RESOLUTION NO. 2418

A RESOLUTION OF THE OLIVEHURST PUBLIC UTILITY DISTRICT ACCEPTING THE PROJECT PLANS AND AUTHORIZING STAFF TO COMPLETE PROJECT DESIGN; ADOPTING A MITIGATED NEGATIVE DECLARATION, AND A MITIGATION MONITORING AND REPORTING PROGRAM FOR THE SOUTH YUBA COUNTY WATER AND WASTEWATER INFRASTRUCTURE IMPROVEMENT PROJECT

WHEREAS, the Olivehurst Public Utility District ("District") wishes to complete design, construct, and operate the South Yuba County Water and Wastewater Infrastructure Improvement Project, a multi-component water and wastewater project (collectively the "Project") consisting of:

Component 1. Completion of sanitary sewer overflow (SSO) reduction measures to the existing wastewater collection system serving the community of Olivehurst,

Component 2. Modification of the District's existing wastewater treatment plant to accommodate increased wet weather flows and replace equipment within the wastewater treatment plant that has reached the end of its operational life,

Component 3. Expansion of the District's wastewater collection system to provide service to the recently annexed South County Service Area between Forty Mile Road and Rancho Road,

Component 4. Construction and operation of a Water Plant and backbone treated water distribution pipelines within the Yuba County General Plan growth area along Forty Mile Road and Rancho Road, and

Component 5. Construction and operation of a wastewater collection system to accept and treat the City of Wheatland's untreated wastewater at the District's existing wastewater treatment plant.

WHEREAS, pursuant to the California Public Resources Code section 21067 and the State CEQA Guidelines (Cal. Code Regs, tit. 14 § 15000 et seq.) section 15051, the District is the lead agency for the proposed Project; and

WHEREAS, the Board of Directors is the decision-making body for the Project, and the Board of Directors is being asked to review and approve the Project's environmental documentation (State CEQA Guidelines, § 15025(b)(1)); and

WHEREAS, District staff reviewed the Project and prepared an Initial Study pursuant to State CEQA Guidelines section 15063; and

WHEREAS, on the basis of the Initial Study, which concluded that the Project would have potentially significant impacts but that those impacts could be reduced to less than significant levels with implementation of proposed mitigation measures, the District determined that a Mitigated Negative Declaration ("MND") should be prepared for the Project, and a MND, bearing the State Clearinghouse Number 2023030233, was prepared pursuant to Public Resources Code sections 21064.5 and 21080, subdivision (c), and the State CEQA Guidelines section 15070 et seq.; and

WHEREAS, the District distributed a Notice of Intent to Adopt a Mitigated Negative Declaration to responsible and trustee agencies, interested members of the public, and individuals who had previously requested to receive notice of CEQA documents on March 10, 2023, pursuant to State CEQA Guidelines section 15072; and

WHEREAS, the thirty-day public review and comment period began on March 13, 2018 and ended on April 11, 2023, pursuant to Public Resources Code section 21091(b); and

WHEREAS, the District also provided copies of the draft MND and Initial Study to the State Clearinghouse for a thirty-day state agency review and comment period beginning on March 13, 2023 and ending on April 11, 2023; and

WHEREAS, the District received three written comment letters during the public and state agency review periods; and

WHEREAS, the District has prepared written responses to the comment letters received during the public and state agency public review periods. The District's written responses to the comment letters received are compiled in Exhibit A; and

WHEREAS, no Native American tribes have registered with the District as of the date of circulation of the MND to receive formal notification of proposed projects in the geographic area that is traditionally and culturally affiliated with the tribe pursuant to Public Resources Code section 21080.3.1. Under these circumstances, Public Resources Code section 21080.3.1(b)(1) permits the District to adopt the Mitigated Negative Declaration without providing formal notification; and

WHEREAS, the District has modified the text of the final MND to revise Mitigation Measure AQ-1 to establish Measures AQ-1 A, B, and C to provide greater clarity in the timing of implementation of the three components of Measure AQ-1.

WHEREAS, the District has modified the text of the final MND to revise Mitigation Measures AQ-3 B and C to clarify the entities responsible for collecting and approving construction air emissions data.

WHEREAS, the District has modified the text of the final MND to revise Mitigation Measure BIO-5 to allow OPUD to obtain USFWS approved mitigation credits from sources other than purchase.

WHEREAS, the District has modified the text of the final MND to revise Mitigation Measure BIO-7 to require that OPUD offset the permanent loss of Giant Garter Snake habitat should any occur; and

WHEREAS, State CEQA Guidelines section 15073.5(c)(1) exempts the revision of a mitigation measure that is equally or more effective than the previous measure set forth within a circulated Negative Declaration from recirculation as is the case for Mitigation Measures AQ-1, AQ-3, BIO-5, and BIO-7; and

WHEREAS, in accordance with State CEQA Guidelines sections 15072 and 15073(e), on March 13, 2023, the District provided written notice to all public agencies of the public hearing to be held on the project for which the MND was prepared; and

WHEREAS, pursuant to Public Resources Code section 21081.6 and State CEQA Guidelines section 15074(d), the District has prepared a program for reporting on or monitoring the changes which it has either required in the project or made a condition of approval to mitigate or avoid significant environmental effects (the "Mitigation Monitoring and Reporting Program"); and

WHEREAS, as contained herein, the District has endeavored in good faith to set forth the basis for its decision on the proposed Project; and

WHEREAS, the District has endeavored to take all steps and impose all conditions necessary to ensure that impacts to the environment would not be significant; and

WHEREAS, all of the findings and conclusions made by the Board of Directors pursuant to this Resolution are based upon the oral and written evidence before it as a whole; and

WHEREAS, the Board of Directors has reviewed the MND, Initial Study, and all other relevant information contained in the record regarding the Project; and

WHEREAS, on April 20, 2023, at the District's regularly-scheduled meeting, the public was afforded an opportunity to comment on the Project and the MND and the Initial Study, and the Board of Directors discussed and considered the Project and the MND and the Initial Study; and

WHEREAS, all other legal prerequisites to the adoption of this Resolution have occurred;

NOW THEREFORE, the Board of Directors does hereby resolve as follows:

SECTION 1. Compliance with the California Environmental Quality Act. As the decision-making body for the Project, the Board of Directors has reviewed and considered the information contained in the MND, Initial Study, and administrative record, on file with the District and available for review at 1970 9th Street, Olivehurst, California. The Board of Directors finds that the MND and Initial Study have been completed in compliance with the California Environmental Quality Act (Pub. Res. Code § 21000 et seq.: "CEQA") and the State CEQA Guidelines.

SECTION 2. Adoption of Modifications to Mitigation Measures AQ-1, AQ-3, BIO-5, and BIO-7. The Board of Directors hereby finds that the textual modification of Mitigation Measures AQ-1, AQ-3, BIO-5, and BIO-7 attached hereto as Exhibit "B", would be more effective or provide greater environmental protection than the previous measures set forth within the circulated Negative Declaration by clarifying the implementation timing of the various requirements of the measure, agency involvement and air emissions data needs, or the acquisition of mitigation credits, and that no recirculation of the MND is necessary consistent with the requirements of Section 15074.1(c) of the State CEQA Guidelines.

SECTION 3. Findings on Environmental Impacts. In the District's role as the lead agency under CEQA, the Board of Directors finds that the MND and the Initial Study contain a complete and accurate reporting of the environmental impacts associated with the Project. The Board of Directors further finds that the documents have been completed in compliance with CEQA and the State CEQA Guidelines. The District further finds that all environmental impacts of the Project are either insignificant or can be mitigated to a less than significant level pursuant to the mitigation measures outlined in the MND, Initial Study and the Mitigation Monitoring and Reporting Program. The Board of Directors further finds that there is no substantial evidence in the record supporting a fair argument that the Project may result in significant environmental impacts, and that any comments

received regarding the Project have been examined and determined to not modify the conclusions of the MND. The Board of Directors finds that the MND and Initial Study contain a complete, objective, and accurate reporting of the environmental impacts associated with the Project and reflects the independent judgment of the Board of Directors.

SECTION 4. Adoption of Mitigated Negative Declaration. The Board of Directors hereby approves and adopts the Final Initial Study/MND prepared for the Project, attached hereto as Exhibit "C".

SECTION 5. Adoption of the Mitigation Monitoring and Reporting Program. The Board of Directors hereby approves and adopts the Mitigation Monitoring and Reporting Program prepared for the Project, attached hereto as Exhibit "D".

SECTION 6. Approval of Plans and Direction to Complete Project Design. The Board of Directors hereby approves of the Project plans and directs the General Manager to complete project design necessary to initiate the solicitation of construction bids for some or all of the Project components. The General Manager shall send any notices or take any actions necessary to complete the design of the Project.

SECTION 7. Custodian of Records. The documents and materials that constitute the record of proceedings on which these findings are based are located at 1970 9th Street, Olivehurst, California. The General Manager is the custodian of the record of proceedings.

SECTION 8. Notice of Determination. Staff is directed to file a Notice of Determination with the County of Yuba and the State Clearinghouse within five (5) working days of approval of the Project.

SECTION 9. Execution of Resolution. The President of Board of Directors shall sign this Resolution and the Board Secretary shall attest and certify to the passage and adoption thereof.

PASSED AND ADOPTED THIS 20th DAY OF April 2023.

OLIVEHURST PUBLIC UTILITY DISTRICT

_____.
President, Board of Directors
Olivehurst Public Utility District

ATTEST:

_____.
Deputy District Clerk & ex-officio Secretary

APPROVE AS TO FORM AND LEGAL SUFFICIENCY

_____.
Legal Counsel

* * * * * * * * * * *

I hereby certify that the foregoing is a full, true and correct copy of a Resolution duly adopted and passed by the Board of Directors of the Olivehurst Public Utility District, Yuba County, California, at a meeting thereof held on the 20th day of April 2023, by the following vote:

AYES, AND IN FAVOR THEREOF:

NOES :

ABSTAIN :

ABSENT :

_____

Deputy District Clerk and ex-officio Secretary

EXHIBIT "A"

RESPONSES TO COMMENTS

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Responses to Comments on the South Yuba County Water and Wastewater Infrastructure Improvement Project Initial Study/Mitigated Negative Declaration

Comment Letter 1: California Water Boards, Central Valley Regional Water Quality Control Board

Response to Comment 1-1

The comment is an introductory statement and does not address the adequacy of the Initial Study/Mitigated Negative Declaration.

Response to Comment 1-2

The comment provides background information regarding potentially applicable regulations and required permits. Compliance with such regulations is discussed throughout Chapter 5, Section X, *Hydrology and Water Resources,* of the Initial Study/Mitigated Negative Declaration. The comment does not address the adequacy of the Initial Study/Mitigated Negative Declaration and has been noted for the record.

Response to Comment 1-3

The comment is a conclusory statement and does not address the adequacy of the Initial Study/Mitigated Negative Declaration.

Comment Letter 2: California Department of Fish and Wildlife

Response to Comment 2-1

The comment is an introductory statement and does not address the adequacy of the Initial Study/Mitigated Negative Declaration.

Response to Comment 2-2

The comment outlines the jurisdiction and regulations of the California Department of Fish and Wildlife (CDFW) and identifies the requirements of Section 1602 of the Fish and Game Code to notify CDFW prior to commencing any activity that may 1) substantially divert or obstruct the natural flow of any river, stream or lake; 2) substantially change or use any material from the bed, channel or bank of any river, stream, or lake; or 3) deposit debris, waste or other materials where it may pass into any river, stream or lake.

Mitigation Measure BIO-13A requires a delineation of aquatic resources to determine the extent of project impacts to jurisdictional aquatic resources or full avoidance of jurisdictional aquatic resources. Mitigation Measure BIO-13B requires that OPUD shall obtain all necessary permits for impacts to waters of the U.S. and wetlands from the Corps and RWQCB and/or for potential impacts to stream features from CDFW prior to project implementation. Mitigation Measure BIO-13B also requires compensatory mitigation consistent with permit requirements, with a minimum of 1:1 replacement ratio, and implementation of a Mitigation Plan that is approved by the permitting agencies.

The circulated Initial Study/Mitigated Negative Declaration concluded that the impact on aquatic resources would be less than significant with the implementation of identified mitigation measures. No modification of the environmental conclusions of the Initial Study/Mitigated Negative Declaration would be necessary in response to this comment, and recirculation of the document would not be required consistent with Section 15073.5 of the State CEQA Guidelines.

Response to Comment 2-3

The comment identifies the potential for occurrence of special-status plants and outlines the Native Plant Protection Act (NPPA) prohibition of take or possession of State-listed rare and endangered plants, unless authorized by CDFW or in certain limited circumstances.

The Initial Study/Mitigated Negative Declaration identifies limited potential for occurrence of special-status plant species due to the level of disturbance within proposed project impact areas and project design features intended to avoid impacts to drainage crossings through the use of trenchless pipeline construction methods. However, the Initial Study/Mitigated Negative Declaration identifies the potential for occurrence of two special-status plant species, both California Rare Plant Rank Species considered special-status for the purposes of California Environmental Quality Act (CEQA) review, but not State-listed rare or endangered plants. Mitigation Measure BIO-1 requires special-status plant surveys of project impact areas within potentially suitable habitat conducted in accordance with agency-approved survey protocols during the appropriate blooming period. Mitigation Measure BIO-2A requires avoidance of impacts to special-status plants, if feasible, or the implementation of Mitigation Measure BIO-2B that requires mitigation for impacts to special-status plant species if avoidance is not possible. Mitigation Measure BIO-2B also requires preparation of a Mitigation Plan for the restoration and/or mitigation appropriate for the species identified, monitoring requirements, and performance criteria to ensure successful establishment of special-status plants so that no net loss will occur.

Although State-listed rare and endangered plants are very unlikely to occur within the project impact areas, Fish & Game Code Section 1913 provides utilities with an exemption from CESA permitting requirements for listed plants within the utility right of way. Specifically, Section 1913(b) states: "…the removal of endangered or rare native plants from a canal, lateral ditch, building site, road, or other right-of-way by the owner of the land or his agent, or the performance by a public agency or a publicly or privately owned public utility of its obligation to provide service to the public, shall not be restricted because of the presence of rare or endangered plants." Section 1913(c) of the NPPA requires the landowner to provide the CDFW with at least 10 days' notice to allow for plant salvage prior to affecting the species.

The circulated Initial Study/Mitigated Negative Declaration concluded that the impact on sensitive plant species would be less than significant with the implementation of identified mitigation measures. No modification of the environmental conclusions of the Initial Study/Mitigated Negative Declaration would be necessary in response to this comment, and recirculation of the document would not be required consistent with Section 15073.5 of the State CEQA Guidelines.

Response to Comment 2-4

The comment identifies that Mitigation Measure BIO-7 does not require early consultation with CDFW regarding potential for take of Giant Garter Snake (GGS), and Incidental Take Permitting for the potential take of GGS. The comment further notes that consultation is not a requirement yet

is highly recommended to ensure proper coverage for listed species with potential to occur in the project area.

The Initial Study/Mitigated Negative Declaration. identifies the potential for GGS occurrence in potentially suitable habitat within Kimball Creek and active rice fields, and the potential for occurrence within project impact areas in or near suitable habitat. Mitigation Measure BIO-7 requires measures to avoid take of GGS, primarily through seasonal restrictions requiring work to occur during the GGS active season and a requirement for construction of Lift Station 23 to occur when the rice field is inactive and has been dry for a minimum of 15 days, making the area no longer suitable GGS aquatic habitat. Mitigation Measure BIO-7 also requires notification and coordination with USFWS and CDFW if GGS are observed. Therefore, with implementation of these measures, the project would not result in the take of State listed species. The recommendation to coordinate with CDFW staff regarding the project and issuance of permits related to those activities is noted.

The circulated Initial Study/Mitigated Negative Declaration concluded that the impact on GGS would be less than significant with the implementation of identified mitigation measures. No modification of the environmental conclusions of the Initial Study/Mitigated Negative Declaration would be necessary in response to this comment, and recirculation of the document would not be required consistent with Section 15073.5 of the State CEQA Guidelines.

Response to Comment 2-5

The comment identifies the potentially significant impact of the project to GGS resulting from the loss of suitable GGS upland habitat from the construction of Lift Station 22 and loss of suitable GGS aquatic habitat from the construction of Lift Station 23, and recommends habitat replacement in the form of payment of the fee to a CDFW approved mitigation bank, or fee title acquisition with a conservation easement to protect managed marsh habitat. CDFW also recommends the applicant consider applying for an Incidental Take Permit and recommends early consultation with CDFW regarding potential impact to CESA listed species.

The Initial Study/Mitigated Negative Declaration identifies the loss of up to 0.22-acre of suitable GGS upland and aquatic habitat from the construction of Lift Stations 22 and 23. As noted in response to comment 2-4 above, Mitigation Measure BIO-7 requires procedures to avoid take of GGS and requires notification and coordination with USFWS and CDFW if GGS are observed. However, Mitigation Measure BIO-7 doesn't require compensatory mitigation for the loss of habitat and therefore, Mitigation Measure BIO-7 has been expanded to require compensatory mitigation for the loss of suitable GGS habitat. The revised Mitigation Measure BIO-7 is as follows with revised text as underlined:

Mitigation Measure BIO-7

Implement the following measures:

A. Prior to the initiation of construction, construction staff shall attend an Environmental Awareness Training Program that will include information regarding identification of giant gartersnake and its habitat, protection measures for the species, and procedures to follow if a giant gartersnake or unknown snake is observed.
B. Construction of Lift Station 23 will occur when the rice field is inactive and has been dry for a minimum of 15 days.

C. Construction of Lift Station 22, Lift Station 23, and the HDD installation of pipelines under Kimball Creek, including all activities within 200 feet of Kimball Creek and the rice field at Lift Station 23, shall be restricted to the period between May 1 and October 1. This is the active period for GGS when the potential for direct mortality is reduced because GGS can actively avoid disturbance.
D. Prior to the start of the Kimball Creek HDD, construction of Lift Station 22, or the construction of Lift Station 23, a qualified biologist shall conduct a preconstruction survey for GGS at these locations prior to the initiation of disturbance. Exclusion fencing shall be installed, as directed by the qualified biologist, to isolate the workspace within 200 feet of suitable aquatic habitat and exclude snakes from the work areas. Exclusion fencing will be buried at the base to prevent snakes from moving under the fence into the construction area. Exclusion fencing shall be maintained for the duration of work in these areas and shall be routinely inspected by the qualified biologist to ensure the fencing is intact and effective. The workspace shall be inspected prior to the start of work each day to ensure that no snakes have entered the work area.
E. If a GGS is observed, the USFWS and CDFW shall be notified immediately. Construction will be suspended in the area until the snake leaves the site of its own volition.
F. All excavations within 200 feet of suitable GGS habitat shall be covered or have escape ramps installed to prevent entrapment prior to the end of work each day. These excavations shall be inspected by the qualified biologist prior to the start of work the following day.
G. Erosion control materials shall consist of tightly woven fibers and netting to prevent entanglement of reptiles and amphibians. No monofilament materials will be allowed.
H. <u>For permanent impacts associated with construction of Lift Station 22 and Lift Station 23, loss of suitable GGS habitat shall be mitigated through the use of USFWS and CDFW approved mitigation credits or fee title acquisition with a conservation easement to protect managed marsh habitat in accordance with mitigation ratios approved by the USFWS and CDFW.</u>

The circulated Initial Study/Mitigated Negative Declaration concluded that the impact on GGS habitat would be less than significant. Modification of the text of Mitigation Measure BIO-7 would require that OPUD would mitigate the permanent loss of GGS habitat, thereby increasing the effectiveness of Mitigation Measure BIO-7. No modification of the environmental conclusions of the Initial Study/Mitigated Negative Declaration would be necessary in response to this comment, and recirculation of the document would not be required consistent with Section 15073.5 of the State CEQA Guidelines.

Response to Comment 2-6

The comment identifies the potential for the project to disturb bird species or nests protected under the Migratory Bird Treaty Act (MBTA) and Fish and Game Code and outlines protections for raptors and other migratory birds. The comment notes that the mitigation requirement outlined in Mitigation Measure BIO-9 for the application of a minimum nest protection buffer of 0.25-mile from an active Swainson's hawk nest may not be suitable for birds with different disturbance thresholds, and that no-work buffers are not designed to reduce stress. The comment further indicates that CDFW recommends performance-based protection measures for all nests protected under MBTA and Fish and Game Code and provides an example of a performance-based protection measure.

The MND identifies the potential for project impacts to nesting Swainson's hawks and incorporates the Technical Advisory Committee (TAC) "Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley" into the mitigation measure. Mitigation Measure BIO-9B requires protocol-level surveys in conformance with the TAC protocol and Mitigation Measure BIO-9B-1 requires a nest protection buffer with a minimum distance of 0.25-mile from an active nest. Mitigation Measure BIO-9B-1 also requires CDFW approval to reduce the nest protection buffer if existing site conditions warrant and Mitigation Measure BIO-9B-2 requires approval from CDFW before the project may proceed within the minimum nest protection buffer and requires monitoring of the nest by a qualified biologist to stop work if signs of distress are observed. Furthermore, Mitigation Measure BIO-9C requires a pre-construction survey report be submitted to CDFW. The survey methods and nest protection measures required by Mitigation Measure BIO-9 are consistent with the TAC protocol designed to meet CDFW recommendations for mitigation and protection of Swainson's hawks.

The circulated Initial Study/Mitigated Negative Declaration concluded that the impact on breeding bird species would be less than significant with the implementation of identified mitigation measures. No modification of the environmental conclusions of the Initial Study/Mitigated Negative Declaration would be necessary in response to this comment, and recirculation of the document would not be required consistent with Section 15073.5 of the State CEQA Guidelines.

Response to Comment 2-7

The comment is a conclusory statement and does not address the adequacy of the Initial Study/Mitigated Negative Declaration.

Comment Letter 3: California Water Boards, State Water Resources Control Board, Division of Financial Assistance

Response to Comment 3-1

The comment sets forth the jurisdiction and regulations of the State Water Resources Control Board (SWRCB), Division of Drinking Water (DDW). The DDW issues water supply permits to water purveyors to ensure compliance with the State Safe Drinking Water Act. For those existing purveyors, such as OPUD, an amendment of the District's existing water supply permit would be necessary to operate the new water reservoir adjacent to proposed Well 35.

The District intends to obtain a water supply permit amendment prior to operation of the new water reservoir. The comment does not address the adequacy of the Initial Study/Mitigated Negative Declaration and has been noted for the record.

Response to Comment 3-2

The comment submitted by the SWRCB Division of Financial Assistance (DFA) sets forth requirements for compliance with the CEQA and the National Environmental Policy Act (NEPA) for qualifying projects seeking State funding to construct and operate water or wastewater projects.

The proposed South Yuba County Water and Wastewater Infrastructure Improvement Project includes five facility components. Three of the components, those facilities that ameliorate existing sanitary sewer overflow (SSO) events, necessary improvements to the existing OPUD wastewater

treatment plant (WWTP) to accept and treat increased peak wet weather flows, and a new pipeline to allow the City of Wheatland's untreated wastewater to be treated at the OPUD WWTP in compliance with regionalization goals, have been identified by OPUD as candidates for State funding. In accordance with DFA regulations, OPUD will submit all required environmental information (as required by CEQA and NEPA) to the DFA upon certification and adoption of the Initial Study/Mitigated Negative Declaration.

State funds are not being sought for water supply and distribution facilities. Proposed water facilities have independent utility from the three components identified above, and are expected to be constructed with local funds. Although the Initial Study/Mitigated Negative Declaration has been subject to analysis under CEQA, the comment is mistaken in imposing State funding information requirements on the water supply and distribution components. Thus, the comment does not address the adequacy of the Initial Study/Mitigated Negative Declaration and has been noted for the record.

Response to Comment 3-3

The comment requests that Chapter 3 of the Initial Study/Mitigated Negative Declaration be modified to add an amended water supply permit to the list of required approvals.

The final Initial Study/Mitigated Negative Declaration been modified to include the requested permit in Chapter 3. Because this addition merely clarifies the permits that would be required of the project, recirculation of the Initial Study/Mitigated Negative Declaration would not be necessary consistent with the requirements of State CEQA Guidelines Section 15073.5 (c).

Response to Comment 3-4

The comment states that the proposed South Yuba County Water and Wastewater Infrastructure Improvement Project is located in a high priority groundwater basin and requests information regarding water use from future developed land uses.

As noted in the response to comment 3-2, no project water infrastructure would be funded by the State.

The comment is correct regarding the status of the Sacramento Valley-South Yuba groundwater subbasin (5-021.61) as a high priority basin. The primary Groundwater Sustainability Agency for this subbasin is the Yuba Water Agency (YWA). The Groundwater Sustainability Plan (GSP) prepared by the YWA was approved by the California Department of Water Resources in November 2021. According to the GSP:

- Groundwater levels in the South Yuba Subbasin were generally declining from the 1940s through the early 1980s but have recovered since the introduction of surface water deliveries to the subbasin in 1983.
- Water budgets were developed (*for the GSP*) to provide a quantitative accounting of surface water and groundwater entering and leaving the Yuba Subbasins under historical, current, future, and future with climate change conditions. The average annual groundwater storage is stable or increasing under all scenarios, suggesting sustainable conditions.
- The total sustainable yield (*for both basins*) is estimated as 239,000 acre-feet per year (AFY), with … 146,000 AFY in the South Yuba Subbasin. This compares to recent use … in the South Yuba Subbasin between 72,000 and 132,000 AFY.

- Unlike many medium- and high-priority basins and subbasins managed under GSPs, groundwater extraction in the Yuba Subbasins does not exceed the sustainable yield. The sustainable yield estimate exceeds current groundwater production by approximately 89,000 AFY.
- The Yuba County, … and City of Wheatland General Plans were written to provide the covered areas with guidelines to successfully facilitate anticipated growth. Growth presents challenges for water resource management, notably when growth results in a shift from surface water irrigated agricultural uses to groundwater supplied urban use. The general plans contain goals, policies, and actions to address water supplies. For instance, Yuba County's General Plan includes Policy NE12.1, which states that "(f)or new developments, the County will manage land use change in a way that reduces the potential for overdraft of groundwater supplies, recognizes overlying groundwater rights and surface water rights, and helps to ensure that the combined use of surface and groundwater resources provides for current and future water demand." These and similar policies allow the General Plans in the Yuba Subbasins, when properly implemented, to likely have no negative influence on the ability of the GSAs to achieve sustainability.

The South County Infrastructure Project, by itself, does not propose or authorize any changes in land use or urban development within the project areas. Future land uses within the South County Service Area that occur pursuant to the adopted Yuba County 2030 General Plan would be required to conform to all applicable regulations, performance standards, and design standards of the General Plan, zoning code, and all other environmental regulations and requirements set forth in the County Code. The South County Infrastructure Project would not permit land uses of greater density or intensity than permitted under the 2030 General Plan, and would not allow new development in areas where such development is prohibited under the 2030 General Plan.

Summarily, groundwater extraction from the South Yuba subbasin within the service area of the water well and main component would be unlikely to exceed sustainable yield as documented in the GSP under all scenarios, including historical, current, future, and future with climate change conditions. Thus, implementation of the project would not interfere with groundwater sustainability. Rather it would be consistent with the land use and utility goals and policies of the Yuba County General Plan and the water demands evaluated in the Groundwater Sustainability Plan.

As set forth in the Initial Study/Mitigated Negative Declaration, implementation of the project would not adversely affect groundwater levels within the subbasin, nor would the project interfere with groundwater recharge. The project would be consistent with the sustainability goals of the Groundwater Sustainability Plan. The circulated Initial Study/Mitigated Negative Declaration concluded that the impact of these environmental issues would be less than significant. No modification of the environmental conclusions of the Initial Study/Mitigated Negative Declaration would be necessary, and recirculation of the document would not be required consistent with Section 15073.5 of the State CEQA Guidelines.

Response to Comment 3-5

The comment sets forth the requirements to submit environmental information to the DFA should an application for funding be submitted.

In accordance with DFA regulations, OPUD will submit all required environmental information (as required by CEQA and NEPA) for the three wastewater components described in response to

Comment 3-2 to the DFA upon certification and adoption of the Initial Study/Mitigated Negative Declaration. The comment does not address the adequacy of the Initial Study/Mitigated Negative Declaration and has been noted for the record.

Response to Comment 3-6

The comment requests that OPUD provide the following CEQA documents as part of its application for an amended water supply permit: the public review draft and the final Initial Study/Mitigated Negative Declaration; the Mitigation Monitoring and Reporting Program, the Resolution adopting the Initial Study/Mitigated Negative Declaration and Mitigation Monitoring and Reporting Program; all comments received and OPUD's responses to the comments; and, the filed Notice of Determination.

In accordance with DDW requirements, OPUD will submit all required environmental information for the water well/reservoir component to the DDW subsequent to certification and adoption of the Initial Study/Mitigated Negative Declaration. The comment does not address the adequacy of the Initial Study/Mitigated Negative Declaration and has been noted for the record.

Response to Comment 3-7

The comment is a conclusory statement and does not address the adequacy of the Initial Study/Mitigated Negative Declaration.

EXHIBIT "B"

MODIFICATIONS TO PROPOSED MITIGATION MEASURES

EXHIBIT "B"

MODIFICATIONS TO PROPOSED MITIGATION MEASURES
AQ-1, AQ-3, BIO-5 AND BIO-7

Mitigation Measure AQ-1 (As set forth in the circulated IS/MND)

Prior to construction, the applicant shall provide to the County a receipt of a FRAQMD approved Dust Control Plan or Construction Notification form in compliance with Rule 3.16 Fugitive Dust. Further, the applicant shall obtain an Authority to Construct (ATC) and Permit to Operate (PTO) for the proposed emergency generators above 50 horsepower in accordance with Regulation IV: Stationary Emission Sources Permit System and Registration. Additional applicable FRAQMD Rules and Regulations may include: Rule 3.0: Visible Emissions, Rule 3:15: Architectural Coatings, and Rule 7:10: Indirect Source Fee. The project applicant will be required to implement measures of applicable FRAQMD Rules and Regulations as determined by the FRAQMD.

Mitigation Measure AQ-1 (Revised)

A. Prior to construction, OPUD or its contractor shall obtain and implement a FRAQMD Dust Control Plan or Construction Notification form in compliance with Rule 3.16 Fugitive Dust.
B. OPUD or its contractor shall obtain and implement an Authority to Construct (ATC) and Permit to Operate (PTO) for the proposed emergency generators above 50 horsepower in accordance with Regulation IV: Stationary Emission Sources Permit System and Registration.
C. OPUD or its contractor additionally shall implement all applicable measures and requirements of FRAQMD Rules and Regulations as determined by the FRAQMD. Additional applicable FRAQMD Rules and Regulations may include: Rule 3.0: Visible Emissions, Rule 3:15: Architectural Coatings, and Rule 7:10: Indirect Source Fee.

Mitigation Measure AQ-3 (As set forth in the circulated IS/MND)

B. OPUD and its construction contractors shall provide a plan for approval by FRAQMD demonstrating that the heavy-duty (equal to or greater than 50 horsepower) off-road equipment to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 5 percent ROG reduction, 20 percent NOx reduction and 45 percent particulate reduction compared to the most recent CARB fleet average at time of construction. A Construction Mitigation Calculator (MS Excel) may be downloaded from the SMAQMD website to perform the fleet average evaluation http://www.airquality.org/ceqa/index.shtml. Acceptable options for reducing emissions may include use of late model engines (Tier 4), CARB Approved low-emission diesel products, alternative fuels, engine retrofit technology (Carl Moyer Guidelines), after-treatment products, voluntary off-site mitigation projects, provide funds for air district off-site mitigation projects, and/or other options as they become available. The FRAQMD should be contacted to discuss alternative measures.

The results of the Construction Mitigation Calculator shall be submitted and approved by the District PRIOR TO BEGINNING WORK. OPUD and its construction contractors shall provide a monthly summary of heavy-duty off-road equipment usage to the FRAQMD throughout the construction of the project.

C. OPUD may also contribute to the FRAQMD's Off-Site Mitigation Program to reduce project emissions to less than significant. OPUD shall compile a list of all emission sources and consult with the FRAQMD staff to implement this mitigation measure. The project contractors shall track emissions generated from equipment and vehicles throughout construction of the project. If determined necessary by the FRAQMD and before construction activities begin, OPUD shall pay a deposit to FRAQMD for contribution to the FRAQMD Off-site Mitigation Fund. This deposit will be held by FRAQMD and applied toward the final off-site mitigation amount to be paid after project construction is complete. Total construction emissions shall be calculated at the end of construction activities. Using these calculations, OPUD shall make a final payment to the FRAQMD Off-Site Mitigation Fund, if necessary, to further offset construction pollutant emissions that exceeded FRAQMD thresholds. (*Personal communications* with Sondra Spaethe, FRAQMD 2023)

Mitigation Measure AQ-3 (Revised)

B. OPUD and its construction contractors shall provide a plan for approval by FRAQMD demonstrating that the heavy-duty (equal to or greater than 50 horsepower) off-road equipment to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 5 percent ROG reduction, 20 percent NOx reduction and 45 percent particulate reduction compared to the most recent CARB fleet average at time of construction. A Construction Mitigation Calculator (MS Excel) may be downloaded from the SMAQMD website to perform the fleet average evaluation http://www.airquality.org/ceqa/index.shtml. Acceptable options for reducing emissions may include use of late model engines (Tier 4), CARB Approved low-emission diesel products, alternative fuels, engine retrofit technology (Carl Moyer Guidelines), after-treatment products, voluntary off-site mitigation projects, provide funds for air district off-site mitigation projects, and/or other options as they become available. The FRAQMD should be contacted to discuss alternative measures.

The results of the Construction Mitigation Calculator shall be submitted and approved by the FRAQMD prior to beginning work. OPUD and its construction contractors shall provide a monthly summary of heavy-duty off-road equipment usage to the FRAQMD throughout the construction of the project.

C. OPUD may also contribute to the FRAQMD's Off-Site Mitigation Program to reduce project emissions to less than significant. OPUD shall compile a list of all construction emission sources and consult with the FRAQMD staff to implement this mitigation measure. The project contractors shall track emissions generated from equipment and vehicles throughout construction of the project. If determined necessary by the FRAQMD and before construction activities begin, OPUD shall pay a deposit to FRAQMD for contribution to the FRAQMD Off-site Mitigation Fund. This deposit will be held by FRAQMD and applied toward the final off-site mitigation amount to be paid after project construction is complete. Total construction emissions shall be calculated at the end of construction activities. Using these calculations, OPUD shall make a final payment to the

FRAQMD Off-Site Mitigation Fund, if necessary, to further offset construction pollutant emissions that exceeded FRAQMD thresholds. (*Personal communications* with Sondra Spaethe, FRAQMD 2023)

Mitigation Measure BIO-5 (Direct impacts.) (As set forth in the circulated IS/MND)

If avoidance of habitat features as described in BIO-4 is not feasible and direct impacts (temporary or permanent) will occur to seasonally inundated ditch and depression features, compliance with one of the following mitigation measures (5A or 5B) shall be required:

A. Prior to the initiation of construction, surveys conducted in accordance with USFWS protocols shall be conducted in all potentially suitable habitat to be impacted. If protocol surveys determine that the seasonally inundated ditch and depression features are not occupied by federally listed vernal pool branchiopod species, no further mitigation is required for impact to species habitat (mitigation for jurisdictional aquatic features consistent with Mitigation Measures BIO-1 and BIO-2 may still apply). If protocol surveys detect the presence of federally listed species, then the following measures shall be implemented:

1. Prior to the initiation of construction, construction crews shall attend an Environmental Awareness Training Program that will include information regarding the potential presence of listed vernal pool branchiopod species and the importance of avoiding impacts to these species and their habitat.
2. All work shall be conducted during the dry season when potential habitat features on or near the proposed pipeline installation areas are dry.
3. Fencing shall be placed and maintained around any avoided (preserved) seasonally inundated ditch and depression features to prevent encroachment. A qualified biologist shall oversee the installation of fencing. Once fencing is installed, a biologist will inspect fencing weekly to ensure its integrity and effectiveness.
4. A USFWS approved biologist shall monitor construction activities in known or potential vernal pool branchiopod habitat that results in temporary or permanent impacts.
5. For temporary impacts that will be restored after construction, a Site Restoration Plan outlining requirements for topsoil collection, preservation, and restoration will be prepared and approved by the USFWS. Implementation of the approved Plan shall include the following requirements at minimum. Prior to excavation in locations with potential or known vernal pool branchiopod habitat, the uppermost soil layer that may contain branchiopods eggs (cysts) shall be collected, labelled, and stored under appropriate climatic conditions until construction in temporary impact areas is complete. Once construction is complete, topsoil shall be placed back in the feature from which it was collected.
6. For permanent impacts, loss of vernal pool branchiopod habitat shall be mitigated through the purchase of mitigation credits at a USFWS approved mitigation bank in accordance with mitigation ratios approved by the USFWS.

B. If OPUD or its contractor chooses not to conduct protocol-level surveys, they may assume presence of listed vernal pool branchiopod species within seasonally inundated ditch and depression features that provide potentially suitable habitat. If presence of listed species is assumed, then measures BIO-5A (1) through (6) as set forth above shall apply to mitigate impacts to a less-than-significant level.

Mitigation Measure BIO-5 (Direct impacts.) (Revised)

If avoidance of habitat features as described in BIO-4 is not feasible and direct impacts (temporary or permanent) will occur to seasonally inundated ditch and depression features, compliance with one of the following mitigation measures (5A or 5B) shall be required:

A. Prior to the initiation of construction, surveys conducted in accordance with USFWS protocols shall be conducted in all potentially suitable habitat to be impacted. If protocol surveys determine that the seasonally inundated ditch and depression features are not occupied by federally listed vernal pool branchiopod species, no further mitigation is required for impact to species habitat (mitigation for jurisdictional aquatic features consistent with Mitigation Measures BIO-1 and BIO-2 may still apply). If protocol surveys detect the presence of federally listed species, then the following measures shall be implemented:

   1. Prior to the initiation of construction, construction crews shall attend an Environmental Awareness Training Program that will include information regarding the potential presence of listed vernal pool branchiopod species and the importance of avoiding impacts to these species and their habitat.
   2. All work shall be conducted during the dry season when potential habitat features on or near the proposed pipeline installation areas are dry.
   3. Fencing shall be placed and maintained around any avoided (preserved) seasonally inundated ditch and depression features to prevent encroachment. A qualified biologist shall oversee the installation of fencing. Once fencing is installed, a biologist will inspect fencing weekly to ensure its integrity and effectiveness.
   4. A USFWS approved biologist shall monitor construction activities in known or potential vernal pool branchiopod habitat that results in temporary or permanent impacts.
   5. For temporary impacts that will be restored after construction, a Site Restoration Plan outlining requirements for topsoil collection, preservation, and restoration will be prepared and approved by the USFWS. Implementation of the approved Plan shall include the following requirements at minimum. Prior to excavation in locations with potential or known vernal pool branchiopod habitat, the uppermost soil layer that may contain branchiopods eggs (cysts) shall be collected, labelled, and stored under appropriate climatic conditions until construction in temporary impact areas is complete. Once construction is complete, topsoil shall be placed back in the feature from which it was collected.
   6. For permanent impacts, loss of vernal pool branchiopod habitat shall be mitigated through the use of USFWS approved mitigation credits in accordance with mitigation ratios approved by the USFWS.

B. If OPUD or its contractor chooses not to conduct protocol-level surveys, they may assume presence of listed vernal pool branchiopod species within seasonally inundated ditch and depression features that provide potentially suitable habitat. If presence of listed species is assumed, then measures BIO-5A (1) through (6) as set forth above shall apply to mitigate impacts to a less-than-significant level.

Mitigation Measure BIO-7 (As set forth in the circulated IS/MND)

Implement the following measures:

A. Prior to the initiation of construction, construction staff shall attend an Environmental Awareness Training Program that will include information regarding identification of giant gartersnake and its habitat, protection measures for the species, and procedures to follow if a giant gartersnake or unknown snake is observed.
B. Construction of Lift Station 23 will occur when the rice field is inactive and has been dry for a minimum of 15 days.
C. Construction of Lift Station 22, Lift Station 23, and the HDD installation of pipelines under Kimball Creek, including all activities within 200 feet of Kimball Creek and the rice field at Lift Station 23, shall be restricted to the period between May 1 and October 1. This is the active period for GGS when the potential for direct mortality is reduced because GGS can actively avoid disturbance.
D. Prior to the start of the Kimball Creek HDD, construction of Lift Station 22, or the construction of Lift Station 23, a qualified biologist shall conduct a preconstruction survey for GGS at these locations prior to the initiation of disturbance. Exclusion fencing shall be installed, as directed by the qualified biologist, to isolate the workspace within 200 feet of suitable aquatic habitat and exclude snakes from the work areas. Exclusion fencing will be buried at the base to prevent snakes from moving under the fence into the construction area. Exclusion fencing shall be maintained for the duration of work in these areas and shall be routinely inspected by the qualified biologist to ensure the fencing is intact and effective. The workspace shall be inspected prior to the start of work each day to ensure that no snakes have entered the work area.
E. If a GGS is observed, the USFWS and CDFW shall be notified immediately. Construction will be suspended in the area until the snake leaves the site of its own volition.
F. All excavations within 200 feet of suitable GGS habitat shall be covered or have escape ramps installed to prevent entrapment prior to the end of work each day. These excavations shall be inspected by the qualified biologist prior to the start of work the following day.
G. Erosion control materials shall consist of tightly woven fibers and netting to prevent entanglement of reptiles and amphibians. No monofilament materials will be allowed.

Mitigation Measure BIO-7 (Revised)

Prior to construction, OPUD or its contractor shall obtain and implement a FRAQMD
Implement the following measures:

A. Prior to the initiation of construction, construction staff shall attend an Environmental Awareness Training Program that will include information regarding identification of giant gartersnake and its habitat, protection measures for the species, and procedures to follow if a giant gartersnake or unknown snake is observed.
B. Construction of Lift Station 23 will occur when the rice field is inactive and has been dry for a minimum of 15 days.
C. Construction of Lift Station 22, Lift Station 23, and the HDD installation of pipelines under Kimball Creek, including all activities within 200 feet of Kimball Creek and the rice field at Lift Station 23, shall be restricted to the period between May 1 and October 1. This is the active period for GGS when the potential for direct mortality is reduced because GGS can actively avoid disturbance.

D. Prior to the start of the Kimball Creek HDD, construction of Lift Station 22, or the construction of Lift Station 23, a qualified biologist shall conduct a preconstruction survey for GGS at these locations prior to the initiation of disturbance. Exclusion fencing shall be installed, as directed by the qualified biologist, to isolate the workspace within 200 feet of suitable aquatic habitat and exclude snakes from the work areas. Exclusion fencing will be buried at the base to prevent snakes from moving under the fence into the construction area. Exclusion fencing shall be maintained for the duration of work in these areas and shall be routinely inspected by the qualified biologist to ensure the fencing is intact and effective. The workspace shall be inspected prior to the start of work each day to ensure that no snakes have entered the work area.
E. If a GGS is observed, the USFWS and CDFW shall be notified immediately. Construction will be suspended in the area until the snake leaves the site of its own volition.
F. All excavations within 200 feet of suitable GGS habitat shall be covered or have escape ramps installed to prevent entrapment prior to the end of work each day. These excavations shall be inspected by the qualified biologist prior to the start of work the following day.
G. Erosion control materials shall consist of tightly woven fibers and netting to prevent entanglement of reptiles and amphibians. No monofilament materials will be allowed.
H. For permanent impacts associated with construction of Lift Station 22 and Lift Station 23, loss of suitable GGS habitat shall be mitigated through the use of USFWS and CDFW approved mitigation credits or fee title acquisition with a conservation easement to protect managed marsh habitat in accordance with mitigation ratios approved by the USFWS and CDFW.

EXHIBIT "C"

INITIAL STUDY AND MITIGATED NEGATIVE DECLARATION

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South Yuba County Water and Wastewater Infrastructure Improvement Project

Final Initial Study and Mitigated Negative Declaration

Prepared for: Olivehurst Public Utility District

Prepared by: Environmental Planning Partners, Inc.
April 20, 2023

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FREQUENTLY USED ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
ACM	Asbestos containing materials
Acre	43,560 square feet
ADL	Aerially deposited lead
ADWF	Average dry weather flow
AF	Acre feet
Air Basin	Sacramento Valley Air Basin
APCD	Air Pollution Control District
APE	Area of Potential Effect
APN	Assessors Parcel Number
ARB	Air Resources Board
AQAP	Air Quality Attainment Plan
AQMD	Air Quality Management District
AST	Above ground storage tank
ATC	Authority to Construct
BFE	Base flood elevation
bgs	Below ground surface
BMP	Best Management Practices
BTEX	Benzene/toluene/ethylbenzene/xylene
CAA	Federal Clean Air Act
CAAQS	California Ambient Air Quality Standards
CARB	California Air Resources Board
CASQA	California Stormwater Quality Association
CBC	California Building Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CDSA	Yuba County Community Development and Services Agency
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CGS	California Geological Survey
CHRIS	California Historical Resources Information Systems
CLSM	Controlled low-strength material
CNDDB	California Natural Diversity Database
CNEL	Community noise equivalent sound level
CNPS	California Native Plant Society
CO	Carbon Monoxide
COC	Contaminant of concern
Corps	United States Army Corps of Engineers
CRHR	California Register of Historic Resources
CUP	Conditional Use Permit
CVRWQCB	Central Valley Regional Water Quality Control Board

Acronym/Abbreviation	Definition
CWA	Clean Water Act
dB	Decibel
dBA	A-weighted sound level
dbh	Diameter at Breast Height
DEIR	Draft Environmental Impact Report
DOC	California Department of Conservation
DWR	California Department of Water Resources
EDD	California Employment Development Department
EIR	Environmental Impact Report
EPA	US Environmental Protection Agency
ESA	Environmental Site Assessment
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHSZ	Fire Hazard Severity Zone
FIRM	Flood Insurance Rate Maps
FRAQMD	Feather River Air Quality Management District
GGS	Giant garter snake
GHG	Greenhouse Gas
GMP	Groundwater Management Plan
gpm	Gallons per minute
GSA	Groundwater sustainability agency
GSP	Groundwater Sustainability Plan
HDD	Horizontal Directional Drilling
HDPE	High Density Polyethylene
HCP	Habitat Conservation Plan
hp	Horsepower
HREC	Historical Recognized Environmental Condition
IESNA	Illuminating Engineering Society of North America
IPCC	International Panel on Climate Change
IPS	Influent Pump Station
IS	Initial Study
LAFCO	Local Agency Formation Commission
L_{dn}	Day-night average sound level
L_{eq}	Equivalent continuous sound level
LRA	Local Responsibility Area
LRP	Legally Responsible Person
LS	Lift Station
LSAA	Lake / Streambed Alteration Agreement
MBTA	Migratory Bird Treaty Act
mgd	Million gallons per day
MDB&M	Mount Diablo Base and Meridian
MMRP	Mitigation Monitoring and Reporting Plan
MMT	Million metric tons

Acronym/Abbreviation	Definition
msl	Mean sea level
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NCIC	Northern California Information Center
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOI	Notice of Intent
NOP	Notice of Preparation
NO_X	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
NRCS	National Resource Conservation Service (formerly, Soil Conservation Service, USDA)
NTU	Nephelometric Turbidity Unit
NWI	USFWS National Wetland Inventory
OES	Yuba County Office of Emergency Services
OPUD	Olivehurst Public Utility District
OPR	Office of Planning and Research
OSHA	Occupational Safety and Health Administration
PCB	Polychlorinated biphenyl
PGE	Pacific Gas & Electric
PM_{10}	Suspended Particulate Matter; Ten micron Particulates
$PM_{2.5}$	Fine Particulate Matter
ppb	Parts per billion
ppm	Parts per million
PRC	Public Resources Code
PRD	Permit Registration Documents
PS	Pump Station
psi	Pounds per square inch
PTO	Permit to Operate
PWWF	Peak Wet Weather Flow
QSP	Qualified SWPPP Practitioner
ROG	Reactive Organic Gases
ROW	Right of way
RWCQB	Regional Water Quality Control Board
SAAQS	State Ambient Air Quality Standards
SACOG	Sacramento Area Council of Governments
SCADA	Supervisory Control and Data Acquisition
SCH	State Clearinghouse
SCP	Sediment Control Plan
SGMA	Sustainable Groundwater Management Act of 2014
SIP	State Implementation Plan

Acronym/Abbreviation	Definition
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO_2	Sulfur Dioxide
SR	State Route
SSMP	Sewage System Management Plan
SSO	Sanitary Sewer Overflows
SVAB	Sacramento Valley Air Basin
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TCP	Traffic Control Plan
TPH	Total Petroleum Hydrocarbons
TPH-d	Diesel Fuel
TPH-g	Gasoline
TPH-mo	Motor Oil
$\mu g/m^3$	Micrograms per Cubic Meter
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UV	Ultraviolet
UWMP	Urban Water Management Plan
VELB	Valley Elderberry Longhorn Beetle
VMT	Vehicle Miles Traveled
VPB	Vernal pool brachiopods
WDR	Waste Discharge Requirement
WP	Water Plant
WPIC	Western Pacific Interceptor Canal
WWTP	Wastewater Treatment Plant
WY	Water Year
YCGP	Yuba County General Plan
YGM	Yuba Groundwater Model

INITIAL STUDY AND ENVIRONMENTAL EVALUATION

Project Title: South County Infrastructure Project

Entitlements Requested: Obligation of Public Funds

Lead Agency Name and Address: Olivehurst Public Utility District
P.O. Box 670
1970 9th Street
Olivehurst, CA 95961

Contact Person and Phone Number: John Tillotson
Phone: (530) 743-4657

1. INTRODUCTION

This Initial Study evaluates the potential effects of constructing and operating public water and wastewater facilities in south Yuba County, within and adjacent to the community of Olivehurst. The proposed project elements evaluated in this Initial Study are consistent with the policies and requirements of the Yuba County General Plan (2030 General Plan) which has been subject to the preparation and certification of an Environmental Impact Report (EIR) consistent with the requirements of the California Environmental Quality Act (CEQA). Section 21083.3 (b)-(f) of the California Public Resources Code (PRC) permits CEQA environmental documents prepared for proposed projects that are consistent with all relevant planning designations and policies to be focused on the environmental effects that are peculiar to the project or to the parcel on which the project would be located, and that were not previously evaluated in an applicable General Plan EIR. The project assessed in this Initial Study meets these statutory requirements for focused review.

Therefore, this Initial Study focuses on whether the proposed project may cause significant effects on the environment that were not addressed or analyzed as significant effects in the Yuba County General Plan 2030 EIR. The Initial Study also assesses any effects for which substantial new information shows that identified effects would be more significant than described in the previous General Plan EIR. The Initial Study is also intended to assess whether any environmental effects of the project are susceptible to substantial reduction or avoidance by the choice of specific revisions in the project, by the imposition of conditions, or by other means [Section 21094(a)(2) of the PRC]. If such revisions, conditions or other means are identified, they will be included in the project as mitigation measures.

This Initial Study relies on State CEQA Guidelines Sections 15064 through 15065 in its determination of the significance of environmental effects. According to Section 15064, the finding as to whether a project may have one or more significant effects shall be based on substantial evidence in the record. The existence of controversy alone, without substantial evidence of a significant effect, does not trigger the need for an EIR.

2. PROJECT DESCRIPTION

The Olivehurst Public Utility District (OPUD or District) provides urban water and wastewater services, as well as other community services, within and adjacent to the community of Olivehurst in an unincorporated area of Yuba County, California. Olivehurst is located approximately 40 miles north of Sacramento, and four miles south of Marysville (see Figure 1).

