s hawk, western burrowing owl, loggerhead shrike, giant gartersnake, and riparian bush rabbit, as well as nesting birds and raptors. **Section 4.4, Biological Resources**, requires the implementation of **Mitigation Measures BIO-1** through **BIO-6**. The impacts would be less than significant with the incorporation of mitigation measures. The information in **Section 4.5, Cultural Resources**, and **Section 4.18, Tribal Cultural Resources**, of this study analyze possible proposed project effects on cultural and tribal cultural resources including the possibility of human remains. **Section 4.5, Cultural Resources**, and **Section 4.18, Tribal Cultural Resources**,

require the implementation of **Mitigation Measure CUL-1**. The impacts would be less than significant with the incorporation of mitigation measures.

- b) **Less than Significant with Mitigation.** The proposed project would construct a stormwater conveyance network. The conveyance network would primarily be underground, excluding parts of the storm drain pump station (SDPS), within public existing or future ROW, as well as RD-17 and OLWD WWTP property. This IS/MND has identified potential impacts in the areas of aesthetics, biological resources, cultural resources, paleontological resources (under geology and soils), hazards, hydrology and water quality, noise, tribal cultural resources, and wildfire that are individually limited and require mitigation to ensure that the impacts would be reduced to a less than significant level both incrementally and cumulatively. Each resource within this IS/MND evaluates the proposed project impacts as well as the proposed project's incremental effects on cumulative impacts. The proposed project approval is conditioned upon implementation of these mitigation measures that avoid incremental effects. In addition, the proposed project is included in the 2013 Manteca Storm Drain Master Plan and the City's General Plan. Therefore, with the incorporation of mitigation measures identified in **Sections 4.1 through 4.20**, above, cumulative impacts are less than significant.
- c) **Less than Significant with Mitigation.** The proposed project would not cause substantial adverse effects on human beings. As discussed in **Sections 4.1 through 4.20**, above, and specifically regarding air quality, geology and soils, hazards, noise, public services, utilities and service systems, and wildfire, the potential impacts to human beings would be mitigated to a less than significant level. Therefore, impacts on human beings would be less than significant with the incorporation of mitigation measures, identified in **Sections 4.1 through 4.20**, above.

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Appendix A – List of Technical Studies

The following technical studies that were used in the preparation of this document are available upon request. Copies of these documents are available at the City of Manteca Department of Public Works office at 1215 West Center Street Manteca, CA 95337.

Please note that any studies documenting known and potential cultural resources in the proposed project area will not be made available to the public to protect Native American tribal rights and interests.

- Air Quality and Greenhouse Gas Study for Storm Drain Zone 36/Zone 39 Improvement Project
- Biological Resources Analysis for Storm Drain Zone 36/Zone 39 Improvement Project
- Cultural Resources Inventory and Evaluation
- Flood Hazards, Hydrology, and Hydraulics Study
- Noise and Vibration Study for Storm Drain Zone 36/Zone 39 Improvement Project
- Paleontological Assessment and Paleontological Resources Monitoring and Mitigation Plan