OPUD is proposing to expand its wastewater collection system to provide capacity for wastewater from the City of Wheatland that will be received and treated at OPUD's Wastewater Treatment Plant (WWTP) to take advantage of unused treatment capacity at the WWTP consistent with State and local regionalization goals. Wheatland wastewater pipelines within the recently annexed South Yuba County Service Area (see Figure 2) would be oversized to accommodate planned urban development in this area. Separately, OPUD additionally proposes to extend the District's water service to the South County Service Area. The South Yuba County Water and Wastewater Infrastructure Improvement Project (South County Infrastructure Project) is intended to provide the water and sewer conveyance system improvements to meet these needs.

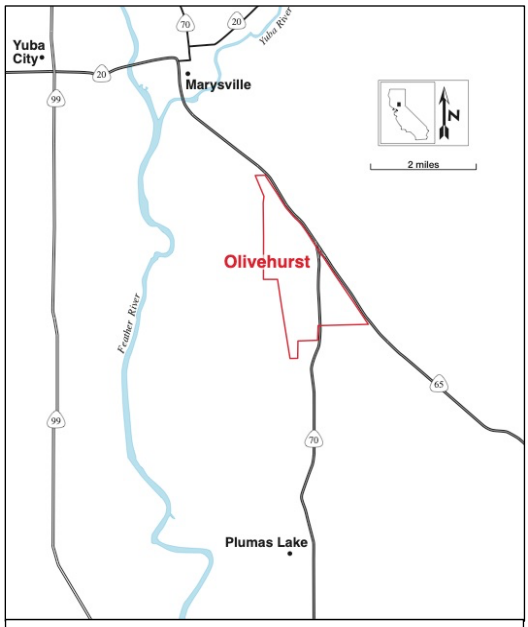


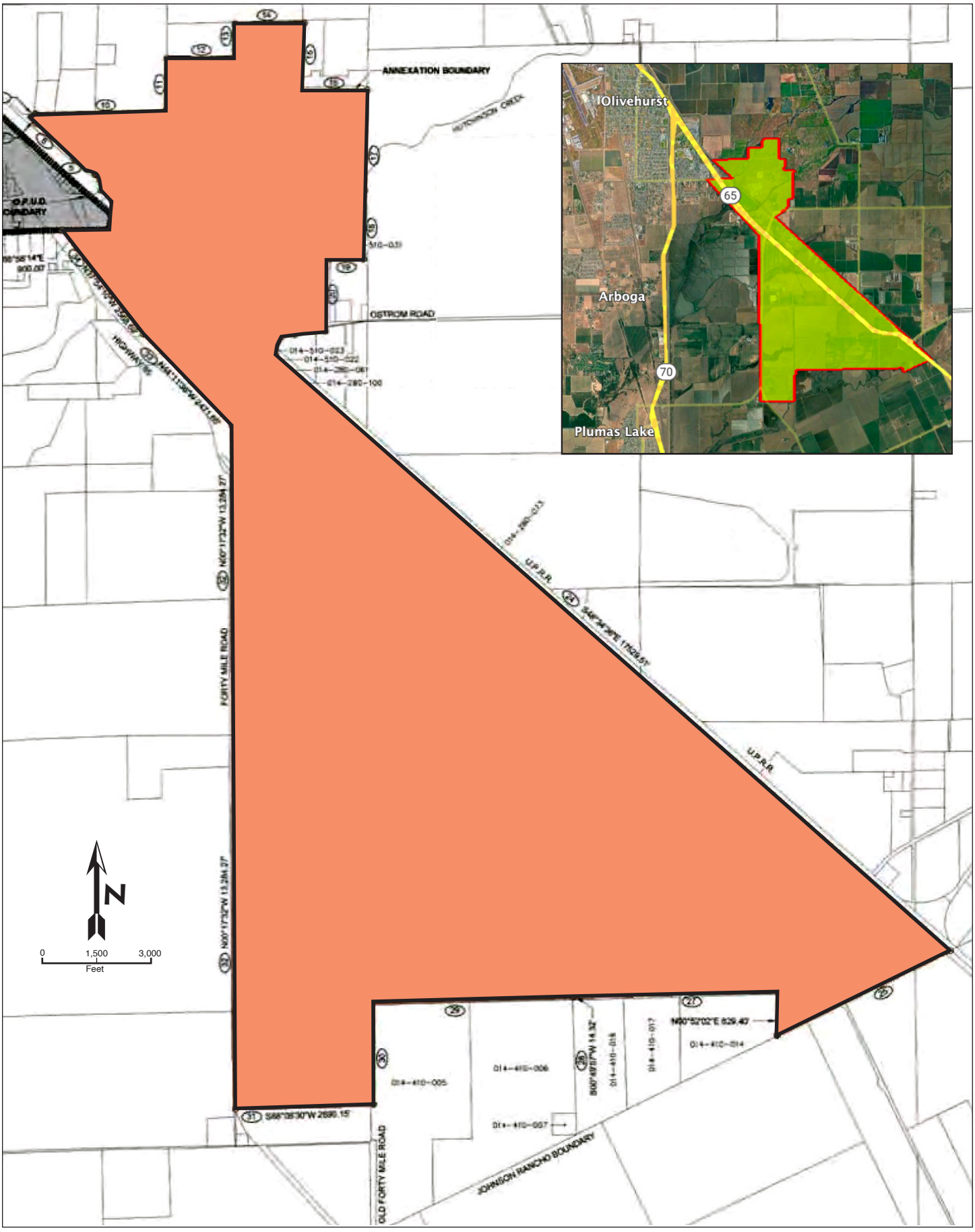
Figure 1 Regional Location

The proposed project would include improvements that will assist in the mitigation of sanitary sewer overflows (SSO) in its existing service area of historic (Old) Olivehurst. One of the new sewer pipelines for the project will be routed near areas that are subject to SSOs. Incrementally oversizing the new sewer pipelines to accommodate flow from the existing Old Olivehurst collection system was determined to be a cost-effective solution for SSO mitigation.

OPUD has identified this five-component project to meet these purposes. As planned by OPUD, the five components would consist of:

- **Component 1.** Completion of SSO reduction measures to the existing wastewater collection system serving the existing community of Olivehurst;
- **Component 2.** Modification of the existing OPUD WWTP to accommodate increased wet weather flows and replace equipment within the WWTP that has reached the end of its operational life;
- **Component 3.** Expansion of OPUD's wastewater collection system to provide service to the recently annexed South County Service Area between Forty Mile Road and Rancho Road;
- **Component 4.** Construction and operation of a Water Plant and backbone treated water distribution pipelines within the General Plan growth area along Forty Mile Road and Rancho Road; and,
- **Component 5.** Construction and operation of a wastewater collection system to accept and treat City of Wheatland untreated wastewater at the existing OPUD WWTP.

In aggregate, these improvements are identified as the South County Infrastructure Project (see Figures 3 and 4).

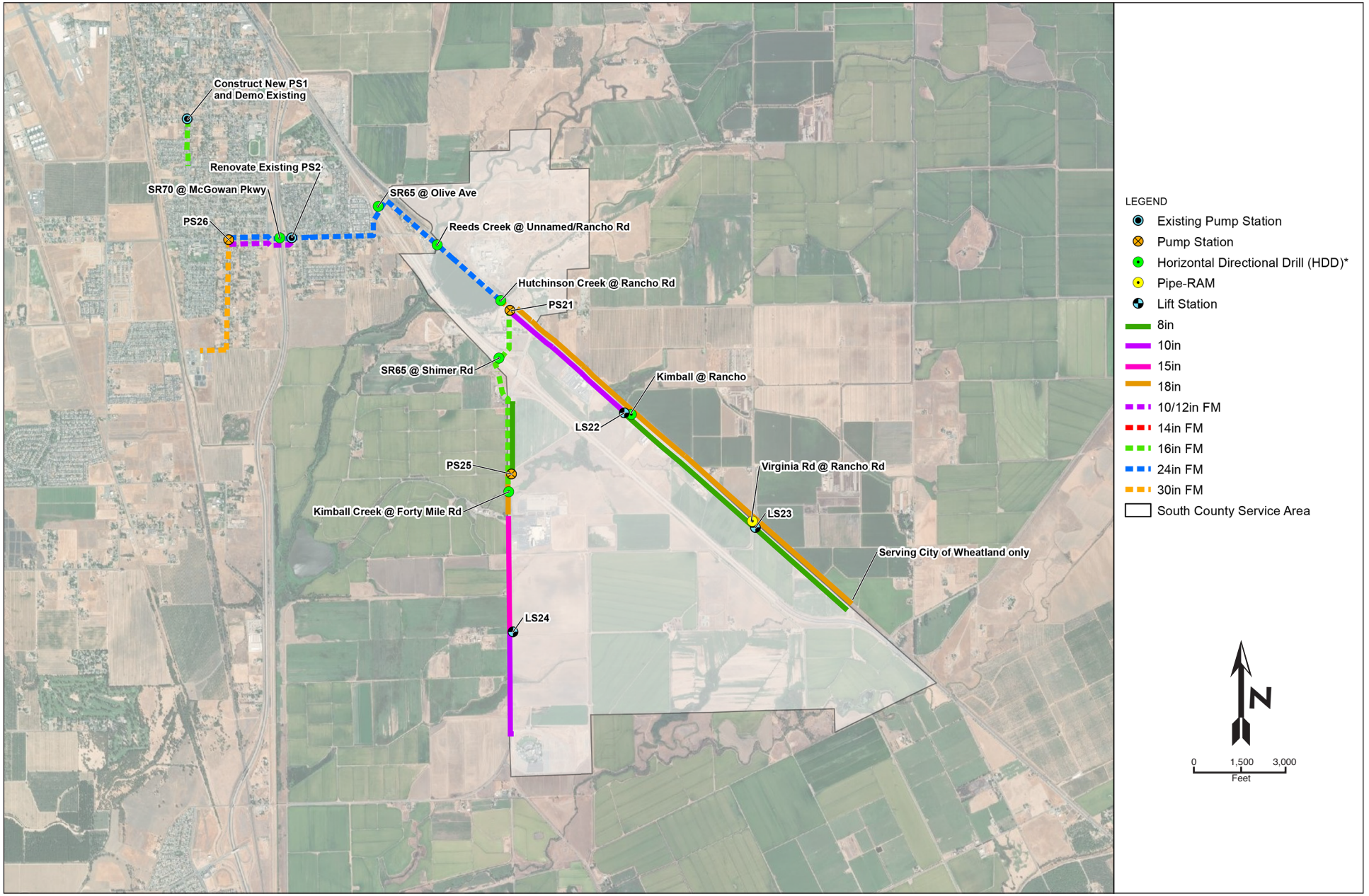


South County Infrastructure Project

SOURCE: MHM Inc., 2022; Planning Partners 2023

Figure 2

South Yuba County Service Area

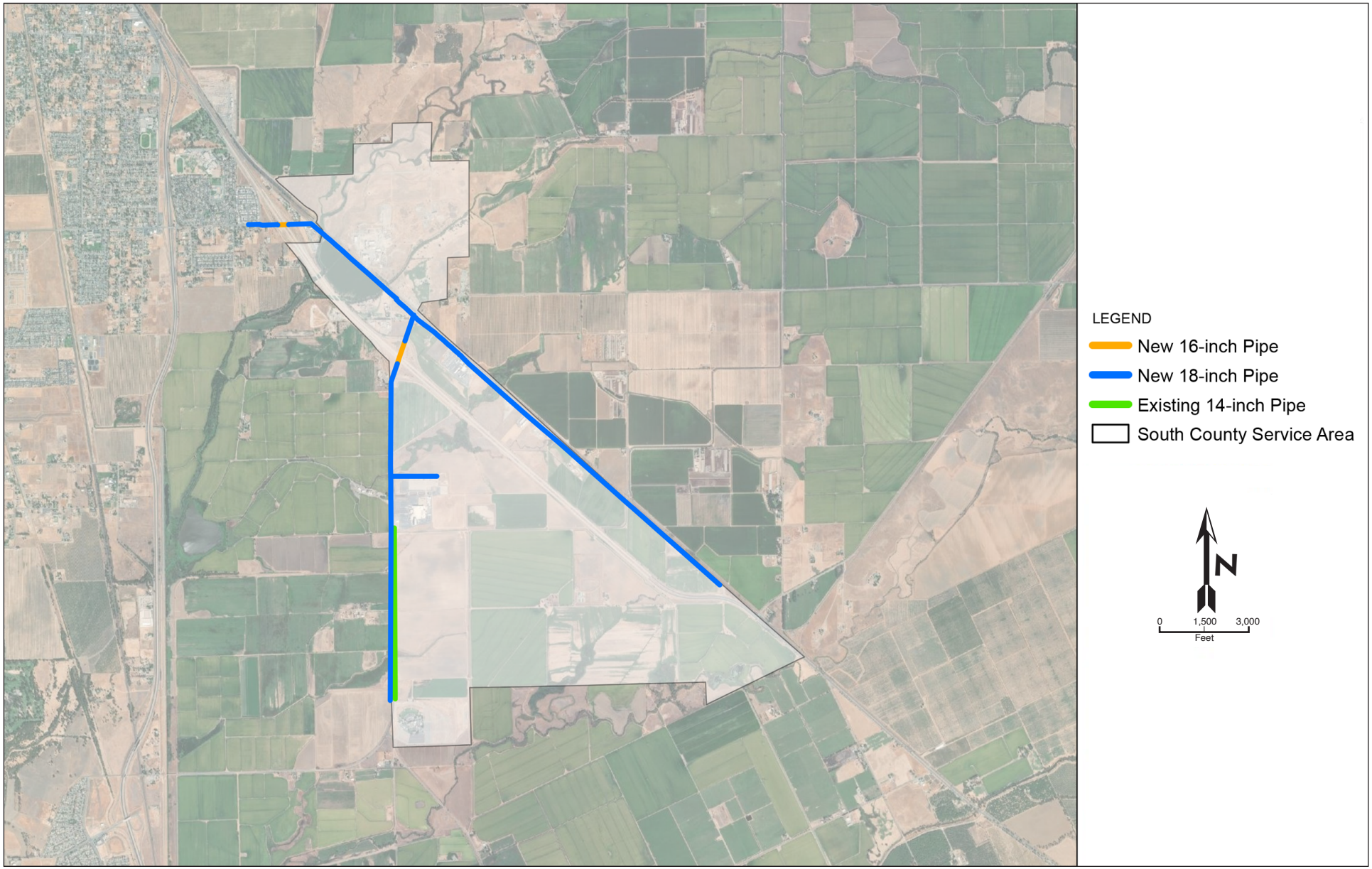


South County Infrastructure Project

SOURCE: Jacobs Engineering, Inc. 2022; Planning Partners 2023

Figure 3

Proposed Wastewater Pipeline and Pump and Lift Station Improvements



South County Infrastructure Project

SOURCE: Jacobs Engineering, Inc. 2022; Planning Partners 2023

Figure 4

Proposed Water System Pipeline Improvements

Additional water supply and distribution facilities beyond those identified in the project would be necessary to serve the ultimate planned buildout of the South County Service Area. In addition to the components described above, the District contemplates that additional water supply wells and water treatment plants, as necessary, would be required as water demands increase. No locations for these facilities or service needs have been identified to serve future land uses consistent with the Yuba County General Plan. Additionally, a water supply pipeline would be needed along the south boundary of the South County Service Area within the general alignment of Morrison Road to connect the Rancho Road water system to the Forty Mile Road system and increase system reliability. None of these facilities are currently designed or proposed.

PROJECT PROPONENT: OLIVEHURST PUBLIC UTILITY DISTRICT

OPUD currently provides potable water, wastewater, recreation, and fire protection services for the communities of Olivehurst and Plumas Lake. OPUD was formed on November 13, 1948 as an independent special district. The District was formed to provide domestic water and fire protection services to the community of Olivehurst. It has since added wastewater collection and treatment, park, drainage, and street lighting services (LAFCo 2012). As of 2023, the District's total service area boundary encompasses approximately 18 square miles, although not all urban services are provided at every location throughout its service area.

The District operates two separate groundwater pumping, treatment, and distribution systems for the communities of Olivehurst and Plumas Lake. The District's Olivehurst system is made up of six active groundwater wells, one standby groundwater well, two storage tanks, two hydropneumatic tanks, eight filter vessels, three treatment facilities, and a distribution system made up of steel, asbestos cement (AC), and plastic (C-900) pipelines. The Olivehurst water system was constructed in 1951 and is currently undergoing pipe replacement and water meter improvements to increase system efficiency and conserve water. These improvements are independent of, and unrelated to, the proposed project. The proposed project ultimately would result in an expansion of the District's Olivehurst system. (OPUD 2017, 2022)

The District also operates wastewater collection and treatment systems for the communities of Olivehurst and Plumas Lake. The District operates an activated sludge, tertiary wastewater treatment facility permitted as of 2021 for three million gallons per day (mgd) discharge. The wastewater treatment facility has an average dry weather flow of 1.5 mgd. The wastewater collection system consists of approximately 32 miles of gravity sewer main collection lines, 8 miles of force main sewer collection lines, and 18 lift stations. The District's wastewater treatment facility discharges fully treated effluent into the Clark Lateral thence into the Western Interceptor Drainage Canal before flowing into the Bear River. (OPUD 2017)

PURPOSE AND NEED

In 2011, Yuba County adopted a new General Plan. The 2030 General Plan (Yuba County 2011) is a long-range, generalized planning policy document to guide development of the county over a period of 20 years. The General Plan consists of a policy document and a series of land use and circulation maps and diagrams. The narrative policy document sets forth the adopted policies of the County regarding issues of public interest and regulation. Topics addressed in the General Plan include goals, policies, and programs regarding: economic, environmental, and social sustainability; managed growth and development of land use and infrastructure; use and conservation of resources; protection of public health, safety, and welfare; regional planning and coordination; rural lifestyle; and local quality of life.

In adopting the 2030 General Plan, Yuba County identified and mapped future land uses within the county. As mapped by the General Plan and Zoning Code, the area south of Olivehurst was identified for future growth and development as shown in Figure 5. According to the General Plan, this area has been planned to host employment-generating commercial and industrial uses.

The District's purpose in proposing the South County Infrastructure Project is to aid future economic development consistent with the Yuba County General Plan (YCGP) by ensuring the timely provision of community water and wastewater services to areas designated by the YCGP for employment uses and/or agricultural industrial uses. An additional purpose is to provide regional wastewater treatment services consistent with the themes and policies of the YCGP.

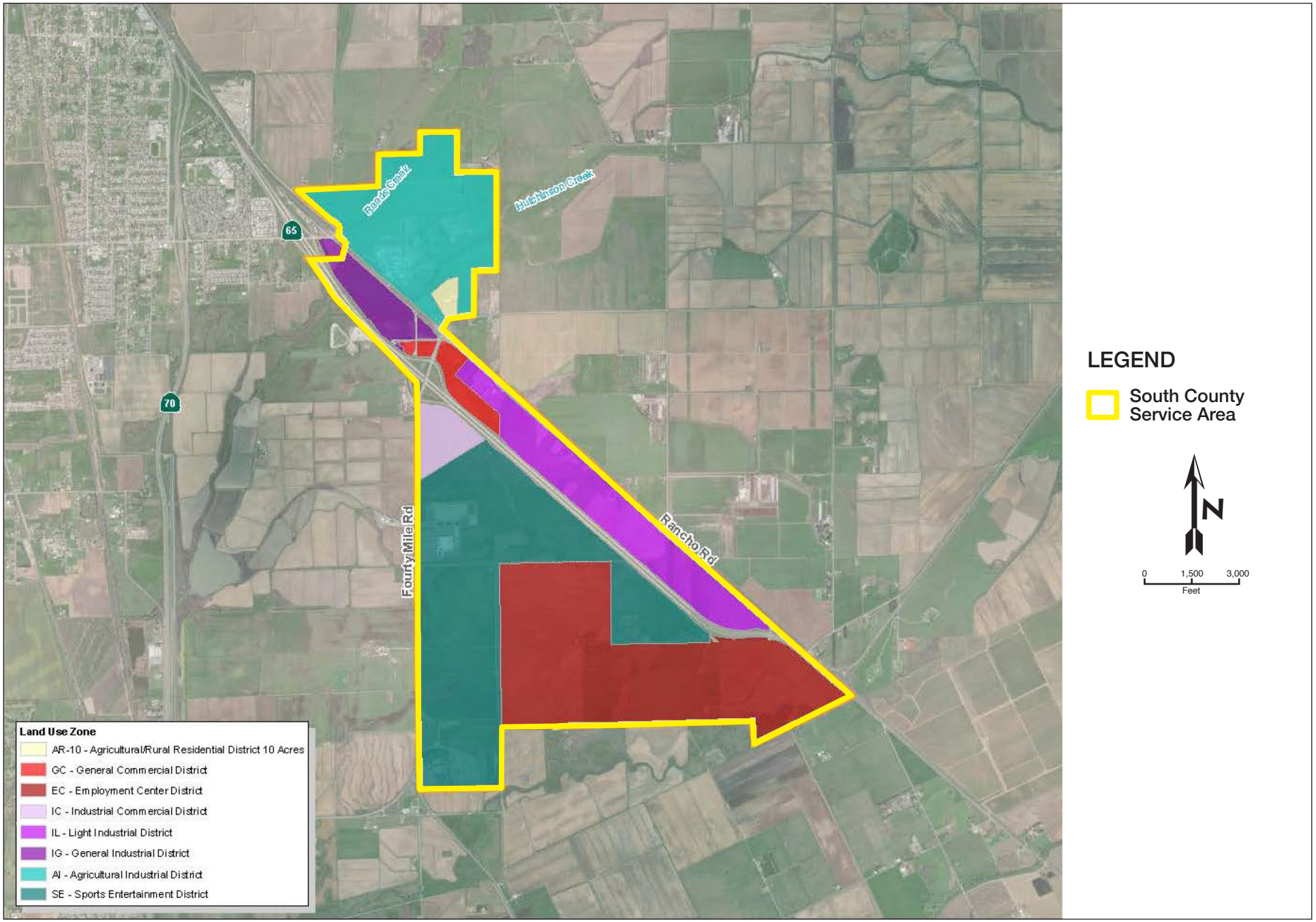
The South County Infrastructure project, by itself, does not propose or authorize any urban development. Future land uses that may occur within the South County Service Area would be required to conform to all applicable regulations, performance standards and design standards of the General Plan and the Yuba County Code. The South County Infrastructure project would not permit land uses of greater density or intensity than permitted under the 2030 General Plan and would not allow new development in areas where such development is prohibited by the 2030 General Plan.

APPLICABLE YUBA COUNTY GENERAL PLAN GOALS AND POLICIES

Providing community utility services to future employment-generating land uses would be consistent with the following goals and policies of the Yuba County General Plan.

2030 GENERAL PLAN THEMES

- **Economic, environmental, and social sustainability**. The County recognizes the dynamic relationship between economic, social, and environmental objectives. The 2030 General Plan policies and actions are designed to achieve the optimal balance among these sometimes competing objectives.
- **Managed growth and development of land use and infrastructure**. The County encourages revitalization and development of land uses and infrastructure from existing areas outward, where greenfield development occurs. The County's policies are designed to avoid "leapfrog development," and carefully consider the regional land use and economic context. As the County develops, there will be new opportunities to improve and diversify the economy, preserve and enhance the environment, and provide better and more affordable housing. Growth will be managed to preserve and enhance the quality of life for residents rather than allowing the benefits to accrue only to newcomers or people living outside Yuba County. Infrastructure and other public improvements will be planned for in advance of development, utilizing the General Plan as a basis for commitment of public funds, and by requiring development to finance specific infrastructure and improvements.
- **Regional Planning and Coordination** with the cities, surrounding counties, Sacramento Area Council of Governments (SACOG), state and federal agencies, special districts and school districts, Beale Air Force Base, the Local Agency Formation Commission (LAFCo), and other public agencies. The County's General Plan supports regionalization of infrastructure and services, where this make sense, and strategically considers the County's position in the region and the policies necessary to achieve a future desired position in the region.



South County Infrastructure Project

SOURCE: Jacobs Engineering, Inc. 2022; Planning Partners 2023

Figure 5

Zoning Designations within South Yuba County Service Area

GENERAL PLAN UPDATE VISION AND GOALS

Economic Independence

- Promote and encourage new commercial and industrial development to balance the recent residential development, generate revenues, and create local jobs and services for residents.

Sustainable and Vibrant Valley Communities

- Encourage the ability for future incorporation and/or annexation of unincorporated areas by establishing realistic and manageable growth boundaries.
- Link new transportation, water, and sewer infrastructure to sound and sustainable policies. Efficiently provide public improvements and services. Consider lifecycle costs - long-term operation and maintenance costs in addition to initial construction costs. Strive for regionalized facilities.

COMMUNITY DEVELOPMENT ELEMENT GOALS AND POLICIES

Goal CD 12. Level of Service: Public Services and Facilities

Ensure high-quality public services, infrastructure, and facilities with adequate capacity to meet the needs of Yuba County's existing and future residents, businesses, industries, and employers.

Policy CD 12.1 New developments will be required to demonstrate the availability of adequate water supply and infrastructure, including during multiple dry years, prior to approval.

Policy CD 12.2 New developments will be required to construct and dedicate and/or fund on a fair-share basis wastewater collection, conveyance, and treatment facilities consistent with applicable local, State, and federal standards.

Goal CD 13. Phasing and Location of Development

Phasing and location of development that promotes efficient public infrastructure and services.

Policy CD 13.1 Growth should be phased from developed areas and existing infrastructure outward in a logical, efficient manner, and in a way that avoids premature conversion of agricultural lands, changes in rural character, and unnecessary loss of other land-based natural resources.

Policy CD 13.2 The County will not induce growth by supporting the provision of services or infrastructure in areas that are not planned for development.

Goal CD 14. Coordinated Public Services, Regional Services

Provide coordinated public service and infrastructure planning.

Policy CD 14.4 The County will coordinate with special districts, cities, LAFCO, SACOG, Caltrans, joint powers authorities, and other relevant agencies to provide efficient local and regional infrastructure, public facilities, and public services.

NATURAL RESOURCES ELEMENT

Vision

- Link new transportation, water and sewer infrastructure to sound and sustainable policies.
- Increase the viability of our agricultural areas by allowing for compatible agricultural related businesses such as, but not limited to, processing facilities, agro-tourism, and boutique farming.

Policy NR3.13 The County's Economic Development Strategy and Work Plan should include as a focus the expansion of existing agriculture and agriculture-related industries and development of new value-added activities, agricultural processing, distribution, marketing and sales, and other agriculture-related economic activities.

EXISTING FACILITIES

WASTEWATER PIPELINE SSO REDUCTION MEASURES (COMPONENT 1)

Existing facilities associated with Component 1 include an existing pump station (PS-1) near the southwest corner of Olivehurst Avenue/11th Avenue intersection, an existing wastewater collection pipeline within the paved section of Olivehurst Avenue from PS-1 to 14th Avenue, a pump station (PS-2) near the intersection of McGowan Parkway and Dan Avenue, and an 8-inch force main within the paved section of McGowan Parkway from PS-2 to a 21-inch gravity pipeline serving the WWTP at the intersection of McGowan Parkway and Donald Drive (see Figure 6).

WASTEWATER TREATMENT PLANT UPGRADE (COMPONENT 2)

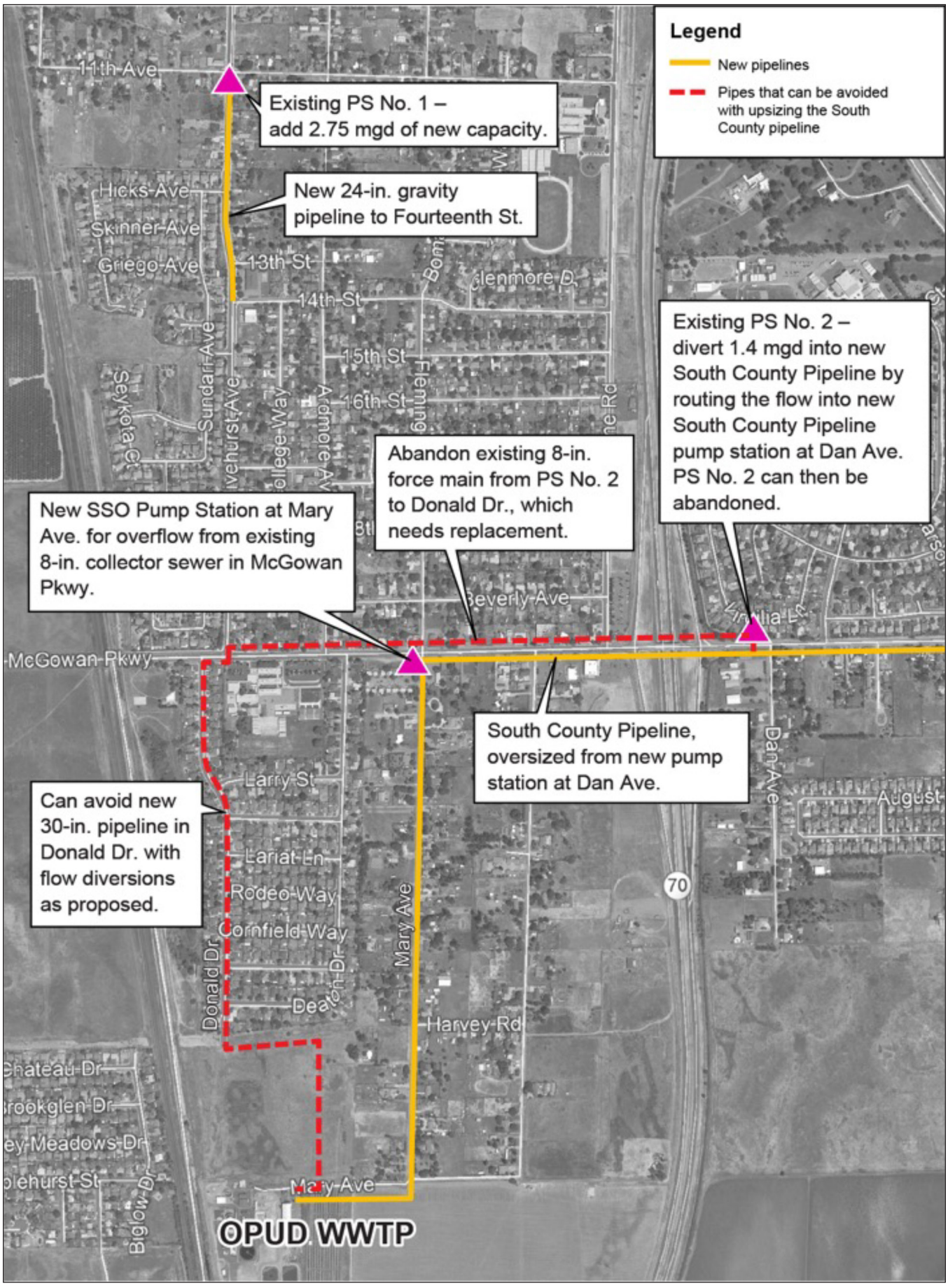
Component 2 would be located within the existing facility boundary of the OPUD WWTP. The 38-acre WWTP site houses the WWTP, a corporation yard for the OPUD water utility, and a five-acre solar array.

The wastewater treatment facility is an activated sludge treatment plant that uses filtration and ultra-violet light to clean and disinfect the water before tertiary treated water is discharged into the Clark Lateral, then flows through the Western Pacific Interceptor Canal (WPIC) through Reeds Creek, through the Bear River, to the Feather River. Figure 7 identifies existing facilities at the WWTP.

The WWTP is permitted to treat three million gallons per day (mgd). The current average dry weather flow (ADWF) into the WWTP is approximately 1.5 mgd. During significant rain events, peak wet weather flow (PWWF) can exceed the WWTP's treatment capacity, and thus, storage will be provided in the Flow Equalization Basin (FEB) and Emergency Storage Basin (ESB).

WASTEWATER PIPELINES – SOUTH COUNTY SERVICE AREA (COMPONENT 3)

No community wastewater collection or treatment facilities currently exist within the South County Service Area. On-site wastewater collection and treatment systems serve individual commercial and residential uses along Rancho Road and Forty Mile Road, as well as a casino and amphitheater (see Figure 8).



South County Infrastructure Project

SOURCE: Jacobs Engineering, Inc. 2022; Planning Partners 2023

Figure 6
Proposed SSO Facilities

South County Infrastructure Project

SOURCE: Google Earth 2022; Planning Partners 2023

Figure 7

Existing Wastewater Treatment Plant

South County Infrastructure Project

SOURCE: Google Earth 2022; Planning Partners 2023

Figure 8

Existing Setting for Water and Wastewater Pipelines

WATER PLANT/DISTRIBUTION PIPELINES – SOUTH COUNTY SERVICE AREA (COMPONENT 4)

No community water supply, treatment, or distribution facilities currently exist within the South County Service Area. On-site water wells serve individual commercial and residential uses along Rancho Road and Forty Mile Road, as well as a casino and amphitheater. A private 14-inch water pipeline is located east of Forty Mile Road approximately one mile from the southerly project boundary (see Figure 8).

WASTEWATER PIPELINE CONNECTOR – CITY OF WHEATLAND (COMPONENT 5)

No wastewater transmission facilities currently exist between the City of Wheatland and the OPUD Olivehurst wastewater collection system (see Figure 8).

PROJECT AND COMPONENT LOCATIONS AND SURROUNDING USES

The five proposed project components are located within and adjacent to the community of Olivehurst in an unincorporated area of Yuba County, California. Olivehurst is located approximately 40 miles north of Sacramento, and four miles south of Marysville. See Figures 1, 2, 3, 4, and 8.

Components 1 and 2 - SSO Reduction Measures/WWTP Modifications - are located within the existing urbanized community of Olivehurst. See Figures 6 and 8. All pipelines associated with Component 1 would be constructed within paved travel lanes of Olivehurst Avenue, McGowan Parkway, and Mary Avenue. The McGowan Parkway pipeline segments associated with SSO reductions measures begin just westerly of Dan Avenue at PS-2 and proceed west to the intersection of McGowan Avenue with Mary Avenue. Two pump stations adjacent to Olivehurst Avenue and McGowan Parkway (PS-1[1] and PS-26) would be constructed. Another, PS-2 adjacent to McGowan Parkway, would be fitted with upgraded equipment. Improvements and modifications to OPUD's wastewater treatment plant would take place within the existing plant site located at the westerly terminus of Mary Avenue (3908 Mary Avenue) (see Figure 7). Components 1 and 2 are located within Sections 5, 8, 9, and 17 of Township 14 North, Range 3 East, Mount Diablo Base and Meridian (MDB&M). The approximate center point of Components 1 and 2 is located at: 39°04'23.61" N, 121°32'49.59" W.

Land uses adjacent to Component 1 consist primarily of single family residences on Olivehurst Avenue and Mary Avenue, and a mixture of commercial, and single-family and multi-family residences adjacent to McGowan Parkway. Improvements to be constructed with implementation of Component 2 would be sited within the boundaries of the existing wastewater treatment plant. Land uses adjacent to the WWTP on the west consist of the WPIC, Union Pacific Railroad tracks, and Arboga Road. There are existing single family residences between the railroad tracks and Arboga Road. On the south, the WWTP site is bordered by the WPIC, and agricultural land. On the north, the project is bordered by uncultivated agricultural lands, with scattered residences approximately 0.15 miles to the northeast. To the east of the site are agricultural lands, and State Route (SR) 70.

[1] PS-1 currently exists. The existing pump station has a capacity of only 1.75 million gallons per day (mgd), and has reached the end of its operational life. The existing facility will be demolished, and a new PS-1, with a capacity of 4.5 mgd, will take its place.

Facilities to be constructed with implementation of **Components 3, 4, and 5 – South County Wastewater Collection/Water Supply and Delivery/Wheatland Wastewater Pipeline Connector -** are located in an undeveloped area south of the existing community of Olivehurst (see Figures 3, 4, and 8). Pipelines associated with Components 3, 4 and 5 would be constructed primarily within the paved travel lanes of Forty Mile Road, Rosser Road, Shimer Road, Rancho Road, Olive Avenue, McGowan Parkway, and Mary Avenue. The Wheatland Connector pipeline would be constructed within Rancho Road. Five wastewater pump or lift stations would be constructed adjacent to Rancho Road and Forty Mile Road. As part of Component 4, a new water well and Water Plant would be constructed east of Forty Mile Road. Improvements associated with Components 3 and 4 are located within Sections 5, 8-10, 14-15, 17, and 22-27 Township 14 North, Range 3 East, MDB&M. The approximate center point of Components 3 and 4 is located at 39°03'04.73" N, 121°29'59.02" W.

The existing land use within the area of Components 3, 4, and 5 primarily consists of irrigated agriculture. Developed uses include an amphitheater, a casino, SR 65, Union Pacific railroad tracks, confined animal agriculture, and heavy commercial and light industrial uses, especially along Rancho Road. Rancho Road, north of McGowan Parkway and Olive Avenue, is characterized by single family residences on large parcels.

PROPOSED PROJECT AND COMPONENTS

Tables A-1 through A-5, located in Appendix A of this document, provide the details of pipelines, pump stations and lift stations, pipeline crossings of freeways and waterways, and methods of borings at crossings. For further information regarding proposed project facilities, refer to Appendix A.

WASTEWATER PIPELINE SSO REDUCTION MEASURES (COMPONENT 1)

The identified collection system improvements are intended to reduce the hydraulic grade line in the Old Olivehurst sewage collection system, thereby reducing the possibility of overflows during peak rainfall events. As shown on Figure 3, SSO components to be constructed with implementation of the proposed project include:

- Increase the capacity of Pump Station 1 (PS-1) from 1.75 to 4.5 mgd. The existing PS-1 would be decommissioned and removed, and a new pump station, also identified as PS-1, would be constructed at the southwest corner of 11th Avenue and Olivehurst Avenue. The pump station would be constructed on a 100 foot by 85 foot parcel (8,500 square feet).
- Construct a new 16-inch diameter force main from the new PS-1 to 14th Avenue (to prevent surcharging an existing pipeline due to an increase in the capacity of PS-1).
- Re-equip the existing PS-2 and revise the downstream piping from PS-2 so that flow that currently is sent to the west to Donald Avenue will be diverted to a new PS-26 at McGowan Parkway and Mary Avenue. This action would remove approximately 2.0 mgd of peak wastewater from the overloaded existing Old Olivehurst collection system, and place it in the new project pipeline to the OPUD WWTP.
- Replace and abandon the existing 8-inch force main in poor condition with a 12-inch force main on McGowan Parkway from PS-2 to PS-26. This force main would be narrowed to 10-inches where it passes within the SR 70 overpass bridge.

- In addition to conveying flow from the South County service area, Wheatland, and PS-2, the new PS-26 will also be sized to divert approximately 1 mgd of sewage from the existing 8-inch diameter gravity collector sewer in McGowan Parkway into the project pipeline. This will further reduce peak flows in the existing Old Olivehurst sewer collection system to mitigate for future overflows.
- Install the recommended WWTP improvements described in the following discussion of Component 2.

WASTEWATER TREATMENT PLANT SSO AND PEAK WET WEATHER FLOW IMPROVEMENTS (COMPONENT 2)

OPUD is implementing modifications to their wastewater collection system to provide SSO relief and accept wastewater from the City of Wheatland. An increase in ADWF capacity would not be provided as part of the South County Infrastructure Project, because the WWTP has sufficient ADWF capacity to handle near term flow increases. However, PWWF are expected to increase as a result of SSO mitigation and the introduction of Wheatland peak flows as described above.

The following improvements are required to increase the PWWF capacity of the WWTP, and to upgrade and replace existing equipment (see Figure 9). The SSO mitigation improvements will result in up to 3.0 mgd of additional PWWF being conveyed to the WWTP during periods of rainfall, and the introduction of Wheatland to the OPUD service area would result in an immediate increase of peak flow of approximately 1.0 mgd. Increasing the amount of wastewater that the collection system can convey to the WWTP will result in lower hydraulic grade lines in the collection system, thereby resulting in fewer SSO events. These improvements consist of:

- Add an additional 50 horsepower (hp) pump to the Influent Pump Station (IPS)
- Add a new 105-foot diameter secondary clarifier and one additional 20 hp return activated sludge pump and one additional 5 hp waste activated sludge pump
- Add a concrete lined Emergency Storage Basin at the south end of the plant site act as an equalization basin that will store increased flows that occur during significant storms. An earthen-lined ESB will be constructed if there are insufficient funds to construct a concrete-lined basin. A dewatering pump station will also be added to allow for sending stored secondary effluent back to the plant headworks
- Provide other site, utility-specific, and similar improvements to support of the improvements previously described.

Additionally, the following other components have been added to the improvements list to replace aging equipment and accommodate supplemental capacity should funding be available:

- Upgrades to IPS, screening, and grit removal systems
- Modifications to the oxidation ditches and associated equipment
- Expansion of the filtration system
- Upgrades to the ultraviolet (UV) disinfection system
- Upgrades to the supervisory control and data acquisition (SCADA) system
- Upgrades to the ancillary support facilities
- Upgrades associated with site civil, electrical, instrumentation, and yard piping for the different facilities undergoing improvements.

Figure 9 additionally shows an aerial view of the existing WWTP and recommended improvements (highlighted). Construction of some of these improvements are contingent upon the availability of OPUD funding and may be eliminated and/or postponed prior to construction.

South County Infrastructure Project

SOURCE: Jacobs Engineering, Inc. 2022; Planning Partners 2023

Figure 9

Proposed Wastewater Treatment Plant Improvements

All of the proposed improvements would be within the existing WWTP site perimeter security fence. Access to the site is through the existing main gate located at the southwest end of Mary Avenue. Construction access would be through the main gate, avoiding the paved areas of the main plant site (as much as possible) by using the unpaved plant road located just to the west of the existing Maintenance Building, or the construction of a new gravel road between the existing easterly site perimeter fence and the existing solar panel arrays.

The construction staging area will be located on site directly east of the existing sludge drying beds.

Excavation for the Storm Drainage Basin and the Flow Equalization Basin 2 will create an excess of 71,000 cubic yards of material not needed onsite. Excess material may be temporarily stockpiled to the east of the Flow Equalization Basin 2 and will need to be disposed of offsite at the conclusion of construction.

WASTEWATER PIPELINES AND ASSOCIATED FACILITIES (COMPONENTS 1, 3, AND 5)

This component consists of sewer pipeline, pump stations, and lift stations required to:

- Provide a backbone wastewater collection and transmission system to serve future demands for the South County Services Area consistent with the Yuba County General Plan
- Convey City of Wheatland wastewater to the Olivehurst WWTP.

Wastewater system improvements are shown on Figures 3 and 8, and include force mains and gravity sewer pipelines ranging in size from 8 to 30 inches in diameter. Detailed information regarding the types of improvements, their size, and construction methods are set forth in Appendix A. The size of the sewer conveyance system is based on the demands from the service area and the City of Wheatland. Some private facilities (e.g., Pacific Gas and Electric [PG&E] yard, Hard Rock Fire Mountain Casino, and Toyota Amphitheatre) are currently served by an on-site wastewater disposal system or another WWTP. Plans for connecting these proposed facilities to the OPUD's sewer collection system are assumed for sizing, but it is understood that they may not connect until a later date. The estimated wastewater ADWF for the South County Service Area at buildout and City of Wheatland contributions is 5.0 mgd. This amount includes 1.5 mgd ADWF for the City of Wheatland.

Pipelines associated with Components 1, 3, and 5 are summarized in Table 1. More detailed information is set forth in Appendix A. The pipelines noted in Table 1 are sized to accommodate flow from the South County service area and Wheatland. In the event that local funding is insufficient, then some reduction in pipeline sizes may be required. A later construction phase, with appropriate CEQA review, will be completed at a future time, when additional conveyance capacity is required.

Table 1 Wastewater Pipeline Summary

Type	Size Range (inches)	Overall Length (feet)	Overall Length (miles)	Number of Pump Stations	Number of Lift Stations	Number of Crossings	
						Roadway	*Waterway*
Force Main	6 - 30	44,440	8.4	5	n/a	3	5
Sanitary Sewer	8 - 24	23,130	4.4	n/a	3	2	5
Total Length of Wastewater Pipelines	n/a	65,570	12.8	n/a	n/a	n/a	n/a

Source: Jacobs/MHM/Planning Partners 2023.

The vertical alignment of pipelines within roadways would maintain a minimum of 48 inches from the top of pipe to the pavement surface. Trench depths would range from 60 inches to 22 feet. All pipeline alignments would provide for a one-foot separation from the pipe edge to any existing utility being crossed while maintaining the minimum cover. Any existing utilities would be surveyed and potholed by the design engineer/team or construction contractor to determine the proposed vertical alignment and crossing method.

Facilities associated with the wastewater pipelines include five pump stations and three lift stations For additional information regarding these facilities, refer to Tables A-2 and A-3 in Appendix A.

A permanent generator would be provided for each pump and lift station to protect against sewer overflows due to power outages. Each generator would be housed in a manufacturer provided sound attenuating enclosure. The size of each generator would depend upon the final sizing of the pumps for each station and whether the District would prefer the generator to be able to power the duty pumps only or all pumps, including the backup pump, simultaneously. Pump stations used to mitigate for SSOs (for example, PS-1 and PS-26) will also include standby generators.

Generators must be able to run for an extended period of time during a power outage. A minimum fuel storage capacity equal to 24 hours of run time would be required. A double contained, under generator type, fuel tank would be provided for most stations. The larger stations may need to have a separate fuel tank depending upon the required size.

Odor control at pump and lift stations would be provided by one of two ways. OPUD's preferred system is to use a bio- bed filter. All pump and lift stations may have bio-bed or mechanical air scrubbers. Odor control may not be provided at either Pump Station PS-1 or PS-26, since pathways for foul air by use of the gravity sewer pipelines can be used for this purpose. Similarly, this gravity pipeline approach will be used at Lift Stations LS-23 and LS-24.

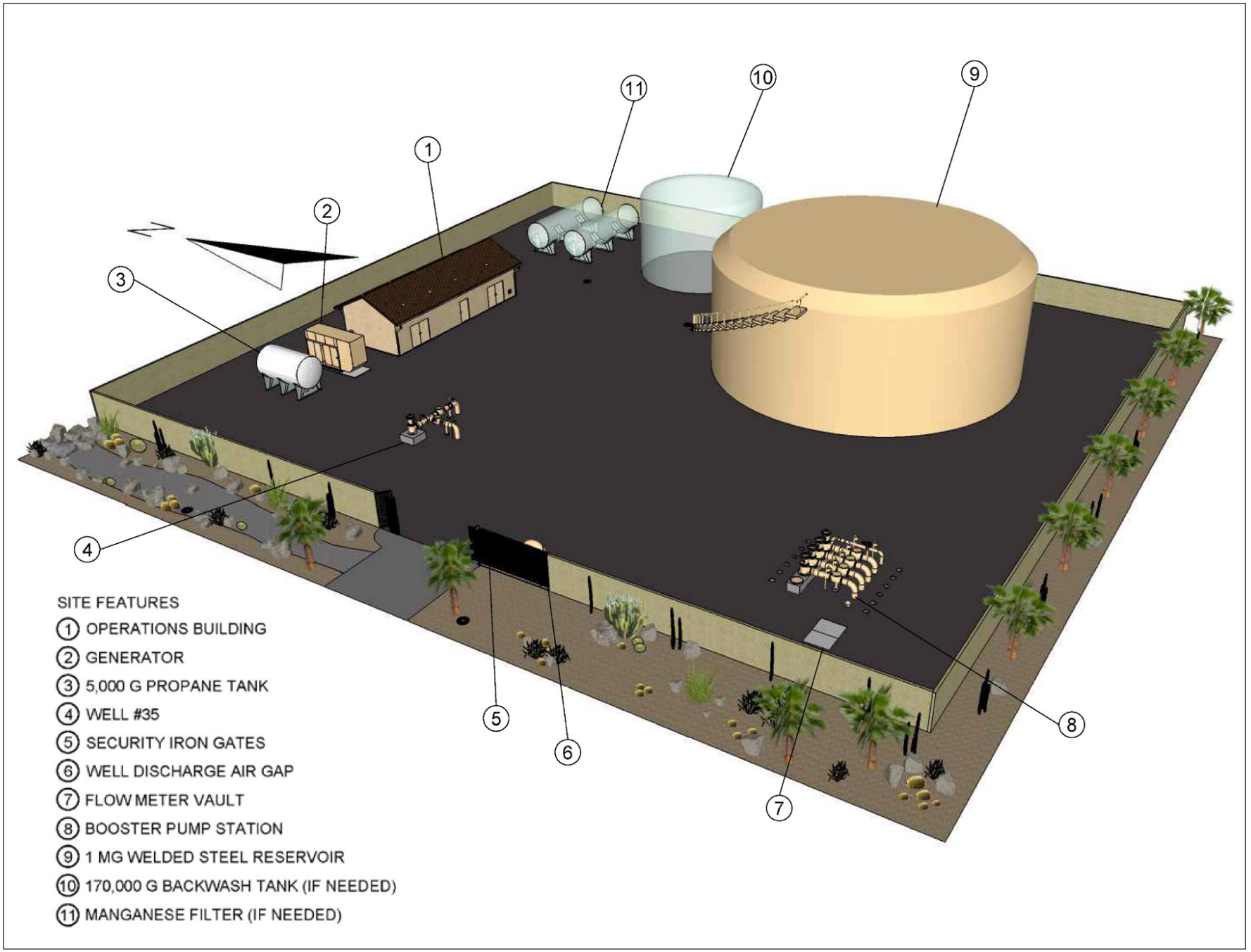
As part of a road improvement project on McGowan Parkway, Yuba County has previously constructed a portion of the pipeline described in Appendix A, Table A-1. From the east end of the McGowan Parkway SR 70 overcrossing to Olive Avenue at the west end of the SR 65 overcrossing, Yuba County has installed the 12-inch force main serving PS-2, and a 24-inch force main. No additional construction within this segment is planned beyond those facilities.

WATER PLANT/DISTRIBUTION PIPELINES – SOUTH COUNTY SERVICE AREA (COMPONENT 4)

This component consists of a production well and Water Plant to meet a portion of the demand for treated water for municipal and industrial needs and fire protection, and a backbone distribution system to meet future treated water demands for the South County Services Area consistent with the Yuba County General Plan.

WATER PLANT

As proposed, the Water Plant (WP) would be constructed on a 0.95-acre site located approximately 1,700 feet east of Forty Mile Road and 800 feet north of the newly constructed Hard Rock Casino. The WP would consist of a new water well (OPUD Well #35), well pump, reservoir, booster station, and chorine feed system (see Figure 10).



South County Infrastructure Project

SOURCE: Affinity Engineering, 2021; Jacobs Engineering, Inc. 2022

Figure 10

Proposed Forty Mile Water Well and Storage Tank

As planned, the new well would provide 1,500 gallons per minute (gpm), although ultimate production could approach 3,000 gpm depending upon the type and timing of future development within the WP service area. A new welded steel reservoir would be constructed with an approximate capacity of 1,017,000 gallons. The tank dimensions would be 76-foot diameter by 32-foot shell height. The tank color is planned to be equivalent to Engard's "Desert Sand" or Glidden's "Pelt" subject to final approval by the District. The booster station is designed to pump out of the reservoir and maintain a desired pressure of 65 pounds per square inch (psi) with a pressure range of between 60 and 70 psi in the water system. A chlorine feed system would inject chlorine to be used for disinfection as part of the WP's treatment process. A backup generator supplied by an on-site propane tank would be provided to power the WP if necessary. Water provided by the WP and transmitted to the regional grid in Forty Mile Road would be provided by a 24-inch pipeline from the WP to a proposed pipeline to be constructed along the southbound travel lane of Forty Mile Road. For additional information regarding the 24-inch water main, refer to Appendix A, Table A-1.

A single generator would be installed at the WP with project implementation (see Figure 10). Additionally, a 5,000 gallon propane tank to supply fuel to the generator would be anchored to a concrete slab. The generator would be dual fuel powered generator to provide power during a power outage. The generator will initially be fueled by propane until natural gas is available. A second generator may be installed in the future.

During construction, needed water to the WP's construction site would be provided by an existing agricultural well located south of the Hard Rock Casino. An above-ground temporary 8-inch pipeline would be used during the construction phase. The 3,725-foot long pipeline would be removed at the completion of construction of the WP.

WATER DISTRIBUTION PIPELINES

This subcomponent consists of treated water pipelines required to:

- Provide a backbone water distribution system to serve future demands for the South County Services Area consistent with the Yuba County General Plan.

Water system improvements are shown on Figure 4 and include water pipelines ranging in size from 16 to 24 inches in diameter. Detailed information regarding the water mains, their size, and construction methods are set forth in Appendix A.

The size of the water distribution system is based on the projected demands from future urban uses within the South Yuba County Service area. Estimated average day, maximum day, and peak hour water demands for the South County service area are 4,980, 9,960 and 19,920 gpm, respectively. These water demands were used to develop design criteria for water pipelines. Additionally, the water distribution system would connect with the existing OPUD water system serving the community of Olivehurst. The existing 14-inch private water main located on south Forty Mile Road is not a South Yuba County facility, and is not planned to serve any identified demands for the South Yuba County Service area.

Pipelines associated with Component 4 are summarized in Table 2. More detailed information is set forth in Appendix A.

Table 2 Treated Water Pipeline Summary					
				Crossings	
Type	Size Range (inches)	Overall Length (feet)	Overall Length (miles)	Roadway	Waterway
Water Main	16 – 24	36,939	7.0	2	5

Source: Jacobs/MHM/Planning Partners 2023.

The vertical alignment of pipelines within roadways would maintain a minimum of 48 inches from the top of pipe to the pavement surface. Trench depths would range from 60 inches to 12 feet. All pipeline alignments would provide for a one-foot separation from the pipe edge to any existing utility being crossed while maintaining the minimum cover. Any existing utilities would be surveyed and potholed by the design engineer/team to determine the proposed vertical alignment and crossing method.

As part of a road improvement project on McGowan Parkway, Yuba County has previously constructed some of the pipelines described in Appendix A, Table A-1. From the east end of the McGowan Parkway SR 70 overcrossing to Olive Avenue at the west end of the SR 65 overcrossing, Yuba County has installed 16- and 18-inch water mains to connect with the existing OPUD water distribution system within Olivehurst. No additional construction within this segment is planned beyond those facilities.

CONSTRUCTION CONSIDERATIONS

CONSTRUCTION PHASING AND SCHEDULE

The construction timing of the proposed South County Infrastructure project components will be directly influenced by the availability of funding for construction. Several sources of funding are being pursued by OPUD and other project sponsors, but none of the sources have been finalized as of the date of this document. If funding can be secured earlier than expected, the schedule set forth below could be accelerated.

Given the current state of project design and permitting, a preliminary schedule for construction is set forth in Table 3.

Table 3 Potential Construction Schedule	
Description of Stage	**Duration/Timeline**
Authorization to Bid	Early Winter 2024
Bidding and Award Period	Summer 2024
Contractor Notice to Proceed	Fall 2024
Initiation of Construction	Winter/Spring 2024
Completion of Construction	Spring 2027
Startup and Commissioning	Summer 2027

Source: Jacobs Engineering 2023.

EASEMENTS AND STAGING AREAS

Construction staging areas would be required to store project equipment and materials that cannot be stored adjacent to the work areas. Staging areas would also be required to provide space for the field offices of the Contractor and the field construction management staff.

Satellite staging areas would be required for special construction where sufficient working room is not provided by the permanent and temporary construction easements. Such locations include tunnel jacking and reception shaft areas that require a concentration of material and equipment. These are located at the SR 70 at McGowan, SR 65 at Olive Avenue, SR 65 at Shimer Road, and at the five stream crossings. Recommended staging areas at these sites have been identified. The proposed Pump Station No. 2 site and Pump Station No. 26 (aka Mary PS) site are potential staging areas for these crossings and for work on Mary Avenue, McGowan Parkway, and Olive Avenue. Other than a staging area at the WWTP, no other staging areas have been identified.

PIPELINE CONSTRUCTION - TRENCHING AND RESTORATION

Conventional excavating equipment is expected to be sufficient for excavating trenches for the South County Sewer Service Area, OPUD Sewer Force Mains, Wheatland Sewer Force Main, OPUD Water Line, and OPUD gravity sewer pipelines.

Two trench types are expected to be implemented on this project: vertical and modified sloped. Key assumptions for these trench types follow:

- Vertical trench walls will remain stable long enough to install shoring or bracing.
- Shoring and bracing are available in the trench widths and depths required for this project.

The vertical trench type will be used where insufficient working space prevents implementing the modified sloped type. The modified sloped trench type will likely be used where ample working space is available. While this trench configuration results in a larger amount of earthwork, it is generally more economical than vertical trenching; less sheeting, shoring, and bracing are required, thereby reducing the overall time and labor required to safely install the pipeline.

Soils are considered suitable for driving sheet piles as a means of meeting trench safety requirements. However, some of the South County Sewer Service Area is located within the Community of Olivehurst where use of sheet piles will not always be feasible (given concerns about excessive noise caused by driving sheet piles and claims of damage to existing structures during sheet piles installation). Some combination of shoring with bracing or sloped trench walls will be required to meet trench safety requirements.

Within all pipeline trenches associated with the project, controlled low-strength material (CLSM) using job-excavated materials will be used for a substantial portion of the backfill of each trench, thereby reducing the need to transport unneeded materials off site. CLSM will consist of cement, soils excavated from the trenches, and water proportioned to obtain a compressive strength of between 50 and 200 pounds per square inch.

Surface restoration within paved roadways includes providing a structural section that meets or exceeds the existing structural section and Yuba County Standard. Surface restoration in undeveloped areas would include the restoration of existing contours with native material and

construction of a permanent maintenance road. The structural section for the paved maintenance road would consist of 3 inches of asphalt concrete over 8 inches of aggregate base. The paved maintenance road would be 12 feet wide with 2-foot-wide shoulders.

SOILS EXCAVATION AND TRENCH STABILITY

Based on the findings of a geotechnical evaluation completed for the proposed project, it is anticipated that the site soils will be excavatable with a medium to large size excavator (such as a CAT 320 or similar). Open excavations 5 feet or deeper will require sloping and/or shoring in accordance with Section 8.4 of the Yuba County Standard Specifications and Cal OSHA requirements. For planning and preliminary design, anticipate sloping/shoring requirements within the soil along the alignment for Type A soil. Excavations near waterway crossings or where perched groundwater/seepage or a sand layer is encountered will require shoring/sloping requirements for a Type C soil (shoring or sloping at a gradient of 1.5:1).

TRENCH DEWATERING

Borings at anticipated trench depths were conducted with the geotechnical evaluation. Groundwater was not encountered at any of the borings. However, the study anticipates that groundwater/seepage could be encountered at or near trenchless crossings or perched at shallower depths along the project alignments. Groundwater levels may be higher during the late fall through late spring months, resulting from higher water levels in creeks and precipitation infiltrating the shallow surficial soil and ponding above the hard clay layers. Similarly, landscape irrigation along the project alignment could infiltrate and pond above the hard clay layer.

The geotechnical study recommends that sump pumps should be adequate to dewater excavations if groundwater/seepage is encountered. during excavation. The study strongly recommend scheduling the project excavations and backfill during the summer through early fall months to reduce potential groundwater/seepage impacts.

TRENCHLESS CROSSINGS

The water main and wastewater pipeline improvements include five trenchless creek crossings along Rancho Road and Forty Mile Road. Additionally, the wastewater pipelines include three trenchless roadway crossings at SR 70/McGowan Parkway, near SR 65/McGowan Parkway and at SR 65/Shimer Road.

Traditional open-cut methods of installing the pipelines beneath highways and creeks are not feasible for the South County Infrastructure project and thus trenchless construction methods would be required. Based on interpretation of the subsurface conditions from historical and project geotechnical investigations, anticipated ground behavior during construction, lengths of the crossings, availability of workspace, feasibility of construction, construction cost, potential settlement impact, agency requirements, and environmental requirements, Horizontal Directional Drilling (HDD) and Pipe Ramming or Auger Boring are identified as the trenchless methods for the South County Infrastructure Project's proposed highway and creek crossings. HDD was selected for its cost- effectiveness, low risk of settlement, lack of need for personnel entry beneath the ground, and ability to cross beneath roadways, culverts, and water bodies. Several of the crossings (Rancho Road/Virginia Creek and Forty Mile Road/Kimball Creek) would be constructed using pipe ramming or auger boring techniques. See Table A-4 in Appendix A.

HORIZONTAL DIRECTIONAL DRILLING

HDD is typically a surface-launched process where a small diameter pilot borehole is drilled along the design alignment and stabilized by filling it with drilling mud (bentonite). The pilot borehole is enlarged by successive reaming passes, while keeping the borehole filled with drilling mud. When the borehole diameter is approximately 12 inches larger than the pipe or 1.5 times the outside diameter of the pipe, the pipe is pulled into the borehole, displacing most of the drilling mud. Shafts are not typically required because HDD bores are installed along a sweeping vertical curve (concave up) from surface to surface. Some agencies, such as Caltrans, require a casing. If a casing is required, the HDPE casing would be installed first, and the carrier pipe or pipes would be pulled through the casing.

Workspaces and pipe string laydown spaces are limited for some crossing locations, especially at SR 70/McGowan Parkway Crossing and at Reeds Creek and Unnamed Creek/Rancho Road Crossings.

PIPE RAMMING

Pipe ramming is a trenchless method for installation of steel pipes and casings. The method is useful for pipe and casing installations under roads or streams, where other trenchless methods could cause subsidence or heaving. Pipe ramming is preferable for shorter distances and applications that do not require tight directional control.

The method uses pneumatic percussive blows to drive the pipe through the ground. The leading edge of the pipe is almost always open, and is typically closed only when smaller pipes are being installed. The shape allows a small overcut (to reduce friction between the pipe and soil and improve load conditions on the pipe), and directs the soil into the pipe interior. Further reduction of friction is typically achieved with lubrication, and different types of bentonite and/or polymers can be used (as in horizontal directional boring) for this purpose.

AUGER BORING

Auger boring is defined as a trenchless application in which a casing pipe is jacked into the earth's surface while simultaneously rotating helical augers remove the excavated spoil. In auger boring, excavated soil is removed from the top of the casing tube. Auger boring employs a cutting edge attached to the auger within the casing pipe and hydraulic jacks, to rotate and penetrate the soil. So that there is unimpeded rotation within the casing, the auger diameter tends to be slightly less than that of the casing pipe. Rotation of the helical auger chain causes the cutting edge to bore through the ground, moving spoil behind the casing pipe, allowing for removal. Excavated material can be removed by mechanical means such as conveyors or excavators, by hand or through the use of muck buckets.

3. REQUIRED APPROVALS

This environmental document is intended to address the environmental impacts associated with all of the following decision actions and approvals:

- **Obligation of Public Funds (OPUD):** The approval action for the South County Infrastructure Project or any portion thereof will consist of the execution of a construction contract or other action that would obligate public funds to initiate the project.
- **Obligation of Public Funds (State Water Resources Control Board, Clean Water State Revolving Fund):** As a responsible agency under CEQA, an approval action by the State Board for a portion of the South County Infrastructure Project will consist of the obligation of public funds to initiate the project.

OPUD has the following discretionary powers related to the proposed South County Infrastructure project:

- **Certification of the Environmental Document:** OPUD will act as the lead agency as defined by CEQA, and will have authority to determine if this environmental document is adequate under CEQA.
- **Consider Project:** OPUD will consider approval of the project as described above.

The State Water Resources Control Board has the following powers related to the proposed South County Infrastructure project:

- An Amended Water Supply Permit: As a responsible agency under CEQA, an approval action by the State Board for a portion of the South County Infrastructure Project will consist of approving a water supply amendment to add a new well (Well 35), and a 1-million gallon water storage reservoir, and possibly, a water treatment system, to the District's existing water system to bring the water to California State Safe Drinking Water standards.

4. PREVIOUS RELEVANT ENVIRONMENTAL ANALYSIS

YUBA COUNTY GENERAL PLAN

Adoption of a General Plan is a project subject to the requirements of CEQA. To comply with CEQA, Yuba County prepared and certified an Environmental Impact Report on June 7, 2011.

The 2030 General Plan EIR was prepared as a program EIR, as described under CEQA and the State CEQA Guidelines (California Code of Regulations, Title 14, Sections 15000 et seq. [14 CCR 15000 et seq.). A program EIR "may be prepared on a series of actions that can be characterized as one large project and are related...in connection with the issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program" (State CEQA Guidelines Section 15168[a][3]). As a program EIR, the County's document focused on the overall effect of the 2030 General Plan.

Section 1.1.1 of the 2030 General Plan EIR sets forth the County's vision for the use of the General Plan EIR in the environmental review and consideration for future projects.

> The County intends to use the 2030 General Plan EIR to streamline approval of private and public projects. The County will make full use of existing streamlining provided by CEQA, and will make full use of emerging streamlining techniques .... The County has invested substantial resources in the 2030 General Plan and wants to promote fiscally prudent use of this EIR, once it is certified, to accommodate development consistent with the 2030 General Plan.

In certifying the 2030 General Plan EIR, the County anticipated that future actions (*such as the proposed OPUD South County Infrastructure project*) could be based, in whole or in part, on the environmental evaluation undertaken as part of the 2030 General Plan and its EIR. The Yuba County 2030 General Plan EIR, Section 1.7 specifically identifies the actions of other agencies and private organizations such as OPUD as falling within the purview of the 2030 General Plan EIR.

The 2030 General Plan EIR was comprehensive in its evaluation of the environmental effects of future urban and rural development pursuant to the 2030 General Plan. Impact topics assessed in the EIR consisted of:

- 4.1 Aesthetics
- 4.2 Agricultural and Forest Resources
- 4.3 Air Quality
- 4.4 Biological Resources
- 4.5 Cultural Resources
- 4.6 Geologic, Soils, Mineral, and Paleontological Resources
- 4.7 Climate Change
- 4.8 Hazards and Hazardous Materials
- 4.9 Hydrology and Water Quality
- 4.10 Land Use Planning, Population, and Housing
- 4.11 Noise and Vibration
- 4.12 Public Services and Facilities
- 4.13 Transportation and Traffic
- 4.14 Utilities and Service Systems
- 4.15 Energy
- 5 Alternatives to the Proposed Project
- 6 Other CEQA Considerations

Thus, because the South County Infrastructure Project is consistent with the Yuba County 2030 General Plan, the EIR for the Yuba County 2030 General Plan (2011) provides relevant environmental analysis and conclusions for the environmental analysis set forth in this Initial Study. The various sites of proposed infrastructure are located within the planning boundaries of the 2030 General Plan. All future land uses and supporting infrastructure, including the project sites and proposed project actions, were assessed in the General Plan EIR. Thus, the 2030 General Plan EIR provides the foundational environmental document for evaluating development throughout the County.

TIERING

"Tiering" refers to the relationship between a program-level EIR (where long-range programmatic cumulative impacts are the focus of the environmental analysis) and subsequent environmental analyses such as the subject document, which focus primarily on issues unique to a smaller project within the larger program or plan. Through tiering a subsequent environmental analysis can incorporate, by reference, discussion that summarizes general environmental data found in the program EIR that establishes cumulative impacts and mitigation measures, the planning context, and the regulatory background. These broad based issues need not be reevaluated subsequently, having been previously identified and evaluated at the program stage.

Tiering focuses the environmental review on the project-specific significant effects that were not examined in the prior environmental review, or that are susceptible to substantial reduction or avoidance by specific revisions in the project, by the imposition of conditions, or by other means. Section 21093(b) of the Public Resources Code requires the tiering of environmental review whenever feasible, as determined by the Lead Agency.

State CEQA Guidelines Section 15152, subsections (a) through (d), permit second tier documents to be an EIR or a Negative Declaration, whichever is appropriate under CEQA Guidelines Sections 15065 and 15070. For instance, Section 15152, subsection (a) refers to a "later EIR or negative declaration" tiering from a broader EIR. In fact, the California Legislature made a declaration in Public Resources Code Section 21093 that environmental impact reports shall be tiered whenever feasible to achieve the efficiencies outlined in Section 21093. This Initial Study was prepared specifically to comply with the State CEQA Guidelines.

The 2030 General Plan EIR contained a comprehensive evaluation of the effects of implementing the Yuba County 2030 General Plan. The 2030 General Plan EIR is comprehensive in its analysis of the environmental impacts associated with development of the County, including the area that makes up the proposed site of the South County Infrastructure Project. This includes discussion of a full range of alternatives and growth inducing impacts associated with urban development in the county, including the South County area.

Therefore, the South County Infrastructure Project is related to the Yuba County General Plan and, pursuant to Section 15152 of the State CEQA Guidelines, tiering of environmental documents is appropriate. State CEQA Guidelines Section 15152(g) specifically provides that,

> "[w]hen tiering is used, the later EIRs or Negative Declarations shall refer to the prior EIR and state where a copy of the prior EIR may be examined. The later [environmental document] should state that the Lead Agency is using the tiering concept and that the [environmental document] is being tiered with the earlier EIR.

The Yuba County 2030 General Plan and the EIR for the 2030 General Plan can be reviewed at the following location:

Olivehurst Public Utility District
1970 9th Street
Olivehurst, CA 95961
Contact Person: John Tillotson
Phone: (530) 743-4657

INCORPORATION OF THE YUBA COUNTY 2030 GENERAL PLAN EIR BY REFERENCE

The EIR for the Yuba County 2030 General Plan is a comprehensive document. Due to various references to the Yuba County 2030 General Plan EIR in this proposed South County Infrastructure Project Initial Study, and to its importance relative to understanding the environmental analysis that has occurred to date with respect to development in the South County area, the document is hereby incorporated by reference as though fully set forth herein pursuant to State CEQA Guidelines Section 15150.

SUMMARY OF YUBA COUNTY 2030 GENERAL PLAN EIR

The Yuba County 2030 General Plan EIR analyzed the environmental impacts associated with adoption of the Yuba County 2030 General Plan allowing for development, open space preservation, and provision of services within the unincorporated areas of Yuba County. The "project site," as defined by CEQA, consists of the unincorporated areas of Yuba County. The 2030 General Plan was an update of the County's existing 1996 General Plan. The overarching purpose of the updated plan is to provide policy guidelines for future development and conservation in the county, and to adapt the General Plan to issues that had emerged since the creation of the previously written elements. The 2030 General Plan provides the framework for decisions guiding where and how development should occur and the priorities given to the County's natural resources in order to achieve the highest quality of life possible for its residents. The General Plan is comprehensive in scope, addressing land use, transportation, housing, conservation of resources, economic development, public facilities and infrastructure, public safety, and open space, among many other subjects.

The Yuba County 2030 General Plan contemplates a full range of land uses that would constitute a balanced community, including residential uses at a variety of densities, as well as commercial, office, employment, and open space uses. Additionally, public or quasi-public uses are contemplated by the Yuba County 2030 General Plan, including utilities, schools, parks, fire stations, government offices, and other uses.

A summary of the EIR's environmental conclusions, mitigation measures, and project alternatives is attached to this Initial Study as Appendix B.

5. ENVIRONMENTAL ANALYSIS

PURPOSE AND LEGAL BASIS FOR THE INITIAL STUDY

As a public disclosure document, this Initial Study also provides local decision makers and the public with information regarding the environmental impacts associated with the proposed project. According to Section 15063 of the CEQA Guidelines, the purpose of an Initial Study is to:

1. Provide the Lead Agency with information to use as the basis for deciding whether to prepare an EIR or a Negative Declaration.
2. Enable an applicant or Lead Agency to modify a project, mitigating adverse impacts before an EIR is prepared, thereby enabling the project to qualify for a Negative Declaration.
3. Assist in the preparation of an EIR, if one is required by:
    a. Focusing the EIR on the effects determined to be significant,
    b. Identifying the effects determined not to be significant,
    c. Explaining the reasons for determining that potentially significant effects would not be significant, and
    d. Identifying whether a program EIR, tiering, or another appropriate process can be used for analysis of the project's environmental effects.
4. Facilitate environmental assessment early in the design of a project.
5. Provide documentation of the factual basis for the finding in a Negative Declaration that a project will not have a significant effect on the environment.
6. Eliminate unnecessary EIRs.
7. Determine whether a previously prepared EIR could be used with the project.

INITIAL ENVIRONMENTAL CHECKLIST

Following each major environmental category and topic in the Initial Study, there are four determinations by which to judge the project's impact. These categories and their meanings are shown below:

"No Impact" means that it is anticipated that the project will not affect the physical environment on or around the project area. It therefore does not warrant mitigation measures.

"Less-than-Significant Impact" means the project is anticipated to affect the physical environment on and around the project area, however to a less-than-significant degree, and therefore not warranting mitigation measures.

"Less than Significant Impact with Mitigation Incorporated" applies to impacts where the incorporation of mitigation measures into a project has reduced an effect from "Potentially Significant" to "Less-than-significant." In such cases, and with such projects, mitigation measures will be provided including a brief explanation of how they reduce the effect to a less-than-significant level.

"Potentially Significant Impact" means there is substantial evidence that an effect is significant, and no mitigation is possible.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, including several impacts that are "Less than Significant Impact with Mitigation Incorporated" as indicated by the checklist on the following pages.

	Aesthetics		Agriculture and Forestry Resources	X	Air Quality
X	Biological Resources	X	Cultural Resources	X	Energy
X	Geology / Soils	X	Greenhouse Gas Emissions	X	Hazards & Hazardous Materials
X	Hydrology / Water Quality		Land Use / Planning		Mineral Resources
X	Noise		Population and Housing		Public Services
	Recreation	X	Transportation		Tribal Cultural Resources
	Utilities / Service Systems		Wildfire	X	Mandatory Findings of Significance

ENVIRONMENTAL SETTING AND EVALUATION OF POTENTIAL IMPACTS

Responses to the following questions and related discussion indicate whether or not the proposed project would have or would potentially have a significant adverse impact on the environment, either directly or indirectly, or individually or cumulatively with other projects. All phases of project planning, implementation, and operation are considered. Mandatory Findings of Significance are located in Section XXI below.

The following analysis includes a table for each issue area that identifies particular project components that may result in impacts to the associated issue area. Project components that are identified in these tables will be evaluated further in the section, while project components that would have no impact will not be discussed further.

I. AESTHETICS	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?				**X**
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				**X**
c) In non-urban 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 a 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?			**X**	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			**X**	

ENVIRONMENTAL SETTING

The primary scenic resource within the project areas are the rural and agricultural landscape. Due to the generally flat topography, short- and mid-range views from and to project components are limited to rural and agricultural uses, and areas of residential and industrial uses. Long-range views include views to the Sierra Nevada foothills and the Sutter Buttes. Viewers in the vicinity of the proposed project improvements are limited to motorists on perimeter roadways, surrounding residents, and persons associated with scattered agricultural, recreational, and industrial uses. The existing visual setting of the water plant and Pump/Lift Stations 21-25 is characterized as rural (Google Earth 2022). See Figures 3, 4, 7 and 8.

Neither the location of the project components nor the views to or from the project components have been designated as an important scenic resource by Yuba County or any other public agency. No state or locally designated scenic highway has been identified in the vicinity of the project area (Caltrans 2022).

REGULATORY SETTING

Chapter 11.19.060 of the Yuba County Code regulates lighting and illumination. Several of the provisions of this Code apply to the proposed project elements.

C. Control of outdoor artificial light. This Subsection is intended to minimize outdoor artificial light that may have a detrimental effect and reduce the unnecessary illumination of adjacent properties.

2. Prohibited lighting. The following types of exterior lighting are prohibited:
   a. Drop-down lenses;
   b. Mercury vapor lights;
   c. Searchlights (excluding emergency/safety response activities), laser lights, or any other lighting that flashes, blinks, alternates, or moves.

3. Fixture type. All lighting fixtures shall be shielded so as not to produce obtrusive glare onto the public right-of-way or adjoining properties. All luminaries shall meet the most recently

adopted criteria of the illuminating Engineering Society of North America (IESNA) for "cut off" or "full cut off" luminaries. In the figure below, cd refers to the candela or measurement of luminous intensity based on the direction or angle of the light projection.

4. Light trespass. Lights shall be placed to deflect light away from adjacent properties and public streets, and to prevent adverse interference with the normal operation or enjoyment of surrounding properties.
    a. Direct or sky-reflected glare from floodlights shall not be directed into any other property or street.
    b. No light or combination of lights, or activity shall cast light exceeding one foot candle onto a public street, with the illumination level measured at the centerline of the street.
    c. No light, combination of lights, or activity shall cast light exceeding 0.5 foot candle onto a residentially zoned property, or any property containing residential uses.

ENVIRONMENTAL EVALUATION

Issue Area CEQA Appendix G Question	Project Component				Discussion
	Water Plant	WWTP	Pipelines	Pump Stations	
	Applicable to Issue Area?				
I.a					No scenic vistas in the project area.
I.b					No scenic highways in project area.
I.c	✓			✓	Several project components would be visible.
I.d	✓	✓		✓	Would include new night lighting.

Question (a) Scenic vista: No Impact. Given the lack of distinctive topographical features in the project vicinity, views to and from the project sites are limited to short- to medium-range views of mixed agricultural, recreational, and industrial uses. These components of the viewshed would be classified as common, and would not be considered to be scenic vistas. Thus, the project components are not located in an area with scenic vistas. No designated scenic vista is visible from the project areas, nor are the project areas visible from any nearby scenic vista. Because the proposed project would not affect a scenic vista, no impact would result with implementation of the project, and no mitigation would be required.

Question (b) Scenic resources: No Impact. No state- or locally-designated scenic highway is visible from the project area features, nor are the areas of the project visible from any nearby designated scenic highway. The nearest designated State Scenic Highway, State Route 50 in El Dorado County, is over 40 miles to the southeast of the project area. Because the project areas are not located within the viewshed of a designated scenic highway, there would be no damage to scenic resources within the viewshed of a scenic highway. No impact would result with implementation of the proposed project, and no mitigation would be required.

Question (c) Visual character: Less-than-significant Impact. While the proposed pipeline infrastructure of the project would be buried within existing roadways, there are several components of the project that would be visible, including pump stations, lift stations, the wastewater treatment plant (WWTP), and the water plant (WP).

Of these, the WWTP and Pump Stations 1 and 2 are existing uses located within the urban area of Olivehurst. As proposed, the existing Pump Station 1 would be demolished and a replacement Pump Station 1 would be constructed on an adjacent parcel. Pump Station 2 would be renovated within its existing footprint. Equipment associated with the pump stations would be hidden from view by perimeter fencing. All improvements proposed for the WWTP would be constructed within the existing area of the plant site. See Figures 7 and 9. Although implementation of the proposed project would alter the appearance of existing WWTP and pump station facilities, the modified facilities would not be considered to be out of character in appearance or size with adjacent facilities and uses.

Pump Station 26 would be constructed at the southwest corner of McGowan Parkway and Mary Avenue within the urbanized area of Olivehurst. Like Pump Stations 1 and 2, all equipment would be hidden from view by perimeter fencing. Pump Station 26 would be similar in size to other commercial and multi-family residential buildings in the surrounding area.

The visual character of the area surrounding the WP and Pump and Lift Stations 21 - 25 is primarily rural agricultural, although there are several areas developed with heavy commercial and recreational uses. The WP would be constructed approximately 1,600 feet east of Forty Mile Road, and northeast of the Hard Rock Casino and hotel. The landscape between the WP and Forty Mile Road is dominated by existing and proposed parking lots. In this landscape, the WP would make a minor contribution to the view. Pump Station 25 would be constructed within the same landscape nearer to Forty Mile Road. Both the pump station and WP would be considered common and appropriate by most viewers.

Pump Station 21 and Lift Stations 22 – 24 would be sited in rural landscapes with little current development. Land uses surrounding these facilities are primarily agricultural, interspersed with scattered residences and commercial uses. While these project components would be visible from adjacent roadways, these facilities would be of a scale and appearance similar to other agricultural and commercial structures in the vicinity.

Since the proposed project elements would be consistent with the existing and planned uses of the area, and the visible project components would not affect the existing visual character of the areas, implementation of the project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings. This would be a less-than-significant impact, and no mitigation would be required.

Question (d) New source of light or glare: Less-than-significant Impact. The proposed project includes a new exterior emergency/security lights associated with the pump stations, wastewater treatment plant improvements, and water plant. The new lighting would be at a similar level and character to existing lighting in the surrounding area. The proposed project would not adversely affect day or nighttime views in the area as a result of lighting or glare, and a less-than-significant impact would result. No mitigation would be required.

CUMULATIVE IMPACTS

As set forth in the 2030 Yuba County General Plan Program EIR, development in Sutter County, Butte County, Nevada County, and Yuba County and cities in the region would cause substantial changes to the existing visual character. Important visual resources present in Yuba County (agricultural lands, views of the Sutter Buttes and the Sierra Nevada, waterways, etc.) would be affected by land use change under the cumulative scenario in the General Plan Program EIR by related projects and plans. As development occurs in the unincorporated County and surrounding areas, substantial changes in visual conditions would continue as open viewsheds are replaced by urban development. Increased urban development would also lead to increased nighttime light and glare in the region and more limited views of the night sky and sky glow effects, and would disrupt the rural nature of the area. The effect of these changes on aesthetic resources from past and planned future projects, when considering the related projects, would be a cumulatively significant impact.

Despite the range of policies and programs in the 2030 General Plan that would reduce or avoid adverse aesthetics impacts throughout Yuba County, urban development of agricultural lands and open space would occur. Growth and development in adjacent counties (Sutter County, Butte County, Nevada County, and Placer County) would involve similar conversion of former agricultural lands, open space, and elements of the rural landscape. Given the large scale of this development and the rural nature of the regional setting, the impacts on visual resources from implementing projects accommodated under the 2030 General Plan would be cumulatively considerable.

Implementation of the proposed South County Infrastructure Project would be consistent with the 2030 General Plan, including future land uses identified in the Plan. The potential impacts to visual quality of implementing the project and its components would be limited since most infrastructure would be buried within existing roadways. Components of the project that would be visible include pump stations, lift stations, the wastewater treatment plant, and the water plant. Several of these facilities, such as the wastewater treatment plant and several pump stations, would be located within the urban area of Olivehurst and would have little adverse visual effect. The remaining facilities (water plant, pump and lift stations) would be located in a primarily agricultural area, but an area designated for future urban development by the 2030 General Plan. Because the aesthetic effects of the proposed project would be less than significant, the proposed South County Infrastructure Project would not make a cumulatively considerable contribution to cumulative aesthetic resource effects.

II. AGRICULTURE AND FORESTRY RESOURCES	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?			**X**	
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?			**X**	
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined in Public Resources Code section 4526), or timberland zoned Timberland Production (as defined in Public Resources Code section 51104(g))?				**X**
d) Result in the loss of forest land or conversion of forest land to non-forest use?				**X**
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?			**X**	

ENVIRONMENTAL SETTING

The area surrounding the wastewater treatment plant (WWTP) and several pump stations (PS-1, PS-2 and PS-26) is primarily urban, as they are existing facilities within the community of Olivehurst. The general area of the water plant (WP) is rural agricultural, and includes the developed and developing areas of the Hard Rock Casino. The project pipeline alignments would be located within and along roadways which traverse rural areas of Yuba County, with a portion of the pipeline alignments within the community of Olivehurst. Most of the proposed pump and lift stations would be located on vacant land adjacent to Rancho Road and Forty Mile Road. See Figures 3, 4, 7 and 8.

The California Department of Conservation (DOC) provides data and services to support the preservation of agricultural land in agricultural uses. The Farmland Mapping and Monitoring Program's (FMMP) Important Farmlands Maps[1] of Yuba County designates the WWTP site, and the sites of PS-1, PS-2, and PS-26 as Urban and Built-Up Land. The proposed site of the proposed water plant (WP) is designated as Grazing Land (DOC 2021a). The wastewater and water system pipeline alignments are located within roadways or roadway easements. Adjacent lands abutting pipeline routes are designated as Prime Farmland, Unique Farmland, Grazing Land, Urban and Built-Up Land, and Other Land. All other pump and lift station locations are designated as Grazing Land, Other Land, and Urban and Built-Up Land, except for Lift Station 23, which is located on designated Prime Farmland. A Horizontal Directional Drilling (HDD) station is located outside of the public road right of way, west of Rosser Road. The farmland designation of this area is Grazing Land (DOC 2021a). See Table 4 for Important Farmland and Yuba County Zoning Designations.

[1] The Important Farmland Map uses a classification system that combines technical soil ratings from the Natural Resources Conservation Service digital soil data and current land use. The minimum land use mapping unit is 10 acres unless specified.

Table 4	**South County Infrastructure Project Important Farmlands and Yuba County Zoning Designations**	
Project Component	**FMMP Designation**	**Zoning Designation**
Pump Station 21	Other Land	IG – General Industrial District
Pump Station 22	Grazing Land	IL – Light Industrial District
Lift Station 23	Prime Farmland	IL – Light Industrial District
Lift Station 24	Grazing Land	SE – Sports Entertainment District
Pump Station 25	Grazing Land	SE – Sports Entertainment District
Pump Station 1	Urban and Built-Up	RM – Medium Density Residential
Pump Station 2	Urban and Built-UP	RS – Single Family Residential
Pump Station 26	Urban and Built-Up	NMX – Neighborhood Mixed Use
Water Treatment Plant	Grazing Land	SE – Sports Entertainment District
WWTP	Urban and Built-Up	PF – Public Facilities District

Sources: Yuba County Zoning Map, Yuba County 2021a. California, State of. Department of Conservation, Division of Land Resource Protection. Farmland Mapping and Monitoring Program, 2018.

The areas of the project components include multiple Yuba County zoning designations as shown in Table 4 above. The wastewater and water system pipeline alignments are located in areas zoned for commercial and employment center uses, industrial, and sports entertainment. None of the project components are located in agriculturally zoned areas.

Yuba County does not participate in the Williamson Act program, and there are no Williamson Act contracts on the project area (Yuba County 2011a).

No forest lands, timberland, or timberland zoned Timberland Production occur in the project area (CDFW 2015; Yuba County 2011a).

ENVIRONMENTAL EVALUATION

Issue Area CEQA Appendix G Question	**Project Component**				**Discussion**
	Water Plant	**WWTP**	**Pipelines**	**Pump Stations**	
	Applicable to Issue Area?				
II.a				✓	Prime Farmland at Lift Station 23
II.b					No zoning for agricultural use or Williamson Act
II.c					There is no forest land or timberland in project area.
II.d					There is no forest land or timberland in project area.
II.e				✓	Prime Farmland at Lift Station 23. No forest land.

Question (a) and (e) Convert farmland to non-agricultural use: Less-than-significant Impact. Project pipelines would be located within paved roadways or crossings of the public right-of-way, and in general would not affect adjacent farmlands. Following construction of the pipeline network, all roadways and other disturbed property would be restored to pre-construction conditions. Except for Lift Station 23, none of the project components are located on Farmland as

classified by the FMMP[2]. While the area of Lift Station 23 is designated as Prime Farmland, the lift station would be located at the edge of existing farmland, and a very small area would be permanently modified. However, because the limited area of conversion (approximately 3,510 square feet or 0.08 acre) is on the edge of existing agricultural activities, and no other changes to the project area would occur following construction of the lift station, the proposed project would not impair the overall agricultural productivity of the site. The proposed project would not result in any change to the existing environment that could result in the near-term conversion of farmland to non-agricultural use. Because construction of the proposed facilities would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a non-agricultural use, a less-than-significant impact would result. No mitigation would be required.

Question (b) Conflict with zoning for agricultural use: Less-than-significant Impact. None of the areas of project components are zoned for agricultural uses (see Table 4 above). The proposed project includes the construction of an updated water and wastewater pipeline network, which would not conflict with any adjacent agricultural uses. Yuba County does not participate in the Williamson Act program, so there are no parcels within the County under Williamson Act contract (Yuba County 2011a). Therefore, the proposed project would not conflict with any Williamson Act contracts. No feature of the project would preclude or limit the agricultural use of adjoining parcels. Thus, the proposed project would not conflict with adjacent agricultural uses. A less-than-significant impact would result, and no mitigation would be required.

Questions (c) and (d) Conflict with zoning for or loss of farmland, forest land, or timber land: No Impact. The project area is not zoned for forest lands or timberland production by Yuba County, and no such lands exist in the vicinity. Thus, there would be no loss of forest land or conversion of forest land to non-forest use. Because the proposed project would not conflict with any existing forest land or timberland production zoning, and no changes associated with the project are proposed that would result in the conversion of existing farmland, forest land, or timber lands, no impact would occur. No mitigation would be required.

CUMULATIVE IMPACTS

As set forth in the 2030 Yuba County General Plan Program EIR, conversion of Important Farmland in the Sacramento Valley is a significant cumulative impact resulting from urbanization. The cumulative loss of forestland through development in the region is also considered a significant cumulative impact. The loss of Important Farmland is a cumulatively considerable impact when considered in connection with the significant cumulative losses that would occur through implementation of the General Plan, past farmland conversions, and planned future development.

The forest land areas that could potentially be affected by implementation of the General Plan are within the previously existing (1996) Rural Community Boundary Areas. The conversion of forestland in Yuba County combined with timberland conversion in adjacent counties as a result of rural community development and rural subdivisions is a significant cumulative impact. The 2030 General Plan, while maintaining previously existing (1996) rural community boundaries, would make a considerable contribution to this significant cumulative impact.

[2] Grazing Land does not fall under the definition of agricultural land according to the Public Resources Code.

The proposed South County Infrastructure Project is consistent with, and implements, the 2030 General Plan. Thus, the cumulative impacts described above include the proposed project within the scope of General Plan land uses and supporting infrastructure assessed in the 2030 General Plan Environmental Impact Report (EIR). Implementation of the South County Infrastructure Project would not result in new cumulative impacts or increase the magnitude of cumulative impacts beyond those assessed in the 2030 General Plan EIR. Additionally, the evaluation of the project's environmental effects on agriculture and forestry resources resulted in a conclusion of no impact or a less-than-significant impact to such resources. For these reasons, the proposed infrastructure project would not make a cumulatively considerable contribution to the cumulative impacts of implementing the 2030 General Plan beyond those assessed in the 2030 General Plan EIR. This would be a less-than-significant impact, and no mitigation beyond that set forth in this chapter would be required.

III. AIR QUALITY	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management 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?		**X**		
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?		**X**		
c) Expose sensitive receptors to substantial pollutant concentrations?			**X**	
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			**X**	

ENVIRONMENTAL SETTING

Air quality influences public health and welfare, the economy, and quality of life. Air pollutants have the potential to adversely impact public health, the production and quality of agricultural crops, visibility, native vegetation, and buildings and structures.

Ambient air quality is described in terms of compliance with state and national standards, and the levels of air pollutant concentrations considered safe to protect the public health and welfare. These standards are designed to protect people most sensitive to respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. The U.S. EPA, the federal agency that administers the Federal Clean Air Act (CAA) of 1970, as amended, has established national ambient air quality standards (NAAQS) for seven air pollution constituents. As permitted by the CAA, California has adopted more stringent state ambient air quality standards (SAAQS), and expanded the number of air constituents regulated.

The project site is located in Yuba County, within the Sacramento Valley Air Basin (SVAB). Air quality within Yuba County is regulated under both federal and state Clean Air Acts by the Feather River Air Quality Management District (FRAQMD) (which includes Yuba and Sutter counties). As required by the California Clean Air Act (CCAA), the FRAQMD has published various air quality planning documents, including Rules and Regulations, to comply with the federal and state AAQS. Air Quality Attainment Plans (AQAP), prepared by the FRAQMD, are incorporated into the State Implementation Plan (SIP), which is subsequently submitted to the EPA.

The California Air Resources Board (CARB) is required to designate areas of the state as attainment, nonattainment, or unclassified for any state standard. An "attainment" designation for an area signifies that pollutant concentrations do not violate the standard for that pollutant in that area. A "nonattainment" designation indicates that a pollutant concentration violated the standard at least once. Of the criteria pollutants, the FRAQMD is in nonattainment for state ozone and state PM_{10} standards. The project site is located within an area of the FRAQMD classified as attainment for all federal NAAQS. (CARB 2020; FRAQMD 2016)

CRITERIA AIR POLLUTANTS

The criteria pollutants of concern in the Sacramento Valley Air Basin are ozone and particulates (dust). Ozone is not emitted directly into the environment, but is generated from complex chemical reactions between reactive organic gases (ROG), or non-methane hydrocarbons, and oxides of nitrogen (NO_X) that occur in the presence of sunlight. Ozone exposure causes eye irritation and damage to lung tissue in humans. Ozone also harms vegetation, reduces crop yields, and accelerates deterioration of paints, finishes, rubber products, plastics, and fabrics. Research also shows that children exposed to unhealthful levels of ozone suffer decreased lung function growth and increased asthma.

PM_{10}, or inhalable particulate matter, is a complex mixture of primary or directly emitted particles, and secondary particles or aerosol droplets formed in the atmosphere by precursor chemicals. The main sources of fugitive dust are unpaved roads, paved roads, and construction. Additional sources of PM_{10} include fires, industrial processes, mobile sources, fuel combustion, agriculture, miscellaneous sources, and solvents. Health studies link particulate pollution to sudden death in infants as well as adults with heart and lung ailments, shortening lives by years. Exposure to airborne particles also aggravates respiratory illnesses like asthma, bronchitis, emphysema, and pneumonia.

$PM_{2.5}$ is atmospheric particulate matter having a particle size less than 2.5 microns (μm) in diameter. These particles are so small they can be detected only with an electron microscope. Sources of fine particles include all types of combustion, including motor vehicles, power plants, residential wood burning, forest fires, agricultural burning, and some industrial processes. These small particles can be inhaled into the lungs and have the potential to cause health-related impacts in sensitive persons.

FRAQMD RULES AND REGULATIONS

All projects are subject to FRAQMD rules in effect at the time of construction. A complete listing of current rules is available at www.fraqmd.org. Specific rules that may relate to construction activities or building design may include, but are not limited to:

Regulation IV: Stationary Emission Sources Permit System and Registration. Any project that includes the use of equipment capable of releasing emissions to the atmosphere may require permit(s) from FRAQMD prior to equipment operation. The applicant, developer, or operator of a project that includes an emergency generator, boiler, or internal combustion engine should contact the FRAQMD early to determine if a permit is required, and to begin the permit application process. Portable construction equipment (e.g., generators, compressors, pile drivers, lighting equipment, etc.) with an internal combustion engine over 50 horsepower are required to have a FRAQMD permit or a California Air Resources Board portable equipment registration. Other general types of uses that require a permit include, but are not limited to fumigation chambers, gasoline tanks and dispensing, spray booths, and operations that generate airborne particulate emissions.

Rule 3.0: Visible Emissions. A person shall not discharge into the atmosphere from any single source of emissions whatsoever, any air contaminants for a period or periods aggregating more than three minutes in any one hour which is as dark or darker in shade as that designated as No. 2 on the Ringleman Chart.

Rule 3.15: Architectural Coatings. The developer or contractor is required to use coatings that comply with the volatile organic compound content limits specified in the rule.

Rule 3.16: Fugitive Dust. The developer or contractor is required to control dust emissions from earth moving activities, storage or any other construction activity to prevent airborne dust from leaving the project site.

Rule 7.10: Indirect Source Fee. An applicant for a building permit shall pay fees to the FRAQMD based on number of units (residential) or square footage of the building and associated parking (commercial and industrial).

SIGNIFICANCE THRESHOLDS

The FRAQMD has established thresholds for certain criteria pollutants for determining whether a project would have a significant air quality impact. Construction and operational emissions are calculated separately. The FRAQMD significance thresholds are presented in Table 5.

Table 5 FRAQMD Significance Thresholds – Criteria Pollutants

Project Phase	Threshold of Significance			
	Reactive Organic Gases (ROG)	Nitrogen Oxides (NO_X)	PM_{10}	$PM_{2.5}$
Construction	25 lbs/day*	25 lbs/day*	80 lbs/day	Not established
Operational	25 lbs/day	25 lbs/day	80 lbs/day	Not established

Notes: * NOx and ROG Construction emissions may be averaged over the life of the project, but may not exceed 4.5 tons/year.
Source: *Feather River Air Quality Management District "A Technical Guide to Assess the Air Quality Impact of Land Use Projects Under the California Environmental Quality Act" 2010.*

ENVIRONMENTAL EVALUATION

Issue Area CEQA Appendix G Question	Project Component				Discussion
	Water Plant	WWTP	Pipelines	Pump Stations	
	Applicable to Issue Area?				
III.a	✓	✓	✓	✓	All components of the project would result in emissions during the construction phase. There would be limited operational emissions.
III.b	✓	✓	✓	✓	
III.c	✓	✓	✓	✓	
III.d	✓	✓	✓	✓	

Question (a) (b) Conflict with air quality plan; Net increase of criteria pollutant: Less-than-significant Impact with Mitigation. As stated above in the discussion of the regulatory environment, for nonattainment criteria pollutants, the FRAQMD has attainment plans in place that identify strategies to bring regional emissions into compliance with federal and state air quality standards. The policies and provisions of the FRAQMD and the 2030 Yuba County General Plan control air quality impacts from the proposed project. The proposed project would result in the installation of backbone infrastructure, and would not conflict with the land use designations of the area of the project set forth by the 2030 Yuba County General Plan. Thus, the proposed

infrastructure improvement project would be consistent with the land use assumptions used by the FRAQMD in drafting the air quality attainment plans.

As stated above, the proposed project would be subject to FRAQMD Rules and Regulations. The proposed emergency generators at the water plant and the pump and lift stations would be subject to stationary source permit requirements. To ensure project compliance with applicable FRAQMD Rules and Regulations, the following mitigation measure would be required:

Mitigation Measure AQ-1

A. Prior to construction, OPUD or its contractor shall obtain and implement a FRAQMD Dust Control Plan or Construction Notification form in compliance with Rule 3.16 Fugitive Dust.
B. OPUD or its contractor shall obtain and implement an Authority to Construct (ATC) and Permit to Operate (PTO) for the proposed emergency generators above 50 horsepower in accordance with Regulation IV: Stationary Emission Sources Permit System and Registration.
C. OPUD or its contractor additionally shall implement all applicable measures and requirements of FRAQMD Rules and Regulations as determined by the FRAQMD. Additional applicable FRAQMD Rules and Regulations may include: Rule 3.0: Visible Emissions, Rule 3:15: Architectural Coatings, and Rule 7:10: Indirect Source Fee.

Implementation of Mitigation Measure AQ-1 would require completion of the ATC/PTO for the proposed project emergency generators and compliance with applicable Rules and Regulations of the FRAQMD as described above would ensure the proposed project would not conflict with or obstruct implementation of any SVAB attainment plan or the SIP. Therefore, a less-than-significant impact would result, and no additional mitigation would be required.

CONSTRUCTION-RELATED AIR POLLUTANT EMISSIONS

Implementation of the proposed project would result in short-term (construction) air pollutant emissions, including ROG, CO, SO_2, NO_X, and fugitive dust. The individual components of construction emissions include employee trips, exhaust emissions from construction equipment, and fugitive dust emissions. Emission levels for these activities would vary depending on the number and types of equipment used, duration of use, operation schedules, and the number of construction workers. The project includes installation of approximately 26.8 miles of wastewater and water pipeline, construction of eight (8) pump and lift stations along the pipeline route, wastewater treatment plant improvements, including enlarging an existing emergency storage basin, and a new water plant. In addition, emergency back-up generators would be installed at each pump and lift station and the water plant.

Construction-related emissions were estimated using the Sacramento Metropolitan Air Quality Management District (SMAQMD) Roadway Construction Emissions Model (Version 9.0) for installation of proposed pipeline and the California Emissions Estimator Model (CalEEMod) Version 2020.4.0 for construction of the proposed pump and lift stations, the wastewater treatment plant improvements, and the new water plant (see Appendix C). This analysis conservatively assumes construction of several project components could occur at the same time over the course of several years, with construction beginning in early 2024. The maximum daily construction emissions from the Roadway Model and CalEEMod for overlapping construction phases were summed in

order to present the most conservative analysis. The results were compared to the standards of significance discussed above in order to determine the associated level of impact. All assumptions used to complete the modeling are included in Appendix A. A summary of estimated construction-related emissions of ROG, NO_X, and PM_{10} in maximum pounds per day and tons per year for the project is shown in Table 6 below, based on anticipated project phasing. To determine whether the project would result in significant air quality impacts, FRAQMD guidelines identify thresholds of significance for certain criteria air pollutants, as set forth in Table 5 above. Since construction would span several years, this analysis uses 4.5 tons/year as the threshold for construction-related ROG and NOx emissions, and 80 pounds/day for PM_{10} emissions.

Table 6 Estimated Unmitigated Construction-Related Criteria Pollutant Emissions

Construction Phase	Maximum Daily Emissions (pounds/day)			Annual Emissions (tons/year)	
	ROG	**NO_X**	**PM_{10}**	**ROG***	**NO_X***
Phase I (2024)	12.27	**115.64**	26.14	1.17	**10.05**
Significance Threshold	25 lbs/day	25 lbs/day	80 lbs/day	4.5 tons/yr	4.5 tons/yr
Criterion Exceeded?	NO	**See Note***	NO	NO	**YES**
Phase II (2025)	52.65	101.04	6.75	1.43	**8.51**
Significance Threshold	25 lbs/day	25 lbs/day	80 lbs/day	4.5 tons/yr	4.5 tons/yr
Criterion Exceeded?	**See Note***	**See Note***	NO	NO	**YES**
Phase III (2026)	**159.73**	**169.74**	44.34	2.05	**10.41**
Significance Threshold	25 lbs/day	25 lbs/day	80 lbs/day	4.5 tons/yr	4.5 tons/yr
Criterion Exceeded?	**See Note***	**See Note***	NO	NO	**YES**
Phase IV (2027)	**47.52**	**32.13**	1.35	0.15	0.16
Significance Threshold	25 lbs/day	25 lbs/day	80 lbs/day	4.5 tons/yr	4.5 tons/yr
Criterion Exceeded?	**See Note***	**See Note***	NO	NO	NO

Notes: Calculations completed in February 2023.
NOx = nitrogen oxide, PM_{10} = particulate matter less than 10 microns in diameter, ROG = reactive organic gases
* The significance threshold of 4.5 tons/year may be used for NOx and ROG construction emissions that are averaged over the life of the project.
Source: Planning Partners 2023. FRAQMD 2010.

Based on construction modeling, ROG and NOx emissions would be above maximum daily FRAQMD significance thresholds in most construction years. However, of those exceedances, only NO_x emissions would exceed annual FRAQMD significance thresholds of 4.5 tons/year in 2024, 2025, and 2026. PM_{10} emissions is not anticipated to exceed the daily FRAQMD significance threshold in any construction year.

Because construction-related NO_x emissions would exceed FRAQMD emissions significance thresholds, implementation of the proposed project would have a significant impact related to air quality. The following mitigation would be required:

Mitigation Measure AQ-2

OPUD will implement, or its construction contractors will implement, the following measures as established by the Standard Construction Mitigation Measures provided in the FRAQMD's Indirect Source Review Guidelines (2010) and FRAQMD Construction Phase Mitigation Measures (FRAQMD 2016) in order to reduce emissions during construction.

A. Develop and submit a fugitive dust control plan to minimize fugitive dust emissions during project construction to FRAQMD for approval.
B. Construction equipment exhaust emissions shall not exceed FRAQMD Regulation Ill, Rule 3.0, Visible Emissions limitations (40 percent opacity or Ringelmann 2.0).
C. The contractor shall be responsible to ensure that all construction equipment is properly tuned and maintained prior to and for the duration of on-site operation.
D. Limit idling time to five minutes
E. Utilize existing power sources (e.g., line power) or clean fuel generators rather than temporary power generators.
F. Develop a traffic plan to minimize traffic flow interference from construction activities. The plan may include advance public notice of routing, use of public transportation, and satellite parking areas with a shuttle service. Schedule operations affecting traffic for off-peak hours. Minimize obstruction of through-traffic lanes. Provide a flag person to guide traffic properly and ensure safety at construction sites.
G. Portable engines and portable engine-driven equipment units used at the project work site, with the exception of on-road and off-road motor vehicles, may require California Air Resources Board (CARB) Portable Equipment Registration with the State or a local district permit. The owner/operator shall be responsible for arranging appropriate consultations with the CARB or FRAQMD to determine registration and permitting requirements prior to equipment operation at the site.
H. All grading operations on a project should be suspended when winds exceed 20 miles per hour or when winds carry dust beyond the property line despite implementation of all feasible dust control measures.
I. Work areas shall be watered or treated with Dust Suppressants as necessary to prevent fugitive dust violations.
J. An operational water truck should be available at all times. Apply water to control dust as needed to prevent visible emissions violations and off-site dust impacts. Travel time to water sources should be considered and additional trucks used if needed.
K. On-site dirt piles or other stockpiled material should be covered, wind breaks installed, and water and/or soil stabilizers employed to reduce wind-blown dust emissions. Incorporate the use of approved non-toxic soil stabilizers according to manufacturer's specifications to all inactive construction areas.
L. All transfer processes involving a free fall of soil or other particulate matter shall be operated in such a manner as to minimize the free fall distance and fugitive dust emissions.
M. Apply approved chemical soil stabilizers according to the manufacturers' specifications, to all- inactive construction areas (previously graded areas that remain inactive for 96 hours) including unpaved roads and employee/equipment parking areas.
N. To prevent track-out, wheel washers should be installed where project vehicles and/or equipment exit onto paved streets from unpaved roads. Vehicles and/or equipment shall be washed prior to each trip. Alternatively, a gravel bed may be installed as appropriate at vehicle/equipment site exit points to effectively remove soil buildup on tires and tracks to prevent/diminish track-out.
O. Paved streets shall be swept frequently (water sweeper with reclaimed water recommended; wet broom) if soil material has been carried onto adjacent paved, public thoroughfares from the project site.
P. Provide temporary traffic control as needed during all phases of construction to improve traffic flow, as deemed appropriate by the Department of Public Works and/or Caltrans and to reduce vehicle dust emissions.

Q. Reduce traffic speeds on all unpaved surfaces to 15 miles per hour or less and reduce unnecessary vehicle traffic by restricting access. Provide appropriate training, on-site enforcement, and signage.
R. Reestablish ground cover on the construction site as soon as possible and prior to final occupancy, through seeding and watering.

Mitigation Measure AQ-3

OPUD and its construction contractors shall implement the following measures to reduce, track, and offset construction-related project emissions, consistent with established FRAQMD Construction Phase Mitigation Measures (FRAQMD 2016).

A. Prior to beginning construction activities, OPUD shall assemble a comprehensive inventory list (i.e., make, model, engine year, horsepower, emission rates) of all heavy-duty off-road (portable and mobile) equipment (50 horsepower and greater) that will be used an aggregate of 40 or more hours for the construction project.
B. OPUD and its construction contractors shall provide a plan for approval by FRAQMD demonstrating that the heavy-duty (equal to or greater than 50 horsepower) off-road equipment to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 5 percent ROG reduction, 20 percent NOx reduction and 45 percent particulate reduction compared to the most recent CARB fleet average at time of construction. A Construction Mitigation Calculator (MS Excel) may be downloaded from the SMAQMD website to perform the fleet average evaluation http://www.airquality.org/ceqa/index.shtml. Acceptable options for reducing emissions may include use of late model engines (Tier 4), CARB Approved low-emission diesel products, alternative fuels, engine retrofit technology (Carl Moyer Guidelines), after-treatment products, voluntary off-site mitigation projects, provide funds for air district off-site mitigation projects, and/or other options as they become available. The FRAQMD should be contacted to discuss alternative measures.

   The results of the Construction Mitigation Calculator shall be submitted and approved by the FRAQMD prior to beginning work. OPUD and its construction contractors shall provide a monthly summary of heavy-duty off-road equipment usage to the FRAQMD throughout the construction of the project.

C. OPUD may also contribute to the FRAQMD's Off-Site Mitigation Program to reduce project emissions to less than significant. OPUD shall compile a list of all construction emission sources and consult with the FRAQMD staff to implement this mitigation measure. The project contractors shall track emissions generated from equipment and vehicles throughout construction of the project. If determined necessary by the FRAQMD and before construction activities begin, OPUD shall pay a deposit to FRAQMD for contribution to the FRAQMD Off-site Mitigation Fund. This deposit will be held by FRAQMD and applied toward the final off-site mitigation amount to be paid after project construction is complete. Total construction emissions shall be calculated at the end of construction activities. Using these calculations, OPUD shall make a final payment to the FRAQMD Off-Site Mitigation Fund, if necessary, to further offset construction pollutant emissions that exceeded FRAQMD thresholds. (*Personal communications* with Sondra Spaethe, FRAQMD 2023)

Implementation of Mitigation Measure AQ-3(b), which requires the use of higher-tier off-road equipment that would result in a project wide fleet-average 20 percent NOx reduction, would substantially reduce the emissions of NO_X, as presented in Table 7.

Table 7 Estimated Mitigated Construction-Related Criteria Pollutant Emissions

Construction Phase	Annual Emissions (tons/year)
	NO_X*
Phase I (2024)	**10.05**
Significance Threshold	4.5 tons/yr
Criterion Exceeded?	**YES**
Mitigation: 20 percent NOx Reduction *	**8.04**
Phase II (2025)	**8.51**
Significance Threshold	4.5 tons/yr
Criterion Exceeded?	**YES**
Mitigation: 20 percent NOx Reduction *	**6.81**
Phase III (2026)	**10.41**
Significance Threshold	4.5 tons/yr
Criterion Exceeded?	**YES**
Mitigation: 20 percent NOx Reduction*	**8.33**

Notes: Calculations completed in February 2023.
NOx = nitrogen oxide, PM_{10} = particulate matter less than 10 microns in diameter, ROG = reactive organic gases
* The significance threshold of 4.5 tons/year is used for construction NOx. As required by FRAQMD Construction Phase Mitigation Measures (FRAQMD 2016), a project wide fleet-average 20 percent NOx reduction would be required.
Source: Planning Partners 2023. FRAQMD 2010.

However, as shown in the table, even with implementation of Mitigation Measure AQ-2(b), emissions of NO_X may not be reduced to below the applicable FRAQMD threshold of significance. Following completion of the Construction Mitigation Calculator and reporting of heavy-duty off-road equipment usage to the FRAQMD throughout the construction of the project, if it is determined that actual calculated emissions would exceed significance thresholds, OPUD would be required to contribute to the FRAQMD Off-site Mitigation Fund as set forth in Mitigation Measure AQ-2(c). Funding provided to the off-site mitigation program will be allocated to the Carl Moyer Program administered locally to obtain emission reductions in Yuba and Sutter counties. Implementation of the above construction mitigation measures would reduce criteria air pollutant emissions during construction, and this impact would be less than significant with mitigation incorporated.

OPERATIONS-RELATED EMISSIONS

Once operational, the proposed wastewater and water pipelines would not generate any air emissions. Operational emissions associated with the water plant and pump and lift stations include the regular maintenance testing of the emergency back-up generators, in addition to two employee trips per month for maintenance to the pump and lift stations, and two employee trip per month for maintenance at the water plant. There would be no substantive increase in operational emissions at the WWTP with the proposed improvements. Operational emissions were estimated with CalEEMod. All assumptions used to complete the modeling are included in Appendix A. A

summary of estimated operations-related emissions of ROG, NO_X, and PM_{10} in maximum pounds per day for the project is shown in Table 8 below, and compared to the FRAQMD standards of significance above to determine the level of impact.

Table 8 Estimated Operational-Related Criteria Pollutant Emissions

Project Component	ROG (pounds/day)	NOx (pounds/day)	Total PM_{10} (pounds/day)
Total Max Emissions	5.09	6.72	0.31
AQMD Threshold	25 lbs/day	25 lbs/day	80 lbs/day
Exceed Threshold?	NO	NO	NO

Notes: Calculations completed in February 2023.
NOx = nitrogen oxide, PM_{10} = particulate matter less than 10 microns in diameter, ROG = reactive organic gases
Source: Planning Partners 2023. FRAQMD 2010.

Based on the low-level of estimated operational emissions shown in Table 8, project emissions of criteria pollutants are not expected to exceed FRAQMD significance thresholds of 25 pounds/day of NO_X, 25 pounds/day ROG, and 80 pounds/day of PM_{10}. This would be a less-than-significant impact, and no mitigation would be required.

SUMMARY

Because project construction and operation emissions of criteria pollutants are not expected to exceed FRAQMD significance thresholds with implementation of mitigation measures, and the proposed project would comply with applicable FRAQMD Rules and Regulations, the project would not emit air pollutants that would result in a cumulatively considerable net increase in any criteria pollutant. A less-than-significant impact would result, and no additional mitigation would be required.

Questions (c) and (d) Expose sensitive receptors to substantial pollutant concentrations / Result in other emissions: Less-than-significant Impact. Sensitive receptors are defined as areas where young children, chronically ill individuals, the elderly, or people who are more sensitive than the general population reside. Existing land uses immediately surrounding the SSO Reduction Measures and WWTP modifications consist primarily of single family residences on Olivehurst Avenue and Mary Avenue, and a mixture of commercial, and single-family and multi-family residences adjacent to McGowan Parkway. There are scattered residences approximately 0.15 miles to the northeast of the WWTP. Additional scattered residences are located along the proposed pipeline alignments on Rancho Road, north of McGowan Parkway and Olive Avenue.

During construction, some odors and hazardous pollutants could result from vehicles and equipment using diesel fuels. Construction vehicles would be required to limit idling time compliant with the ARB and FRAQMD guidelines. Cancer risk associated with diesel exhaust exposure is typically associated with chronic exposure. Because the level of overall emissions would be low, and the duration of emissions would be temporary, and most construction activities would not occur in the vicinity of sensitive receptors, or would occur intermittently in the vicinity of sensitive receptors, cancer risk and odors from diesel exhaust during construction would be considered less than significant.

Operational-related emissions of toxic air contaminants are typically associated with stationary diesel engines or land uses that involve heavy truck traffic or idling. The proposed sewer and water pipeline would not generate emissions during operations. The proposed emergency generators at the water plant and the pump and lift stations would be a source of toxic air emissions from project operations. However, as described above, generator use would be limited to maintenance testing or during emergency use, and would be regulated by FRAQMD permit conditions. Since the proposed generators would be used intermittently, and would be subject to FRAQMD permit conditions, the proposed project is not anticipated to result in the exposure of nearby sensitive receptors to substantial concentrations of toxic air contaminants during project operations.

Further, no feature of the proposed improvements would result in other emissions, such as those leading to odors, that would adversely affect a substantial number of people. While the proposed project includes improvements to the existing WWTP, and sewer pipeline with associated pump and lift stations to transport wastewater, odor control systems at the proposed pump and lift stations would minimize the potential for foul air at these locations.

Because no substantial levels of air pollutant emissions would occur during construction or operation activities, the proposed project would not expose sensitive receptors to substantial air pollutant concentrations or create emissions leading to odors. This would be a less-than-significant impact, and no mitigation would be required.

NATURALLY OCCURRING ASBESTOS

Naturally occurring asbestos is not a potential concern in the project area. For more information, see Section IX, *Hazards and Hazardous Materials*.

CUMULATIVE IMPACTS

Air quality in the region does not meet State of California standards. Construction and operation of projects accommodated under regional plans could have a long-term impact on a region's emission profile and ability to attain and maintain NAAQS and CAAQS. The cumulative effects from short- and long-term criteria pollutants generated from the proposed 2030 General Plan, combined with related projects, creates a significant cumulative impact.

Construction-related and operational criteria air pollutant emissions associated with General Plan buildout would exceed FRAQMD significance thresholds. Therefore, the 2030 General Plan would have a cumulatively considerable contribution to air pollutants in the region.

Toxic air contaminants are considered in land use planning in association with sensitive land uses. Projects and plans throughout the region would contribute roadway and railway traffic that could occur near sensitive receptors, resulting in a significant cumulative impact. The County considers the contribution of the 2030 General Plan to be cumulatively considerable.

The proposed South County Infrastructure Project is consistent with, and implements, the 2030 General Plan. Thus, the cumulative impacts described above include the proposed project within the scope of General Plan land uses and supporting infrastructure assessed in the 2030 General Plan Environmental Impact Report (EIR). Implementation of the South County Infrastructure Project would not result in new cumulative impacts or increase the magnitude of cumulative impacts beyond those assessed in the 2030 General Plan EIR. Additionally, the evaluation of the project's

environmental effects on air resources set forth in this chapter concludes that all identified impacts could be reduced below a level of significance with the imposition of identified mitigation. For these reasons, the proposed infrastructure project would not make a cumulatively considerable contribution to the cumulative impacts of implementing the 2030 General Plan beyond those assessed in the 2030 General Plan EIR. This would be a less-than-significant impact, and no mitigation beyond that set forth in this chapter would be required.

IV. BIOLOGICAL RESOURCES

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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 Wildlife or the U.S. Fish and Wildlife Service?		**X**		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?		**X**		
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?		**X**		
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 site?			**X**	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			**X**	
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?			**X**	

This analysis includes a review of pertinent literature, a review of regulatory requirements, results of reconnaissance field surveys, and a preliminary analysis of general impacts of project implementation on biological resources. The evaluation is based on and summarizes the *Biological Technical Report, Olivehurst Public Utility District South County Infrastructure Project* (Padre 2023a), prepared by Padre Associates, Inc. (Padre) (February 2023), included as Appendix D of this Initial Study.

Padre evaluated the potential biological resource impacts of the proposed South County Infrastructure Project through a review of available data and field surveys. Prior to the field surveys, Padre reviewed available project information, county soil survey maps, topographic maps, and other environmental documents. The California Natural Diversity Database (CNDDB) was queried for records of special-status species reported within the Olivehurst and Wheatland, California quadrangles, and the surrounding seven quadrangles (California Department of Fish and Wildlife [CDFW] 2022). A list of federally listed Threatened and Endangered species was obtained from the U.S. Fish and Wildlife Service (USFWS) (USFWS 2022a). An unofficial species list was obtained from the National Marine Fisheries Service (NMFS) for the two quadrangles within which the project occurs (NMFS 2022). The federal species lists and CNDDB query results are included in the Biological Technical Report (see Appendix D). Special-status taxa that are known to exist or have the potential to exist on the project site were also identified through a review of relevant literature (California Native Plant Society [CNPS] 2022; Zeiner et al. 1988; 1990a, b). A query of the National Wetland Inventory (NWI) was reviewed for information regarding mapped waters and wetlands in the project area (USFWS 2022b). The results of the literature review were used to identify known

occurrences of special-status plant and animal species in the project vicinity, and to identify potentially sensitive and regulated habitat.

Reconnaissance level field surveys were conducted by Padre biologists from February 15 to 17, 2022 to assess biological resources, and to determine the likelihood of occurrence for special-status species or sensitive and regulated habitats on the project site. Follow-up surveys were conducted in June 2022 for the purposes of detecting elderberry shrubs during the blooming season. Additional follow-up surveys were conducted on various aspects of the project in August and December 2022 and January 2023 to resurvey areas due to changes in the project design, and to review the depressional features along Rancho Road during the wet season to confirm areas of inundation.

Detection methods included direct observation with binoculars; examination and identification of tracks, scats, burrows/diggings, and carcasses/skeletal remains; and identification of vocalizations (calls and songs). No trapping or netting was performed during surveys. Plants not identified in the field were collected and returned to the lab for identification using standard taxonomic references (Baldwin 2012). Prior to the field surveys, the CNDDB query was reviewed to identify occurrences of special-status plant and animal species in the project vicinity. During the field surveys, vegetative cover types and significant habitat features, such as wetlands, potential nest trees, and potential dens or burrow clusters, were noted and mapped for avoidance to the extent feasible during project design and planning. Lists of plants and wildlife observed during surveys were compiled and are included in Appendix D.

It should be noted that some portions of the study area are situated on private property that was inaccessible during the field surveys, including the Horizontal Directional Drilling (HDD) workspace adjacent to Rosser Road. Reconnaissance surveys for this location were conducted using binoculars from the fence line, and aerial imagery. Aquatic resource features were generally mapped based on surface indicators; an aquatic resource delineation was not performed.

ENVIRONMENTAL SETTING

The majority of the study area consists of lands within developed urban areas, disturbed habitat along roadway shoulders or in vacant lots, and land within or adjacent to agricultural fields. See Appendix D, *Biological Technical Report*, Figures 2A-2T. Wetlands and riparian cover types occur along the waterways at the trenchless crossing locations. The agricultural fields in the area are primarily used to produce rice and other grain crops. Disturbed areas and road shoulders that had vegetation present support annual grassland and ruderal cover types. Proposed pipeline alignments are limited to developed lands within the paved roadway and disturbed shoulder with minimal vegetation present. Workspaces associated with HDD crossings are within natural and undeveloped lands or agricultural lands. Pump stations and lift stations are within developed and disturbed lands, vacant lots, natural and undeveloped lands, or agricultural lands.

There are several natural drainage crossings throughout the pipeline alignments. These include crossings of Hutchinson Creek, Reeds Creek, Kimball Creek, and Virginia Creek. At these crossings, the vegetation communities observed were a mix of natural riparian communities, emergent wetland vegetation, and annual grassland cover types. Dominant species varied from crossing to crossing. Kimball Creek supported predominantly emergent wetland vegetation with little or no riparian corridor. Hutchinson Creek and Reeds Creek supported a riparian corridor. Virginia Creek is a channelized canal that supports little to no vegetation.

At multiple locations along the pipeline alignment, roadside ditches and depressions are present that support a range of hydrologic characteristics that affect the types of vegetation that grow. Ditches with prolonged or perennial inundation supported wetland plant species. The roadside ditches with a shorter hydroperiod supported more facultative wetland species or were barren of vegetation. Many of these ditches supported algal matting or biotic crust on the ground's surface, an indicator of hydrology and inundation during the wet season.

WATERS AND WETLANDS

The project sites were examined for evidence of regulated habitats, such as waters and wetlands, under regulatory authority of the U.S. Army Corps of Engineers (Corps) under Section 404 of the Clean Water Act. The NWI map of the study area was reviewed to assist in the identification of waters and wetlands on the site (USFWS, 2022b).

There are several riverine features identified on the NWI map within the project area. These include Hutchinson Creek, Reeds Creek, Kimball Creek, and Virginia Creek. In addition to the natural riparian crossings, NWI identifies several man-made features including stock ponds, irrigation canals, and the artificially flooded portions of the Olivehurst Public Utility District (OPUD) Wastewater Treatment Plant (WWTP). In addition to the features mapped on NWI, there were many roadside ditches and depressions that had evidence of wetland vegetation and hydrology. The potential wetland areas were defined by the presence of hydrophytic vegetation and supported a combination of facultative (FAC), facultative-wetland (FACW), and obligate wetland (OBL) plant species. In addition, evidence of hydrology was commonly noted as in the form of algal matting and saturated soil. For detailed information regarding these features, refer to Appendix D of this Initial Study.

The South County Infrastructure Project is designed to avoid impacts to drainage crossings by using trenchless methods at all major waterway crossings. Trenchless methods include HDD crossings at some locations, and pipe ramming or auger boring methods in the roadway at other locations. At these trenchless crossing locations, temporary impact footprints will be sited outside of the riparian community and/or adjacent wetlands. In several cases, culverted crossings may be trench-installed within the paved roadway and beneath the existing shallow culverts without disturbance to the culverts or the waterway.

In addition to the waterway crossings, there are multiple roadside ditches and depressions that support a range of hydrologic characteristics. Roadside ditches that have been constructed for drainage are prevalent along much of the pipeline alignments in roadways. These features range from unvegetated roadside ditches or dry roadside ditches supporting a mix of upland or facultative wetland grasses to wet roadside ditches supporting emergent wetland vegetation. In addition, roadside depressions occur, primarily along Rancho Road, and often in the low lying area between the roadway and the adjacent railroad tracks. Many of these depressions have indicators of hydrology and inundation during the wet season, including algal mat or biotic crust formation. Some of these depressions support wetland plant species. Because of their proximity to the road, these areas often have deep tire ruts from vehicular use during the wet season and are highly disturbed wet depressions.

WILDLIFE

Wildlife observed at the project site were characteristic of the region and the time of year that surveys were conducted. Species observed during the survey are listed in Appendix D of this Initial Study. The vegetation communities within and surrounding the study area provide habitat for resident and migratory wildlife species. The composition, density, distribution, and physical characteristics of vegetative communities determine the diversity and abundance of wildlife species residing in the project area.

A large portion of the study area is in active agricultural production or is surrounded by urban development that limits use by wildlife. However, the waterways, riparian corridors, and wetlands provide forage and cover for a variety of resident and migratory wildlife species. In addition, certain types of agricultural fields, such as rice, can provide wildlife habitat. Surveys were conducted during the non-nesting season; therefore, many species observed are non-resident migratory species that would not be present in the project area during the spring and summer breeding season.

SPECIAL-STATUS PLANTS, AND SPECIAL-STATUS WILDLIFE

A list of special-status plant and animal species that historically occur in the vicinity of the project site was compiled using the resources discussed above. The species identified from these data sources were further assessed for their potential to occur within the project site based upon previously documented occurrences, their habitat requirements, and the quality and extent of any available habitat within the project sites. Based on this initial review, 2 special-status plants and 12 special-status wildlife species have the potential to occur within the project site. See Appendix D, Table 5 and Section 4.7, for a complete list of special-status species potentially occurring in the vicinity of the proposed project site, including an analysis of the probability of occurrence on the site.

A number of special-status species may occur on or adjacent to the proposed pipeline alignments and other project features. These include: rare plants, vernal pool branchiopods (VPB) (vernal pool fairy and tadpole shrimp), valley elderberry longhorn beetle, giant garter snake, western pond turtle, cooper's hawk, tricolored blackbird, burrowing owl, Swainson's hawk, Northern harrier, white-tailed kite, and song sparrow (Modesto population).

WILDLIFE MIGRATION CORRIDORS

Wildlife migration corridors are generally defined as connections between fragmented habitat patches that allow for physical and genetic exchange between otherwise isolated wildlife populations. Migration corridors may be local, such as those between foraging and nesting or denning areas, or they may be regional in extent. Migration corridors are not unidirectional access routes; however, reference is usually made to source and receiver areas in discussions of wildlife movement networks. "Habitat linkages" are migration corridors that contain contiguous strips of native vegetation between source and receiver areas. Habitat linkages provide cover and forage sufficient for temporary inhabitation by a variety of ground-dwelling animal species.

Within the study area there are several natural drainages and riparian corridors that provide suitable migratory corridors for an array of species. These drainages and riparian areas include Reeds Creek, Hutchinson Creek, Kimball Creek, and Virginia Creek, and other smaller unnamed waterways. These creeks help to provide access for wildlife to move from foothill habitat areas to valley habitat areas,

including the Feather River, Sutter National Wildlife Refuge, and other wildlife areas. At the drainage crossings within the study area, the vegetation communities observed were a mix of natural riparian communities, emergent wetland vegetation, and annual grassland cover types. Signs of mammals moving through the riparian corridors were observed for several species, including raccoon, coyote, and mink.

The project is designed to avoid impacts to the drainage crossings and associated riparian corridors using trenchless installation methods for pipeline crossings at these locations. Impacts to wildlife corridors will be limited to indirect temporary disturbance during construction, primarily during daytime hours.

SENSITIVE NATURAL COMMUNITIES

There are no identified sensitive natural communities in areas that would be affected by the proposed South County Infrastructure Project.

REGULATORY SETTING

Biological resources within the project area are managed and regulated by the following federal and State entities and regulatory programs:

Federal	State of California
• Federal Endangered Species Act • Magnuson-Stevens Fishery Conservation and Management Act • Migratory Bird Treaty Act / Bald Eagle and Golden Eagle Protection Act • Clean Water Act • Rivers and Harbors Act	• California Endangered Species Act • Fully Protected Species, Fish and Game Code Sections 3511, 4700, 5050, and 5515 • California Fish and Game Code Section 3503 • California Native Plant Protection Act • California Fish and Game Code Section 1600 • Porter-Cologne Water Quality Control Act • Clean Water Act • Oak Woodland Protection

For more information regarding the substance and effects of these regulations and programs, refer to Section 5 of Appendix D.

The Yuba County 2030 General Plan contains goals and policies with respect to biological resource issues. The project site and pipeline alignments are within the County of Yuba, and are therefore within the jurisdiction of this General Plan. The applicable goals and policies are found under the Natural Resources Element of the General Plan, and are outlined below (County of Yuba 2011a).

BIOLOGICAL RESOURCES

Goal: Protect and restore habitat for special-status species that have the potential to occur in Yuba County.

Implementing Policies

- Policy NR-5.1: New developments that could adversely affect special-status species habitat shall conduct a biological resources assessment and identify design solutions that avoid such adverse effects. If, after examining all feasible means to avoid impacts to special-status species habitat through project design, adverse effects cannot be avoided, then impacts shall be mitigated in accordance with guidance from the appropriate state or federal agency charged with the protection of the subject species, including pre-construction surveys conducted according to applicable standards and protocols, where necessary.
- Policy NR-5.2: The County will coordinate its environmental review and mitigation requirements with the Yuba-Sutter NCCP/HCP, once adopted.
- Policy NR-5.3: The County will support the continued development and implementation of the Yuba-Sutter NCCP/HCP, once adopted.
- Policy NR-5.4: New developments shall be located and designed to preserve and incorporate existing native vegetation to the maximum extent feasible. Fire safety standards may override consideration of retaining existing vegetation in certain circumstances.
- Policy NR-5.5: The County will support cooperative restoration, development, and promotion of natural resources with the U.S. Fish and Wildlife Service, the Army Corps of Engineers, the Bureau of Reclamation, the U.S. Forest Service, and other public agencies with an interest in the Yuba County's water and wildlife assets.
- Policy NR-5.6: The County will seek funding to enhance and restore habitat along the Yuba River, in coordination with development of recreational facilities and public access.
- Policy NR-5.7: New developments and public investments near Yuba County's streams and rivers shall be designed to avoid tree removal, erosion, or other modifications that would adversely affect salmonid habitat.
- Policy NR-5.8: New private developments adjacent to riparian areas shall provide a buffer designed and maintained to preserve existing wildlife habitat; provide habitat conditions favorable to native local wildlife; restrict activities that may adversely affect wildlife habitat quality; and restore degraded habitat, where feasible.
- Policy NR-5.9: New developments shall be designed to avoid the loss of jurisdictional wetlands. If loss is unavoidable, the County will require applicants to mitigate the loss on a "no net loss" basis through a combination of avoidance, minimization, restoration, and/or constructed wetlands, in accordance with federal and state law.
- Policy NR-5.10: The County will encourage measures on agricultural lands that conserve or restore habitat.
- Policy NR-5.11: The County will support the use of mitigation fees from the Yuba-Sutter Natural Community Conservation/Habitat Conservation Plan to fund preservation and restoration elements of the County's open space strategy.
- Policy NR-5.12: Any new developments adjacent to the Spenceville Wildlife Refuge, Marysville Wildlife Area, Feather River Wildlife Area, Daugherty Hill Wildlife Area, or Starbend Fishing Access shall be buffered from wildlife areas or otherwise designed to avoid adverse direct and indirect effects on wildlife. Buffers related to firearm use, if necessary, should occur within the public wildlife area.
- Policy NR-5.13: New developments that could adversely affect wildlife movement corridors shall conduct a biological assessment and avoid placing any temporary or permanent barriers within such corridors, if they are determined to exist on-site. Avoiding barriers to wildlife movement may be accomplished at the project or community plan level.

- Policy NR-5.14: The County will discourage development that would substantially and adversely affect the designated winter and critical winter range of the Mooretown or Downieville deer herd.
- Policy NR-5.15: Roads, water lines, sewer lines, drainage facilities, and other public facilities constructed to serve unincorporated County development shall be located and designed to avoid substantial impacts to stream courses, associated riparian areas, and wetlands, to the greatest extent feasible.

TREES AND OTHER IMPORTANT VEGETATION

Goal: Preserve the County's trees and other vegetation that provide aesthetic and habitat benefits.

Implementing Policies

- Policy NR-10.1: Building placement, grading, and circulation should be planned to retain as much existing native vegetation as feasible, with a priority on preserving existing oak trees that have a diameter at breast height (dbh) of 6 inches or greater and all other trees that have a dbh of 30 inches or greater. The County's policies and standards for fire safety may override consideration of retaining existing vegetation in certain circumstances.
- Policy NR-10.2: The County will encourage the preservation of healthy, attractive native vegetation during land development. Where this is not feasible, the County will require landscaping that uses climate-appropriate plant materials.

LOCAL HABITAT CONSERVATION PLANS

No Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan has been approved within Yuba County.

ENVIRONMENTAL EVALUATION

Issue Area	Project Component				Discussion
CEQA Appendix G Question	Water Plant	WWTP	Pipelines	Pump/Lift Stations	
	Applicable to Issue Area?				
IV.a	✓	✓	✓	✓	Impacts to special status plants and wildlife
IV.b			✓	✓	Impacts at LS 23 and stream crossings
IV.c			✓	✓	Impacts at LS 23 and stream crossings
IV.d			✓		LTS impacts at stream crossings and riparian areas
IV.e					No local ordinances present
IV.f					No HCP or other conservation plans present

Effects on biological resources in natural or semi-natural areas resulting from development take the form of direct impacts, including habitat loss and fragmentation, introduction of barriers to movement and dispersion, and conversion of native communities to developed conditions. Development may also result in indirect impacts that affect the quality of habitat on the project site and in the project area. Indirect impacts include invasion of non-native plants into natural areas, noise disturbances, and declines in air and water quality. The proposed improvements associated with the South County Infrastructure Project are primarily within developed areas in the community of Olivehurst, and in developed roadways and disturbed areas in rural southern Yuba County. All of

the proposed alignments for trench-installed pipelines are within the paved roadway and disturbed shoulder, with the exception of short overland connections to permanent above-ground features (e.g., Water Plant, lift stations, and pump stations). Trenchless construction methods are proposed for large drainage crossings to avoid impacts to waterways and riparian habitat. Permanent above-ground project features are sited within upland areas and disturbed or developed areas to the extent feasible to minimize habitat loss.

Effects on biological resources in the project area will be primarily temporary, with permanent impacts limited to above-ground project features such as the Water Plant, and lift stations and pump stations. There will be temporary impacts to wildlife habitat during pipeline installation and construction of above-ground structures. General construction may temporarily alter the natural movement and behavior of wildlife in the project area. Construction may also result in indirect impacts that affect the quality of habitat in the project area.

The following analyses provide an assessment of potential impacts from the proposed project activities, and includes project-specific measures proposed by OPUD, and/or prescribed mitigation measures to reduce impacts to special-status species or other biological resources to a level of less than significant.

OVERVIEW OF POTENTIAL EFFECTS

The permanent, above-ground features associated with this project would result in the conversion of approximately 2.43 acres of existing undeveloped areas to developed lands. Construction of pump stations, lift stations and the Water Plant will occur in annual grassland, ruderal, developed, disturbed, and agricultural lands. Installation of the pipeline alignments using trench installation and bored trenchless methods will result in temporary impacts, primarily within the paved roadway and unvegetated road shoulder, that include pipeline connections to pump stations, lift stations, and the Water Plant through overland areas including annual grassland, disturbed lands, and roadside ditches and depressions that are seasonally inundated. HDD-installed highway and waterway crossings will result in temporary impacts from the HDD workspace and the pipe string staging area. Table 9 summarizes the permanent and temporary impacts associated with the project.

Table 9 South County Infrastructure Project Biological Resource Impacts

Feature	Cover Type	Impact Area (Acres)
Permanent Impacts		
Pump Station 1	Annual Grassland, Ruderal (urban vacant lot)	0.19
Pump Station 26	Annual Grassland, Ruderal (urban vacant lot)	0.46
Pump Stations 21	Annual Grassland	0.24
Lift Station 22	Annual Grassland	0.10
Lift Station 23	Agricultural (rice), Roadside ditch / depression (seasonally inundated)	0.12
Pump Station 25	Disturbed land (Unpaved parking lot)	0.23
Pump Station 24	Annual Grassland	0.14
Water Plant	Disturbed land (Stockpile / staging area)	0.95
Temporary Impacts		
SR 70 HDD (McGowan Pkwy)	Developed land (paved roadway)	0.29

Table 9 South County Infrastructure Project Biological Resource Impacts

Feature	Cover Type	Impact Area (Acres)
SR 65 HDD (Olive Ave – Rancho Rd)	Annual Grassland, Wet depression (seasonally inundated)	0.95
Reeds Creek HDD (Rancho Rd)	Disturbed land (road shoulder), Roadside ditch / depression (seasonally inundated), annual grassland, agricultural	0.88
Hutchinson Creek HDD (Rancho Rd)	Annual grassland, Disturbed land (road shoulder), agricultural	1.28
SR 65 HDD (Rosser Rd – Shimer Rd)	Grazed pasture, developed land (paved road)	0.69
Kimball Creek HDD (Rancho Rd)	Annual grassland, Roadside ditch / depression (seasonally inundated)	0.90
Virginia Creek Bore (Rancho Rd)	Developed land (paved road), disturbed land (road shoulder)	0.02
Kimball Creek Bore (Forty Mile Rd)	Developed land (paved road)	0.03
Trench Installed Pipeline1	Developed land (paved road), Disturbed land (road shoulder), Annual Grassland, Roadside ditch / depression (seasonally inundated)	--

1 Total acreage not available for 32.6 miles of trench installed pipeline because trench width and depths are variable and not fully defined. Trench installed pipeline will occur primarily in existing roadways in developed and disturbed land.

Source: Padre Associates, Inc. 2023.

Temporary disturbance areas within or near sensitive areas (e.g., riparian corridors, waterways and wetlands, and suitable habitat for special-status species) will require work within designated workspace and delineation of the work areas to prevent encroachment on sensitive areas. Limited tree removal may occur in some of these work areas though the number, type, and size of trees that may need to be removed is unknown.

No mitigation is proposed for permanent or temporary impacts to developed lands, disturbed lands, and upland annual grasslands and ruderal areas. Yuba County does not have a tree ordinance that would require mitigation for the loss of individual oak trees, and no mitigation for tree removal is proposed.

Cover types that are regulated habitats or potentially suitable habitat for special-status species will be assessed below.

Question (a) Adverse effect on special-status species. Less-than-significant Impact with Mitigation.

SPECIAL STATUS PLANTS

The likelihood of occurrence of special-status plant species within project disturbance areas is limited because most impacts are within cover types not known to support special status plants. Potential for occurrence of special-status plants within suitable habitat areas is limited due to the level of disturbance in roadside ditches and depressions that provide seasonally inundated habitat. Two plant species were identified as having a moderate potential for occurrence within creeks, large ditches, or depressions that support a prolonged hydroperiod: Sanford's arrowhead (*Saggitaria sanfordii*) and Brazilian watermeal (*Wolffia brasiliensis*). The project will avoid impacts to the drainage

crossings through the use of trenchless pipeline construction methods; however, impacts to seasonally inundated ditches and depressions may provide habitat for Sanford's arrowhead, particularly in large ditch or depression features that support a prolonged hydroperiod, such as those along the southern portion of Rancho Road. Project impacts to some of these areas cannot be avoided.

Because of this, there is some potential for project-related impact to special-status plants in locations where impacts to seasonally inundated ditches and depressions could not be avoided, or where workspaces and trench-installed pipeline will occur in close proximity to these features. Construction of these features may have an impact on special-status plants. This would be a potentially significant impact. The following mitigation measures would facilitate actions to reduce potential impacts to special status plants to a less-than-significant level.

Mitigation Measure BIO-1

Pre-construction special-status species plant surveys shall be conducted by OPUD or its contractor in all impact areas that provide potentially suitable habitat for special-status plants prior to initiating project construction activities. All surveys shall be conducted in accordance with agency-approved survey protocols during the appropriate blooming period. If no special-status species are identified in protocol surveys, no additional mitigation is required. If surveys determine that special-status species occur within impact areas, Mitigation Measure BIO-2 shall apply.

Mitigation Measure BIO-2

If special-status plants are identified within project impact areas, one of the following measures shall apply:

A. If feasible, the project shall be adjusted to avoid impacts to special-status plants. If modifications can be made to avoid special-status species, the installation of protective fencing may be necessary to prevent accidental encroachment. If adjustment of construction areas or methods is not feasible, Mitigation Measure BIO-2B shall apply.

B. If there is no feasible alternative to avoid special-status plant species impacts, OPUD shall mitigate for impacts to special-status plants. A Mitigation Plan shall be prepared and implemented that provides for plant salvage, transplantation, seed collection and replanting, and/or topsoil collection and replacement as appropriate for the species identified within the project impact area. Transplantation or seed placement shall be within suitable or restored habitat after completion of construction for temporary impacts, or within off-site habitat at a mitigation site for permanent impacts. The Mitigation Plan shall include monitoring requirements to ensure successful establishment of special-status plants, that established performance criteria are achieved, and that no net loss of special-status plants has occurred after the prescribed monitoring period.

Because implementation of Mitigation Measures BIO-1 and BIO-2 would require preconstruction plant surveys; consultation with resource agencies, if necessary; avoidance measures during construction; or habitat restoration, potential impacts to rare plants would be minimized to less-than-significant levels. No additional mitigation would be required.

SPECIAL STATUS WILDLIFE SPECIES

Vernal Pool Branchiopods

Seasonally inundated wetlands, vernal pools, ditches, and depressions provide suitable habitat for VPBs, including the listed vernal pool fairy shrimp (*Branchinecta lynchi*) and vernal pool tadpole shrimp (*Lepidurus packardi*). There are two occurrences of vernal pool fairy shrimp located less than 0.5 miles from the northern portion of the project site (CNDDB 2022) that occur in seasonally inundated roadside habitat similar to wet ditch and depression habitat observed within the study area. There are no classic vernal pool landscapes within the study area, but potentially suitable habitat for VPBs occurs in seasonally inundated ditches and depressions that provide a sufficient hydroperiod primarily along Rancho Road. See Appendix D, *Biological Technical Report*, Figures 2A-2T. Due to proximity to the roadway, habitat in the project area is often highly disturbed by off-road vehicle use, trash dumping, and other urban influences, and therefore may be suboptimal for fairy shrimp occurrence; however, given proximity to other occurrences of this species in similar roadside habitat, occurrence cannot be ruled out.

Project impacts to seasonally inundated ditches and depressions may provide habitat for VPBs, particularly the vernal pool fairy shrimp. Because of this, there is some potential for project-related impacts to VPBs in locations where impacts to seasonally inundated ditches and depressions could not be avoided, or where workspaces and trench-installed pipeline will occur in close proximity to these features. Construction of these features may have an impact on VPBs.

Indirect Impacts. The trench installed pipeline within Rancho Road is proposed to be constructed in or on the shoulder of the existing paved roadway, and will not directly impact seasonally inundated ditch or depression features. Trench installation of the pipeline alignment on this road will involve construction in close proximity to potentially suitable habitat for VPBs in seasonally inundated ditches and depressions immediately adjacent to the roadway. Additionally, HDD workspace at several locations occurs immediately adjacent to potentially suitable habitat for VPBs. Indirect impacts could occur in areas where construction will be in close proximity to seasonally inundated ditch and depression features. These include the following:

- Pipe string staging area off north end of Rancho Road at the SR 65 HDD crossing
- Trench-installed pipelines in the paved roadway or disturbed road shoulder on Rancho Road
- Pipe string staging area adjacent to Shimer Road at the SR HDD crossing
- HDD workspace and pipe stating area southeast of Kimball Creek and northeast side of Rancho Road
- Bore pit locations in the paved road and disturbed road shoulder on Rancho Road at the Virginia Creek crossing.

Direct Impacts. Direct impacts may occur in areas where impacts to seasonally inundated ditch and depressions cannot be avoided, including HDD workspace areas at two of the drainage crossings and Lift Station 23. These include:

- Pipe string staging area off north end of Rancho Road at the SR 65 HDD crossing
- HDD workspace on the northwest side of the Reed Creek crossing on Rancho Road
- HDD workspace on the northwest side of the Kimball Creek crossing on Rancho Road
- Lift Station 23 and the pipeline connection to Lift Station 23.

There would be potentially significant indirect and direct impacts with implementation of the proposed South County Infrastructure Project. The following mitigation measures would facilitate actions to reduce potential impacts to special status branchiopods to a less-than-significant level.

Mitigation Measure BIO-3 (Both direct and indirect impacts.)

Section 7 Consultation with USFWS shall be conducted to analyze the direct and indirect effects on listed wildlife species and to obtain regulatory permits and authorizations for impacts to listed species and loss of habitat. Measures and requirements outlined in agency authorizations may supersede the following measures.

Mitigation Measure BIO-4 (Indirect impacts.)

Trench excavation and stockpiling for pipeline installation shall be entirely located within the paved roadway or disturbed shoulder on Rancho Road in areas where seasonally wet ditches and depressions were mapped adjacent to the roadway. Equipment staging and trench excavation in these areas will be limited to designated workspace areas in the paved roadway and shoulder. To reduce the potential for indirect impacts to seasonally inundated ditches and depressions in close proximity to construction activities, but where no direct impacts will occur, the following measures shall apply:

A. Prior to the initiation of construction, crews shall attend an environmental Awareness Training Program that will include information regarding the potential presence of listed branchiopod species and the importance of avoiding impacts to these species and their habitat.
B. All work shall be conducted during the dry season when potential habitat features on or near the proposed pipeline installation areas are dry.
C. Fencing shall be placed and maintained to delineate the approved work areas and prevent encroachment on seasonally inundated ditch and depression features. A qualified biologist shall oversee the installation of fencing. Once fencing is installed, a biologist will inspect fencing weekly to ensure its integrity and effectiveness.
D. All excavation, construction staging, and stockpiles shall be limited to paved roadways, disturbed shoulder, and approved work areas.
E. Storm water BMPs (silt fencing and straw waddles) shall be placed around construction disturbance and dirt stockpiles to reduce potential for erosion and sedimentation into potential branchiopod habitat features.
F. No application of water (e.g., dust suppression) shall occur in seasonally inundated ditch or depression features without additional measures (such as barriers and/or use of low flow water truck nozzles) in place to keep water out of potential or known VPB habitat features during the dry season.
G. Any groundwater encountered within the trench excavation shall not be discharged to areas where seasonally inundated ditch or depression features are located.

Mitigation Measure BIO-5 (Direct impacts.)

If avoidance of habitat features as described in BIO-4 is not feasible and direct impacts (temporary or permanent) will occur to seasonally inundated ditch and depression features, compliance with one of the following mitigation measures (5A or 5B) shall be required:

A. Prior to the initiation of construction, surveys conducted in accordance with USFWS protocols shall be conducted in all potentially suitable habitat to be impacted. If protocol surveys determine that the seasonally inundated ditch and depression features are not occupied by federally listed vernal pool branchiopod species, no further mitigation is required for impact to species habitat (mitigation for jurisdictional aquatic features consistent with Mitigation Measures BIO-1 and BIO-2 may still apply). If protocol surveys detect the presence of federally listed species, then the following measures shall be implemented:

    1. Prior to the initiation of construction, construction crews shall attend an Environmental Awareness Training Program that will include information regarding the potential presence of listed vernal pool branchiopod species and the importance of avoiding impacts to these species and their habitat.
    2. All work shall be conducted during the dry season when potential habitat features on or near the proposed pipeline installation areas are dry.
    3. Fencing shall be placed and maintained around any avoided (preserved) seasonally inundated ditch and depression features to prevent encroachment. A qualified biologist shall oversee the installation of fencing. Once fencing is installed, a biologist will inspect fencing weekly to ensure its integrity and effectiveness.
    4. A USFWS approved biologist shall monitor construction activities in known or potential vernal pool branchiopod habitat that results in temporary or permanent impacts.
    5. For temporary impacts that will be restored after construction, a Site Restoration Plan outlining requirements for topsoil collection, preservation, and restoration will be prepared and approved by the USFWS. Implementation of the approved Plan shall include the following requirements at minimum. Prior to excavation in locations with potential or known vernal pool branchiopod habitat, the uppermost soil layer that may contain branchiopods eggs (cysts) shall be collected, labelled, and stored under appropriate climatic conditions until construction in temporary impact areas is complete. Once construction is complete, topsoil shall be placed back in the feature from which it was collected.
    6. For permanent impacts, loss of vernal pool branchiopod habitat shall be mitigated through the use of USFWS approved mitigation credits in accordance with mitigation ratios approved by the USFWS.

B. If OPUD or its contractor chooses not to conduct protocol-level surveys, they may assume presence of listed vernal pool branchiopod species within seasonally inundated ditch and depression features that provide potentially suitable habitat. If presence of listed species is assumed, then measures BIO-5A (1) through (6) as set forth above shall apply to mitigate impacts to a less-than-significant level.

Because implementation of Mitigation Measures BIO-3 through BIO-5 would require consultation with resource agencies; preconstruction surveys, if necessary; avoidance measures during construction; habitat restoration; or purchase of mitigation credits, potential impacts to vernal pool branchiopods would be minimized to less-than-significant levels. No additional mitigation would be required.

Valley Elderberry Longhorn Beetle

Surveys during the blooming season identified four elderberry shrubs within 165 feet (VELB encroachment buffer) of project activities along Rancho Road; however, these shrubs were located east of the railroad and would not be impacted by the project or accidental encroachment. A single elderberry shrub occurs on the shoulder of Forty Mile Road and within 20 feet (VELB core area) of a proposed trench-installed pipeline within the paved roadway. This shrub was very small, though several stems were greater than one inch in diameter. The shrub is exposed to frequent disturbance within 20 feet of the canopy due to its location at the edge of pavement on Forty Mile Road. No emergence holes occur on the shrub. and this shrub is highly disjunct from riparian habitat and other elderberry shrubs. It is very unlikely that the VELB occurs, though habitat is present due to the presence of this single shrub that could be indirectly impacted.

Implementation of the project will not require removal of the shrub; however, a 20-foot protective buffer is not possible because that would extend the buffer into the paved travel lane. Incursion into the 20-foot protective buffer would be a significant impact. The following measure will ensure that the elderberry shrub is not directly impacted by the project.

Mitigation Measure BIO-6

A. Prior to the initiation of construction, implement Mitigation Measure BIO-3. Measures and requirements outlined in agency authorizations may supersede the following measures.
B. A 20-foot exclusion zone extending from the dripline of the shrub shall be maintained during construction in all directions away from the pavement. The exclusion zone will be reduced on the pavement side of the shrub to the edge of gravel roadway shoulder so that the fencing will not interfere with the roadway. Consistent with measures outlined by the USFWS to mitigate potential impacts to VELB, the following measures shall be implemented:
    1. Fence and flag the elderberry shrub to be avoided and provide a minimum setback of at least 20 feet from the dripline of the elderberry plant for ground disturbance activities (e.g., trenching) to ensure that activities will not damage or kill the elderberry shrub. Due to its location at the edge of pavement on Forty Mile Road, the 20-foot setback will be adjusted (reduced) consistent with the edge of the gravel road shoulder so that fencing does not interfere with the paved roadway.
    2. Prior to the initiation of any construction, environmental training shall brief the contractors and key employees of the need to avoid any impacts to elderberry plants, and to advise them of penalties associated with damage or destruction of the plants. The work crew shall be instructed regarding the status of the VELB and the need to protect its elderberry host plant, and possible penalties for non-compliance with avoidance and minimization measures.
    3. A qualified biologist shall monitor the work area at project-appropriate intervals to assure that all avoidance and minimization measures are implemented. The amount and duration of monitoring will depend on the timing of project activities, and shall be determined in coordination with the USFWS biologist.
    4. As much as feasible, all activities within 165 feet of the elderberry shrub will be conducted outside the flight season of the VELB (March-July).

5. No insecticides, herbicides, fertilizers, or other chemicals that might harm the VELB or its host plant shall be used within 100 feet of the elderberry plant with a stem measuring 1.0 inch or greater in diameter at ground level.
6. Mechanical vegetation removal within the dripline of the elderberry shrub shall be limited to the season when adult VELB are not active (August-February) and shall avoid damaging the elderberry.
7. Erosion control will be implemented, and the affected construction area shall be revegetated with appropriate native plants.

Because implementation of Mitigation Measures BIO-3 and BIO-6 would require consultation with resource agencies; avoidance measures during construction; and habitat restoration, potential impacts to the valley elderberry longhorn beetle would be minimized to less-than-significant levels. No additional mitigation would be required.

Giant Garter Snake

Potentially suitable habitat occurs within Kimball Creek and active rice fields in the project area based on the presence of the three habitat components necessary to support giant garter snake (GGS). The components include aquatic habitat in the summer with emergent vegetation and a prey base, an upland component near aquatic habitat for thermoregulation and summer shelter in burrows, and an upland refugia component for use as winter hibernacula (USFWS 1993). Reeds Creek may also provide potentially suitable habitat for GGS; however, the pipeline will be installed using trenchless techniques under Reeds Creek, and all project activities are set back more than 200 feet from Reeds Creek, and therefore will not impact GGS or its habitat at this location. Other suitable habitat in the study area, including agricultural ditches and rice fields along Forty Mile Road, are in areas where pipeline installation activities are limited to the paved roadway and will avoid impacts to suitable aquatic or upland habitat.

Impacts associated with the construction of Lift Station 22 adjacent to Kimball Creek will impact suitable upland habitat for GGS. Project construction associated with Lift Station 23 will also result in the loss of a small portion of suitable GGS aquatic habitat within the northwest corner of a rice field. The project will result in approximately 0.12-acre of loss of rice field for the construction of Lift Station 23 and 0.10-acre of upland grassland habitat adjacent to Kimball Creek. Because these features provide potentially suitable upland and aquatic habitat for GGS, this would be a significant impact. The following measures will ensure that the GGS would not be adversely impacted by the project.

Mitigation Measure BIO-7

Implement the following measures:

A. Prior to the initiation of construction, construction staff shall attend an Environmental Awareness Training Program that will include information regarding identification of giant gartersnake and its habitat, protection measures for the species, and procedures to follow if a giant gartersnake or unknown snake is observed.
B. Construction of Lift Station 23 will occur when the rice field is inactive and has been dry for a minimum of 15 days.
C. Construction of Lift Station 22, Lift Station 23, and the HDD installation of pipelines under Kimball Creek, including all activities within 200 feet of Kimball Creek and the rice field at Lift Station 23, shall be restricted to the period between May 1 and October 1. This is the

active period for GGS when the potential for direct mortality is reduced because GGS can actively avoid disturbance.

D. Prior to the start of the Kimball Creek HDD, construction of Lift Station 22, or the construction of Lift Station 23, a qualified biologist shall conduct a preconstruction survey for GGS at these locations prior to the initiation of disturbance. Exclusion fencing shall be installed, as directed by the qualified biologist, to isolate the workspace within 200 feet of suitable aquatic habitat and exclude snakes from the work areas. Exclusion fencing will be buried at the base to prevent snakes from moving under the fence into the construction area. Exclusion fencing shall be maintained for the duration of work in these areas and shall be routinely inspected by the qualified biologist to ensure the fencing is intact and effective. The workspace shall be inspected prior to the start of work each day to ensure that no snakes have entered the work area.
E. If a GGS is observed, the USFWS and CDFW shall be notified immediately. Construction will be suspended in the area until the snake leaves the site of its own volition.
F. All excavations within 200 feet of suitable GGS habitat shall be covered or have escape ramps installed to prevent entrapment prior to the end of work each day. These excavations shall be inspected by the qualified biologist prior to the start of work the following day.
G. Erosion control materials shall consist of tightly woven fibers and netting to prevent entanglement of reptiles and amphibians. No monofilament materials will be allowed.
H. For permanent impacts associated with construction of Lift Station 22 and Lift Station 23, loss of suitable GGS habitat shall be mitigated through the use of USFWS and CDFW approved mitigation credits or fee title acquisition with a conservation easement to protect managed marsh habitat in accordance with mitigation ratios approved by the USFWS and CDFW.

Because implementation of Mitigation Measure BIO-7 would require the implementation of avoidance measures during construction; monitoring; and consultation with resource agencies if necessary, potential impacts to the giant garter snake would be minimized to less-than-significant levels. No additional mitigation would be required.

Western Pond Turtle

The project site has potentially suitable habitat for western pond turtle at the drainage crossings and wetlands in the study area, though suitable basking habitat was limited. Suitable habitat for western pond turtle includes aquatic habitat with basking sites available for thermoregulation and nearby upland breeding habitat. Because of the proximity of the project to potential western pond turtle habitat, there is potential for impact to the western pond turtle. This would be a significant impact. Implementation of the following measure will ensure that the western pond turtle would not be adversely impacted by the project.

Mitigation Measure BIO-8

Implement the following measures:

A. A preconstruction survey for western pond turtle shall be conducted no more than 48 hours prior to the start of construction within 150 feet of the drainages or other suitable wetland habitat. If no western pond turtles are observed, no further mitigation would be necessary.
B. If a western pond turtle is observed within the project area, a qualified biologist shall relocate the individual to a suitable habitat location outside of the construction area.

C. If a pond turtle nest is identified, exclusion fencing shall be placed a minimum of 25 feet around the nest and disturbance to the area will be avoided until the hatchlings have emerged. The nest will be monitored daily by the qualified biologist to ensure nestlings emerge to a suitable habitat area safely outside the construction zone.

Because implementation of Mitigation Measure BIO-8 would require the implementation of avoidance and relocation measures during construction, potential impacts to the western pond turtle would be minimized to less-than-significant levels. No additional mitigation would be required.

Swainson's Hawk

Nest Disturbance. The state-threatened Swainson's hawk is known to nest and forage in the project vicinity and suitable nest trees occur within the study area, particularly within riparian habitat, with large trees surrounded by foraging habitat in agricultural fields and grasslands. The project site is in a region that has very high Swainson's hawk nesting activity. There are approximately 73 nesting occurrences within 10 miles of the study area. The nearest occurrence (Occ. # 1529) is from 2003 and is less than 400 feet west of the pipeline alignment on Forty Mile Road (CDFW 2022). This species was not observed during field surveys because surveys were conducted during the winter when Swainson's hawk is not present in California.

Because Swainson's hawk is a State-listed species, and there are known nesting occurrences in the vicinity of the project area, there is the potential that construction near Swainson's hawk nesting areas could disrupt breeding activities if construction occurs during the nesting season. This would be a significant impact.

Loss of Foraging Habitat: Swainson's hawks generally forage within 10 miles of their nest tree, and more commonly within five miles of their nest tree (CDFW 1994). According to the CDFW Staff Report regarding Mitigation for Impacts to Swainson's Hawks (CDFW 1994), the following vegetation types are considered small mammal and insect foraging habitat for Swainson's hawks: alfalfa; fallow fields; beet, tomato, and other low-growing row or field crops; dry-land and irrigated pasture; rice land (when not flooded); and cereal grain crops (including corn after harvest). Small disjunct parcels of habitat seldom provide foraging habitat; therefore, infill development in urbanized areas which have less than five acres of foraging habitat and are surrounded by existing urban development would not be considered foraging habitat unless within 0.25-mile of a nest tree (CDFW 1994).

Because Swainson's hawk is a State-listed species, because approximately 0.6-acre of foraging habitat would be removed with construction of Pump/Lift Stations 21 - 25, and due to the abundance of potential nesting habitat in close proximity to the pipeline alignment, this would be a potentially significant impact.

Implementation of the South County Infrastructure Project would result in the potential for nesting disturbance and the loss of foraging habitat. Compliance with the following mitigation measures would be required to avoid or reduce these potential effects.

Mitigation Measure BIO-9 (Nest disturbance.)

A. If construction or vegetation removal work occurs outside of Swainson's hawk nesting season (August 31 to Feb 1), impacts to the Swainson's hawk would be avoided. Surveys

would not be required for work conducted during that part of the year, and no further mitigation for nest disturbance would be required.

B. If project activities occur between February 1 to August 31, surveys shall be conducted by a qualified biologist for active Swainson's hawk nests. OPUD or its contractor shall conduct a protocol-level survey in conformance with the "Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley," Swainson's Hawk Technical Advisory Committee (https://www.wildlife.ca.gov/conservation/survey-protocols#377281284-birds) (May 31, 2000) hereby incorporated by reference. This protocol prescribes minimum standards for survey equipment, mode of survey, angle and distance to tree, speed, visual and audible clues, distractions, notes and observations, and timing of surveys. If the surveys show that there are no active Swainson's hawk nests within 0.25-mile of construction activities, no further mitigation for nest disturbance will be required. If active Swainson's hawk nests are identified near the project area, a 0.25-mile nest protection buffer shall be identified, and the following measures shall be required:

    1. Apply a nest protection buffer with a minimum distance of 0.25-mile from an active nest. Postpone project activities within the nest protection buffer until after the young have fledged and are no longer dependent on the nest tree. The minimum nest protection buffer may be reduced in coordination with CDFW if existing site conditions, habituation to disturbance, proposed disturbance levels, and nest concealment or barriers between the nest and activities indicate a reduced buffer would be effective.
    2. If it is not possible to postpone project activities within the minimum nest protection buffer, construction activities may proceed with CDFW approval and monitoring of the nest by a qualified raptor biologist. If the monitoring biologist observes signs of distress, they shall have the authority to stop construction work and coordinate with CDFW to establish additional protection measures to ensure avoidance of nest abandonment prior to the re-start of project activities.

C. A written report summarizing the pre-construction survey results shall be provided to CDFW within 30 days of survey completion.

Mitigation Measure BIO-10 (Foraging habitat.)

If nesting occurrences of Swainson's hawks occur within 10 miles of the permanent impact areas (e.g., pump station, lift station, and WP sites) mitigation for loss of foraging habitat shall be required. Generally, CDFW requires mitigation for loss of Swainson's hawk foraging habitat based on the presence of active nests within 10 miles of the project. If an active nest site occurs within ten miles of the project, OPUD or its contractor will be required by CDFW to provide off-site foraging habitat management lands at a specified Mitigation Ratio that is based on nest proximity to the project site, as follows:

Distance from Project Boundary	**Mitigation Acreage Ratio***
Within 1 mile	1.00:1**
Between 1 and 5 miles	0.75:1
Between 5 and 10 miles	0.50:1
*Ratio means [acres of mitigation land] to [acres of foraging habitat impacted]. **This ratio shall be 0.5:1 if the acquired lands can be actively managed for prey production.	

CDFW provides options for off-site habitat management by fee title acquisition or conservation easement acquisition with a CDFW-approved management plan, and by the acquisition of comparable habitat. Mitigation credits may be obtained through a CDFW-approved mitigation bank for Swainson's hawk with a service area that covers the project site.

Because implementation of Mitigation Measures BIO-9 and BIO-10 would require consultation with resource agencies; avoidance measures during construction; and the acquisition of off-site foraging habitat, potential impacts to the Swainson's hawk would be minimized to less-than-significant levels. No additional mitigation would be required.

Burrowing Owl

The burrowing owl, a California Species of Special Concern, is known to occur within grassland habitat in the region. Suitable burrowing owl habitat is present at the southern end of the Wastewater Treatment Plant (WWTP) where an extensive California ground squirrel colony was observed on an earthen berm. Within this colony, several of the burrows showed signs of renovation by burrowing owls. Additionally, grassland habitat with ground squirrel burrows present could provide habitat. Due to the proximity of suitable habitat, impact to nesting burrowing owls could occur as a result of construction disturbance. Nest disturbance would be a significant impact, and the following mitigation is identified to avoid or reduce this potential effect.

Mitigation Measure BIO-11

A. A pre-construction survey of areas providing suitable burrowing owl habitat within 1,640 feet (500 meters) of construction at the WWTP shall be conducted by a qualified raptor biologist within 14 days prior to ground disturbance. Surveys shall follow guidelines outlined by CDFW in the Staff Report on Burrowing Owl Mitigation (CDFW 2012). If the required pre-construction surveys show there are no active burrowing owl nests within the 1,640 feet (500 meters) of construction activities, no further mitigation for burrowing owl nest disturbance will be required.
B. If an occupied burrow is discovered during pre-construction surveys, a protective buffer consistent with CDFW guidelines shall be established. Appropriate protective buffers depend on the type of burrowing owl occurrence (nesting or overwinter), level of project disturbance, and time of year that the disturbance occurs. Nest protective buffers consistent with CDFW guidelines are outlined below.

Location	Time of Year	Level of Disturbance		
		Low	Med	High
Nesting Site	April 1 – Aug 15	200 m	500 m	500 m
Nesting Site	Aug 16 – Oct 15	200 m	200 m	500 m
Nesting Site	Oct 16 – March 31	50 m	100 m	500 m

A reduced buffer may be implemented upon CDFW approval and based upon site specific conditions, nesting phenology, and the recommendation of the qualified biologist.

C. A written report summarizing the pre-construction survey results shall be provided to OPUD and CDFW within 30 days of survey completion.
D. If occupied burrows cannot be avoided, OPUD or its contractor shall conduct a survey during the non-nesting season (September 30 through January 31) to identify occupied

burrows within the disturbance footprint, exclude burrowing owls from burrows within the disturbance footprint, and then collapse the burrows in accordance with methodology outlined by the CDFW. Burrowing owl exclusion and burrow collapse must be conducted in coordination with CDFW and with the approval of CDFW.

Because implementation of Mitigation Measure BIO-11 would require consultation with resource agencies; avoidance measures during construction; or exclusion, potential impacts to burrowing owls would be minimized to less-than-significant levels. No additional mitigation would be required.

Nesting Birds

Implementation of the project has the potential to impact nesting migratory birds, including special-status species such as tricolored blackbird, Modesto song sparrow, and other species protected by the Migratory Bird Treaty Act. Suitable habitat for tree and ground-nesting raptors, including special-status species such as northern harrier or white tailed kite, occurs in the project area. Construction disturbance has the potential to impact nesting birds. This would be a significant impact.

Mitigation Measure BIO-12

A. If construction or vegetation removal work occurs outside of nesting season (August 31 to Feb 1), impacts would be avoided. Surveys would not be required for work conducted during this part of the year, and no further mitigation for nest disturbance would be required.
B. If vegetation removal or construction activities occur between February 1 to August 31, pre-construction surveys shall be conducted by a qualified biologist of suitable habitat within 500 feet of worksites and disturbance areas for passerines, and within 0.25-mile of worksites and disturbance areas for raptors. Pre-construction surveys shall be conducted within 14 days prior to the start of construction of vegetation removal. If nests are identified, a suitable nest protection buffer shall be recommended by the qualified biologist based on the species, nest phenology, and site-specific conditions. Construction activities shall be prohibited within the established buffer zones until the young have fledged. If a lapse in project-related activities occurs for 14 days or longer during the nesting season, another focused survey shall be conducted before construction activities can be reinitiated.
C. A written report summarizing the pre-construction survey results shall be provided to OPUD and CDFW within 30 days of survey completion.

Because implementation of Mitigation Measure BIO-11 would require avoidance measures during construction; buffer areas around nests; and consultation with resource agencies, if necessary, potential impacts to nesting birds would be minimized to less-than-significant levels. No additional mitigation would be required.

Questions (b) and (c) Adverse effect on aquatic resources. Less-than-significant Impact with Mitigation. The proposed project may result in impacts to aquatic resources at Lift Station 23, several of the HDD workspace areas, and several of the pipeline connection crossings. Additionally, the HDD waterway crossings will involve the use of drilling fluids that present the unlikely potential for inadvertent returns to the waterways. These aquatic resources may be regulated by the Corps under Section 404 of the Clean Water Act, the Central Valley Regional Water Quality Control Board (CVRWQCB) under Section 401 of the Clean Water Act, and/or the CDFW under Section 1600 of

the California Fish and Game Code. These areas were identified and mapped for the purposes of avoidance during biological reconnaissance surveys. See Appendix D, *Biological Technical Report*, Figures 2A-2T. A preliminary aquatic resource delineation was not conducted as part of the reconnaissance surveys and full avoidance of these features may not be feasible; therefore, the following authorizations may be required:

- Clean Water Act Section 404 Discharge/Fill Permit by the Corps;
- Clean Water Act Section 401 Water Quality Certification by the CVRWQCB; and,
- Fish and Game Code Section 1600 Lake/Streambed Alteration Agreement with CDFW.

Construction of the project may result in impacts to regulated aquatic resources. This would be a significant impact, and the following mitigation would be required.

Mitigation Measure BIO-13

A. Prior to the initiation of construction, OPUD or its contractor shall conduct a preliminary aquatic resource delineation of the project site to define the limits of jurisdictional areas and determine the extent of project impacts. The delineation will be verified by the Corps. The verified delineation will provide OPUD with the impact acreage necessary for preparing a Waters of the US/Wetland Mitigation Plan and/or permit application if impacts to jurisdictional areas cannot be avoided. If the project can fully avoid delineated aquatic resources, no further mitigation would be required. If the project cannot fully avoid delineated aquatic resources, Mitigation Measure BIO-13 B will apply.

B. If project impacts to federal and State jurisdictional areas are identified, OPUD shall obtain all necessary permits for impacts to Waters of the US and wetlands from the Corps and RWQCB and/or for potential impacts to stream features from CDFW prior to project implementation. Implementation of the project shall comply with all permit conditions. Compensatory mitigation must be consistent with the Corps' standards pertaining to mitigation type, location, and ratios, but will be accomplished with a minimum of 1:1 replacement ratio.

   If compensatory mitigation is needed, OPUD may satisfy all or a portion of Waters of the US and wetlands mitigation through the purchase of "credits" at a mitigation bank approved by the Corps, RWQCB, and/or CDFW for compensatory mitigation of impacts to hydrologically similar Waters of the US, or through other means, such as on- or off-site wetland creation, conservation easement, contribution to approved in-lieu habitat fund, etc. The Mitigation Plan must be approved by the permitting agencies, and shall be implemented by OPUD subsequent to plan approval.

Mitigation Measure BIO-14

The proposed HDD installations under regulated drainages have a small potential to "frac out" or inadvertently release drilling muds to the surface during drilling operations. Because of the potential for a frac-out to impact waters and wetlands at the drainage crossings, OPUD or its contractor shall prepare and implement an Inadvertent Returns Contingency Plan that outlines the measures that will be taken to prevent inadvertent returns, and outlines the response measures to be employed and response equipment to be maintained on site for use in the unlikely event of an inadvertent return during drilling operations.

With implementation of the above mitigation measures, no additional effects to aquatic resources are expected to occur, and no additional mitigation would be required.

Question (d): Interfere with species movement, wildlife corridors, or native wildlife nursery sites. Less-than-significant Impact. Wildlife migration corridors are generally defined as connections between fragmented habitat patches that allow for physical and genetic exchange between otherwise isolated wildlife populations. Migration corridors may be local, such as those between foraging and nesting or denning areas, or they may be regional in extent. Migration corridors are not unidirectional access routes; however, reference is usually made to source and receiver areas in discussions of wildlife movement networks. "Habitat linkages" are migration corridors that contain contiguous strips of native vegetation between source and receiver areas. Habitat linkages provide cover and forage sufficient for temporary inhabitation by a variety of ground-dwelling animal species. Wildlife migration corridors are essential to the regional fitness of an area as they provide avenues of genetic exchange and allow animals to access alternative territories as fluctuating dispersal pressures dictate.

Within the study area there are several natural drainages and riparian corridors that provide suitable migratory corridors for an array of species. These drainages and riparian areas include Reeds Creek, Hutchinson Creek, Kimball Creek, and Virginia Creek and other smaller unnamed waterways. These creeks help to provide access for wildlife to move from foothill habitat areas to valley habitat areas, including the Feather River, Sutter National Wildlife Refuge, and other wildlife areas. At the drainage crossings within the study area, the vegetation communities observed were a mix of natural riparian communities, emergent wetland vegetation, and annual grassland cover types. Signs of mammals moving through the riparian corridors were observed for several species including raccoon, coyote, and mink.

The project is designed to avoid impacts to the drainage crossings and associated riparian corridors using trenchless installation methods for pipeline crossings at these locations. Impacts to wildlife corridors will be limited to indirect temporary disturbance during construction, primarily during daytime hours.

Because the proposed project would result in only temporary impacts that would be restored to pre-project conditions upon completion of the project, impacts to wildlife movement would be short term and temporary, and would not permanently disrupt wildlife movement or impede the use of wildlife nursery sites. This would be a less-than-significant impact, and no mitigation would be required.

Questions (e) and (f) Conflict with policies, ordinances, or plans protecting biological resources. Less-than-significant Impact. South County Infrastructure Project facilities are not located in an area covered by an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan. Yuba County has not adopted a tree preservation ordinance, and the proposed project would be consistent with adopted 2030 General Plan policies that protect biological resources. Therefore, no conflict with any adopted policies, ordinances, or plans protecting biological resources would occur with project implementation. No significant impact would result, and no mitigation would be required.

CUMULATIVE IMPACTS

Past development in Yuba County, ranging from conversion of land to agricultural production to recent expansion of urban development, has resulted in a substantial loss of native habitat to other uses. This is a significant cumulative impact. Implementing the 2030 General Plan could result in further loss of special status species and their habitat. Continued development of natural resources areas will result in the incremental decline in the amount of habitat remaining to support special-status species and sensitive natural communities. The 2030 General Plan would contribute to an ongoing decline of special status species and habitats. The 2030 General Plan policies and actions require avoidance of impacts to special-status species and their habitats. The Natural Resources Element also designates various types of open space, including open space required to protect critical habitat and other important biological resources. Therefore, the 2030 General Plan's contribution to a significant cumulative impact would be reduced by implementing the General Plan policies and actions. However, it may not be feasible to completely avoid direct and indirect impacts while still allowing full build out of the designated land uses, and therefore the 2030 General Plan would have a cumulatively considerable contribution to this significant cumulative impact.

In Yuba County, most established riparian vegetation occurs along the largest rivers; the Feather River, Yuba River, and Bear River, and south Honcut Creek. Important riparian corridors also occur along Dry Creek and other tributaries to Honcut Creek and the Yuba River. Riparian vegetation is present in the surrounding region along the Sacramento River and in the Sutter Bypass. Agricultural, residential, and industrial water use and land development have resulted in a significant cumulative reduction in the extent of riparian habitats in the County and surrounding region. The 2030 General Plan would have a cumulatively considerable contribution to this significant cumulative impact.

The alteration of the hydrologic condition supporting long-term soil saturation and conversion to other uses, primarily agriculture, has resulted in a significant cumulative impact to freshwater emergent wetlands in Yuba County and the surrounding region. Implementing the 2030 General Plan could result in the loss of freshwater emergent wetland and vernal pool complex with vernal pools and swales. Implementing the General Plan policies and actions listed above, along with the additional mitigation measures, is expected to reduce significant impacts on wetland and other Waters of the United States requiring delineation and avoidance of these habitats to the maximum extent feasible, establishment of wetland habitat buffers, and by providing compensation for unavoidable impacts in a manner that would ensure no net loss of overall wetland habitat in the County. Complete avoidance would not be possible while still allowing full build out of the designated land uses. Therefore, the 2030 General Plan would have a cumulatively considerable contribution to this significant cumulative impact.

The proposed South County Infrastructure Project is consistent with, and implements, the 2030 General Plan. Thus, the cumulative impacts described above include the proposed project within the scope of General Plan land uses and supporting infrastructure assessed in the 2030 General Plan Environmental Impact Report (EIR). Implementation of the South County Infrastructure Project would not result in new cumulative impacts, or increase the magnitude of cumulative impacts beyond those assessed in the 2030 General Plan EIR. Additionally, the evaluation of the project's environmental effects on biological resources set forth in this chapter concludes that all identified impacts could be reduced below a level of significance with the imposition of identified mitigation. For these reasons, the proposed infrastructure project would not make a cumulatively considerable contribution to the cumulative impacts of implementing the 2030 General Plan beyond those assessed in the 2030 General Plan EIR. This would be a less-than-significant impact, and no mitigation beyond that set forth in this chapter would be required.

V. CULTURAL RESOURCES	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?		**X**		
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?		**X**		
c) Disturb any human remains, including those interred outside of formal cemeteries?		**X**		

This analysis includes a review of pertinent literature, a review of regulatory requirements, results of reconnaissance field surveys, and a preliminary analysis of general impacts of project implementation on cultural resources. The evaluation is based on and summarizes the *Cultural Resources Technical Report, Olivehurst Public Utility District South County Infrastructure Project* (Padre 2023b), prepared by Padre Associates, Inc. (Padre) (March 2023).

Records of the known cultural resources found in Yuba County are included in the files of the Office of Historic Preservation, California Historical Resources Information System (CHRIS). The North Central Information Center (NCIC), housed at California State University, Sacramento, locally administers these records. Methodology used included literature and records research, including those records in the files of the NCIC, and direct in-field cultural resources sensitivity assessment of the proposed project areas.

ENVIRONMENTAL SETTING

For the purposes of this report, the project Area of Potential Effect (APE) refers to all areas that are considered for construction, access, and staging. The project will consist of the construction of a well site, water plant, pump stations, and lift stations on approximately 2.5 acres of land, and the construction of approximately 26.8 linear miles of new water and sewer lines, primarily within roadways and road shoulders. Improvements to the existing Wastewater Treatment Plant (WWTP) will be installed within the existing WWTP limits. Trenchless installations at roadway and waterway crossings will be achieved using attachment to an existing bridge where possible. Horizontal directional drill (HDD) or pipe ramming/auger bore trenchless installation methods are proposed where bridge attachment is not feasible. The project proposes 13 locations for trenchless installation, seven bore crossings for pipeline installation under waterways, and six bore crossings for pipeline installation under highways. See Figures 3, 4, and 8.

In August 2020 the study team ordered an archaeological records search from the NCIC located at California State University, Sacramento. The center is an affiliate of the State of California Office of Historic Preservation and the official state repository of archaeological and historic records and reports for six counties, including Yuba County.

The records search included a review of all recorded historic-era and prehistoric archaeological sites within a 0.25-mile radius of the project APE as well as a review of known cultural resource surveys and technical reports. Records from the State Historic Property Data Files, National Register of Historic Places, National Register of Determined Eligible Properties, California Points of Historic Interest, and the California Office of Historic Preservation Archaeological Determinations of Eligibility also were analyzed.

The records search identified no previously recorded cultural resources within the project APE and five previously recorded cultural resources within the 0.25-mile search radius. The records search also indicated that five cultural resource studies have been completed within the project APE. Additionally, 32 cultural resources studies have been completed within the 0.25-mile search radius.

On February 14 and 15, 2022, environmental staff conducted an intensive pedestrian survey of the project APE. Due to most of the project APE crossing through developed residential and urban areas along roadways and road shoulders, a majority of the survey was performed as a "windshield survey." The portions of the project APE within agricultural and rural residential areas were subject to an intensive pedestrian surface survey, and covered on foot in transect intervals not exceeding 10 meters, unless prohibited by terrain, vegetation, access, or safety issues.

In March 2022, environmental staff submitted a request for a Sacred Lands File search to the Native American Heritage Commission (NAHC), to request information about sacred or traditional cultural properties that may be located within the project APE. A search of the Sacred Lands file housed at the NAHC did not indicate the presence of Native American cultural resources within the project boundaries.

The majority of the project APE consists of lands within developed urban areas, disturbed soils along roadway shoulders or in vacant lots, and land within or adjacent to agricultural fields. The agricultural fields in the area are primarily used to produce rice and other grain crops. Proposed pipeline alignments are limited to developed lands within the paved roadway and disturbed shoulder. Workspace associated with HDD crossings are within vacant or agricultural lands. Pump stations and lift stations are within developed and disturbed lands, vacant lots, natural and undeveloped lands, or agricultural lands.

The terrain throughout the project APE is mostly level. Ground visibility ranged between zero to 80 percent with existing roads, gravel, vegetation, and debris accounting for areas of lesser visibility. The soils observed consisted of a silt clay loam and sandy clay loam with gravel and small cobble inclusions. No cultural resources were observed during the survey.

REGULATORY FRAMEWORK

State and federal legislation requires the protection of historical and cultural resources. In 1971, President's Executive Order No. 11593 required that all federal agencies initiate procedures to preserve and maintain cultural resources by nomination and inclusion on the National Register of Historic Places. In 1980, Governor's Executive Order No. B-64-80 required that state agencies inventory all "significant historic and cultural sites, structures, and objects under their jurisdiction which are over 50 years of age and which may qualify for listing on the National Register of Historic Places." Section 15064.5(b)(1) of the CEQA Guidelines specifies that projects that cause "…physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historic resource would be materially impaired" shall be found to have a significant impact on the environment.

ENVIRONMENTAL EVALUATION

Issue Area CEQA Appendix G Question	Project Component				Discussion
	Water Plant	WWTP	Pipelines	Pump/Lift Stations	
	Applicable to Issue Area?				
IX.a	✓	✓	✓	✓	Potential for unknown cultural resources
IX.b	✓	✓	✓	✓	Potential for unknown cultural resources
IX.c	✓	✓	✓	✓	Potential for unknown cultural resources

Questions (a) through (c) Historical and archaeological resources, human remains: Less-than-significant Impact with Mitigation. No prehistoric or historic resources within the project APE have been reported to the NCIC, and none were observed during surveys of the APE. Thus, the project would not adversely affect any known historic or archaeological resources.

There are multiple locations in the project APE where pipelines would intersect creeks or rivers. Prehistoric archaeological resources have been found in association with similar streamside environs within Yuba County. Construction activities could result in inadvertent impacts upon buried (subsurface) historic or prehistoric resources. Because construction activities could result in the discovery of previously unknown cultural resources, a significant impact could occur. The following mitigation would be required.

Mitigation Measure CUL-1

A. If buried cultural resources such as chipped or ground stone, midden deposits, historic debris, building foundations, human bone, or paleontological resources are inadvertently discovered during ground-disturbing activities, work shall stop in that area and within 100 feet of the find until a qualified archaeologist or paleontologist can assess the significance of the find and, if necessary, develop responsible treatment measures in consultation with Yuba County and other appropriate agencies.

B. If remains of Native American origin are discovered during proposed project construction, it shall be necessary to comply with state laws concerning the disposition of Native American burials, which fall within the jurisdiction of the Native American Heritage Commission (NAHC). If any human remains are discovered or recognized in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:

   - The County coroner has been informed and has determined that no investigation of the cause of death is required; and
   - If the remains are of Native American origin:
     - √ The most likely descendants of the deceased Native Americans have made a recommendation to the landowner or person responsible for the excavation work for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC 5097.98; or
     - √ The NAHC has been unable to identify a descendant, or the descendant failed to make a recommendation within 24 hours after being notified.

C. According to the California Health and Safety Code, six or more human burials at one location constitute a cemetery (Section 8100), and disturbance of Native American

cemeteries is a felony (Section 7052). Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the NAHC.

CUMULATIVE IMPACTS

Cultural resources in the Yuba County region generally consist of prehistoric sites, historic sites, historic structures, and isolated artifacts. During the 19th and 20th centuries, localized urbanization and intensive agricultural use in the region caused the destruction or disturbance of numerous prehistoric sites, while many structures now considered to be historic were erected. Development of projects and plans assumed in the cumulative scenario has the potential to result in the discovery of undocumented subsurface cultural resources or unmarked historic-era or prehistoric Native American burial sites. Cumulative gains in population, households, and jobs would require a commensurate increase in infrastructure, capital facilities, services, housing, and commercial uses in Yuba County, its incorporated cities, and areas adjacent counties. The impact on archaeological deposits, human remains, and paleontological resources would be substantial given the past extent of urban development, and anticipated gains in population, jobs, and housing. There is a significant cumulative impact to cultural resources. Full buildout of the 2030 General Plan would involve substantial development and earth disturbance, and the impact is cumulatively considerable.

The proposed South County Infrastructure Project is consistent with, and implements the 2030 General Plan. Thus, the cumulative impacts described above include the proposed project within the envelope of General Plan land uses and supporting infrastructure assessed in the 2030 General Plan EIR.). Implementation of the South County Infrastructure Project would not result in new cumulative impacts, or increase the magnitude of cumulative impacts beyond those assessed in the 2030 General Plan EIR. The evaluation of the project's environmental effects on cultural resources set forth in this chapter conclude that all identified impacts could be reduced below a level of significance with the imposition of identified mitigation. For these reasons, the proposed infrastructure project would not make a cumulatively considerable contribution to the cumulative impacts of implementing the 2030 General Plan beyond those assessed in the 2030 General Plan EIR. This would be a less-than-significant impact, and no mitigation beyond that set forth in this chapter would be required.

VI. ENERGY	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?		**X**		
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			**X**	

ENVIRONMENTAL SETTING

Pacific Gas and Electric (PG&E) provides electricity and natural gas to Yuba County. Existing energy use for the project includes existing operations at the Wastewater Treatment Plant (WWTP) and pump stations PS-1 and PS-2.

CALIFORNIA GREEN BUILDING STANDARDS CODE

The California Green Building Standards Code (CALGreen Code)(California Code of Regulations, Title 24, Part 11) is a part of the California Building Standards Code that comprehensively regulates the planning, design, operation, and construction of newly constructed buildings throughout the state. Both mandatory and voluntary measures are included in the CALGreen Code. Mandatory measures for non-residential structures include standards for light pollution reduction, energy efficiency, and water conservation, among others.

ENVIRONMENTAL EVALUATION

Issue Area CEQA Appendix G Question	Project Component				Discussion
	Water Plant	WWTP	Pipelines	Pump Stations	
	Applicable to Issue Area?				
VI.a	✓	✓	✓	✓	Construction/operation would result in energy use
VI.b					Would not conflict with energy plan

Question (a) Wasteful consumption of energy resources: Less-than-significant Impact with Mitigation. Development of the proposed pipeline would entail energy consumption that includes both direct and indirect expenditures of energy. Indirect energy would be consumed by the use of construction materials for the project (e.g., energy resource exploration, power generation, mining and refining of raw materials into construction materials used, including placement). Direct energy impacts would result from the total fuel consumed in vehicle propulsion (e.g., construction vehicles, heavy equipment, and other vehicles using the facility). This would be a significant impact, and the following mitigation would be required.

Mitigation Measure EN-1

Implement Mitigation Measures AQ2 (b-f, and p) and AQ-3 (b and c).

Implementation of Mitigation Measures AQ-2 (b-f, and p) and AQ-3 (b and c) would reduce emissions from construction equipment and processes and lead to a lessening of energy used during

construction compared to a business as usual scenario. No unusual materials, or those in short supply, are required in the construction of the project.

The proposed project's energy use during operations would include the relatively small amount of energy required by the pump and lift stations to transport wastewater flows, and energy use at the water plant. Operations at the Wastewater Treatment Plant (WWTP) are an existing use, and the proposed modifications to the WWTP would not result in a significant increase in energy use. Further, these long-term energy uses are necessary for effective operation of the project. In addition, with construction of the proposed wastewater transmission facilities from the City of Wheatland to the OPUD WWTP, the existing City of Wheatland WWTP would be decommissioned, and energy use at this facility would no longer occur.

Although energy during the construction phase would be consumed, it would not be consumed in a wasteful, inefficient, or unnecessary manner with the adoption and implementation of Mitigation Measures AQ-2 (b-f, and p) and AQ-3 (b and c). No additional mitigation would be required.

Question (b) Conflict with state or local energy efficiency plans: Less-than-significant Impact. The proposed project would not result in unplanned developed land uses or construct structures or facilities that would conflict with State or local plans for renewable energy or efficiency. Compliance with California's Building Energy Efficiency Standards would ensure that the proposed project would implement all necessary energy efficiency regulations. Therefore, the proposed project would not conflict with any applicable plan, policy, or regulation adopted for the purpose of promoting renewable energy or energy efficiency, and this would be a less-than-significant impact.

CUMULATIVE IMPACTS

Implementation of the 2030 General Plan would increase energy demand. New residential, commercial, industrial, and civic uses that could be developed under the 2030 General Plan would increase local energy demand. However, the policies and actions of the General Plan that guide growth and development are designed to avoid wasteful, inefficient, and unnecessary consumption of energy and the impact for the 2030 General Plan is less than significant. Implementation of the2030 General Plan would result in the need to extend services and infrastructure to new users in Yuba County, resulting in significant and unavoidable impacts.

The proposed South County Infrastructure Project is consistent with, and implements, the 2030 General Plan. Thus, the cumulative impacts described above include the proposed project within the scope of General Plan land uses and supporting infrastructure assessed in the 2030 General Plan Environmental Impact Report (EIR). Implementation of the South County Infrastructure Project would not result in new cumulative impacts or increase the magnitude of cumulative impacts beyond those assessed in the 2030 General Plan EIR. Additionally, the evaluation of the project's environmental effects on energy set forth in this chapter concludes that all identified impacts could be reduced below a level of significance with the imposition of identified mitigation. For these reasons, the proposed infrastructure project would not make a cumulatively considerable contribution to the cumulative impacts of implementing the 2030 General Plan beyond those assessed in the 2030 General Plan EIR. This would be a less-than-significant impact, and no mitigation beyond that set forth in this chapter would be required.

VII. GEOLOGY AND SOILS	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?				**X**
ii) Strong seismic ground shaking?			**X**	
iii) Seismic-related ground failure, including liquefaction?			**X**	
iv) Landslides?				**X**
b) Result in substantial soil erosion or the loss of topsoil?		**X**		
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?		**X**		
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?		**X**		
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				**X**
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		**X**		

The analysis for the proposed project's geology and soils impacts is based on the Updated Draft Preliminary Geotechnical Basis of Design Report, prepared by Blackburn Consulting (April 2021), included as Appendix E of this Initial Study (bound separately). The analysis within the geotechnical report is based on exploratory borings at various project locations and laboratory testing, and includes relevant information about surface conditions, regional geology, seismicity, and subsurface conditions. The assessment of paleontological resources is based on an in-depth countywide evaluation set forth in the EIR for the Yuba County 2030 General Plan.

ENVIRONMENTAL SETTING

Yuba County is located within an area of relatively low seismic activity and is not located within a highly active fault zone. The project does not lie within or adjacent to an Alquist–Priolo Earthquake Fault Zone or landslide and liquefaction zone (DOC 2022; Yuba County 2011b). Yuba County is not believed to have experienced ground shaking at a level at which damage to buildings would be expected (at a level of Modified Mercalli Index of VII or greater) between 1800 and 2002 (Yuba County 2011b).

The proposed project is located within an area of the county underlain by Tertiary and Quaternary alluvium. The topography of the project areas is generally flat locally, except near State Routes 65 and 70, where the topography slopes toward the highways. The site elevations, excluding areas near the highways, range between 55 feet above mean sea level (msl) in the western portion of the project

and 75 feet above msl in the easternmost portion of the project. The USDA web soil survey indicates that the project area is underlain primarily by mostly San Joaquin loam, and also Hollenbeck silty clay loam, Conejo Loam, and Oakdale Sandy loam. (Blackburn 2021a)

ENVIRONMENTAL EVALUATION

Issue Area CEQA Appendix G Questions	Project Component				Discussion
	Water Plant	WWTP	Pipelines	Pump Stations	
	Applicable to Issue Area?				
VII.a					No earthquake fault and associated hazards.
VII.b	✓	✓	✓	✓	Construction would result in potential soil erosion.
VII.c	✓	✓	✓	✓	Geotechnical measures required for soil conditions.
VII.d	✓	✓	✓	✓	Geotechnical measures required for soil conditions.
VII.e					No septic systems involved.
VII.f	✓	✓	✓	✓	Unknown paleontological resources may be present.

Question (a.i) Earthquake fault: No Impact. The project is not located within or near a mapped earthquake fault, and there is no record or evidence of faulting on the project area (DOC 2022). Because no fault traces underlie the project area, no existing hazardous conditions would be exacerbated with implementation of the project. There would be no impact.

Question (a.ii) Ground shaking: Less-than-significant Impact. As noted above, the proposed project is located in an area not believed to have experienced ground shaking at a level at which damage to buildings would be expected (Yuba County 2011). Yuba County requires that all new construction comply with the seismic safety requirements of the California Building Code (CBC), which would reduce any potential increase in risks in the areas of the proposed project from seismic ground shaking to levels considered acceptable for the State and region. This would be a less-than-significant impact, and no mitigation is required beyond compliance with adopted standards.

Question (a.iii) Ground failure, liquefaction: Less-than-significant Impact. The proposed project is not located within a mapped liquefaction zone (DOC 2022). Based on the project geotechnical study, the potential for damaging liquefaction at the site is very low (Blackburn 2021a). The proposed project would employ standard pipeline construction practices and comply with CBC requirements for the State of California, which would limit soil liquefaction hazards to levels deemed acceptable in the State and region. Adherence with adopted building and design standards would avoid substantial adverse effects due to the risk of loss, injury, or death involving liquefaction or other seismic-related ground failure. This would be a less-than-significant impact, and no mitigation would be required.

Question (a.iv) Landslides: No Impact. The project areas are generally flat and not located near steep slopes with unstable soils that may be susceptible to landslides. Also, the greater project area is not noted for unstable geologic formations susceptible to landslides (DOC 2022). Implementation of the project would not affect any of these existing conditions that would increase the risk of landslides in the project area. Therefore, the project would not be exposed to potential geologic hazards, including the risk of loss, injury, or death involving a landslide. There would be no impact.

Question (b) Soil erosion: Less-than-significant Impact with Mitigation .Development of the proposed project would include construction activities including excavation, grading, trenching, and fill activities for site improvements, which would result in the disturbance of on-site soils. Ground disturbance would be limiting to the areas proposed for grading, trenching, trenchless crossings, and excavation. While construction of the project could result in temporary soil erosion and the loss of top soil due to construction activities, the proposed project areas are generally level from previous road building and grading.

Erosion control measures would be required in accordance with Yuba County Department of Public Works Improvement Standards and Specifications, and an Erosion and Sediment Control Plan would be required for those project components that are within the Olivehurst urban area. Further, all aspects of the South County Infrastructure project would require coverage under the NPDES Construction General Permit requirements, which includes erosion control measures. For a discussion of potential significant effects due to sedimentation during construction of the project, see Section X, *Hydrology and Water Quality*. Compliance with Yuba County requirements and the NPDES Construction Permit would minimize impacts due to soil erosion or loss of topsoil; a less-than-significant impact would occur, and no mitigation would be required.

Mitigation Measure GEO-1

Implement Mitigation Measures HYD-1, HYD-2, and HYD-3.

Implementation of Mitigation Measures A HYD-1, HYD-2, and HYD-3 would require compliance with State and Yuba County requirements to avoid or reduce soil erosion during project construction. Use of Best Management Practices and other erosion reductions measure would result in a less-than-significant impact, and no additional mitigation would be required.

Questions (c) and (d) Unstable geologic unit/Expansive Soils: Less-than-significant Impact with Mitigation. Expansive soils are soils that shrink and swell in response to changes in moisture. These volume changes can result in damage over time to building foundations, roads, underground utilities, and structures, if they are not designed and constructed appropriately to resist the changing soil conditions. The project areas are not noted for unstable geologic formations susceptible to landslide or ground failure, and the topography surrounding the proposed project components is generally level; however, moderately expansive clay soils underlay the site (Blackburn 2021a). As set forth in the geotechnical study, the ground conditions at the proposed pipeline alignments, pump and lift stations, wastewater treatment plan, and water plant would be suitable for the planned improvements when constructed in accordance with the project plans, industry standards, and geotechnical recommendations. However, because a final geotechnical engineering report has not yet been prepared, the following mitigation measure would be required to ensure completion of a final report and implementation of finalized geotechnical recommendations.

Mitigation Measure GEO-2

A. In additional to civil drawing for the project, a final geotechnical engineering report for the proposed project shall be produced by a California Registered Civil Engineer or Geotechnical Engineer and submitted to Yuba County for review. The geotechnical engineering report measures shall address construction conditions, including but not limited to: excavation conditions, site clearing specifications, ground and subgrade preparation, general fill placement and compaction, dewatering, and foundations. Following approval in

the geotechnical report by Yuba County, construction shall be completed in accordance with the geotechnical recommendations in the report, Yuba County Standard Specifications, and Cal OSHA requirements. Proof shall be provided for engineering inspection and certification that earthwork has been performed in conformity with recommendations contained in the report. (Preliminary geotechnical recommendations are included in Appendix E of this Initial Study).

B. The Contractor shall retain an engineer to evaluate the impact of construction traffic vibrations, actual soil conditions exposed in the open excavations, seepage and/or groundwater conditions, surcharges adjacent to excavations, proximity of excavations to existing structures, and other factors that may promote excavation wall instability or cause excavation related damage to existing facilities and improvements and adjust excavation sloping/shoring methods accordingly.

With implementation of the above mitigation measures, the proposed project would not result in any adverse changes to soil instability and subsequent landslide, lateral spreading, liquefaction, or collapse that would affect existing facilities or land uses. This would be a less-than-significant impact, and no mitigation would be necessary.

Question (e) Soils adequately support septic system: No Impact. The proposed project does not include the installation or expansion of any septic system. Further, the proposed project would improve an existing community wastewater collection and treatment system, and would not require the use of septic systems. Therefore, the proposed project would not 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 would result, and no mitigation would be required.

Question (f) Paleontological resource / unique geologic feature: Less-than-significant Impact with Mitigation. According to available information, the project is not located in an area known to have produced significant paleontological[3] resources (Yuba 2011b), nor are there any unique geologic features. While no vertebrate fossil sites were reported in the 2030 Yuba County General Plan, vertebrate fossil sites may occur in Yuba County where surveys have not taken place. Pleistocene alluvial deposits in the valley portion of the county could harbor previously unknown paleontological resources. Development in these areas could result in the loss or disturbance of fossils or other paleontological resources. Therefore, while project construction would not result in the destruction or degradation of unique geological features, construction activities associated with the proposed project could disturb previously unknown paleontological resources. This would be a significant impact. Implementation of the following mitigation would be required.

Mitigation Measure GEO-3

Consistent with Yuba County 2030 General Plan policies, if potential paleontological resources are found during construction, work shall stop and consultation is required to avoid further impacts. If potential paleontological resources are detected during construction, work shall stop and consultation shall be required to avoid further impacts. Actions after work stoppage will be designed to avoid significant impacts to the greatest extent feasible. These measures should include construction worker education, consultation with a qualified paleontologist, coordination

[3] Paleontological resources are the remains or traces of prehistoric animals and plants (fossils).

with experts on resource recovery and curation of specimens, and/or other measures, as appropriate.

With implementation of the above mitigation measures the proposed project would not result in any adverse effects to unknown paleontological resources. This would be a less-than-significant impact, and no additional mitigation would be necessary.

CUMULATIVE IMPACTS

The fact that vertebrate fossils have been recovered throughout the Sacramento and San Joaquin Valleys in sediments suggests that there is a potential for uncovering additional similar fossil remains during construction-related earthmoving activities. Development under the cumulative scenario could adversely affect these resources, resulting in a significant cumulative impact. Implementation of the policies and actions of the 2030 General Plan would reduce the impacts of buildout of the 2030 General Plan on paleontological resources. However, the 2030 General Plan would have a cumulatively considerable contribution to a significant cumulative impact.

The proposed South County Infrastructure project is consistent with, and implements, the 2030 General Plan. Thus, the cumulative impact described above includes the proposed project within the scope of General Plan land uses and supporting infrastructure assessed in the 2030 General Plan Environmental Impact Report (EIR). Implementation of the South County Infrastructure project would not result in new cumulative impacts or increase the magnitude of cumulative impacts beyond those assessed in the 2030 General Plan EIR. Additionally, the evaluation of the project's environmental effects on geology and soil resources set forth in this chapter concludes that all identified impacts would be less than significant. For these reasons, the proposed infrastructure project would not make a cumulatively considerable contribution to the cumulative impacts of implementing the 2030 General Plan beyond those assessed in the 2030 General Plan EIR. This would be a less-than-significant impact, and no mitigation would be required.

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

ENVIRONMENTAL SETTING

Global Warming is a public health and environmental concern around the world. As global concentrations of atmospheric greenhouse gases (GHG) increase, global temperatures increase, weather extremes increase, and increases in air pollutant concentrations. Global warming and climate change have been observed to contribute to poor air quality, rising sea levels, melting glaciers, stronger storms, more intense and longer droughts, more frequent heat waves, increases in the number of wildfires and their intensity, and other threats to human health and safety (IPCC 2013). The years 2013–2021 all rank among the ten warmest years in the 1880–2021 record (142-year record). The global annual temperature has increased at an average rate of 0.08°C (0.14°F) per decade since 1880 and over twice that rate (+0.18°C / +0.32°F) since 1981 (NOAA 2022). Hotter days facilitate the formation of ozone, increases in smog emissions, and increases in impacts to public health and well-being (e.g., heat-related illness, heart and respiratory conditions, increased food-, water-, and vector-borne disease, mental health consequences) (EPA 2021a). Because oceans tend to warm and cool more slowly than land areas, continents have warmed the most. If greenhouse gas emissions continue to increase, climate models predict that the average temperature at the Earth's surface is likely to increase by over 1.5ºC by the year 2100 relative to the period from 1850 to 1900 (IPCC 2013).

THE GREENHOUSE EFFECT (NATURAL AND ANTHROPOGENIC)

The Earth naturally absorbs and reflects incoming solar radiation and emits longer wavelength terrestrial (thermal) radiation back into space. On average, the absorbed solar radiation is balanced by the outgoing terrestrial radiation emitted to space. A portion of this terrestrial radiation, though, is itself absorbed by gases in the atmosphere. The energy from this absorbed terrestrial radiation warms the Earth's surface and atmosphere, creating what is known as the "natural greenhouse effect." Without the natural heat-trapping properties of these atmospheric gases, the average surface temperature of the Earth would be below the freezing point of water (IPCC 2007). Although the Earth's atmosphere consists mainly of oxygen and nitrogen, neither plays a significant role in this greenhouse effect because both are essentially transparent to terrestrial radiation.

The greenhouse effect is primarily a function of the concentration of water vapor, carbon dioxide, methane, nitrous oxide, ozone, and other trace gases in the atmosphere that absorb the terrestrial radiation leaving the surface of the Earth (IPCC 2007). Changes in the atmospheric concentrations of these greenhouse gases can alter the balance of energy transfers between the atmosphere, space, land, and the oceans. Increases in greenhouse gas concentrations in the atmosphere produces a warming effect, and will likely contribute to an increase in global average temperature and related climate changes (EPA 2022).

GREENHOUSE GASES

Naturally occurring greenhouse gases include water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and ozone (O_3). Several classes of halogenated substances that contain fluorine, chlorine, or bromine are also greenhouse gases, but they are, for the most part, emitted solely by human activities. There are also several gases that, although they do not have a direct radiative forcing effect, do influence the formation and destruction of ozone, which does have such a terrestrial radiation absorbing effect. These gases, referred to here as ozone precursors, include carbon monoxide (CO), oxides of nitrogen (NO_X), and non-methane volatile organic compounds (NMVOC). Aerosols (extremely small particles or liquid droplets emitted directly or produced as a result of atmospheric reactions) can also affect the absorptive characteristics of the atmosphere.

Carbon is stored in nature within the atmosphere, soil organic matter, oceans, marine sediments and sedimentary rocks, terrestrial plants, and fossil fuel deposits. Carbon is constantly changing form on the planet through a number of processes referred to as the carbon cycle, which includes but is not limited to degradation and burning, photosynthesis and respiration, decay, and dissolution[4]. When the carbon cycle transfers more carbon to the atmosphere this can lead to global warming. Since 1970, carbon dioxide emissions have increased by about 90 percent, with emissions from fossil fuel combustion and industrial processes contributing about 78 percent from 1970 to 2011.

REGULATORY SETTING

The U. S. Environmental Protection Agency (EPA) is the federal agency responsible for implementing the Clean Air Act (CAA). The U.S. Supreme Court ruled on April 2, 2007 that CO_2 is an air pollutant as defined under the CAA, and that EPA has the authority to regulate emissions of GHGs. However, there are no federal regulations or policies regarding GHG emissions thresholds applicable to the proposed project at the time of this Initial Study.

The ARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California, and for implementing the CCAA. Various statewide and local initiatives to reduce the state's contribution to GHG emissions have raised awareness that, even though the various contributors to and consequences of global climate change are not yet fully understood, global climate change is under way, and there is a real potential for severe adverse environmental, social, and economic effects in the long-term. Because every nation emits GHGs, and therefore makes an incremental cumulative contribution to global climate change, cooperation on a global scale will be required to reduce the rate of GHG emissions to a level that can help to slow or stop the human-caused increase in average global temperatures and associated changes in climatic conditions.

In September 2006, then-Governor Schwarzenegger signed AB 32, the California Climate Solutions Act of 2006. AB 32 established regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. In 2011, the ARB adopted the cap-and-trade regulation. The cap-and-trade program covers major sources of GHG emissions in the State such as refineries, power plants, industrial facilities, and transportation fuels. The cap-and-trade

[4] Dissolution is the process whereby carbon dioxide from the atmosphere dissolves in water.

program includes an enforceable emissions cap that will decline over time. The State will distribute allowances, which are tradable permits, equal to the emissions allowed under the cap.

As the sequel to AB 32, Senate Bill (SB) 32 was approved by the Governor on September 8, 2016. SB 32 requires the ARB to ensure that statewide greenhouse gas emissions are reduced to 40 percent below the 1990 level by 2030. The 2030 target acts as an interim goal on the way to achieving reductions of 80 percent below 1990 levels by 2050, a goal set by former Governor Schwarzenegger in 2005 with Executive Order S-3-05.

Yuba County does not yet have a Climate Action Plan (CAP), but includes General Plan policies to reduce GHG emissions.

SIGNIFICANCE THRESHOLDS

The Feather River Air Quality Management District (FRAQMD) has not established CEQA thresholds of significance for GHG emissions. The FRAQMD recommends that CEQA documents include a quantification of GHG emissions from all project sources, and include measures to minimize and mitigate GHG emissions as feasible.

ENVIRONMENTAL EVALUATION

Issue Area CEQA Appendix G Question	Project Component				Discussion
	Water Plant	WWTP	Pipelines	Pump Stations	
	Applicable to Issue Area?				
VIII.a	✓	✓	✓	✓	Construction and operation would result in GHG emissions
VIII.b					Not inconsistent with GHG reduction plans

Question (a) Generate GHG emissions: Less-than-significant Impact with Mitigation. Greenhouse gas emissions would be generated from the proposed project during construction and operation. Temporary GHG emissions would occur during construction activities, predominantly from vehicle and equipment exhaust. Operational GHG emissions would occur from employee maintenance trips, and operation of emergency generators during maintenance and emergency use.

GHG emissions from construction activities were estimated using the SMAQMD Roadway Construction Emissions Model (Version 9.0) and CalEEMod Version 2020.4.0. As noted previously, FRAQMD has not adopted quantitative thresholds of significance for GHG emissions. However, consistent with FRAQMD guidance, the GHG emissions associated with the proposed project have been quantified and included for informational purposes. The estimated construction and operation related GHG emissions are summarized in Table 10. See Appendix C for modeling assumptions and output.

Table 10	**Summary of Estimated Greenhouse Gas Emissions During Construction and Operation Activities**
Emissions Source	**GHG Emissions (metric tons CO_2e)**
Construction Emissions	
Phase I (2024)	2,401
Phase II (2025)	2,424
Phase III (2026)	2,789
Phase IV (2027)	50
Total Construction (all years)	**7,664**
Construction Amortized (35 years)	219
Operational Emissions	**6**

Notes: CO_2e = carbon dioxide equivalent; GHG = greenhouse gas
Source: Planning Partners 2023. See Appendix C for modeling results.

Short-term project construction activities would generate an annual maximum of 2,789 metric tons of CO_2e of GHG emissions (see Table 10). Because of the cumulative effect of GHGs, the project's construction emissions were amortized over the operational lifetime of the project to provide a relative comparison. When amortized over the assumed 35-year lifetime of the project, the project's annual construction-related GHG emissions would be 219 metric tons of CO_2e. Implementation of FRAQMD rules and regulations applicable to construction activities included in Mitigation Measures AQ-1, AQ-2, and AQ-3 would reduce GHGs associated with construction of the project. Long term operational emissions associated with the improvements with employee trips and emergency generator use are anticipated to result in six metric tons of CO_2e of GHG emissions per year. This would be a significant impact, and the following mitigation measure would be required:

Mitigation Measure GHG-1

Implement Mitigation Measures AQ-1, AQ-2, and AQ-3.

Because the construction-related emissions associated with the proposed project would be reduced with the implementation air quality mitigation measures, and operation-related GHG emissions would be minimal, greenhouse gas emissions would not be expected to be significant, and the project would not be expected to make a substantial contribution to the cumulatively significant impact of global climate change. After implementation of Mitigation Measures AQ-1, AQ-2, and AQ-3, a less-than-significant impact would result, and no additional mitigation would be required.

Question (b) Conflict with GHG emissions reduction plans: Less-than-significant Impact. Yuba County has not adopted a climate change or GHG reduction plan with which the proposed project would conflict. The ARB's Climate Change Scoping Plan represents the primary plan to reduce GHG emissions throughout California. The proposed project would not be considered inconsistent with the GHG reduction measures contained in the Scoping Plan. Therefore, the proposed South County Infrastructure Project would comply with applicable plans, policies, or regulations adopted for the purpose of reducing the emissions of GHGs.

CUMULATIVE IMPACTS

Greenhouse gas emissions have the potential to adversely affect the environment because such emissions contribute, on a cumulative basis, to global climate change. Global climate change has the potential to result in sea level rise (resulting in flooding of low-lying areas), to affect rainfall and snowfall (leading to changes in water supply), to affect temperatures and habitats (affecting biological resources), and to result in many other adverse effects. Global GHG emissions represent a significant cumulative impact.

Because the 2030 General Plan would generate higher GHG emissions per service population than is needed at the State level to achieve the AB 32 target, and since a substantial quantity of GHG emissions would be generated through buildout of the 2030 General Plan, this impact is considered a cumulatively considerable contribution to the significant cumulative impact of global climate change.

In addition to GHG emissions from implementation of the 2030 General Plan, another cumulative impact of climate change includes increased global average temperatures (global warming) through the intensification of the greenhouse effect, and associated changes in local climatic conditions. This is a significant cumulative impact. Policies and actions in the 2030 General Plan would reduce the extent and severity of climate change-associated impacts by proactively planning for changes in climate and conditions, and providing methods for adapting to these changes. For the purposes of this Initial Study, the impact is considered cumulatively considerable.

The proposed South County Infrastructure Project is consistent with, and implements, the 2030 General Plan. Thus, the cumulative impacts described above include the proposed project within the scope of General Plan land uses and supporting infrastructure assessed in the 2030 General Plan Environmental Impact Report (EIR). Implementation of the South County Infrastructure Project would not result in new cumulative impacts or increase the magnitude of cumulative impacts beyond those assessed in the 2030 General Plan EIR. Additionally, the evaluation of the project's environmental effects on climate change and greenhouse gas emissions set forth in this chapter concludes that all identified impacts could be reduced below a level of significance with the imposition of identified mitigation. For these reasons, the proposed infrastructure project would not make a cumulatively considerable contribution to the cumulative impacts of implementing the 2030 General Plan beyond those assessed in the 2030 General Plan EIR. This would be a less-than-significant impact, and no mitigation beyond that set forth in this chapter would be required.

IX. HAZARDS AND HAZARDOUS MATERIALS	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?		**X**		
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?		**X**		
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			**X**	
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?				**X**
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?			**X**	
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?		**X**		
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?			**X**	

The analysis for the proposed project impacts due to hazards and hazardous materials is based on the *Phase 1 Initial Site Assessment* (ISA) (June 2021) and *Phase 2 Environmental Site Assessment* (ESA) (August 2021), both prepared by Blackburn Consulting, included as Appendix F of this Initial Study. The purpose of the Phase 1 ISA is to identify Recognized Environmental Conditions (REC)[5], Historical Recognized Environmental Conditions (HREC), and potential RECs, that may be present within or adjacent to the project areas. The Phase 2 ESA is designed to evaluate whether impacts due to potential contaminants of concern (COC) require mitigation recommendations for construction and/or soil management.

ENVIRONMENTAL SETTING

According to the Phase 1 ISA completed for the project, there is history of hazardous site contamination at several locations within or adjacent to the project area and along public roadways that comprise the proposed pipeline alignments (Blackburn 2021b). The following summarizes the RECs identified within or adjacent to the project limits as identified in the Phase 1 ISA.

[5] The term Recognized Environmental Condition is defined as "The presence or likely presence of any hazardous substances or petroleum products in, on, or at a property (1) due to any release to the environment, (2) under conditions indicative of a release to the environment or (3) under conditions that pose a material threat of a future release to the environment."

- OPUD Wastewater Treatment Facility - Public Utilities District 3908 Mary Avenue - diesel above ground storage tank (AST). There are no indications of a release of diesel to soil or groundwater.
- Four sites located immediately adjacent to the project alignment were identified with high risk RECs (see Section 3.2.2 and Figures 2a-c in Appendix F of this document). Documented impacts to soil or groundwater are present on or have been remediated at these adjacent parcels.
- Five sites located immediately adjacent to the project alignment were identified with medium risk RECs (see Section 3.2.2 and Figures 2a-c in Appendix F of this document). Fuel storage tanks are present on these adjacent parcels. There is no evidence in the records review to suggest releases have occurred from the tanks or hazardous material issues from these sites will impact the project, however, there is a potential to encounter residual contamination at these sites.
- Three sites located north of the project alignment on Olivehurst Avenue were identified with high risk RECs (see Section 3.2.2 and Figures 2a-c in Appendix F of this document). The project limits do not currently extend to these sites. Documented impacts to soil or groundwater are present on or have been remediated at these parcels. There is a potential that impacts from these parcels extend into the right-of-way (ROW) adjacent to the parcel.

Additional potential contamination issues within the project include:

- Yellow traffic stripes are known to contain heavy metals, such as lead and chromium, at concentrations in excess of the hazardous waste thresholds established by the California Code of Regulations and may produce toxic fumes when heated.
- Aerially Deposited Lead (ADL) has been found to occur in soils adjacent to highways and high use roadways. The lead is presumably from the historical use of leaded gasoline and subsequent exhaust emissions. Some of these roadways have been present in various alignments since at or before 1910 and, therefore, have the potential to be impacted with ADL.
- Union Pacific Railroad is an active railroad adjacent to the east side of Rancho Road. Soils located adjacent to railroad tracks may be impacted by on-going railroad operations. Potential contaminants at these locations commonly include petroleum hydrocarbons, semi-volatile organic compounds (SVOC), heavy metals, and pesticides.
- Asbestos Containing Material (ACM) and Lead in Buildings Materials. Structures constructed pre-1989 have the potential to contain ACM/Lead materials. Aerial photographs identify structures along the project alignment as developed prior to 1989.
- Pole-mounted transformers and power lines were observed within the existing ROW.
- Historical topographic maps from 1947 and 1949 depict an orchard in the southeastern 1/2-mile alignment of Rancho Road that may be a source of residual Organochlorine Pesticides (OCP). (Blackburn 2021b)

There are several schools in Olivehurst located within one-quarter mile of the proposed project pipeline, including Olivehurst Elementary School and Johnson Park Elementary School (Google Earth 2023).

The Airport Land Use Commission (ALUC) for Sacramento, Sutter, Yolo, and Yuba Counties has developed the Yuba County Airport Land Use Compatibility Plan (ALUCP). The nearest airport to the project areas is the Yuba County Airport, approximately 0.5 miles west of the SSO project improvements. Portions of project in the Olivehurst urban area are located in the Airport Influence Area. The westerly area of the wastewater treatment plant is located within Safety Zone 4, while portions of wastewater pipeline routes in Mary Avenue and McGowan Parkway are located within Safety Zone 6. Wastewater facilities such as PS-1, PS-2, and PS-26, and the forcemains associated with them are located in Safety Zone 6. According to the Yuba County ALUCP Table 2, Safety Compatibility Criteria, wastewater treatment facilities such as the WWTP and associated pump stations are normally compatible in both Safety Zones 4 and 6. No South County Infrastructure Project facilities are located a noise impact zone. (SACOG 2011)

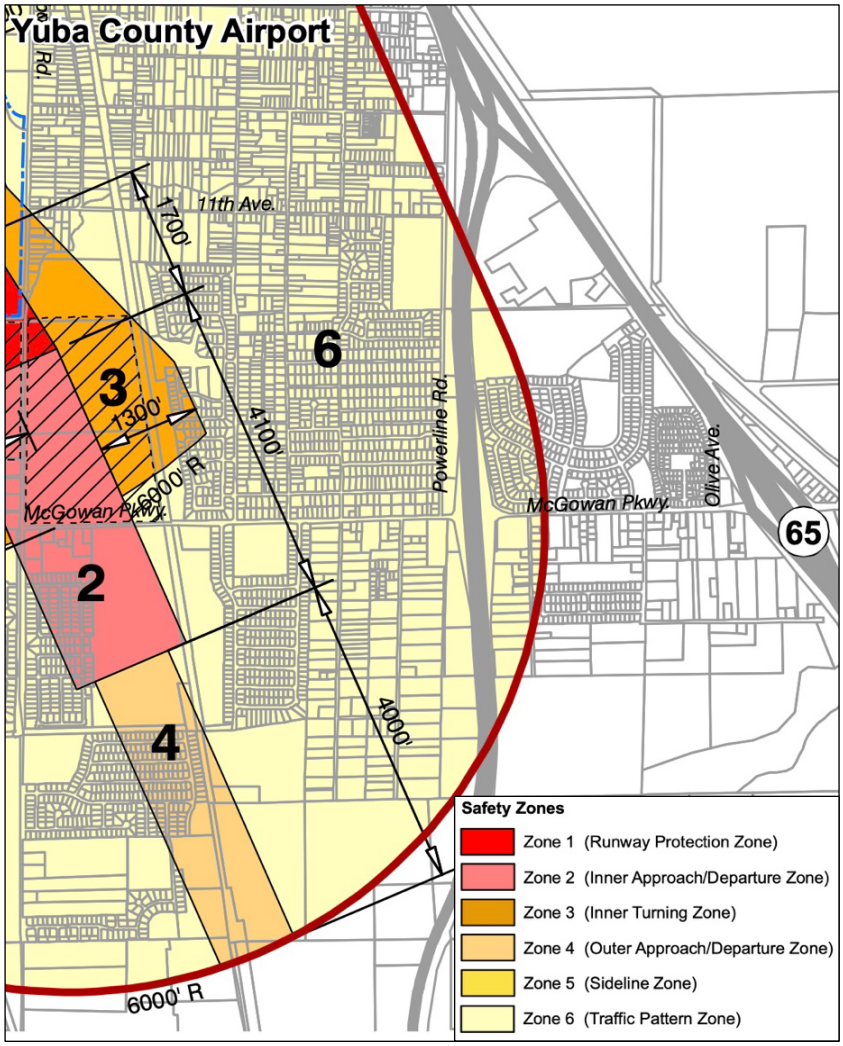


Figure 11 Airport Safety Zones

Source: Yuba County ALUCP, 2010.

The Yuba County Office of Emergency Services (OES) uses evacuation zones during emergencies, alerting affected residents and providing information regarding evacuations and road closures (Yuba County OES 2019). Freeways and major county roads according to zone would be used as primary evacuation routes in the event of a natural hazard, technological hazard, or domestic security threat.

Wildfire risk in Yuba County varies by location, and wildfire hazard is greatest in the foothill and mountain areas of the county (Yuba County 2021b). According to California Fire and Resource Management Program Fire Hazard Severity Zone map, the proposed project area is within a Local Responsibility Area (LRA) (CalFIRE 2007; Yuba County 2021b). The Fire Hazard Severity Zone (FHSZ) map for Yuba County indicates that the project areas are located in three Fire Hazard Severity Zones: Non-Wildland/Non-Urban; Urban Unzoned; and limited areas designated as Moderate (Yuba County 2021). The project would be located in areas where the threat of wildland

fire has been determined to be unlikely to moderate (CalFIRE 2007). No project components are located within or near a state responsibility area or within lands with a very high FHSZ.

No asbestos is mined in Yuba County, but small areas of potentially asbestos-bearing ultramafic rock are located in foothills and mountain portions of the County (Yuba County 2011b). 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 (USGS 2011). Therefore, no naturally occurring asbestos is expected in on-site soils that could be disturbed during construction, and this issue will not be discussed further.

REGULATORY SETTING

Both federal and state laws include provisions for the safe handling of hazardous substances. The federal Occupational Safety and Health Administration (OSHA) administers requirements to ensure worker safety. Construction activity must also be in compliance with the California Occupational Safety and Health Administration regulations.

ENVIRONMENTAL EVALUATION

Issue Area CEQA Appendix G Question	Project Component				Discussion
	Water Plant	WWTP	Pipelines	Pump Stations	
	Applicable to Issue Area?				
IX.a	✓	✓	✓	✓	Construction would include the use of hazardous materials.
IX.b	✓	✓	✓	✓	Phase 1 and Phase 2 identified potentially hazardous materials in the vicinity of project facilities.
IX.c			✓	✓	There are schools within 0.25 miles of proposed PS-1 and its associated pipeline.
IX.d					Not located on a list of hazardous materials.
IX.e		✓	✓	✓	Portions of the project located within an airport land use plan.
IX.f			✓	✓	Proposed facilities could disrupt local circulation.
IX.g					Not located in an area of high risk for wildland fires.

Question (a) Transport, use, or disposal of hazardous materials: Less-than-significant Impact with Mitigation.

CONSTRUCTION

Construction of the proposed project would include the use, storage, transport, and disposal of oil, diesel fuel, paints, solvents, and other hazardous materials. If spilled, these substances could pose a risk to the environment and to human health. Both federal and state laws include provisions for the safe handling of hazardous substances. According to federal health and safety standards, applicable federal OSHA requirements would be in place to ensure worker safety. Construction activity must also comply with the California Occupational Safety and Health Administration regulations (Occupational Safety and Health Act of 1970). In the event of an accidental release of a hazardous material during construction, the contractors would be required to notify the Yuba County Division

of Environmental Health, who would then provide appropriate technical assistance for the remediation of hazardous conditions. Because of the toxicity of materials that could be used during construction and the sensitivity of resources along Rancho Road and Forty Mile Road, spillages of these materials could pose a risk to the environment. This would be a significant impact and implementation of the following mitigation would be required.

Mitigation Measure HAZ-1

A. Prohibit or restrict equipment refueling, fluid leakage, equipment maintenance, and road surfacing activities near wetlands and other sensitive areas. Require placement of fuel storage and refueling sites in safe areas well away from wetlands and other sensitive habitats. Safe areas include paved or cleared roadbeds, within contained areas such as lined truck beds, or other appropriate fuel containment sites. Inspect equipment and vehicles for hydraulic and oil leaks regularly. Require the use of drip pans below equipment stored onsite. Require that vehicles and construction equipment are in good working condition, and that all necessary onsite servicing of equipment be conducted away from wetlands or other sensitive areas.

B. Require all contractors to possess, and all vehicles to carry, emergency spill containment materials. Absorbent materials should be on hand at all times to absorb any minor leaks and spills.

OPERATIONS

The proposed project would provide new sewer conveyance system improvements. While wastewater discharges from the sewer conveyance system could contain pollutants that have the potential to create a significant hazard to the public, a portion of the proposed project is designed to assist in the mitigation of sanitary sewer overflows in OPUD's existing service area of Olivehurst. Further, the proposed improvements would be engineered and designed to prevent leaking or rupture of pipelines or at pump and lift stations. In the event of a minor spill or leak, OPUD maintains a Sewage System Management Plan (SSMP) as required by the RWQCB, reviewed and updated every two years, that outlines procedures during an overflow emergency. These procedures include sending out a field crew, containing the spill, fixing the problem, cleaning up the spill, and reporting to appropriate agencies. Therefore, the proposed project would reduce the occurrence of SSOs in Olivehurst. Additionally, compliance with OPUD's SSMP would ensure that operations of the proposed project wastewater conveyance system improvements would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials during operations. During the operational period this would be a less-than-significant impact, and no additional mitigation would be necessary.

Question (b) Accident conditions related to hazardous materials: Less-than-significant Impact with Mitigation. As discussed previously, the Phase 1 ISA report revealed a history of hazardous site contamination at several locations within or adjacent to the project area. The Phase 1 ISA identified two RECs located at adjacent sites that warranted further assessment in the Phase 2 ESA. The RECs included historic releases of petroleum to soil and groundwater at Tower Mart #60 along McGowan Parkway, and releases of diesel to soil at the PG&E North Valley Materials facility along Rancho Road. Potential contaminants of concern include total petroleum hydrocarbons (TPH) as diesel (TPH-d), gasoline (TPH-g), and motor oil (TPH-mo), metals, and benzene/toluene/ethylbenzene/xylene (BTEX). The Phase II ESA also assessed potential contamination issues related to yellow traffic striping, aerially deposited lead along the roadways,

Union Pacific Railroad, and OCPs at the historical orchard. For an in-depth discussion of data collection, testing, and evaluation of results of the assessment, see Appendix F.

To evaluate appropriate soil management for the lead impacted soil, samples were tested from Rancho Road and McGowan Parkway. One sample along McGowan Parkway and 13 samples along Rancho Road exceeded the Department of Toxic Substances Control (DTSC) Residential Soil Screening Level of 80 mg/kg (DTSC 2022). Due to the potential for disturbance of ADL during construction, the following mitigation is required:

Mitigation Measure HAZ-2

> The contractor shall conduct all grading operations in accordance with the Department of Toxic Substances, Caltrans Soil Management Agreement for Aerially Deposited Lead-Contaminated Soils (Agreement), June 30, 2016, and with the awareness that lead impacted soils are present on McGowan Parkway and Rancho Road. Construction project documents shall include a site-specific Health and Safety Plan and special Soil Management Plan (SMP) to address elevated levels of lead along McGowan Parkway and Rancho Road. The SMP shall be in accordance with all applicable Cal/OSHA requirements and, at a minimum, the SMP shall include measures to control worker exposure to soil, airborne dust, and control runoff along both McGowan Parkway and Rancho Road.

Because none of the detected metals other than lead exceeded screening levels, special construction considerations are not required for these metals. In addition, no special construction considerations are required for Total Petroleum Hydrocarbons. Testing concentrations of Organochlorine Pesticides, Semi-Volatile Organic Compounds, Volatile Organic Compounds, and pH values were below screening levels and laboratory limits. (Blackburn 2021b)

While lead and chromium from traffic striping were not detected above their respective laboratory reporting limits, the following mitigation measure would be required to minimize the potential for toxic fumes from construction activities:

Mitigation Measure HAZ-3

> The contractor shall use general dust controls during paint striping removal on McGowan Parkway Road. In addition, the contractor shall include measures to minimize dust or debris leading to or near storm drains, waterways, and other sources of water during construction activities that include removal of paint striping.

With implementation of Mitigation Measures HAZ-1 and HAZ-2, potential impacts to construction workers due to accidental discovery of hazardous materials would be reduced to less-than-significant levels, and no additional mitigation would be required.

Question (c) Hazardous emissions or materials near a school: Less-than-significant Impact. While there are several schools in Olivehurst located within 0.25 miles of the proposed project pipelines and pump stations (PS-1, PS-26), the pipelines within Olivehurst Avenue and McGowan Parkway would be located underground and would be designed to comply with local, state, and federal safety requirements as discussed under Question (a) above. The two cited pump stations would be enclosed within locked, fenced areas and, except for fuel for the emergency generators, no hazardous or potentially hazardous chemicals or other materials would be stored at either of the two

stations. Therefore, while the proposed wastewater pipeline would transport potential pollutants that have the potential to create a significant hazard to the public within 0.25 miles of an existing school, the potential risk of upset or release of these hazardous materials that could affect an existing or proposed school is considered minimal. The impact to those attending nearby existing schools would be less than significant, and no mitigation would be required.

Question (d) Included on list of hazardous materials sites: No Impact. According to environmental records search completed for the Phase 1 ISA (Blackburn 2021b), the proposed water distribution and wastewater collection system improvements would not pass through a site identified on a list of hazardous materials sites compiled pursuant to California Government Code Section 65962.5. While there are RECs located adjacent to the project limits as discussed in Question (b) above, there are no records or indications of a hazardous materials site within project boundaries, and, as a result, implementation of the project would not create a significant hazard to the public or the environment. No impact would result, and no mitigation would be required.

Question (e) Safety hazard or excessive noise near airports: Less-than-significant Impact. While portions of the project are located in an Airport Influence Area of the Yuba County Airport (SACOG 2011), proposed above-ground project facilities (such as the WWTP and three pump stations) within Safety Zones would be compatible with airport operations (SACOG 2011). Thus, the proposed project would not result in a safety hazard or excessive noise for people residing or working in the project area due to aircraft over-flight and a less-than-significant impact would occur.

For an analysis of the potential noise effects related to construction and operation of the proposed project, see Section XIII, *Noise*.

Question (f) Impair or interfere with an adopted emergency response/evacuation plan: Less-than-significant Impact with Mitigation. The proposed pipeline would be placed within existing public ROW within Yuba County. Freeways and major county roads would be used as primary evacuation routes in the event of emergency. During construction and installation of underground pipeline within local roads and the public ROW, there may be temporary lane closures that could cause delays in traffic and emergency response. However, emergency vehicles would be expedited through the construction zone, and emergency service providers would be informed of the project so they could choose alternate routes as needed. All impacts related to lane closures would cease after project completion. Further, the proposed project would not result in an increased concentration of large numbers of persons in an at-risk location. As described in Section XVII, *Transportation*, a Traffic Control Plan would be prepared for construction to minimize traffic conflicts.

Mitigation Measure HAZ-4

Implement Mitigation Measure TRA-1.

Other roads in the vicinity of the proposed project offer alternative routes for evacuation, and construction effects on emergency circulation would be temporary and well managed. With implementation of Mitigation Measure TR-1, this would be a less-than-significant impact, and no additional mitigation would be required.

Question (g) Exposure to risk involving wildland fires: Less-than-significant Impact. The Fire Hazard Severity Zone map for Yuba County indicates that project components are located in

the Non-Wildland / Non-Urban, Urban Unzoned, and with limited areas in the Moderate Fire Hazard Severity Zones (Yuba County 2021). The pipeline alignment traverses areas designated as a Local Responsibility Area (CalFIRE 2007). The project would be located in areas where the threat of wildland fire has been determined to be unlikely to moderate (CalFIRE 2007). Implementation of the proposed water and wastewater improvements project would not affect wildland fire risk or hazards. Therefore, a less-than-significant hazard would occur related to risk of loss, injury, or death due to wildland fire with implementation of the proposed project. No mitigation would be required.

CUMULATIVE IMPACTS

Land uses and development consistent with the 2030 General Plan would allow development of new residential, commercial, and industrial uses. New residential development would result in increased use, storage, and disposal of household hazardous materials. New commercial and industrial development would also result in increased use, storage, and/or disposal of hazardous materials during routine operations. The amount of hazardous materials transported through the County on main local and regional routes, the UPRR, and state routes (i.e., SRs 20, 65, and 70) is likely to increase as a result of new development accommodated under the 2030 General Plan and regional growth. Transportation of hazardous materials on area roadways is regulated by CHP and Caltrans, and use of these materials is regulated by DTSC, as outlined in Title 22 of the California Code of Regulations (CCR). The United States Department of Transportation (USDOT) (through the Hazardous Materials Transportation Act), and other regulatory agencies (including the California Public Utilities Commission for natural gas transmission lines) provide standards designed to avoid releases including provisions regarding securing materials and container design. Facilities developed under the 2030 General Plan that would use hazardous materials on-site would be required to obtain permits and comply with appropriate regulatory agency standards designed to avoid hazardous waste releases and protect the public health.

Projects potentially developed under the General Plan that would involve the use, transport, and disposal of hazardous materials are subject to regulations that are designed to protect the public health. The above 2030 General Plan policies also require consideration of hazardous materials issues in the land use planning process. Implementation of current state and federal regulations, as well as the policies of the 2030 General Plan may not prevent all potential releases of hazardous materials, but would serve to minimize both the frequency and the magnitude, if such a release occurs. In combination with existing federal and State regulations, these policies would also reduce the potential impacts of the routine transportation of hazardous materials in the County. This impact would be less than significant.

The California Department of Education enforces school siting requirements, and new facilities would not be constructed within 1/4 mile of facilities emitting or handling materials based on these requirements. Furthermore, permitting requirements for individual hazardous material handlers or emitters, including enforcement of Public Resources Code Section 21151.4, would require evaluation and notification where potential material handling and emission could occur in proximity to schools. The 2030 General Plan ensures that state laws regarding the location of school sites are followed during new development. In addition, consideration is made of land uses potentially handling hazardous materials, which would further ensure that such land uses are not developed in proximity to schools. In addition, enforcement of California Department of Education school siting regulations, permitting requirements for individual hazardous material handlers and emitters, and enforcement of Public Resources Code Section 21151.4 during project-level environmental review

for projects developed under the General Plan would prevent future conflicts between hazardous materials handling and emissions and schools. This impact would be less than significant.

Ground disturbance associated with development at sites listed on a known hazardous materials site list compiled pursuant to Government Code Section 65962.5 (Cortese List) could potentially result in the exposure of construction workers, the public, and the environment to hazards associated with contaminated soil and/or groundwater if not properly remediated and/or monitored. The vast majority of planned development under the 2030 General Plan is not expected to occur in areas listed in the Envirostor database. For areas with existing hazardous materials issues, 2030 General Plan policies and actions, in addition to application of current regulations would not absolutely prevent exposure to hazards and hazardous materials, but would use existing facility information to identify areas of hazardous materials use. In combination with existing required federal and State regulations pertaining to hazardous site cleanup, these policies would also reduce the potential impacts of development on listed hazardous materials sites in the County under the 2030 General Plan. Ongoing remediation activities combined with the implementation of required federal and State regulations and the 2030 General Plan policies and action listed about would ensure that this impact would be less than significant.

Implementation of the 2030 General Plan could result in land uses and development located near airports within Yuba County. The Sacramento Area Council of Governments (SACOG) serves as the County ALUC, which is empowered by State law to prepare the CLUP for airports located in the County. SACOG ensures the orderly development of airports and the adoption of land use measures to minimize the public's exposure to excessive noise and safety hazards within areas around public airports, to the extent that these areas are not already devoted to incompatible uses. Development in the vicinity of airports would be subject to discretionary review as well as review by the County ALUC, in this case, SACOG. Projects would be required to comply with the ALUC's adopted CLUP, which provides safety, noise, and compatibility standards that reduce the likelihood of accidents affecting land uses on the ground. This, along with the policies and actions from the 2030 General Plan listed above, would ensure that incompatible land uses are not placed in areas with a higher risk of aircraft crashes and that all applicable regulations are implemented, ensuring that this impact would be less than significant.

The County participates in updates and implementation of Multi-Hazard Mitigation Plans, which are designed to mitigate against the hazards that affect Yuba County, protecting the lives and property of all of its citizens, as well as reducing the costs to the County. However, the focus of General Plan policy, given the County's jurisdiction and the role of general plans, is on the location of development, design of circulation systems, and other physical elements that are required for emergency response, as opposed to programmatic elements of emergency preparedness and response. An efficient roadway and circulation system is vital for the evacuation of residents and the mobility of fire suppression, emergency response, and law enforcement vehicles. Implementation of the 2030 General Plan would create additional traffic and develop new residences and businesses requiring evacuation in case of an emergency. In addition to the operation of the Yuba County Office of Emergency Services (OES) and implementation of the Multi-Hazard Mitigation Plan, implementation of the 2030 General Plan policies and action listed above would ensure that future development would not interfere with emergency response or evacuation plans, thereby protecting County residents from adverse effects in the event of a disaster. This impact is considered less than significant.

The proposed South County Infrastructure Project is consistent with, and implements, the 2030 General Plan. Thus, the County-wide cumulative impacts described above includes the proposed project within the scope of General Plan land uses and supporting infrastructure assessed in the 2030 General Plan Environmental Impact Report (EIR). Implementation of the South County Infrastructure Project would not result in new cumulative impacts or increase the magnitude of cumulative impacts beyond those assessed in the 2030 General Plan EIR. Additionally, the evaluation of the project's environmental effects related to hazards or hazardous materials set forth in this section concludes that all identified impacts would be less than significant after mitigation. For these reasons, the proposed infrastructure project would not make a cumulatively considerable contribution to the cumulative impacts of implementing the 2030 General Plan beyond those assessed in the 2030 General Plan EIR. This would be a less-than-significant impact, and no mitigation would be required.

X. HYDROLOGY AND WATER RESOURCES	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?		**X**		
b) Substantially decrease groundwater supplies or interfere with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			**X**	
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: (i) result in substantial erosion or siltation on- or off-site;			**X**	
(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;			**X**	
(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			**X**	
(iv) impede or redirect flood flows?			**X**	
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?			**X**	
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			**X**	

PROPOSED PROJECT

The proposed South County Infrastructure Project consists of five components. For project components that are above ground, such a pump and lift stations, and the water and wastewater treatment plants, there is the potential for impacts to hydrology and water quality. Table 11 illustrates the details of the project components that could generate potential impacts to hydrology or water quality. For more information regarding each project component, refer to Section 2, *Project Description*, and Appendix A of this Initial Study.

Table 11 Potential for Hydrology or Water Quality Effects by Project Component

Component No.	Component	Location	Above/Below Ground	Stormwater Discharge	Within Special Flood Hazard Area
1	SSO reduction measures	Olivehurst	Below	n/a	n/a
	Mary Ave/McGowan Pkwy/Olivehurst Ave pipelines	Olivehurst	Below	n/a	n/a
	PS-1	Olivehurst	Above	Existing storm drain	No
	PS-2	Olivehurst	Above	Existing storm drain	No
	PS-26	Olivehurst	Above	Existing storm drain	No
	SR 70 HDD Crossing	Olivehurst	Below	n/a	n/a

Table 11	Potential for Hydrology or Water Quality Effects by Project Component				
Component No.	**Component**	**Location**	**Above/Below Ground**	**Stormwater Discharge**	**Within Special Flood Hazard Area**
2	Modify WWTP	Olivehurst	Above	Existing and expanded onsite facilities	No
3	Rancho Rd/Forty Mile Rd wastewater pipelines	Olivehurst	Below	n/a	n/a
	PS-21	Rural	Above	Roadside ditch w/ energy dissipation	No
	LS-22	Rural	Above	Roadside ditch w/ energy dissipation	Possible
	LS-23	Rural	Above	Roadside ditch w/ energy dissipation	No
	LS-24	Rural	Above	Roadside ditch w/ energy dissipation	No
	PS-25	Rural	Above	Connection to in-process storm drain	Yes
	SR 65 HDD Crossing	Olivehurst	Below	n/a	n/a
	SR 65 HDD Crossing	Rural	Below	n/a	n/a
4	Water Plant	Rural	Above	Connection to in-process storm drain	No
	Water pipelines	Rural	Below	n/a	n/a
5	City of Wheatland connection pipelines	Rural	Below	n/a	n/a
General	Appurtenant Facilities	Urban	Above	To be designed	No
		Rural	Above	To be designed	Potentially

Source: Jacobs Engineering, Inc. 2023, Planning Partners 2023.

ENVIRONMENTAL SETTING

Yuba County is located in the northern portion of California along the eastern edge of the Sacramento Valley within the Sacramento River Basin, which is one of the largest basins in California, encompassing approximately 26,500 square miles. The County occupies portions of California's Central Valley and Sierra Nevada geomorphic provinces. The County is predominantly drained by the Feather, Yuba, and Bear Rivers, which flow into the Sacramento River and ultimately into the Pacific Ocean through San Francisco Bay.

The valley area, encompassing the western portion of Yuba County, is dominated by agriculture (e.g., field and tree crops, rice), urbanized areas, and Beale Air Force Base. Elevations within the western county range from approximately 30 feet above mean sea level (msl) at the Feather River, increasing easterly to approximately 250 feet above mean sea level (msl) in the western Sierra Nevada foothill area.

SURFACE WATER

Yuba County's boundaries are marked by its major rivers. In the project vicinity, the western boundary of Yuba County is formed by the Feather River. The Bear River flows along the southern boundary. The nearest proposed project facility at the wastewater treatment plant (WWTP) is located 2.2 miles east of the Feather River; the Bear River is located 3.6 miles south of the terminus

of the Wheatland wastewater pipeline near the intersection of Rancho Road and SR 65. Several intermittent streams transect the project area, including Reeds Creek, Hutchison Creek, Kimball Creek and Virginia Creek. The WWTP discharges tertiary treated water into the Clark Lateral, that then flows through the Western Pacific Interceptor Canal (WPIC) through Reeds Creek, through the Bear River, to the Feather River. At multiple locations along the pipeline alignments, roadside ditches and depressions are present that support a range of hydrologic characteristics.

The Federal Clean Water Act (CWA) requires that California report on the quality of its surface waters every two years. California surface waters are assessed to determine if they contain pollutants at levels that exceed protective water quality standards. Both the Feather River and Bear River in southwestern Yuba County have been identified as streams with identified water quality exceedances by the State Water Resources Control Board (SWRCB). Identified pollutants listed for the Bear River include copper, chlorpyrifos (a pesticide used in agriculture), and mercury. Pollutants that adversely affect water quality in the Feather River are mercury, PCBs (polychlorinated biphenyls), chlorpyrifos, Group A pesticides, and toxicity (SWRCB 2023). No streams or other surface water features within the South County Infrastructure project boundaries have been identified as being impaired.

GROUNDWATER

The valley floor is underlain by an alluvial aquifer system that contains significant quantities of groundwater, while the foothill and mountain areas are underlain by a fractured rock aquifer. Historically, groundwater flows from the eastern boundary of Yuba County toward the western boundary of the county. The hydraulic gradient dips steeply from the Sierra Nevada Mountain front, which abuts the eastern boundary of the County and gradually flattens out toward the west, eventually discharging into the Feather River. Groundwater in Yuba County is divided into two subbasins of the larger Sacramento Valley Groundwater Basin: the North Yuba Subbasin and the South Yuba Subbasin. The community of Olivehurst, the service area of OPUD, and the components of the South County Infrastructure Project are located within the South Yuba Subbasin.

The South Yuba Subbasin has ground water levels that range from about 25 feet msl along portions of the Highway 70 to 140 feet msl at the edge of the subbasin near the Yuba River and Beale AFB. Near the center of the subbasin, groundwater is found at about 45 feet msl (Yuba 2011a). Groundwater levels in the South Yuba Subbasin have historically exhibited a well-developed regional cone of depression since as early as the 1940s. The cone of depression starts on the western side of Beale AFB and continues into the central region (west of Beale AFB) of the subbasin (Yuba 2011a). In 1960, nearly all water levels in the subbasin were well below adjacent river levels on the Bear, Feather, and Yuba Rivers because of reliance on groundwater pumping. (YWCA 2019)

By 1984, water levels in the center of the South Yuba cone of depression had fallen to 30 feet below sea level. The water level contours adjacent to the Bear and Yuba Rivers indicated a large gradient and seepage from the rivers (DWR, 2006b). Groundwater levels in the South Yuba Subbasin have recovered since the introduction of surface water deliveries to the subbasin in 1983. (YCWA 2022)

Similar to most groundwater basins in the state, groundwater levels typically decline in summer and recover in the fall and winter. This follows patterns of use and recharge. More groundwater use

occurs in the summer to irrigate fields and water lawns, and more recharge occurs in the winter from precipitation and higher streamflow.

During Water Year (WY) 2021, the recorded precipitation in Yuba County was 7.16 inches, representing 35.1% of long-term average precipitation (WY 1948 – 2021), as measured at Marysville. Yuba River flow at Smartsville for the same period was 600,000 acre-feet, representing about 24% of the long-term average flow (WY 1901 – 2021) at that location. (YCWA 2022) During WY 2021, groundwater use was estimated at 155,860 acre-feet (AF) for the South Yuba Subbasin (146% of average since 2013). This compares to recent annual groundwater use (since 1990 in the South Yuba Subbasin between 69,000 (in 2019) and 160,000 AF (in 1991). Surface water use during WY 2021 is estimated at 73,760 AF for the South Yuba Subbasin (78% of average since 2013).

Based on estimates using the Yuba Groundwater Model (YGM), from beginning to end of WY 2021, the South Yuba Subbasin saw a decrease in storage of approximately 81,000 AF. Though groundwater in storage decreased in the South Yuba Subbasin during WY 2021, cumulative change in storage since WY 1961 was approximately +151,000 AF by WY 2021 in the South Yuba Subbasin. This represents a long-term improvement to conditions in the South Yuba Subbasin. (YCWA 2022)

Groundwater level data were collected by the Yuba County Water Agency at 18 representative monitoring wells in the South Yuba Subbasin during WY 2021. Comparing March 2021 measurements to established sustainable management criteria, groundwater levels were above the minimum threshold and local management level at all representative monitoring wells (higher levels are better for groundwater levels) within the South Yuba Subbasin. Groundwater levels were above the measurable objective at 16 wells in the South Yuba Subbasin. Groundwater levels were at or above the historically full aquifer levels at 6 wells in the South Yuba Subbasin. (YCWA 2022)

The evaluation of groundwater level data in the South Yuba Subbasin conducted for water supply studies in OPUD's service area also show large groundwater level declines prior to 1983 and a similar amount of recovery since 1983. The magnitude of the declines and subsequent recovery ranged from 10 feet or less at the edges of the basin to 85 feet in the center of the cone of depression. By 2005, water levels in most wells had recovered to 1950s levels or higher, and the cone of depression was no longer present. The water level data show no indication of overdraft occurring in the subbasin at present. (OPUD 2022)

The South Yuba Subbasin is also not expected to become overdrafted in the future based on projected groundwater pumpage and surface water deliveries. Unlike many medium- and high-priority basins and subbasins managed under Groundwater Sustainability Plans (GSP), groundwater extraction in the Yuba Subbasins does not exceed the sustainable yield, and the average annual groundwater storage is stable or increasing under all scenarios, suggesting sustainable conditions. Therefore, the South Yuba Subbasin is expected to be reliable in all years and over the 25-year planning horizon of the OPUD 2020 Urban Water Management Plan (UWMP). (OPUD 2022)

Regional groundwater quality in the South Yuba Subbasin is considered good to excellent for municipal, domestic, and agricultural uses and does not have a significant adverse impact on the beneficial uses of groundwater in the subbasin. There is naturally occurring arsenic, iron, and manganese in some areas that may have concentrations that exceed the associated drinking water thresholds, although such occurrences are limited. Instances with elevated concentrations may be

addressed through treatment, blending, use of supplies at different depths or locations, or through non-potable uses not sensitive to the constituent. Beale Air Force Base and other localized contaminated sites are present in the subbasin but are under remediation overseen by the State and federal regulatory agencies. (Yuba County 2011b)

NEAR SURFACE GROUNDWATER

Trenching to construct both water and wastewater pipelines and excavation to construct wet wells at pump and lift stations could approach 30 feet in depth. At this depth, there is the potential to intercept perched, near surface groundwater. In support of the development engineering for the South County Infrastructure Project, soil borings were completed to determine soil conditions. These borings also identified the presence or absence of near-surface groundwater and the depth that it could be encountered. Tables 12-15 present the results of this testing. Based on this information, the depth to groundwater across the project areas typically ranges from 20 to 30 feet, although it occasionally is measured above 20 feet or below 30 feet.

Table 12 Pipeline Depth to Groundwater

Street	Boring Depth (feet)	Approximate Depth to Groundwater (feet)
Mary Avenue	21.5	Not Encountered
McGowan Parkway	15.0 – 61.5	23 - 36
McGowan Parkway/Olive Avenue	16.5 – 51.5	29-31
SR 65 Median	41.5	25.0
Rancho Road	15-51.5	15 – 27.5
Rancho Road	14.5 – 51.5	14 - 25
Rancho Road	21.0 – 41.5	28
Rancho Road	16.5 – 51.5	36
Rancho Road	21.5 – 41.5	40
Rancho Road	15	Not encountered
Forty Mile Road	15 – 51.4	26 – 37.5
Forty Mile Road	21.5 – 51.5	17 – 32
Forty Mile Road	14.5 – 16.5	Not encountered
Forty Mile Road	15	Not encountered
Rosser Rd to Shimer Road	41.5	21.5 – 35.0
Olivehurst Avenue	16.5 – 41.5	Not encountered

Source: Blackburn Consulting, 2021a.

Table 13 Freeway Crossings Depth to Groundwater

HDD Location	Boring Depth (feet)	Approximate Depth to Groundwater (feet)
McGowan Parkway under SR 70	6.15	31 – 36
Olive Ave to Ranch Road Under SR 65	41.5 – 51.5	25 – 31
Rosser Rd to Shimer Road Under SR 65	41.5	21.5 - 35

Source: Blackburn Consulting, 2021a.

Table 14 Waterway Trenchless Crossings Depth to Groundwater

Waterway	Boring Depth (feet)	Approximate Depth to Groundwater (feet)
Rancho Road under Reeds Creek	51.5	14 – 23
Rancho Road under Hutchinson Creek	51.5	25
Rancho Road under Kimball Creek	51.5	24
Rancho Road under Virginia Creek	51.0	36 – 38.5
Forty Mile Road under Kimball Creek	51.5	17 - 24

Source: Blackburn Consulting, 2021a.

Table 15 Pump Stations/Lift Stations Depth to Groundwater

Pump/Lift Station	Boring Depth (feet)	Approximate Depth to Groundwater (feet)	Depth of Wet Well (feet)
PS-1 – Olivehurst Avenue	41.5	23	24 - 33
PS-2 – McGowan Parkway		To be determined	To be determined
PS-26 – McGowan Parkway	41.5	23	40.5
PS-21 – Rancho Rd/Shimer Road	41.5	23	41.3
LS-22 - Rancho Rd/Kimball Creek	41.5	19	23.4
LS-23 – Rancho Rd/Virginia Creek	41.5	40	27.2
LS-24 – Forty Mile Road	41.5	37.5	40.7
PS-25 – Forty Mile Road	41.2	27	37

Source: Blackburn Consulting, 2021a.

FLOODING AND DRAINAGE

Flooding within the South County Infrastructure Project areas is complex. Flood events can occur on both a regional basis and locally. Within the community of Olivehurst, many streets and areas lack developed storm drainage facilities and are subject to nuisance flooding during rain events. Yuba County is pursuing a program to construct and improve stormwater drainage within the area in a multi-facility program of improving roads, providing curbs, gutters, and sidewalks, and storm drain facilities. Additionally, OPUD, through the South County Infrastructure project SSO components, is seeking to avoid or reduce pollution during storm events due to overflowing sewers.

On a regional basis, Olivehurst and the South County Infrastructure Project are exposed to a number of sources of flooding from the Feather River, Bear River, backflow from the Bear River, and local streams such as Reeds Creek, Hutchison Creek, Kimball Creek or Virginia Creek. The Federal Emergency Management Agency (FEMA) has identified areas exposed to flooding within the project areas. See Figure 12. As determined by FEMA, pipelines installed within Rancho Road between Reeds and Hutchinson Creeks and on Forty Mile Road and Rancho Road in the vicinity of Kimball Creek would be developed in a special hazard flood area subject to inundation during a 100-year (1 %) flood. Lift station 22 and pump station 25 may also be located within a special hazard flood area.

REGULATORY SETTING

FEDERAL LAWS AND REGULATIONS

CLEAN WATER ACT

Administered by the EPA; implemented by the SWRCB and the nine RWQCBs in California; Section 303(d) requires states to develop and maintain lists of water bodies that don't attain water quality standards; Section 402 sets standards for pollutant discharges; Section 404 regulates the placement of dredge and fill materials in waters of the U.S., including wetlands.

NATIONAL FLOOD INSURANCE ACT

Administered by FEMA; authorizes FEMA to develop regulations and establish requirements for floodplain management; includes requirements for obtaining flood insurance.

STATE OF CALIFORNIA LAWS AND REGULATIONS

CONSTRUCTION STORM WATER GENERAL PERMIT

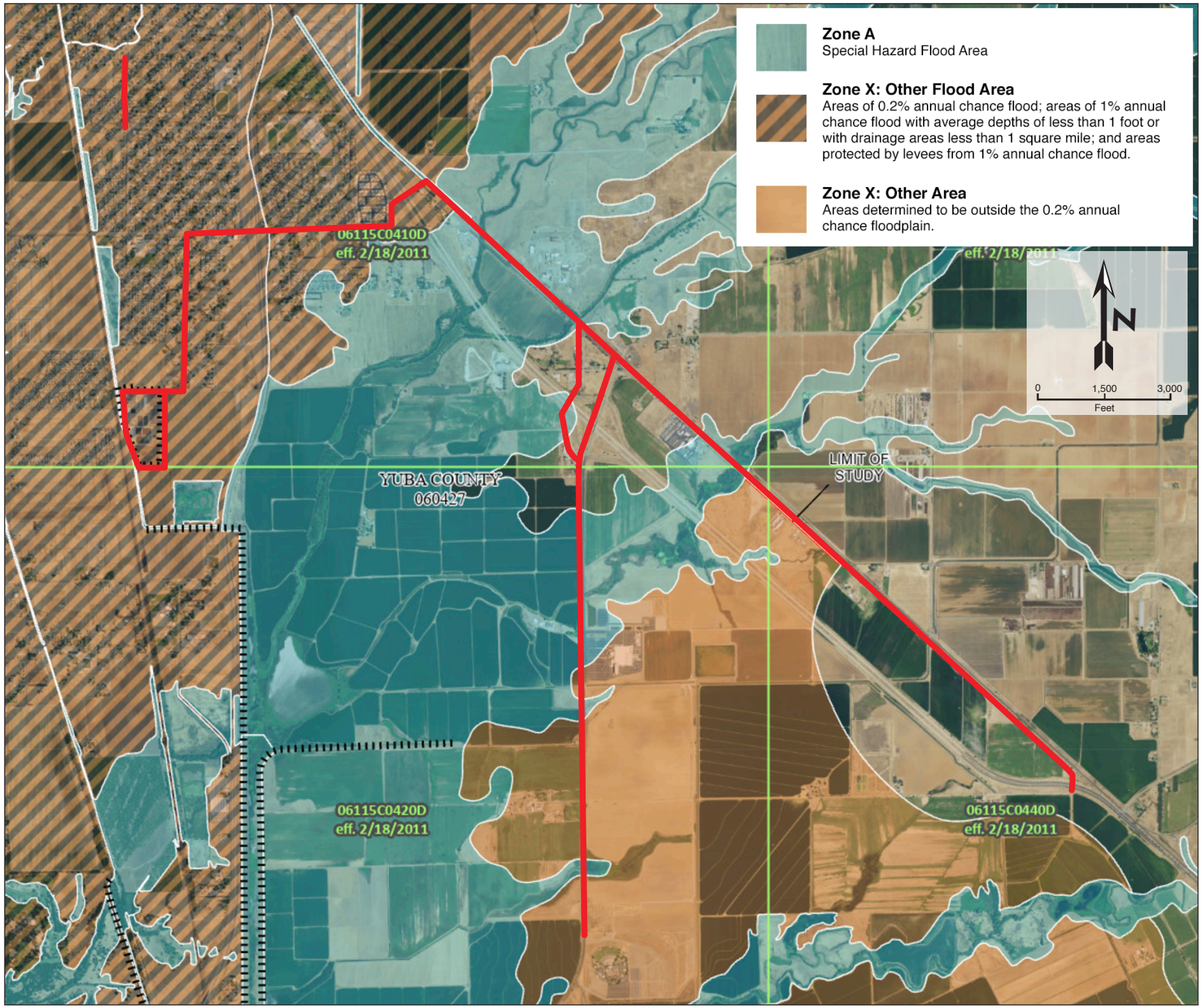
Dischargers whose project disturbs one or more acres of soil, or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction General Permit Order NO. 2009-0009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP).

CLEAN WATER ACT SECTION 404 PERMIT

If the project will involve discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corp of Engineers (USACE). If a Section 404 permit is required by the USACE, the Central Valley Water Regional Quality Control Board (CVRWQCB) will review the permit application to ensure that discharge will not violate water quality standards.

CLEAN WATER ACT SECTION 401 PERMIT – WATER QUALITY CERTIFICATION

If a USACE permit (e.g., Non-Reporting Nationwide Permit, Nationwide Permit, Letter of Permission, Individual Permit, Regional General Permit, Programmatic General Permit), or any other federal permit (e.g., Section 10 of the Rivers and Harbors Act or Section 9 from the United States Coast Guard), is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the CVRWQCB prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications.



South County Infrastructure Project

SOURCE: Federal Emergency Management Agency 2023; Planning Partners 2023

Figure 12

FEMA Flood Zones

WASTE DISCHARGE REQUIREMENTS – DISCHARGES TO WATERS OF THE STATE

If USACE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project may require a Waste Discharge Requirement (WDR) permit to be issued by CVRWQCB. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation.

Projects involving excavation or fill activities impacting less than 0.2 acre or 400 linear feet of non-jurisdictional waters of the state may be eligible for coverage under the State Water Resources Control Board Water Quality Order No. 2004-0004-DWQ (General Order 2004-0004).

DEWATERING PERMIT

If the proposed project includes construction or groundwater dewatering to be discharged to land, the proponent may apply for coverage under the State Water Board General Water Quality Order (Low Threat General Order) 2003-0003 or the Central Valley Water Board's Waiver of Report of Waste Discharge and Waste discharge Requirements (Low Threat Waiver) R5-2018-0085. Small temporary construction dewatering projects are projects that discharge groundwater to land from excavation activities or dewatering of underground utility vaults. Dischargers seeking coverage under the General Order or waiver must file a Notice of Intent with the Central Valley Water Board prior to beginning discharge.

LIMITED THREAT GENERAL NPDES PERMIT

If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for Limited Threat Discharges to Surface Water (Limited Threat General Order). A complete Notice of Intent must be submitted to the Central Valley Water Board to obtain coverage under the Limited Threat General Order.

NPDES PERMIT

If the proposed project discharges waste that could affect the quality of surface waters of the State, other than into a community sewer system, the proposed project will require coverage under a NPDES permit. A complete Report of Waste Discharge must be submitted with the CVRWQCB to obtain a NPDES permit.

YUBA COUNTY LAWS AND REGULATIONS

YUBA COUNTY STORMWATER QUALITY ORDINANCE

Chapter 7.50 of the Yuba County Code of Ordinances establishes the County's stormwater management regulations. The purpose of the ordinance is to ensure that Yuba County is compliant with State and federal laws, and fulfills its requirements to: protect the health, safety, and general welfare of the citizens of Yuba County; enhance and protect the quality of waters of the State in Yuba County by reducing pollutants in stormwater discharges to the maximum extent practicable and controlling non-stormwater discharges to the storm drain system; and to cause the use of best

management practices by the County and its citizens that will reduce the adverse effects of polluted runoff discharges on waters of the state.

The ordinance is intended to assist in the protection and enhancement of the water quality of watercourses, water bodies and wetlands in a manner pursuant to and consistent with the Federal Clean Water Act (33 U.S.C. Sections 1251 et seq.) and any subsequent amendments thereto, by reducing pollutants in storm water discharges to the maximum extent practicable and by prohibiting non-storm water discharges into the storm drain system. The ordinance is also intended to assist in meeting the requirements of the California State Water Resources Control Board Order No. 2013-0001-DWQ and any subsequent amendments thereto.

The ordinance seeks to promote these purposes by: prohibiting illicit discharges to the storm drain system; establishing authority to adopt requirements for stormwater management, including source control requirements, reducing pollution to the maximum extent practicable; establishing authority to adopt requirements for development projects to reduce stormwater pollution and erosion both during construction and after the project is complete; and establishing authority that will enable the County to implement and enforce any stormwater management plan adopted by the County.

Subject to the authority granted by the Regional Water Quality Control Board and the County Public Works Director, the following discharge shall not be prohibited except as otherwise provided by this ordinance to any discharge regulated under a NPDES permit issued to the discharger and administered by the State, provided that the discharger is in compliance with all requirements of the permit and other applicable laws.

YUBA COUNTY FLOODPLAIN MANAGEMENT ORDINANCE

Chapter 10.30 of the Yuba County Code of Ordinances provides the County's floodplain management regulations. The purpose of the ordinance is to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by legally enforceable regulations applied uniformly throughout the community to all publicly and privately owned land within flood-prone, mudslide, or flood related erosion areas. The ordinance provides direct and specific requirements for development within the floodplain, including that all building pad elevations must be raised to at least one foot above the Base Flood Elevation.

ENVIRONMENTAL EVALUATION

Issue Area CEQA Appendix G Question	Project Component				Discussion
	Water Plant	WWTP	Pipelines	Pump Stations	
	Applicable to Issue Area?				
X.a	✓	✓	✓	✓	Construction impacts – LTS after mitigation
X.b					No project use of groundwater or interference with recharge
X.c		✓			No adverse effects on existing streams or waterways, or capacities of stormwater infrastructure
X.d					No increased exposure to flooding or other hazards
X.e					No conflict with GSP or Basin Plan

Question (a) Water quality: Less-than-significant Impact with Mitigation. Construction of the various project components could adversely affect surface water quality during storm events or via construction dust control measures. Table 16 sets forth the activities and sources of surface water contamination.

Table 16 Potential Project Actions Leading to Hydrology or Water Quality Effects

Component No.	Component	Potential Water Quality Effects
1	SSO reduction measures	
	Mary Ave/McGowan Pkwy/Olivehurst Ave pipelines	Trench spoils storage/reuse/disposal
	PS-1	Grading/Excavation of Dry Well/Paving
	PS-2	Grading/Excavation of Dry Well/Paving
	PS-26	Grading/Excavation of Dry Wells/Paving
	SR 70 HDD Crossing	Pit excavation/Drill spoils
2	Modify WWTP	Grading/Excavation
3	Rancho Rd/Forty Mile Rd wastewater pipelines	Trench spoils storage/reuse/disposal
	PS-21	Grading/Excavation of Dry Well/Paving
	LS-22	Grading/Excavation of Dry Well/Paving
	LS-23	Grading/Excavation of Dry Well/Paving
	LS-24	Grading/Excavation of Dry Well/Paving
	PS-25	Grading/Excavation of Dry Well/Paving
	SR 65 HDD Crossing (Olive Ave.)	Pit excavation/Drill spoils
	SR 65 HDD Crossing (Shimer Rd.)	Pit excavation/Drill spoils
4	Water Plant	Grading/Water well development/Paving
	Water pipelines	Trench spoils storage/reuse/disposal
5	City of Wheatland connection pipelines	Trench spoils storage/reuse/disposal
General	Appurtenant Facilities	Grading/Equipment maintenance/Construction chemical and fuel storage

Sources: Jacobs Engineering, Inc. 2022, Planning Partners 2023.

Each of these project activities has the potential to release sediment, chemicals, and other materials used in construction either accidentally or through construction operations.

CONSTRUCTION

ALL PROJECT COMPONENTS

Project construction activities have the potential to affect water quality and contribute to localized violations of water quality standards if impacted stormwater runoff from construction activities enters waterways in the project vicinity, including Reeds Creek, Hutchinson Creek, Kimball Creek, Virginia Creek, or other unnamed intermittent streams in the project areas. Urban stormwater collection and management facilities within the community of Olivehurst vary from formal stormwater collection and treatment facilities to unmaintained roadside ditches. The discharges from construction activities within the Olivehurst urban area could adversely affect stormwater quality in the community.

Soils exposed by construction activities have the potential to affect water quality in two ways: 1) suspended soil particles and sediments transported through runoff; or 2) sediments transported as dust that eventually reach local water bodies. Spills or leaks from heavy equipment and machinery, staging areas, or building sites also have the potential to affect runoff water quality. Typical pollutants include, but are not limited to, petroleum and heavy metals from equipment and products such as paints, solvents, and cleaning agents, which could contain hazardous constituents. Drilling muds (bentonite and/or polymers) would be used during horizontal drilling operations. Sediment from erosion of graded or excavated surface materials, leaks or spills from equipment, or inadvertent releases of building products could result in water quality degradation if runoff containing the sediment or contaminants should enter receiving waters in sufficient quantities. Discharge of polluted stormwater or non-stormwater runoff could violate waste discharge requirements. However, in general, impacts from construction-related activities would be short-term and of limited duration at any one location.

Erosion control measures would be required in accordance with Yuba County Department of Public Works Improvement Standards and Specifications, and an Erosion and Sediment Control Plan would be required for those project components that are within the Olivehurst urban area.

Because the proposed project would disturb more than one acre, OPUD or its contractor would be required to obtain a General Construction Activity Storm Water Permit from the SWRCB for stormwater discharges associated with construction activities. This permit would require the implementation of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP must contain Best Management Practices (BMP) to reduce soil erosion and protect stormwater runoff. In addition, a Notice of Intent (NOI) would be filed with CVRWQCB and Yuba County.

Development of the SWPPP would include plans to treat stormwater runoff in accordance with the standards of the California Stormwater Quality Association (CASQA) Stormwater BMP Handbook for New Development and Redevelopment. Yuba County Code of Ordinances Section 11.23.050 requires applications for grading permits to provide evidence of coverage under the NPDES Program.

Non-stormwater management and material management controls reduce non-sediment-related pollutants from potentially leaving the construction site. The Construction General Permit prohibits the discharge of materials other than stormwater and authorized non-stormwater discharges (such as pipe flushing and testing). Non-stormwater BMPs tend to be management practices with the purpose of preventing stormwater from coming into contact with potential pollutants. Examples of non-stormwater BMPs include preventing illicit discharges, and implementing good practices for vehicle and equipment maintenance, cleaning, and fueling operations, such as using drip pans under vehicles. Waste and materials management BMPs include implementing practices and procedures to prevent pollution from materials used on construction sites. Examples of materials management BMPs include the following:

- Good housekeeping activities such as storing of materials covered and elevated off the ground, in a central location;
- Securely locating portable toilets away from the storm drainage system and performing routine maintenance;
- Providing a central location for concrete washout and performing routine maintenance;

- Providing several dumpsters and trash cans throughout the construction site for litter/floatable management; and
- Covering and/or containing stockpiled materials and overall good housekeeping on the site.

While the final materials management BMPs to be used during construction of the proposed South County Infrastructure Project are currently unknown, the project would likely include a combination of the BMP examples listed above. Final BMPs for the proposed project construction would be chosen in consultation with the CASQA Stormwater BMP Handbook for New Development and Redevelopment, and implemented by the project contractor.

In accordance with the Construction General Permit, the project site would also be inspected during construction before and after storm events and every 24 hours during extended storm events in order to identify maintenance requirements for the implemented BMPs and to determine the effectiveness of the implemented BMPs. The site-specific SWPPP that would be prepared for the proposed project would be modified as construction activities progress. A Qualified SWPPP Practitioner (QSP) would ensure compliance with the SWPPP through regular monitoring and visual inspections during construction activities. The QSP for the project would amend the SWPPP and revise project BMPs as determined necessary through field inspections to protect against substantial erosion or siltation on- or off- site.

Construction of the various South County Infrastructure Project components may not occur as a single construction project, but rather as a series of individual components that could be constructed over an unknown period of time. Additionally, because a SWPPP has not yet been prepared for the entire project or individual project components, the proposed project could result in a significant impact related to short-term construction-related water quality. To ensure implementation of stormwater requirements to avoid siltation or other adverse effects and ensure that State and local requirements to protect water quality would occur, the following mitigation measure would be required.

Mitigation Measure HYD-1

A. OPUD or its contractor shall submit Permit Registration Documents (PRD) for the Construction General Permit Order 2009-0009-DWQ to the State Water Resources Control Board, and comply with, and implement, all requirements of the permit. A Legally Responsible Person (LRP) shall electronically submit PRDs prior to commencement of construction activities in the Storm Water Multi-Application Report Tracking System. PRDs consist of the Notice of Intent, Risk Assessment, Post-Construction Calculations, a Site Map, the Storm Water Pollution Prevention Plan (SWPPP), a signed certification statement by the LRP, and the first annual fee. Following submittal of a Notice of Intent package and development of a SWPPP in accordance with the Construction General Permit, OPUD or its contractor will receive a Waste Discharge Identification Number from the SWRCB. All requirements of the site-specific SWPPP, including any revisions, shall be included in construction documents for the project. Prior to the initiation of any construction, proof of registration shall be submitted to the Yuba County Director of Public Works for review and approval and shall remain on the project site during all phases of construction.

B. For those project components within the Olivehurst urban area, OPUD or its contractor will apply for and obtain an Erosion and Sediment Control Plan in accordance with Yuba

County Department of Public Works Improvement Standards and Specifications, and implement all identified erosion control measures set forth in the Plan.

With implementation of Mitigation Measure HYD-1, the proposed project is not expected to violate any water quality standards or waste discharge requirements during construction. Compliance with applicable requirements would minimize project impacts to water quality. A less-than-significant impact would result, and no additional mitigation would be necessary.

ENCOUNTERED SHALLOW GROUND WATER DURING CONSTRUCTION

As described in Tables 12 to 15, shallow groundwater can be encountered between 14 and 42 feet below the ground surface (bgs) in the areas that would be affected by the construction of the project components. Although groundwater was present at the time depths were calculated, the depth to perched groundwater varies with the time of year, with the lowest levels present in the fall.

Generally, trenching for the installation of wastewater force mains and water pipelines would not be expected to encounter perched groundwater. However, along Rancho Road in the vicinity of lift stations LS-22 and LS-23, because of the depth of the sanitary sewer pipelines, groundwater could be intercepted. Similarly, based on current information, the construction of wet wells at four of the lift/pump stations could encounter groundwater (PS-1, PS-26, PS-21, and PS-25). The Geotechnical Basis of Design Report prepared for the project identified the potential to encounter groundwater for facilities greater than approximately 15 feet bgs at the WWTP and 20 bgs for the lift/pump stations (Blackburn 2021a). Dewatering would be required if the construction of project components encountered perched groundwater. The discharge of groundwater, especially to roadside ditches in rural areas of the project, could contribute to pollution of existing surface waters with sediments. This would be a significant impact. To avoid encountering perched groundwater or avoid the release of pollutants should groundwater be encountered and require dewatering, implementation of the following mitigation would be required.

Mitigation Measure HYD-2

Groundwater elevations were taken during the geotechnical exploration phase of the project design, and noted in the Geotechnical Data Report. However, groundwater elevations in the project areas will vary by season, and it is known that overall groundwater elevations in the South Yuba Basin are trending to rising slightly since surface water has been substituted for groundwater for agricultural use in the project area. OPUD or its contractor shall monitor groundwater and conduct construction operations in a manner intended to avoid pumping for groundwater control, using one or more of the following sub-measures:

A. Monitor groundwater elevations on a seasonal basis, and construct improvements (for all project components, but specifically auger bores, pump and lift station wet wells, and pipelines) during those time periods when pumping for groundwater control can be avoided.
B. If possible, given the depth of encountered groundwater, tremie concrete could be used in the bottom of pump and lift station wet wells, or
C. In the event that groundwater pumping is to be pursued by OPUD or its contractor, OPUD or the contractor shall apply for and obtain a Low Threat Discharge Permit and any other permits necessary for such pumping. Permits that may be required include NPDES permit requirements and CVRWQCB requirements, which may include the approval of a Dewatering Permit. Appropriate groundwater handling and disposal would be ensured as

part of the SWPPP for the project and would include collection and treatment measures prior to discharge.

WELL DEVELOPMENT

Development of the water plant includes drilling a production water well. The well construction process requires the use of water during drilling and construction. For the South County Improvements Project water plant (WP), construction water would be provided by an existing agricultural well located southwest of the WP site. Construction water would be delivered by a temporary above-ground pipeline. During well development and pump testing of the well, discharge water would be disposed of in such a manner as to cause the least impact to the site and vicinity. During well development and construction, water containing solids[6], including sand and silts, would be transported via a 12-inch above-ground pipe to an adjacent settling basin east of the project site. Water in the 500,000 gallon capacity settling basin would be allowed to percolate into the ground or evaporate. The project contractor would provide temporary earth berms as necessary to retain water within the basin to prevent the water from entering any local waterways. After well development and testing have been completed, berms would be removed and the settling basin would be reclaimed.

Because of the turbidity of the water produced during well development and the lack of developed stormwater collection and treatment in the project vicinity, this would be a significant impact. Implementation of the following mitigation measure would reduce the chance that local waterways would be adversely affected by well development.

Mitigation Measure HYD-3

A. Implement Mitigation Measure HYD-1 and include the proposed water well and its settling basin within the NPDES permit.
B. In coordination with Yuba County, all construction activities shall implement stormwater pollution prevention Best Management Practices (BMP) designed to reduce potential impacts to water quality during construction of the water well, including, but not limited to:
    1. Protecting adjacent properties and waterways from the discharge of sediment or other contaminants from the well construction site,
    2. Scheduling as much project work as possible during the dry season,
    3. Using other BMPs as necessary, including applying rainy season erosion controls, managing stockpiles, disposing of well development water properly, and correctly managing and disposing of construction wastes,
    4. Maintaining all Best Management Practices, and
    5. Stabilizing the site after construction is complete, including removing sediment from the settling basin.

Implementation of Mitigation Measure HYD-3 and compliance with applicable requirements would minimize well development impacts to water quality. After mitigation, a less-than-significant impact would result, and no additional mitigation would be necessary.

[6] Turbid development water discharged to the settling basin would have a turbidity value defined by Nephelometric Turbidity Units (NTU) of 100-500 NTU.

OPERATIONS

During operation, implementation of the South County Infrastructure Project would not adversely affect groundwater or surface water quality. All pipelines would be placed underground, and all pump and lift stations, though located above-ground would be isolated by the wastewater collection system from surface water and groundwater. No adverse effects due to decreased water quality would occur. Therefore, the impact to water quality from operations would be less than significant, and no mitigation would be required.

Question (b) Groundwater supply: Less-than-significant Impact. The only project components that would influence the use of groundwater are the South County Infrastructure water plant and associated water mains. This component of the overall project is intended to provide municipal and industrial water in the future to land uses developed consistent with the land use policies of the Yuba County 2030 General Plan. No groundwater would be used by the SSO, Wheatland, or wastewater components of the project. Since no land uses have been proposed for the South County Service Area, the proposed project would not substantially deplete groundwater supplies, nor interfere with groundwater recharge. Impacts would be considered less than significant, and no mitigation would be necessary. For further information regarding the impacts of future urban development within the South County Service Area, see Sections XI, Land Use and Planning, and XIV, Population and Housing, of this Initial Study/Mitigated Negative Declaration.

Questions (c.i) (c.ii) (c.iv) Drainage patterns: Less-than-significant Impact: Installation of below ground water and wastewater pipelines would not interfere with drainage patterns in areas affected by the project. Pipelines installed within Rancho Road and Forty Mile Road would cross under existing waterways using directional drilling techniques. There would be no effect on the bed or banks of Reeds Creek, Hutchinson Creek, Kimball Creek, or Virginia Creek within the project area. Impervious surfaces within five lift stations and pump stations located in rural areas of the project would average 9,200 square feet each in paved area. This would result in a minor increase in impervious area over the 825 acre nominal project area.

The proposed pipelines would be constructed within the paved sections of public roadways within the project area. After the pipelines are installed, the ground surface above the pipe would be restored to its original condition (e.g., repaved within streets or backfilled with native soil in areas outside of paved roadways). Therefore, implementation of the proposed South County Infrastructure Project would not modify surface water drainage patterns, and would not cause localized off-site migration of runoff, erosion, and/or impede or redirect flood flows. A less-than-significant impact would result, and no mitigation would be required.

Question (c.iii) Exceedance of Capacity: Less-than-significant Impact: The OPUD WWTP discharges tertiary treated water (consisting of filters and ultraviolet light (UV) disinfection) into the Clark Lateral. The treated water then flows through the Western Pacific Interceptor Canal (WPIC), through Reeds Creek, through the Bear River, to the Feather River. As a result of the proposed project, peak wet weather flow (PWWF) discharges from the OPUD WWTP would increase, thereby increasing the peak effluent flowrate discharged to the Clark Lateral and the WPIC. The proposed SSO mitigation work (project Component 1) would add an additional 3 mgd to the WWTP influent flowrate. Additionally, the City of Wheatland would send their sewage to the OPUD WWTP for treatment and disposal The combination of these two sources would thereby increasing overall influent flowrates.

With implementation of Component 2 of the proposed project, the peak wet weather capacity of the OPUD tertiary treatment plant would be increased by 3 mgd. Additionally, an Emergency Storage Basin of approximately 8 million gallons would be constructed to assist in storing peak flowrates received at the WWTP until storms have subsided. Therefore, total plant effluent capacity increases as a result of this component would be 3 mgd of additional flow to be discharged to the Clark Lateral and the WPIC.

Discharged sewage effluent would travel downstream in the Clark Lateral and the WPIC until it reached the South Olivehurst Detention Basin. The South Olivehurst Detention Basin,owned and operated by Yuba County, was constructed approximately 18 years ago as a storm-water detention basin and pumping station that was intended to reduce the threat of flooding to the community of Olivehurst. Prior to the construction of the Detention Basin, flooding in Olivehurst was due in part to high water levels in the Bear River that would back up in the WPIC into Olivehurst. The South Olivehurst Detention Basin was constructed to block this water from reaching the community. Flap gates (one-way gates that do not allow water from the Bear River to enter into the community of Olivehurst when the Bear River is at flood stage) were installed on the WPIC, and a detention basin was installed upstream of those gates. As high water from the Bear River backs up to the gate location, the gates automatically close, thereby blocking water passage on the WPIC into Olivehurst. Upstream stormwater from Olivehurst flows into the detention basin where pumps pass the upstream stormwater over the gates and into the downstream reach of the WPIC. The storage capacities of the detention basin and the installed pumps would be sufficient to manage the predicted incoming stormwater and sewage effluent discharged from the WWTP during peak flows. If the combination of upstream stormwater and sewage effluent from the OPUD WWTP were greater than the capabilities of the detention basin and pumps to handle, the detention basin could reach capacity and overtop.

The designer of the South Olivehurst Detention Basin (MHM, Inc) has advised that up to 20 cfs of sewage effluent can be discharged to the WPIC without impacting the ability of the South Olivehurst Detention Basin to function properly. With implementation of the proposed project, the total discharge of sewage effluent to the WPIC is not anticipated to exceed 15.5 cfs of peak wet weather discharge, an amount that would be less than the capacity of the Detention Basin and pumps. Implementation of the proposed project would not result in a discharge during storm events that would exceed the capacity of the South Olivehurst Detention Basin to manage flows. This would be a less-than-significant impact and no mitigation would be necessary.

Question (d) Flood hazard, tsunami, or seiche zones: Less-than-significant Impact. While the proposed pipeline alignments run through areas located within the FEMA designated 100-year or 500-year floodplains, following installation of the pipeline, areas disturbed by construction would be returned to their original condition. The proposed project area is located over 100 miles from the Pacific Ocean at elevations ranging between 55 feet msl and 75 feet msl and distant from any lakes (Google Earth 2023). Therefore, the proposed project would not be exposed to inundation hazards related to a seiche or tsunami. Implementation of the proposed South County Infrastructure Project would not increase existing flood risks, nor would it act to increase exposure of existing land uses and activities to seiche or tsunami. A less-than-significant impact would result, and no mitigation would be required.

Question (e) Conflict with water quality or sustainable groundwater management plans: Less-than-significant Impact. The current Groundwater Sustainability Plan for the Yuba Subbasins was adopted in 2019. As noted above under Question a, the proposed project would be required to implement a SWPPP during construction, and proposed project operations would not result in waste discharges to surface or groundwater resources. Therefore, the proposed project would not include any waste discharges that could conflict with the Basin Plan.

Regional groundwater in Yuba County is composed of two subbasins: the North Yuba Subbasin and the South Yuba Subbasin. The project area is located within the South Yuba Subbasin. The South Yuba Subbasin is not expected to become overdrafted in the future based on projected groundwater pumpage and surface water deliveries. Unlike many medium- and high-priority basins and subbasins managed under GSPs, groundwater extraction in the Yuba Subbasins does not exceed the sustainable yield, and the average annual groundwater storage is stable or increasing under all scenarios, suggesting sustainable conditions. As noted above under Question b, the proposed South County Infrastructure Project, in and of itself, would not result in an increase in groundwater use.

Therefore, the proposed project would not conflict with or obstruct the water quality control plan or a sustainable groundwater management plan, and the potential impacts would be less than significant. No mitigation would be required.

CUMULATIVE IMPACTS

Implementation of the 2030 General Plan would potentially combine with development in the region to create significant cumulative hydrologic and water resource impacts. However, the General Plan's Public Health & Safety Element policies are designed to reduce the rate of runoff, filter out pollutants, and/or facilitate groundwater infiltration. Implementation of existing regulations and laws, along with the policies and actions of the 2030 General Plan, would reduce the 2030 General Plan's contribution to this potentially significant cumulative impact to water quality. The 2030 General Plan would have a less than cumulatively considerable contribution to a significant cumulative impact related to water quality impacts assuming application of existing regulations and policies and actions of the 2030 General Plan.

Development and land use change in Yuba County and in the surrounding region could result in additional impervious surfaces, and the diversion of groundwater to surface water through subsurface drainage features or localized dewatering measures. As a result, levels of groundwater recharge in the underlying groundwater basin would decline. Reductions in groundwater recharge in a given area could affect groundwater levels and the yield of hydrologically connected wells. This is considered a significant cumulative impact. 2030 General Plan policies would be implemented in coordination with the Yuba County Groundwater Management Plan on a regional level to ensure conjunctive use, perennial yield, and avoidance of groundwater overdraft within the County and in surrounding areas that are hydrologically connected to it. The impact is less than cumulatively considerable.

Much of the floodplain area of Yuba County and adjacent Sutter County is protected by levees along the Feather River, Yuba River, Bear River, and Honcut Creek. Riverine flooding can overwhelm the integrity of the local or regional levee system. This is a potentially significant cumulative impact. Adoption and implementation of the proposed policies in the 2030 General Plan, as well as existing State and local regulations, would reduce the risk for people and structures involving flooding that

could result from failure of a levee. With implementation of the 2030 General Plan policies and actions, the 2030 General Plan would have a less than cumulatively considerable contribution to a significant cumulative impact.

The proposed South County Infrastructure Project is consistent with, and implements, the 2030 General Plan. Thus, the cumulative impacts described above include the proposed project within the scope of General Plan land uses and supporting infrastructure assessed in the 2030 General Plan Environmental Impact Report (EIR). Implementation of the South County Infrastructure project would not result in new cumulative impacts or increase the magnitude of cumulative impacts beyond those assessed in the 2030 General Plan EIR. Additionally, the evaluation of the project's environmental effects on hydrology and water quality set forth in this chapter concludes that all identified impacts could be reduced below a level of significance with the imposition of identified mitigation. For these reasons, the proposed infrastructure project would not make a cumulatively considerable contribution to the cumulative impacts of implementing the 2030 General Plan beyond those assessed in the 2030 General Plan EIR. This would be a less-than-significant impact, and no mitigation beyond that set forth in this chapter would be required.

XI. LAND USE AND PLANNING	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Physically divide an established community?			**X**	
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?			**X**	

ENVIRONMENTAL SETTING

Much of the overall project area where water and wastewater pipelines would be constructed consists of roadways traversing rural areas of Yuba County or within the town of Olivehurst. These roadways include Mary Avenue, Olivehurst Avenue, McGowan Parkway, Olive Avenue, Rancho Road, and Forty Mile Road. Land uses along these roads for each South County Infrastructure Project component are set forth below.

Components 1 and 2 - SSO Reduction Measures/WWTP Modifications. These components are located within the existing urbanized community of Olivehurst. See Figures 3 and 8. All pipelines associated with Component 1 would be constructed within the paved travel lanes of Olivehurst Avenue, McGowan Parkway, and Mary Avenue. Improvements and modifications to OPUD's wastewater treatment plant would take place within the existing plant site located at the westerly terminus of Mary Avenue (3908 Mary Avenue) (see Figure 7). Land uses adjacent to Component 1 consist primarily of single family residences on Olivehurst Avenue and Mary Avenue, and a mixture of commercial, single-family residences, and multi-family residences adjacent to McGowan Parkway. Improvements to be constructed with implementation of Component 2 would be sited within the boundaries of the existing wastewater treatment plant.

Components 3, 4, and 5 – South County Wastewater Collection/Water Supply and Delivery/Wheatland Wastewater Pipeline Connector. Facilities of Components 3, 4, and 5 to be constructed with implementation of the proposed project are located primarily in an undeveloped area south of the existing community of Olivehurst (see Figures 3, 4, and 8). Pipelines associated with Components 3, 4, and 5 would be constructed primarily within the paved travel lanes of Forty Mile Road, Rosser Road, Shimer Road, Rancho Road, Olive Avenue, McGowan Parkway, and Mary Avenue. The Wheatland Connector pipeline would be constructed within Rancho Road. Five wastewater pump or lift stations would be constructed adjacent to Rancho Road and Forty Mile Road. As part of Component 4, a new water well and water plant would be constructed east of Forty Mile Road. The existing land use within the area of Components 3, 4, and 5 primarily consists of irrigated agriculture. Developed uses include an amphitheater, a casino, SR 65, Union Pacific railroad tracks, confined animal agriculture, and heavy commercial and light industrial uses, especially along Rancho Road. Rancho Road, north of McGowan Parkway and Olive Avenue, is characterized by single family residences on large parcels.

Land adjacent to the project along Rancho Road is zoned as agricultural industrial and light industrial, with General Plan land use designations of Employment, Employment Village, and Natural Resources. Land adjacent to Forty Mile Road is zoned for agricultural use and sports entertainment, with a land use designation of Employment and Natural Resources. Land near the

OPUD Wastewater Treatment Plant on Mary Avenue is zoned for use as public utilities land, with a land use designation of Valley Neighborhood (Yuba County 2021a; Yuba County 2011b).

ENVIRONMENTAL EVALUATION

Issue Area CEQA Appendix G Question	Project Component				Discussion
	Water Plant	WWTP	Pipelines	Pump Stations	
	Applicable to Issue Area?				
XI.a					Project would be constructed within or adjacent to existing roadways, or at existing WWTP
XI.b					Would comply with existing land use plans, policies, or regulations.

Question (a) Physically divide established community: Less-than-significant Impact. Pipelines associated with the proposed South Yuba Infrastructure Project would be constructed within or adjacent to existing roadways within the community of Olivehurst or nearby rural areas of Yuba County. Roadways disturbed by pipeline installation would be restored to their original condition after the installation of water and wastewater pipes. No division of an established community would occur since the disruption of roadways would be temporary. For activities at the existing Wastewater Treatment Plant facilities in Olivehurst, all new construction would take place within the plant's existing site. The Water Plant would be constructed adjacent to existing and under construction parking lots serving the Hard Rock Casino. Because all roadways would be returned to their original condition, and there are not communities that would be affected at the Wastewater Treatment Plant or the Water Plant, the South County Infrastructure Project would not alter land use in a manner that would divide an established community; a less-than-significant effect would result, and no mitigation would be necessary.

Question (b) Conflict with land use plans or policies: Less-than-significant Impact. As discussed previously, the project area south of Olivehurst is designated for future growth and development by the Yuba County General Plan. The proposed South County Infrastructure Project would provide community utility services to future employment-generating land uses consistent with Yuba County General Plan policies as set forth in the project description. No General Plan amendment or rezone would be required for the proposed South County Infrastructure Project.

The activities associated with the construction of the proposed water and wastewater improvements would be required to comply with all applicable regulations set forth at the federal, State, and local level to prevent potential environmental impacts as outlined in this document. Since the proposed project is consistent with the existing and planned uses of the area and would comply with applicable plans, policies, and regulations adopted for the purpose of avoiding or mitigating an environmental effect, this would be a less-than-significant impact, and no mitigation would be required.

CUMULATIVE IMPACTS

Regional growth could displace existing housing and population, requiring the construction of housing elsewhere, representing a significant cumulative impact. The 2030 General Plan does not propose to remove existing housing or displace existing population or housing units. However, it is

possible that some housing could be removed during buildout. The 2030 General Plan could have a cumulatively considerable contribution to this significant cumulative impact.

The proposed South County Infrastructure Project is consistent with, and implements, the 2030 General Plan. Thus, the cumulative impact described above includes the proposed project within the scope of General Plan land uses and supporting infrastructure assessed in the 2030 General Plan Environmental Impact Report (EIR). Implementation of the South County Infrastructure Project would not result in new cumulative impacts or increase the magnitude of cumulative impacts beyond those assessed in the 2030 General Plan EIR. Additionally, the evaluation of the project's environmental effects on community division set forth in this chapter concludes that all identified impacts would be less than significant. For these reasons, the proposed infrastructure project would not make a cumulatively considerable contribution to the cumulative impacts of implementing the 2030 General Plan beyond those assessed in the 2030 General Plan EIR. This would be a less-than-significant impact, and no mitigation would be required.

XII. MINERAL RESOURCES	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?				**X**
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?				**X**

ENVIRONMENTAL SETTING

There are many areas that produce mineral resources in Yuba County, with most of the gravel and sand extraction areas located along the Yuba River. There are gold and silver mines and dredge tailings from historic mining activities along the Yuba River, in the foothills, and in the mountain portions of the County (Yuba County 2011b). No significant Mineral Resource Zones or mineral resource production areas are located in the project area. Known mineral resources in the MRZ-2 zone[7] are located along the Yuba River, extending from Marysville on the west to Smartsville on the east (Yuba County 2011b). The California Geological Survey indicates that the proposed project is not within an Aggregate Production Area (CGS 2018b).

ENVIRONMENTAL EVALUATION

Issue Area CEQA Appendix G Question	Project Component				Discussion
	Water Plant	WWTP	Pipelines	Pump Stations	
	Applicable to Issue Area?				
XII.a					Not in mineral resource zone.
XII.b					Not in mineral resource zone.

Questions (a) and (b) Loss of mineral resources of value and/or delineated on land use plans: No Impact. No important mineral deposits, significant Mineral Resource Zones, or existing or previous mines are located on the project sites. Because there are no mineral resources or resource protection zones in the vicinity of the project sites, there would be no loss of availability of known mineral resources. No adverse effect would result, and no mitigation would be required.

CUMULATIVE IMPACTS

The cumulative loss of access to mineral resources is a significant cumulative impact resulting from encroachment by development into areas with mineral resources. Implementation of the proposed policies and actions of the 2030 General Plan and implementation of existing regulations for SMARA Mineral Resource Zones would reduce the impacts of buildout of the 2030 General Plan on mineral resources. Nonetheless, it is possible that development of the County's Rural Community Boundary Areas could preclude extraction of important County mineral resources along the Yuba River. One of the key objectives of the 2030 General Plan is to proactively guide development of rural areas of the County, including those that could be within areas of important

[7] The MRZ-2 zone indicates the presence of significant mineral deposits or where there is a high likelihood for their presence.

mineral resources. The County has included all feasible mitigation as a part of the 2030 General Plan. The 2030 General Plan would have a cumulatively considerable contribution to a significant cumulative impact. All feasible mitigation is included as policies and actions of the 2030 General Plan.

The proposed South County Infrastructure Project is consistent with, and implements, the 2030 General Plan. Thus, the cumulative impacts described above include the proposed project within the scope of General Plan land uses and supporting infrastructure assessed in the 2030 General Plan Environmental Impact Report (EIR). Implementation of the South County Infrastructure Project would not result in new cumulative impacts or increase the magnitude of cumulative impacts beyond those assessed in the 2030 General Plan EIR. Additionally, the evaluation of the project's environmental effects on mineral resources set forth in this chapter concludes that all identified impacts would be less than significant. For these reasons, the proposed infrastructure project would not make a cumulatively considerable contribution to the cumulative impacts of implementing the 2030 General Plan beyond those assessed in the 2030 General Plan EIR. This would be no impact, and no mitigation would be required.

XIII. NOISE	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?		**X**		
b) Generation of excessive ground-borne vibration or ground-borne noise levels?			**X**	
c) For a project located within the vicinity of a private airstrip or an airport land use plan, or where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?			**X**	

ENVIRONMENTAL SETTING

CHARACTERISTICS OF NOISE

Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, or sleep. Several noise measurement scales exist that are used to describe noise in a particular location. A decibel (dB) is a unit of measurement that indicates the relative intensity of a sound. The 0 point on the dB scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Changes of 3 dB or less are only perceptible in laboratory environments. Sound levels in dB are calculated on a logarithmic basis. An increase of 10 dB represents a 10-fold increase in acoustic energy, while 20 dB is 100 times more intense, and 30 dB is 1,000 times more intense. Each 10 dB increase in sound level is perceived as approximately a doubling of loudness; and similarly, each 10 dB decrease in sound level is perceived as half as loud. Sound intensity is normally measured through the A-weighted sound level (dBA). This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. The A-weighted sound level is the basis for 24-hour sound measurements that better represent how humans are more sensitive to sound at night.

As noise spreads from a source, it loses energy so that the farther away the noise receiver is from the noise source, the lower the perceived noise level would be. Geometric spreading causes the sound level to attenuate or be reduced, resulting in a 6 dB reduction in the noise level for each doubling of distance from a single point source of noise to the noise-sensitive receptor of concern.

Many ways are available to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. Equivalent continuous sound level (L_{eq}) is the total sound energy of time varying noise over a sample period. However, the predominant rating scales for human communities in the State of California are the L_{eq}, the community noise equivalent level (CNEL), and the day-night average level (L_{dn}) based on A-weighted decibels (dBA). CNEL is the time varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale, but without the adjustment for events occurring during the evening relaxation hours. CNEL and L_{dn} are within one dBA of each

other and are normally interchangeable. The noise adjustments are added to the noise events occurring during the more sensitive hours.

EXISTING NOISE ENVIRONMENT

The area surrounding the wastewater treatment plant and several existing pump stations (PS-1/PS-2) is primarily urban within the community of Olivehurst, and is exposed to typical urban noises such as traffic, outdoor maintenance such as lawn mowing, and aircraft operations from the Yuba County Airport. The general area of the proposed water plant is under development as a regional recreation center, but is otherwise rural; at the current time, intermittent construction noise sources predominate in this area. The primary project pipeline alignments and the proposed sites of five pump/lift stations would be located within Rancho Road, Forty Mile Road, Shimer Road, and Rosser Road; these roads traverse rural areas of Yuba County. Noise sources within these areas include traffic noise on the roadways and from State Route 65, noise from agricultural activities, and several light industrial uses along Rancho Road. Within Olivehurst, pipelines and a new pump station (PS-26) would be constructed along Olivehurst Avenue, Mary Avenue, McGowan Parkway, and Olive Avenue.

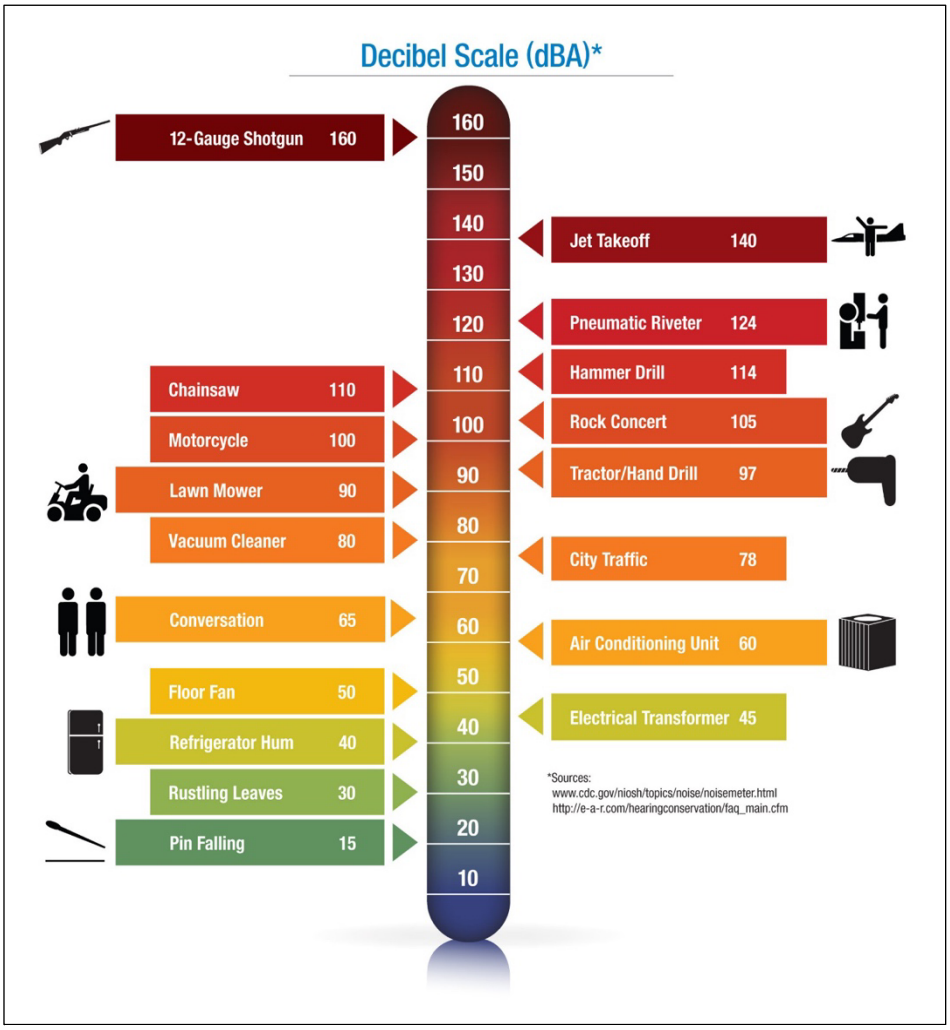


Figure 13 Noise Levels Associated with Common Noise Sources
Source: Bollard Acoustical Consulting, Inc., 2022.

Noise sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, hospitals, guest lodging, libraries, churches, nursing homes, auditoriums, concert halls, amphitheaters, playgrounds, and parks are considered noise-sensitive uses. Sensitive land uses immediately surrounding the project components include single-family and multi-family residences, primarily in the community of Olivehurst.

The Yuba County Airport is located in the community of Olivehurst, approximately 0.5 miles west of the SSO project component improvements. Portions of project in the Olivehurst urban area are located in the Airport Influence Area (SACOG 2011).

REGULATORY SETTING

The 2030 Yuba County General Plan provides a basis for local policies to control and abate environmental noise, and to protect the citizens of Yuba County from excessive noise exposure (Yuba County 2011a). Yuba County General Plan Policy HS10.5 generally requires the maximum noise level for non-transportation noise sources to not exceed the noise levels shown in Table 17, below, as measured at outdoor activity areas of any affected noise-sensitive land use. Further, General Plan Policy HS10.6 requires that new developments provide all feasible noise mitigation to reduce construction noise and vibration impacts, and Policy HS10.7 requires that construction equipment is properly maintained and equipped with noise control components, such as mufflers, in accordance with manufacturers' specifications.

Table 17 Yuba County General Plan Noise Standards: Maximum Allowable Noise Exposure from Non-Transportation Noise Sources at Noise-Sensitive Land Uses

Noise Level Descriptor	Daytime (7 a.m.-10 p.m.)	Nighttime (10 p.m.-7 a.m.)
Hourly L_{eq}	60 dBA	45 dBA
L_{max}	75 dBA	65 dBA

Notes: dBA = A-weighted decibel; L_{eq} = energy-equivalent noise level; L_{max} = maximum noise level.
Source: 2030 Yuba County General Plan, 2011a.

The County also enforces its Noise Regulations (Chapter 8.20) in the County Code. Maximum noise levels during project construction may be higher than Chapter 8.20.140 of the Yuba County Code would normally allow (60 dB - 7:00 pm to 10:00 pm.; 65 dB - 7:00 am to 7:00 pm). However, according to County Code (Chapter 8.20.310), the County prohibits any person within a residential zone, or within a radius of 500 feet of a residential zone, from operating equipment or performing any outside construction or repair work on buildings, structures, or projects, or from operating any piledriver, power shovel, pneumatic hammer, derrick, power hoist, or any other construction-type device between the hours of 10:00 p.m. and 7:00 a.m. the following day in such a manner that a reasonable person of normal sensitiveness residing in the area would be caused discomfort or annoyance. Any construction during prohibited hours in areas zoned for residential uses or within 500 feet of such zones would require a permit from the Community Development and Services Agency's Director of the Planning Department.

Table 18 Yuba County Zoning Districts Surrounding Project Components	
Road Affected by Project	**Zoning Designations**
11th Avenue/Olivehurst Avenue	RS – Single Family Residential District RM – Medium Density Residential District
11th Avenue to 14th Street	RS – Single Family Residential District RM – Medium Density Residential District
Mary Avenue	RS – Single Family Residential District
Mary Avenue/McGowan Parkway	NMX – Neighborhood Mixed Use District
McGowan Parkway – Mary Avenue to Rancho Rd	RS – Single Family Residential District RM – Medium Density Residential District NMX – Neighborhood Mixed Use District* Public Facilities District
Olive Avenue – McGowan Parkway to 500 feet north	RM – Medium Density Residential District NMX – Neighborhood Mixed Use District*
Rancho Rd/Forty Mile Rd/Shimer Rd/Rosser Rd	Non-residential Zoning Designations

Notes:
* Residential uses permitted within zoning district
Source: Planning Partners 2023.

ENVIRONMENTAL EVALUATION

Issue Area CEQA Appendix G Question	Project Component				Discussion
	Water Plant	WWTP	Pipelines	Pump Stations	
	Applicable to Issue Area?				
XIII.a	✓	✓	✓	✓	Construction noise could exceed noise standards
XIII.b					No vibration effects that would exceed standards
XIII.c					No exposure of sensitive receptors to aircraft noise

Question (a) Generate a noise increase in excess of local plan standards: Less-than-significant Impact with Mitigation. Potential noise impacts can be categorized as those resulting from construction and those from operational activities. Construction noise would have a short-term effect; operational noise would continue throughout the lifetime of the project.

CONSTRUCTION NOISE

Construction of the South Yuba Infrastructure project may result in a temporary increase in ambient noise levels. Construction activities would be considered an intermittent noise impact throughout the construction period of the project, and no single sensitive receptor would be exposed to continuous noise over the construction period, since the construction noise only occurs when construction is nearby. These activities could result in various effects on sensitive receptors, depending on the construction phase and the type and amount of equipment used at the construction site, and on the presence of intervening barriers or other insulating materials.

The noise generation of various construction activities is provided in Table 19. Not all of the equipment listed in Table 19 would be required for this project construction, but it generally illustrates that maximum noise levels ranging from 70 to 90 dBA can be expected at a distance of 50 feet from the operating equipment.

Table 19 Typical Construction Equipment Noise	
Equipment Description	**Maximum Noise Level at 50 feet, dBA**
Auger drill rig	85
Backhoe	80
Bar bender	80
Boring jack power unit	80
Chain saw	85
Compactor (ground)	80
Compressor (air)	80
Concrete batch plant	83
Concrete mixer truck	85
Concrete pump truck	82
Concrete saw	90
Crane (mobile or stationary)	85
Dozer	85
Dump truck	84
Excavator	85
Flatbed truck	84
Front end loader	80
Generator (25 kilovoltamperes [kVA] or less)	70
Generator (more than 25 kVA)	82
Grader	85
Hydra break ram	90
Jackhammer	85
Mounted impact hammer (hoe ram)	90
Paver	85
Pickup truck	55
Pneumatic tools	85
Pumps	77
Rock drill	85
Scraper	85
Soil mix drill rig	80
Tractor	84
Vacuum street sweeper	80
Vibratory concrete mixer	80
Welder/Torch	73

Source: Federal Highway Administration, 2006.

Based on typical construction equipment noise emission levels shown in Table 19 above, noise levels produced during construction could potentially reach 90 dBA at 50 feet from construction. Because the proposed project could generate a substantial temporary increase in ambient noise levels at noise-sensitive land uses in the vicinity of the project during construction activities, and to comply

with Yuba County General Plan policies and County regulations, the following mitigation measures would be required.

Mitigation Measure NSE-1

To reduce the effects of construction noise on affected residents, the project contractor shall implement the following measures for all project components:

A. All work necessary to implement the project components will be performed between the hours of 7:00 a.m. and 7:00 p.m. Monday through Sunday.
B. All equipment will be equipped with appropriate muffler devices to reduce the noise impacts of the construction operations.
C. Prior to the initiation of construction, OPUD or its contractor shall consult with the Yuba County Community Development and Services Agency (CDSA) to determine whether proposed construction activities would require an exemption permit pursuant to Chapter 8.20.710 of the Yuba County Code. If it is determined that such a permit would be necessary or beneficial, OPUD or its contractor will submit a permit application to the CDSA and abide by the terms of the permit.

The construction noise generation of this project would be generally comparable to other water and wastewater construction projects within Yuba County. The General Plan EIR concluded that, with the implementation of General Plan Policies HS10.6 and HS10.7, a less-than-significant impact related to construction noise would occur. Implementation of the foregoing mitigation measure would reduce the potential for construction noise to cause annoyance to nearby neighbors or workers, and this would be a less-than-significant impact.

OPERATIONAL NOISE

Since the proposed water and wastewater pipelines would be buried underground, no new or increased noise levels would be generated from the proposed pipelines. All pump and lift stations would include 11-foot tall sound attenuating walls (See Table A-2 in Appendix A). While the pump and lift station and water plant emergency generators would require periodic testing, it is assumed this would occur 30 minutes per month, and the generators would be in 75 dB sound attenuating enclosures. Therefore, there would not be a permanent increase in ambient noise with the proposed emergency generators. The small increase in traffic associated with minimal maintenance trips associated with the proposed project would not lead to a perceptible change in noise levels. This would be a less-than-significant impact, and no mitigation would be required.

Question (b) Ground-borne vibration or noise: Less-than-significant Impact. The project would generate temporary groundborne vibrations from heavy equipment operation at the project site, though it would represent a short-term minor increase compared to existing conditions. Further, the Yuba County Code of Ordinances Section 11.26.060 exempts vibrations from temporary construction and construction vehicles that enter and leave affected parcels from County restrictions. Operation of the proposed lift and pump stations may result in minor groundborne vibrations, though it would not be anticipated to be discernible at nearby residential sensitive receptors. Therefore, impacts would be less than significant, and no mitigation would be required.

Question (c) Excessive noise levels near airports: Less-than-significant Impact. While portions of the project are located in an Airport Influence Area of the Yuba County Airport (SACOG 2011), the proposed project would be consistent with all applicable regulations and standards, and would not promote urban development in agricultural areas in locations where urban uses are not identified by the 2030 General Plan (SACOG 2011). While a small portion of the project is within a compatibility zone with limited use restrictions, the project would not expose people residing or working in the project area to excessive noise levels. A less-than-significant impact would result, and no mitigation would be required.

CUMULATIVE IMPACTS

Traffic noise levels will increase along major regional roadway corridors as a result of the additional traffic generated by buildout of the 2030 General Plan, coupled with regional growth. This represents a significant cumulative impact. The primary factor for a cumulative noise impact analysis is the consideration of future traffic volumes. Implementation of the 2030 General Plan, along with regional growth and traffic conditions, would cause changes in traffic noise levels over existing traffic noise levels. The 2030 General Plan would make a cumulatively considerable contribution to this significant cumulative impact.

The proposed South County Infrastructure Project is consistent with, and implements, the 2030 General Plan. Thus, the County-wide cumulative impacts described above includes the proposed project within the scope of General Plan land uses and supporting infrastructure assessed in the 2030 General Plan Environmental Impact Report (EIR). Implementation of the South County Infrastructure Project would not result in new cumulative impacts or increase the magnitude of cumulative impacts beyond those assessed in the 2030 General Plan EIR. Additionally, the evaluation of the project's environmental effects on the construction and operational noise levels set forth in this chapter concludes that all identified impacts would be less than significant after mitigation. For these reasons, the proposed infrastructure project would not make a cumulatively considerable contribution to the cumulative impacts of implementing the 2030 General Plan beyond those assessed in the 2030 General Plan EIR. This would be a less-than-significant impact, and no mitigation would be required.

XIV. POPULATION AND HOUSING	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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)?			**X**	
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				**X**

ENVIRONMENTAL EVALUATION

Issue Area CEQA Appendix G Question	Project Component				Discussion
	Water Plant	WWTP	Pipelines	Pump Stations	
	Applicable to Issue Area?				
XIV.a					The proposed project implements the 2030 General Plan. Any growth induced by the project would be planned and consistent with the General Plan.
XIV.b					No aspect of the project would displace people or housing.

Question (a) Induce unplanned population growth: Less-than-significant Impact. The proposed infrastructure project would serve to meet the wastewater services and water supply needs of planned future development in the South County Service Area consistent with Yuba County 2030 General Plan. See Figures 3, 4, and 5. The project would also accommodate wastewater from the City of Wheatland, including existing and planned growth in the City. The City's existing wastewater treatment plant (WWTP) would be decommissioned with completion of the project. Because the proposed improvements would be sized to accommodate planned urban development in the South County Service Area, and also to provide capacity for wastewater from the City of Wheatland, it is not anticipated that the proposed project would induce unplanned population growth in the area. The proposed project is consistent with Yuba County land use plans, and no modification of land use and development policies would be necessary to accommodate the proposed project.

The South County Infrastructure Project, by itself, does not propose or authorize any changes in land use or urban development within the project areas. Future land uses within the South County Service Area that occur pursuant to the adopted Yuba County 2030 General Plan would be required to conform to all applicable regulations, performance standards, and design standards of the General Plan, zoning code, and all other environmental regulations and requirements set forth in the County Code. The South County Infrastructure Project would not permit land uses of greater density or height than permitted under the 2030 General Plan, and would not allow new development in areas where such development is prohibited under the 2030 General Plan.

Construction of the proposed South County Infrastructure Project is anticipated to take several years to complete. Construction activities would result in increased employment opportunities associated with the proposed project. In December 2022, the labor force in Yuba County totaled 30,800 persons, with an official unemployment rate of 5.6 percent (or 1,700 unemployed persons) (EDD 2023). The increased labor needs of the project could be accommodated by this existing workforce within Yuba County and would not require the importation of workers. Similarly, any additional housing demands caused by project employees could be accommodated by existing and planned housing resources within Yuba County.

Therefore, the proposed project would not induce substantial direct or indirect population growth, and a less-than-significant impact would occur. No mitigation would be necessary.

Question (b) Displace substantial numbers of people or housing: No Impact. Construction of the pipeline alignments would take place within existing roadways and rights of way. Also, the project's associated pump and lift stations would be constructed on undeveloped land, and the WWTP improvements would be located within the existing WWTP facility. The Water Plant would be constructed adjacent to existing and under construction parking lots serving the Hard Rock Casino. Because no people or housing would be displaced, and no construction of replacement housing would be needed, there would be no impact. No mitigation would be required.

CUMULATIVE IMPACTS

General plans in the region, along with specific plans that are outside the development assumptions from local general plans, would potentially accommodate substantially greater population and employment growth compared to regional forecasts and planning efforts. Population and employment growth beyond those included in local and regional land use and transportation plans could induce population growth, which could have a significant cumulative impact.

The County has designed the 2030 General Plan to balance land uses in order to avoid growth inducement elsewhere. However, the 2030 General Plan could accommodate a substantially greater population and employment growth than is included in existing forecasts and plans. The 2030 General Plan would have a cumulatively considerable contribution to this significant cumulative impact.

Regional growth could displace existing housing and population, requiring the construction of housing elsewhere, representing a significant cumulative impact. The 2030 General Plan does not propose to remove existing housing or displace existing population or housing units. However, it is possible that some housing could be removed during buildout. The 2030 General Plan could have a cumulatively considerable contribution to this significant cumulative impact.

The proposed South County Infrastructure Project is consistent with, and implements, the 2030 General Plan. Thus, the cumulative impact described above includes the proposed project within the scope of General Plan land uses and supporting infrastructure assessed in the 2030 General Plan Environmental Impact Report (EIR). Implementation of the South County Infrastructure Project would not result in new cumulative impacts or increase the magnitude of cumulative impacts beyond

those assessed in the 2030 General Plan EIR. Additionally, the evaluation of the project's environmental effects on growth inducement or the displacement of persons or housing set forth in this chapter concludes that all identified impacts would be less than significant. For these reasons, the proposed infrastructure project would not make a cumulatively considerable contribution to the cumulative impacts of implementing the 2030 General Plan beyond those assessed in the 2030 General Plan EIR. This would be a less-than-significant impact, and no mitigation would be required.

XV. PUBLIC SERVICES	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives of any of the public services:				
a) Fire protection?			**X**	
b) Police protection?			**X**	
c) Schools?			**X**	
d) Parks?			**X**	
e) Other facilities?			**X**	

ENVIRONMENTAL SETTING

The closest fire station to proposed project facilities is the Olivehurst Fire Department, located in Olivehurst. There are numerous schools and parks in Olivehurst. The Yuba County Sheriff's Department provides police protection in the unincorporated areas of Yuba County. Utility services are discussed in more detail in *Section XVII, Utilities and Service Systems.*

ENVIRONMENTAL EVALUATION

Issue Area CEQA Appendix G Questions	Project Component				Discussion
	Water Plant	WWTP	Pipelines	Pump Stations	
	Applicable to Issue Area?				
XV.a					No aspect of the proposed project would require modifications to, or create the need, for new governmental facilities.
XV.b					
XV.c					
XV.d					
XV.e					

Questions (a) through (e) New or physically altered governmental public service facilities: Less-than-significant Impact. Project construction would not result in any effects to existing governmental facilities except for roadways. The proposed project does not include new housing, and following construction, public roadways would be returned to their original condition. Construction of the proposed project would not be expected to result in an increase in demand for fire or police protection, schools, parks, or health services that would lead to the construction of new or physically altered facilities.

Because no new residences would be constructed, needed employees would be drawn from the local labor pool, and no substantial increase in population is expected to result from the proposed project, there would be no increase in the demand for public services that would require the construction of new facilities or physically altered facilities. This would be a less-than-significant impact, and no mitigation would be required.

CUMULATIVE IMPACTS

The County will ensure that new development projects provide impact fees, land dedication, school construction, or other measures acceptable to local school districts to ensure adequate educational facilities. New development is required by state law to pay school impact fees to school districts and provide sites for new schools. As new development occurs, new schools will be developed to accommodate the growth. Therefore, no cumulative impact to public educational services would occur. Therefore, the 2030 General Plan does not have any cumulatively considerable contribution to any significant cumulative impact. The impact is less than significant.

The 2030 General Plan provides an overall guide for development and conservation in the County over the long-term, including ensuring adequate access to the full range of public services, facilities, and infrastructure. To support the County's goal for fire protection, the 2030 General Plan includes policies intended to maintain adequate levels of service for fire protection for both existing and new residents.

Implementing actions contained in the 2030 General Plan will require the County to maintain a planning and entitlement review process that documents compliance with State and local standards for fire safety, and to update zoning, development, improvement standards, and building standards, as necessary, to maintain compliance with relevant fire codes, including those maintained by the California Department of Forestry and Fire Protection.

However, the County does not directly control whether and when facilities to serve new growth would be constructed; these decisions are made by the local fire protection service providers. Local demand, therefore, would be served through local expansion of services, and could perhaps involve construction of additional facilities, but this would not combine with effects in neighboring areas to create any cumulative impact. There is no significant cumulative impact, therefore, the 2030 General Plan would make no cumulatively considerable contribution.

The proposed South County Infrastructure Project is consistent with, and implements, the 2030 General Plan. Thus, the cumulative impacts described above include the proposed project within the scope of General Plan land uses and supporting infrastructure assessed in the 2030 General Plan Environmental Impact Report (EIR). Implementation of the South County Infrastructure Project would not result in new cumulative impacts or increase the magnitude of cumulative impacts beyond those assessed in the 2030 General Plan EIR. Additionally, the evaluation of the project's environmental effects on public services set forth in this chapter concludes that all identified impacts would be less than significant. For these reasons, the proposed infrastructure project would not make a cumulatively considerable contribution to the cumulative impacts of implementing the 2030 General Plan beyond those assessed in the 2030 General Plan EIR. This would be a less-than-significant impact, and no mitigation would be required.

XVI. RECREATION	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood or regional parks or other recreational facilities such that substantial deterioration of the facility would occur or be accelerated?				**X**
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				**X**

ENVIRONMENTAL SETTING

Within the communities of Olivehurst and Plumas Lakes, the Olivehurst Public Utility District (OPUD) provides parks and recreational activities. These include 50 acres of parklands within 20 park sites, none of which are in the vicinity of any South County Infrastructure Project component (OPUD 2023). Outside of the Olivehurst community, Yuba County plans for and maintains some local parks, and provides regional parks and facilities, such as Hammon Grove Park, Sycamore Ranch, and Star Bend Boat Ramp (Yuba County 2023).

ENVIRONMENTAL EVALUATION

Issue Area CEQA Appendix G Question	Project Component				Discussion
	Water Plant	WWTP	Pipelines	Pump Stations	
	Applicable to Issue Area?				
XVI.a					Project would not increase use of recreational facilities.
XVI.b					Project would not include recreational facilities.

Questions (a) and (b) Increase park use, construct or expand recreational facilities: No Impact. The proposed project would consist of public water and wastewater facilities, including wastewater treatment plant improvements, a water plant, and associated wastewater and water pipelines and pump and lift stations. Implementation of the project would not directly affect the provision or demand for any recreation resource. There would be no increase in the use of existing neighborhood or regional parks or other recreational facilities that would cause or accelerate the physical deterioration of such facilities. The proposed project does not include recreational facilities, nor does it require the construction or expansion of such facilities. Thus, no significant adverse impacts to recreation would occur with implementation of the proposed project, and no mitigation would be required.

CUMULATIVE IMPACTS

Development and operation of new parks that may be needed to serve additional population accommodated under the General Plan could result in adverse impacts on the physical environment. The 2030 General Plan establishes the overall parkland standard as "a diversity of park types at a ratio of at least 5 acres for every 1,000 residents." Implementation of this standard will require land dedication and/or fees and planning for parkland of different types that is integrated into new growth areas, as well as redevelopment areas. The County, however, is not the primary provider of developed park facilities or recreational programming for all unincorporated areas. Because the

County cannot guarantee the full implementation of parkland and recreational policies and actions, and because it is possible that parkland and recreational facilities may not be provided at an adequate rate to avoid overuse of existing facilities, a potentially significant cumulative impact related to park facilities would occur. The 2030 General Plan would make a cumulatively considerable contribution to a significant cumulative impact.

The proposed South County Infrastructure Project is consistent with, and implements, the 2030 General Plan. Thus, the cumulative impact described above includes the proposed project within the scope of General Plan land uses and supporting infrastructure assessed in the 2030 General Plan Environmental Impact Report (EIR). Implementation of the South County Infrastructure Project would not result in new cumulative impacts or increase the magnitude of cumulative impacts beyond those assessed in the 2030 General Plan EIR. Additionally, the evaluation of the project's environmental effects on the provision of, or need for, parks set forth in this chapter concludes that all identified impacts would be less than significant. For these reasons, the proposed infrastructure project would not make a cumulatively considerable contribution to the cumulative impacts of implementing the 2030 General Plan beyond those assessed in the 2030 General Plan EIR. This would be a less-than-significant impact, and no mitigation would be required.

XVII. TRANSPORTATION

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?			**X**	
b) Would the project conflict with or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?			**X**	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			**X**	
d) Result in inadequate emergency access?		**X**		

ENVIRONMENTAL SETTING

The proposed project is located within and adjacent to the community of Olivehurst. The proposed facilities would be constructed along several roadways, including Forty Mile Road, Rosser Road, Shimer Road, Rancho Road, Olive Avenue, McGowan Parkway, and Mary Avenue. There are several regional highways in the project vicinity: State Route 70 runs north-south through the center of the project area and State Route 65 runs southeast adjacent to Rancho Road.

ENVIRONMENTAL EVALUATION

Issue Area CEQA Appendix G Question	**Project Component**				**Discussion**
	Water Plant	**WWTP**	**Pipelines**	**Pump Stations**	
	Applicable to Issue Area?				
XVII.a					Existing facilities would be restored after project construction
XVII.b					No meaningful increase in vehicle miles travelled
XVII.c					Existing facilities would be restored after project construction
XVII.d	✓	✓	✓	✓	Project construction could interfere with emergency access

Question (a) Conflict with local circulation plans: Less-than-significant Impact. The project includes installation of approximately 26.8 miles of wastewater and water pipeline, construction of eight (8) pump and lift stations along the pipeline route, wastewater treatment plant (WWTP) improvements, including enlarging an existing emergency storage basin, and a new water plant. The proposed pipeline would be located predominantly within or across public roadways.

Construction of the proposed project would be considered temporary, beginning in early 2024 and continuing over the course of several years. Construction employee trips and construction deliveries would be considered temporary construction traffic. Following implementation of the proposed project, project operations would result in approximately two trips per month for maintenance and generator operations at each of the pump and lift stations, and two trips per month for maintenance and generator testing at the water plant. There would be no additional operational trips at the existing WWTP as a result of the proposed improvements.

The proposed project use would be considered consistent with existing General Plan land use designations in Yuba County (see Section XI, *Land Use and Planning* of this Initial Study). Because minimal new trips would be generated by the proposed project, and the proposed project would be consistent with existing Yuba County General Plan land use designations and would not result in a more intense use than previously considered, the proposed project would not conflict with any program, plan, ordinance or policy addressing the circulation system.

Because the proposed pipeline would be constructed underground, no feature of these improvements would result in the modification of any bicycle or pedestrian travel route. Construction of the WWTP, water plant, and pump and lift stations would be located adjacent to project roadways, and would not result in the modification of any bicycle or pedestrian travel route. This would be a less-than-significant impact, and no mitigation would be required.

Question (b) Conflict with CEQA Guidelines regarding analysis of transportation impacts: Less-than-significant Impact. Section 15064.3, subdivision (b) of the CEQA Guidelines describes criteria for analyzing transportation impacts. The proposed project would result in approximately eighteen trips per month for maintenance and generator testing. Many local agencies have developed screening thresholds to indicate when detailed analysis is needed. As set forth in the Governor's Office of Planning and Research Technical Advisory on Evaluating Transportation Impacts in CEQA (December 2018), "absent substantial evidence indicating that a project would generate a potentially significant level of vehicle miles traveled, or inconsistency with a Sustainable Communities Strategy or general plan, projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than-significant transportation impact." Because the project would be considered consistent with the Yuba County General Plan, and the project would not generate a significant number of trips and associated vehicle miles traveled, a less-than-significant impact would occur, and no mitigation would be required.

Question (c) Increase hazards due to geometric design feature: Less-than-significant Impact. Following completion of construction, any roadway disturbed by trenching or other construction activities would be returned to its original condition. Implementation of the proposed project would not result in any permanent changes to the design features or uses of project roadways, or construction of new roadways. There would be no increase to hazards related to a geometric design feature, or due to incompatible uses. A less-than-significant impact would result, and no mitigation would be required.

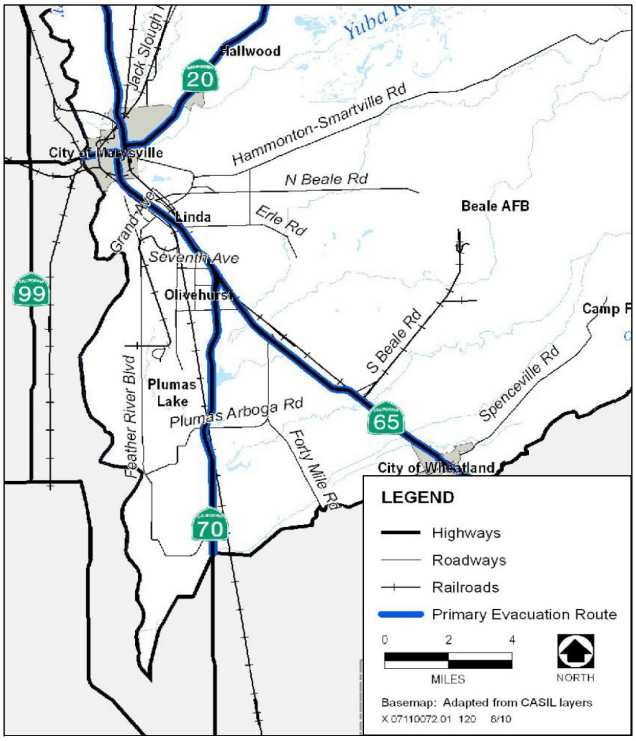


Figure 14 Emergency Evacuation Routes
Source: Yuba County Local Hazard Mitigation Plan Update, 2021.

Question (d) Inadequate emergency access: Less-than-significant Impact with Mitigation. As stated above, the proposed water and wastewater pipelines would be placed within or adjacent to existing public roadways within Yuba County. Encroachment Permits

issued by Yuba County and Caltrans would be required for construction of proposed pipeline within public roadways, or by Caltrans for work crossing state highways. During construction and installation of underground pipelines within public roadways, or for construction of proposed facilities adjacent to project roadways, there may be temporary lane closures that could cause delays and queuing of vehicle traffic, and thereby interfere with emergency services. However, emergency vehicles would be expedited through the construction zone, and emergency service providers would be informed of the project so they could choose alternate routes as needed. All impacts related to lane closures would cease after project completion. This would be a significant impact.

Should it be determined that lane closures are necessary, a Traffic Control Plan (TCP) will be required to detail how the project OPUD or its contractor will manage roadway access for both emergency and public use, and will include Best Management Practices such as covering the trenched areas after work hours. To ensure implementation of a TCP, the following mitigation measure will be required:

Mitigation Measure TR-1

> Prior to the initiation of construction, OPUD or its contractor will obtain encroachment permits from Yuba County and Caltrans for work within the County and State rights of way. The project OPUD or its contractor will prepare a Traffic Control Plan/Plans that meets the requirements of Yuba County and Caltrans. For Yuba County, the TCP shall meet the current TCP Checklist and TCP Conditions of Acceptance requirements of Yuba County. The TCP shall include all required topics, including: traffic handling during each stage of construction, maintaining emergency service provider access by, if necessary, providing alternate routes, repositioning emergency equipment, or coordinating with nearby service providers for coverage during construction closures, and covering trenches during the evenings and weekends. A component of the TCP will involve public dissemination of construction-related information through notices to the nearby residences, press releases, and/or the use of changeable message signs. The project contractor will be required to notify all affected residents, post the construction impact schedule, and place articles and/or advertisements in appropriate local newspapers regarding construction impacts and schedules.

While construction of portions of the proposed pipeline would occur within public right-of-way, the pipeline routes would be restored to their original condition after installation of the pipelines. With implementation of Mitigation Measure TR-1, because construction effects on traffic and emergency circulation for the project would be temporary and well-managed, there would be a less-than-significant impact to emergency access.

CUMULATIVE IMPACTS

Regional population and employment growth is anticipated to result in traffic volumes along regional roadways, such as SR 70, that could exceed acceptable levels of service. This represents a significant cumulative impact. While the 2030 General Plan includes various policies to reduce traffic demand and mitigation for roadway segments and intersections, traffic is anticipated to exceed level of service standards at certain roadway segments and intersections. The 2030 General Plan would make a cumulatively considerable contribution to this significant cumulative impact.

The proposed South County Infrastructure Project is consistent with, and implements, the 2030 General Plan. Thus, the cumulative impact described above includes the proposed project within the scope of General Plan land uses and supporting infrastructure assessed in the 2030 General Plan Environmental Impact Report (EIR). Implementation of the South County Infrastructure Project would not result in new cumulative impacts or increase the magnitude of cumulative impacts beyond those assessed in the 2030 General Plan EIR. Additionally, the evaluation of the project's environmental effects on transportation set forth in this chapter concludes that all identified impacts would be less than significant. For these reasons, the proposed infrastructure project would not make a cumulatively considerable contribution to the cumulative impacts of implementing the 2030 General Plan beyond those assessed in the 2030 General Plan EIR. This would be no impact, and no mitigation would be required.

XVIII. TRIBAL CULTURAL RESOURCES	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources 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 Historic Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or			**X**	
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 resource to a California Native American tribe.			**X**	

REGULATORY SETTING

Effective July 1, 2015, Assembly Bill 52 (AB 52) amended CEQA to require that: 1) a lead agency provide notice to any California Native American tribes that have requested notice of projects proposed by the lead agency; and 2) for any tribe that responded to the notice within 30 days of receipt with a request for consultation, the lead agency must consult with the tribe. Topics that may be addressed during consultation include Tribal Cultural Resources (TCR), the potential significance of project impacts, type of environmental document that should be prepared, and possible mitigation measures and project alternatives.

Section 21074(a) of the Public Resource Code (PRC) defines TCRs for the purpose of CEQA as sites, features, places, cultural landscapes (geographically defined in terms of the size and scope), sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

a. included or determined to be eligible for inclusion in the California Register of Historical Resources; and/or
b. included in a local register of historical resources as defined in subdivision (k) of Section 5020.1; and/or
c. 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 Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

"Substantial evidence" is defined in Section 21080 of the Public Resources Code as "fact, a reasonable assumption predicated upon fact, or expert opinion supported by fact."

The criteria for inclusion in the California Register of Historical Resources (CRHR) are as follows [CCR Title 14, Section 4852(b)]:

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; and/or
2. It is associated with the lives of persons important to local, California, or national history; and/or
3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; and/or
4. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

In addition, the resource must retain integrity, which is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association [CCR Title 14, Section 4852(c)].

ENVIRONMENTAL SETTING

RECORDS SEARCH

The Native American Heritage Commission (NAHC) was contacted to request an examination of their Sacred Lands Files to determine whether the project is located on sacred land. A current list of Native American tribal representatives who may have concerns regarding the proposed project was also requested. The search was completed and no Sacred Lands files were identified for the vicinity of the proposed project. The NAHC provided a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the proposed pipeline alignment.

PEDESTRIAN SURVEY

On February 14 and 15, 2022, a Padre Staff Archaeologist conducted an intensive pedestrian survey of the proposed Area of Proposed Effect (APE). Due to most of the Project APE crossing through developed residential and urban areas along roadways and road shoulders, a majority of the survey was performed as a "windshield survey". The portions of the Project APE within agricultural and rural residential areas were subject to an intensive pedestrian surface survey and covered on foot in transect intervals not exceeding 10 meters, unless prohibited by terrain, vegetation, access, or safety issues.

The majority of the Project APE consists of lands within developed urban areas, disturbed soils along roadway shoulders or in vacant lots, and land within or adjacent to agricultural fields. The agricultural fields in the area are primarily used to produce rice and other grain crops. Proposed pipeline alignments are limited to developed lands within the paved roadway and disturbed shoulder. Workspace associated with HDD crossings are within vacant or agricultural lands. Pump stations and lift stations are within developed and disturbed lands, vacant lots, natural and undeveloped lands, or agricultural lands. No cultural resources were observed during the survey.

NATIVE AMERICAN CONSULTATION

As of the date of this Initial Study (March 2023), no tribes have previously requested consultation with the Olivehurst Public Utility District (OPUD) regarding tribal cultural resources (Tillotson pers. comm. 2023). Although no tribes have requested consultation with OPUD for proposed projects within its service area, letters describing the proposed project and requesting information regarding Native American concerns were sent to each tribal representative on the list provided by the NAHC.

As of the date of preparation of this Initial Study, no responses have been received from any of the tribes who had been contacted.

ENVIRONMENTAL ANALYSIS

Issue Area CEQA Appendix G Question	Project Component				Discussion
	Water Plant	WWTP	Pipelines	Pump Stations	
	Applicable to Issue Area?				
XVIII.a					No known TCRs in project area.
XVIII.b					No known TCRs in project area.

AB 52 established that a substantial adverse change to a TCR has a significant effect on the environment. In assessing substantial adverse change, OPUD must determine whether or not substantial evidence of a TCR exists within the project area. If substantial evidence of a TCR exists, OPUD would then determine whether or not the project would adversely affect the qualities of the known tribal cultural resource.

Questions (a) and (b) Affect CRHR resources, significant California Native American Tribe resource: Less-than-significant Impact. A sacred lands file search was conducted by the NAHC, and no sacred lands were identified for the vicinity of the project site. Additionally, Northern California Information Center (NCIC) records searches for cultural resources found no known prehistoric archaeological resources within the project alignment. No tribes have previously requested consultation with OPUD regarding tribal cultural resources, and the tribal responses to the letter sent to local tribes provided no new information regarding known sacred lands or cultural resources in the area of the proposed project.

Because no known tribal cultural resources were identified that are listed/eligible for listing on the CRHR, or are otherwise deemed significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, implementation of the proposed project would not cause a significant adverse change in significance of a TCR 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. A less-than-significant impact would result, and no mitigation would be required.

CUMULATIVE IMPACTS

The County received a letter on the NOP for the 2030 General Plan EIR from the Native American Heritage Commission (NAHC) dated August 23, 2007. This letter offered guidance and direction to the County regarding cultural resource regulations and consultation. The NAHC letter identified Native American contacts for the County to use in consultation. The County used this same contact list (based on correspondence from NAHC earlier in the General Plan process) to circulate a letter providing the opportunity to participate in the local land use planning process to ensure consideration of cultural places in the context of broad local land use policy. As of December 7, 2010, none of the Native American contacts responded.

As set forth in the 2030 General Plan EIR, cultural resources in the Yuba County region generally consist of prehistoric sites, historic sites, historic structures, and isolated artifacts. During the 19th

and 20th centuries, localized urbanization and intensive agricultural use in the region caused the destruction or disturbance of numerous prehistoric sites, while many structures now considered to be historic were erected. Implementation of projects and plans pursuant to the 2030 General Plan assumed in the cumulative scenario have the potential to result in the discovery of undocumented subsurface cultural resources or unmarked historic-era or prehistoric Native American burials. Cumulative gains in population, households, and jobs would require a commensurate increase in infrastructure, capital facilities, services, housing, and commercial uses in Yuba County, its incorporated cities, and areas adjacent counties. The impact on archaeological deposits, human remains, … would be substantial given the past extent of urban development, and anticipated gains in population, jobs, and housing. There is a significant cumulative impact to cultural resources. Full buildout of the 2030 General Plan would involve substantial development and earth disturbance and the impact is cumulatively considerable.

The proposed South County Infrastructure project is consistent with, and implements the 2030 General Plan. Thus, the cumulative impacts described above include the proposed project within the envelope of General Plan land uses and supporting infrastructure assessed in the 2030 General Plan EIR. Additionally, the evaluation of the project's environmental effects on cultural resources set forth in this Initial Study conclude that all identified impacts could be reduced below a level of significance with the imposition of identified mitigation. For these reasons, the proposed infrastructure project would not make a cumulatively considerable contribution to the cumulative impacts of implementing the 2030 General Plan beyond those assessed in the 2030 General Plan EIR. This would be a less than significant impact, and no mitigation beyond that set forth in this chapter would be required.

XIX. UTILITIES AND SERVICE SYSTEMS	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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 relocation of which could cause significant environmental effects?			**X**	
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?			**X**	
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?			**X**	
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?			**X**	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?			**X**	

ENVIRONMENTAL EVALUATION

Issue Area CEQA Appendix G Question	Project Component				Discussion
	Water Plant	WWTP	Pipelines	Pump Stations	
	Applicable to Issue Area?				
XIX.a	✓	✓	✓	✓	The project would provide water and wastewater infrastructure.
XIX.b	✓		✓		The project includes water infrastructure to accommodate planned development.
XIX.c		✓	✓	✓	The project includes wastewater infrastructure to accommodate planned development.
XIX.d	✓	✓	✓	✓	Construction waste would be managed in compliance with State and local standards.
XIX.e	✓	✓	✓	✓	

Questions (a) through (c) Construct or relocate new service system facilities, sufficient water supply, adequate wastewater treatment capacity: Less-than-significant Impact. The purpose of the proposed project is to expand OPUD's wastewater collection system to provide capacity for wastewater from the City of Wheatland and for planned urban development in the recently annexed South Yuba County Service Area. The project also includes an extension of the District's water service to the South County Service Area. The project includes installation of approximately 26.8 miles of wastewater and water pipeline, construction of eight (8) pump and lift stations along the pipeline route, wastewater treatment plant improvements, including enlarging an existing emergency storage basin, and a new water plant. Thus, the proposed project would construct water and sewer conveyance system infrastructure improvements, and the environmental impacts from implementation of the project are evaluated in this Initial Study. Where potentially significant impacts have been identified, mitigation measures have been included in this document to

reduce impacts to less-than-significant levels. For a listing of all mitigation measures identified in this Initial Study/Mitigated Negative Declaration, see Chapter XXI, Mandatory Findings of Significance.

No community wastewater collection or treatment facilities currently exist within the South County Service Area. On-site wastewater collection and treatment systems serve individual commercial and residential uses along Rancho Road and Forty Mile Road, as well as a casino and amphitheater (see Figure 8). The proposed facilities included in the South County Infrastructure Project assessed in this Initial Study/Mitigated Negative Declaration were proposed to provide the wastewater collection and treatment facilities to serve future urban development of the South Yuba County Service Area. Similarly, upgrades to the wastewater treatment plant were designed to serve flows from the City of Wheatland, reduce storm-generated overflows within the treatment plant and existing facilities in Olivehurst, and provide services to future urban development. In designing the South County Infrastructure Project as proposed, OPUD has made a determination that existing capacity within the wastewater collection and treatment systems, with the addition of the proposed South County Infrastructure Project wastewater components, would be adequate to serve existing and future demands within the District's service area.

Similarly, no community water supply, treatment, or distribution facilities currently exist within the South County Service Area. The proposed water plant would include a new water well, well pump, reservoir, booster station, and chorine feed system. The size of the water distribution system is based on the projected demands from future urban uses within the South County Service Area. However, no urban development is proposed as part of the South County Infrastructure Project. The South County Infrastructure Project, by itself, does not propose or authorize any changes in land use or urban development within the project areas. Future land uses within the South County Service Area that occur pursuant to the adopted Yuba County 2030 General Plan would be required to conform to all applicable regulations, performance standards, and design standards of the Yuba County 2030 General Plan, zoning code, and all other environmental regulations and requirements set forth in the County Code. The South County Infrastructure Project would not permit land uses of greater density or intensity than permitted under the 2030 General Plan and would not allow new development in areas where such development is prohibited under the 2030 General Plan. For a discussion of water supply, see Section X, *Hydrology and Water Resources*, of this Initial Study.

The limited drainage impacts resulting from impervious surfaces at the proposed pump and lift stations and water plant would not require construction of expanded stormwater drainage infrastructure. Stormwater generated at the existing wastewater treatment plant would continue to be retained on site. Following completion of construction, the areas of the pipeline components would be returned to their original condition, including any modification of roadside ditches in the rural areas of the project. Therefore, no adverse effects to storm drainage are expected, and no needs for, or modifications to, storm drainage systems in the project vicinity would be necessary. For more information regarding stormwater drainage, see Section X, *Hydrology and Water Resources*, above.

Electricity would be provided by PG&E at the proposed pump and lift stations, and at the water plant. For the most part, PG&E currently serves the project areas in Olivehurst and along Forty Mile and Rancho Roads. Due to the rural nature of these roads, electricity services would need to be extended to serve several pump and lift stations adjacent to these roadways. These extensions would be minor, and no new or expanded major infrastructure would be required.

With respect to existing infrastructure in areas that could be affected by South County Infrastructure Project construction, the project is being designed to avoid all existing facilities, including establishing a minimum distance of one foot between existing and new project facilities. In meeting the requirements of Yuba County Standard Plans & Specifications, the proposed plans show all existing underground utilities that could be affected by construction activities. The construction contractor will be required to protect existing utilities from damage during construction.

Other than avoiding and protecting existing underground natural gas, telecommunications, or other facilities, implementation of the proposed project would not affect the ability of these utilities to serve.

Based on the information above, implementation of the proposed would not result in the relocation or construction of new or expanded stormwater drainage, electric power, natural gas, or telecommunications facilities. This would be a less-than-significant impact, and no mitigation would be required.

The proposed project would consist of the construction of wastewater and water conveyance infrastructure, which could cause significant environmental effects, as identified and evaluated in the various sections of this Initial Study.

Question (d) and (e) Solid waste: Less-than-significant Impact. Operation of the proposed infrastructure project would not result substantially increase the generation of solid waste, as there is no significant source of operational waste. In accordance with California Green Building Standards Code, the proposed project would be required to comply with recycling and reuse requirements for construction waste. Therefore, the project would not 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. This would be a less-than-significant impact, and no mitigation would be required.

CUMULATIVE IMPACTS

Exceed Wastewater Treatment Requirements. Implementation of the 2030 General Plan would result in the development of new residential, commercial, industrial, and civic uses, which would increase local demand for wastewater treatment facilities. It is possible that land use change could exceed the capacity of wastewater treatment facilities. It is possible that, depending on the specific uses developed under the 2030 General Plan, wastewater treatment requirements may be exceeded. The County implemented measures that ensure the availability of adequate wastewater collection and removal systems for land development projects in the unincorporated county under the 2030 General Plan. Implementation of the mitigation would assist in ensuring that sufficient service capacity is available to serve future growth projected in the 2030 General Plan and avoid issues related to wastewater treatment requirements. By adhering to the policies proposed in the 2030 General Plan, mitigation and existing regulations, the impact is considered less than significant.

Construction of New or Expanded Water or Wastewater Facilities. Implementation of the 2030 General Plan would result in the development of new residential, commercial, industrial, and civic uses, which would increase local demand for water conveyance and wastewater collection, conveyance, and treatment facilities. In addition, implementation of the 2030 General Plan could accommodate development in areas that currently are not served by water systems or a wastewater treatment provider. Construction of new or expanded water and wastewater facilities could have

adverse effects on the physical environment. By adhering to the policies proposed in the 2030 General Plan, as well as all applicable requirements pertaining to water supply, wastewater treatment, and septic systems, the County could minimize impacts associated with construction of new wastewater treatment facilities or extension of existing facilities or infrastructure. The 2030 General Plan includes policies and actions, and the 2030 General Plan EIR includes mitigation measures, where necessary, to reduce or avoid impacts. Despite mitigating policies and actions and the application of necessary mitigation measures, construction and operation of new or expanded water delivery and wastewater conveyance and treatment infrastructure may result in significant environmental effects. The impact is considered significant and unavoidable.

New or Expanded Storm Water Drainage Facilities. Buildout of the 2030 General Plan would accommodate an expansion of the urbanized landscape and construction of new impermeable surfaces that would generate additional stormwater runoff compared to baseline conditions. New land uses would be expected to include residential, commercial, industrial, and civic uses. Each of these land uses could involve addition of impermeable surfaces, with associated increases in stormwater runoff. The construction of new facilities and conveyance infrastructure or the expansion of existing facilities and infrastructure to handle this runoff could generate significant environmental effects. By adhering to the policies proposed in the 2030 General Plan, as well as all applicable requirements pertaining to drainage systems, the County could minimize impacts. The 2030 General Plan includes policies and actions, and the 2030 General Plan EIR includes mitigation measures, where necessary, to reduce or avoid impacts. However, as with all ground disturbing construction, there is the potential for impacts to previously unidentified resources. In addition, other natural resources within the footprint of an expanded stormwater drainage network may be adversely affected. Despite mitigating policies and actions and the application of necessary mitigation measures, construction and operation of new or expanded drainage facilities and infrastructure may result in significant environmental effects. The County has included throughout the 2030 General Plan all feasible measures available to mitigate such impacts. The impact is considered significant and unavoidable.

Insufficient Water Supplies to Meet the Future Water Demand in Unincorporated Areas Served by the County. Implementation of the 2030 General Plan would designate land uses that, if developed to full buildout, would increase water demand. Reductions in agricultural cultivation caused by conversion of agricultural land would decrease water consumption within Yuba County. Existing regulations require additional water conservation measures in new development and for large developments to demonstrate ongoing reliable water supply. Considering existing regulations that require conservation and demonstration of water supply and that the overall change in water demand compared to existing supply is not substantial, the impact is considered less than significant.

Increased Demand for Solid Waste Disposal and Compliance with Solid Waste Requirements. Buildout of the 2030 General Plan would accommodate an increase in population and commerce. This would result in an associated increase in solid waste streams of approximately 82,125 tons of solid waste per year, conservatively estimated. Because available capacity can meet this demand, no new facilities would need to be constructed to serve 2030 General Plan buildout. For these reasons this impact would be less than significant.

The proposed South County Infrastructure Project is consistent with, and implements, the 2030 General Plan. Thus, the County-wide cumulative impacts described above include the proposed project within the scope of General Plan land uses and supporting infrastructure assessed in the

2030 General Plan Environmental Impact Report (EIR). Implementation of the South County Infrastructure Project would not result in new cumulative impacts or increase the magnitude of cumulative impacts beyond those assessed in the 2030 General Plan EIR. Additionally, the evaluation of the project's environmental effects on utilities and service systems set forth in this chapter concludes that all identified impacts would be less than significant after mitigation. For these reasons, the proposed infrastructure project would not make a cumulatively considerable contribution to the cumulative impacts of implementing the 2030 General Plan beyond those assessed in the 2030 General Plan EIR. This would be a less-than-significant impact, and no mitigation would be required.

XX. WILDFIRE	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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 evaluation plan?				**X**
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?				**X**
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?				**X**
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?				**X**

ENVIRONMENTAL EVALUATION

Proposed project facilities are located within a Local Responsibility Area (LRA) (CalFIRE 2007). Within LRAs, fire protection is under the jurisdiction of local fire departments, not CalFire. Fire protection services within the community of Olivehurst are provided by the Olivehurst Fire Department. Fire protection services in the project areas are provided by the Olivehurst Fire Department and the Plumas Brophy Fire Protection District. (LAFCo 2012)

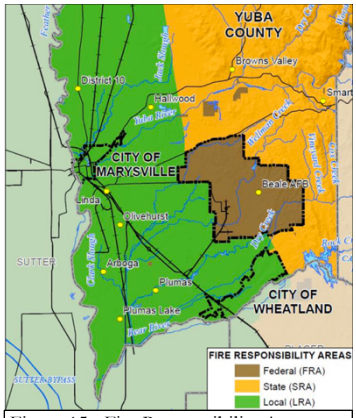


Figure 15 Fire Responsibility Areas

The Fire Hazard Severity Zone (FHSZ) map for Yuba County indicates that the project areas are located in three Fire Hazard Severity Zones: Non-Wildland/Non-Urban; Urban Unzoned; and limited areas designated as Moderate (Yuba County 2021b). The project would be located in areas where the threat of wildland fire has been determined to be unlikely to moderate (CalFIRE 2007). No portion of the project is located within or near a state responsibility area or lands classified as being with a very high FHSZ.

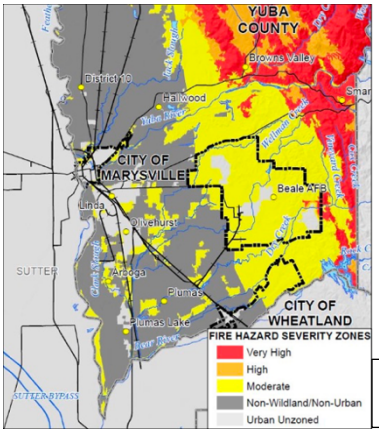


Figure 16
Fire Hazard Severity Zones

Issue Area CEQA Appendix G Question	Project Component				Discussion
	Water Plant	WWTP	Pipelines	Pump Stations	
	Applicable to Issue Area?				
XX.a					Not located within or adjacent to a very high fire hazard severity zone.
XX.b					
XX.c					
XX.d					

Primary emergency evacuation routes within or adjacent to the project areas are State Routes 65 and 70. The proposed wastewater pipelines would cross these highways at three locations. However, these crossings would be constructed using horizontal directional drilling (HDD). This process would be completely underground, and would not interfere with normal travel or evacuation in the event of an emergency.

Questions (a) through (d) Wildfire: No Impact. Implementation of the South County Infrastructure Project would not interfere with a primary evacuation route during an emergency. The project area is not located in or near State Responsibility Areas, or lands classified as a very high fire hazard severity zone. South County Infrastructure Project components are located in an area where the threat of wildland fire has been determined to be unlikely to moderate (CalFIRE 2007). Because the proposed project is not located in or near a State Responsibility Area nor on lands classified as a very high fire hazard severity zone, no impact would occur and no mitigation would be required. For additional information regarding emergency access to the site, see Section XVII, *Transportation*.

CUMULATIVE IMPACTS

Exposure of People and Structures to Urban and Wildland Fires. Development of the 2030 General Plan throughout Yuba County, including the project areas, could potentially increase risk to fire for both people and property. However, implementation of 2030 General Plan policies and actions, along with existing regulations would ensure that people and structures would not be exposed to a significant risk of loss of injury involving fires.

Implementation of 2030 General Plan policies and actions and existing regulations would ensure that people or structures would not be exposed to a significant risk of loss of injury involving fires. County policies and County and State regulations ensure adequate emergency access and evacuation in the case of fire; installation of sprinkler systems, where needed, as well as other building and fire code requirements designed to protect the public health; inclusion of defensible space in areas prone to wildfire; and other mechanisms, as described in Chapter 4.8 of the 2030 General Plan EIR and in the regulatory setting portion of the EIR section. With the incorporation of these policies and regulations, this impact is considered less than significant.

The proposed South County Infrastructure Project is consistent with, and implements, the 2030 General Plan. Thus, the County-wide cumulative impact described above includes the proposed project within the scope of General Plan land uses and supporting infrastructure assessed in the 2030 General Plan Environmental Impact Report (EIR). Implementation of the South County Infrastructure Project would not result in new cumulative impacts or increase the magnitude of cumulative impacts beyond those assessed in the 2030 General Plan EIR. Additionally, the evaluation of the project's environmental effects on the exposure to wildfire set forth in this chapter concludes that all identified impacts would be less than significant. For these reasons, the proposed infrastructure project would not make a cumulatively considerable contribution to the cumulative impacts of implementing the 2030 General Plan beyond those assessed in the 2030 General Plan EIR. This would be a less-than-significant impact, and no mitigation would be required.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?		**X**		
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)			**X**	
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			**X**	

Based on the analysis provided within, the Initial Study/Negative Declaration has concluded that adoption of the proposed project would not result in new cumulatively significant impacts on the environment that have not been previously examined or adequately addressed in the Yuba County 2030 General Plan Program EIR. Thus, this Initial Study/Negative Declaration has focused on the project-specific effects of implementing the South County Infrastructure project. The environmental evaluation contained herein has found that there would be potential impacts to air quality, biological resources, cultural resources, energy, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, noise, and transportation. The assessment further found that all identified impacts could be reduced below a level of significance with the implementation of mitigation identified in this Initial Study/Negative Declaration.

Question (a) Degrade quality of the environment: As discussed above, the project has the potential to result in impacts to air quality, biological resources, cultural resources, energy, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, noise, and transportation. With the implementation of mitigation measures identified in this Initial Study and listed at the end of this section, all potential impacts would be reduced to a less-than-significant level. No significant or potentially significant impacts would remain.

Question (b) Cumulatively considerable impacts: Less-than-significant Impact. While the proposed project could contribute to cumulative impacts associated with increased development in the region, these impacts have previously been evaluated by the County and considered in development of the County's 2030 General Plan. The 2030 General Plan EIR comprehensively evaluated the potential environmental effects, including the potential countywide and cumulative impacts, of implementing the 2030 General Plan. As set forth in the preceding discussion of tiering, the General Plan EIR is hereby incorporated by reference into this Initial Study pursuant to State CEQA Guidelines Section 15150 as though fully set forth herein.

As discussed in this Initial Study, the South County Infrastructure Project has the potential to result in project-specific impacts to air quality, biological resources, cultural resources, energy, geology and

soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, noise, and transportation. As set forth in the appropriate topical discussions of this Initial Study, effects to these issue areas are all subject to the proposed mitigation measures identified in this Initial Study, State, Federal, and County standards and regulations, and 2030 Yuba County General Plan policies and programs designed to avoid, reduce, or mitigate such effects.

Implementation of the proposed project would result in the installation of water and wastewater infrastructure facilities. As viewed within the context of the overall growth and development in the County as outlined in the 2030 Yuba County General Plan, the potential impacts of the proposed project are individually limited and not considered "cumulatively considerable." Additionally, after mitigation, the project has been determined not to have significant project level or cumulative level effects for any environmental issue. Therefore, construction and operation of the proposed project would not make a cumulatively considerable contribution to cumulative impacts, and would result in a less-than-significant impact when viewed in connection to the effects of past and probable future projects.

Question (c) Adversely affect human beings: Less-than-significant Impact. As demonstrated in the detailed evaluation contained in this Initial Study, because of existing site conditions, Yuba County standards, Yuba County 2030 General Plan programs and policies, and the regulation of potential environmental impacts by other agencies, in addition to mitigation measures included in this Initial Study, the proposed South County Infrastructure Project would not have the potential to cause substantial adverse effects on human beings. This would be a less-than-significant impact.

MITIGATION MEASURES

Mitigation Measure AQ-1

A. Prior to construction, OPUD or its contractor shall obtain and implement a FRAQMD Dust Control Plan or Construction Notification form in compliance with Rule 3.16 Fugitive Dust.
B. OPUD or its contractor shall obtain and implement an Authority to Construct (ATC) and Permit to Operate (PTO) for the proposed emergency generators above 50 horsepower in accordance with Regulation IV: Stationary Emission Sources Permit System and Registration.
C. OPUD or its contractor additionally shall implement all applicable measures and requirements of FRAQMD Rules and Regulations as determined by the FRAQMD. Additional applicable FRAQMD Rules and Regulations may include: Rule 3.0: Visible Emissions, Rule 3:15: Architectural Coatings, and Rule 7:10: Indirect Source Fee.

Mitigation Measure AQ-2

OPUD will implement, or its construction contractors will implement, the following measures as established by the Standard Construction Mitigation Measures provided in the FRAQMD's Indirect Source Review Guidelines (2010) and FRAQMD Construction Phase Mitigation Measures (FRAQMD 2016) in order to reduce emissions during construction.

A. Develop and submit a fugitive dust control plan to minimize fugitive dust emissions during project construction to FRAQMD for approval.
B. Construction equipment exhaust emissions shall not exceed FRAQMD Regulation Ill, Rule 3.0, Visible Emissions limitations (40 percent opacity or Ringelmann 2.0).

C. The contractor shall be responsible to ensure that all construction equipment is properly tuned and maintained prior to and for the duration of on-site operation.
D. Limit idling time to five minutes
E. Utilize existing power sources (e.g., line power) or clean fuel generators rather than temporary power generators.
F. Develop a traffic plan to minimize traffic flow interference from construction activities. The plan may include advance public notice of routing, use of public transportation, and satellite parking areas with a shuttle service. Schedule operations affecting traffic for off-peak hours. Minimize obstruction of through-traffic lanes. Provide a flag person to guide traffic properly and ensure safety at construction sites.
G. Portable engines and portable engine-driven equipment units used at the project work site, with the exception of on-road and off-road motor vehicles, may require California Air Resources Board (CARB) Portable Equipment Registration with the State or a local district permit. The owner/operator shall be responsible for arranging appropriate consultations with the CARB or FRAQMD to determine registration and permitting requirements prior to equipment operation at the site.
H. All grading operations on a project should be suspended when winds exceed 20 miles per hour or when winds carry dust beyond the property line despite implementation of all feasible dust control measures.
I. Work areas shall be watered or treated with Dust Suppressants as necessary to prevent fugitive dust violations.
J. An operational water truck should be available at all times. Apply water to control dust as needed to prevent visible emissions violations and off-site dust impacts. Travel time to water sources should be considered and additional trucks used if needed.
K. On-site dirt piles or other stockpiled material should be covered, wind breaks installed, and water and/or soil stabilizers employed to reduce wind-blown dust emissions. Incorporate the use of approved non-toxic soil stabilizers according to manufacturer's specifications to all inactive construction areas.
L. All transfer processes involving a free fall of soil or other particulate matter shall be operated in such a manner as to minimize the free fall distance and fugitive dust emissions.
M. Apply approved chemical soil stabilizers according to the manufacturers' specifications, to all- inactive construction areas (previously graded areas that remain inactive for 96 hours) including unpaved roads and employee/equipment parking areas.
N. To prevent track-out, wheel washers should be installed where project vehicles and/or equipment exit onto paved streets from unpaved roads. Vehicles and/or equipment shall be washed prior to each trip. Alternatively, a gravel bed may be installed as appropriate at vehicle/equipment site exit points to effectively remove soil buildup on tires and tracks to prevent/diminish track-out.
O. Paved streets shall be swept frequently (water sweeper with reclaimed water recommended; wet broom) if soil material has been carried onto adjacent paved, public thoroughfares from the project site.
P. Provide temporary traffic control as needed during all phases of construction to improve traffic flow, as deemed appropriate by the Department of Public Works and/or Caltrans and to reduce vehicle dust emissions.
Q. Reduce traffic speeds on all unpaved surfaces to 15 miles per hour or less and reduce unnecessary vehicle traffic by restricting access. Provide appropriate training, on-site enforcement, and signage.

R. Reestablish ground cover on the construction site as soon as possible and prior to final occupancy, through seeding and watering.

Mitigation Measure AQ-3

OPUD and its construction contractors shall implement the following measures to reduce, track, and offset construction-related project emissions, consistent with established FRAQMD Construction Phase Mitigation Measures (FRAQMD 2016).

A. Prior to beginning construction activities, OPUD shall assemble a comprehensive inventory list (i.e., make, model, engine year, horsepower, emission rates) of all heavy-duty off-road (portable and mobile) equipment (50 horsepower and greater) that will be used an aggregate of 40 or more hours for the construction project.
B. OPUD and its construction contractors shall provide a plan for approval by FRAQMD demonstrating that the heavy-duty (equal to or greater than 50 horsepower) off-road equipment to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 5 percent ROG reduction, 20 percent NOx reduction and 45 percent particulate reduction compared to the most recent CARB fleet average at time of construction. A Construction Mitigation Calculator (MS Excel) may be downloaded from the SMAQMD website to perform the fleet average evaluation http://www.airquality.org/ceqa/index.shtml. Acceptable options for reducing emissions may include use of late model engines (Tier 4), CARB Approved low-emission diesel products, alternative fuels, engine retrofit technology (Carl Moyer Guidelines), after-treatment products, voluntary off-site mitigation projects, provide funds for air district off-site mitigation projects, and/or other options as they become available. The FRAQMD should be contacted to discuss alternative measures.

   The results of the Construction Mitigation Calculator shall be submitted and approved by the FRAQMD prior to beginning work. OPUD and its construction contractors shall provide a monthly summary of heavy-duty off-road equipment usage to the FRAQMD throughout the construction of the project.

C. OPUD may also contribute to the FRAQMD's Off-Site Mitigation Program to reduce project emissions to less than significant. OPUD shall compile a list of all construction emission sources and consult with the FRAQMD staff to implement this mitigation measure. The project contractors shall track emissions generated from equipment and vehicles throughout construction of the project. If determined necessary by the FRAQMD and before construction activities begin, OPUD shall pay a deposit to FRAQMD for contribution to the FRAQMD Off-site Mitigation Fund. This deposit will be held by FRAQMD and applied toward the final off-site mitigation amount to be paid after project construction is complete. Total construction emissions shall be calculated at the end of construction activities. Using these calculations, OPUD shall make a final payment to the FRAQMD Off-Site Mitigation Fund, if necessary, to further offset construction pollutant emissions that exceeded FRAQMD thresholds. (*Personal communications* with Sondra Spaethe, FRAQMD 2023)

Mitigation Measure BIO-1

Pre-construction special-status species plant surveys shall be conducted by OPUD or its contractor in all impact areas that provide potentially suitable habitat for special-status plants

prior to initiating project construction activities. All surveys shall be conducted in accordance with agency-approved survey protocols during the appropriate blooming period. If no special-status species are identified in protocol surveys, no additional mitigation is required. If surveys determine that special-status species occur within impact areas, Mitigation Measure BIO-2 shall apply.

Mitigation Measure BIO-2

If special-status plants are identified within project impact areas, one of the following measures shall apply:

A. If feasible, the project shall be adjusted to avoid impacts to special-status plants. If modifications can be made to avoid special-status species, the installation of protective fencing may be necessary to prevent accidental encroachment. If adjustment of construction areas or methods is not feasible, Mitigation Measure BIO-2B shall apply.

B. If there is no feasible alternative to avoid special-status plant species impacts, OPUD shall mitigate for impacts to special-status plants. A Mitigation Plan shall be prepared and implemented that provides for plant salvage, transplantation, seed collection and replanting, and/or topsoil collection and replacement as appropriate for the species identified within the project impact area. Transplantation or seed placement shall be within suitable or restored habitat after completion of construction for temporary impacts, or within off-site habitat at a mitigation site for permanent impacts. The Mitigation Plan shall include monitoring requirements to ensure successful establishment of special-status plants, that established performance criteria are achieved, and that no net loss of special-status plants has occurred after the prescribed monitoring period.

Mitigation Measure BIO-3 (Both direct and indirect impacts)

Section 7 Consultation with USFWS shall be conducted to analyze the direct and indirect effects on listed wildlife species and to obtain regulatory permits and authorizations for impacts to listed species and loss of habitat. Measures and requirements outlined in agency authorizations may supersede the following measures.

Mitigation Measure BIO-4 (Indirect impacts)

Trench excavation and stockpiling for pipeline installation shall be entirely located within the paved roadway or disturbed shoulder on Rancho Road in areas where seasonally wet ditches and depressions were mapped adjacent to the roadway. Equipment staging and trench excavation in these areas will be limited to designated workspace areas in the paved roadway and shoulder. To reduce the potential for indirect impacts to seasonally inundated ditches and depressions in close proximity to construction activities, but where no direct impacts will occur, the following measures shall apply:

A. Prior to the initiation of construction, crews shall attend an environmental Awareness Training Program that will include information regarding the potential presence of listed branchiopod species and the importance of avoiding impacts to these species and their habitat.
B. All work shall be conducted during the dry season when potential habitat features on or near the proposed pipeline installation areas are dry.

C. Fencing shall be placed and maintained to delineate the approved work areas and prevent encroachment on seasonally inundated ditch and depression features. A qualified biologist shall oversee the installation of fencing. Once fencing is installed, a biologist will inspect fencing weekly to ensure its integrity and effectiveness.
D. All excavation, construction staging, and stockpiles shall be limited to paved roadways, disturbed shoulder, and approved work areas.
E. Storm water BMPs (silt fencing and straw waddles) shall be placed around construction disturbance and dirt stockpiles to reduce potential for erosion and sedimentation into potential branchiopod habitat features.
F. No application of water (e.g., dust suppression) shall occur in seasonally inundated ditch or depression features without additional measures (such as barriers and/or use of low flow water truck nozzles) in place to keep water out of potential or known VPB habitat features during the dry season.
G. Any groundwater encountered within the trench excavation shall not be discharged to areas where seasonally inundated ditch or depression features are located.

Mitigation Measure BIO-5 (Direct impacts)

If avoidance of habitat features as described in BIO-4 is not feasible and direct impacts (temporary or permanent) will occur to seasonally inundated ditch and depression features, compliance with one of the following mitigation measures (5A or 5B) shall be required:

A. Prior to the initiation of construction, surveys conducted in accordance with USFWS protocols shall be conducted in all potentially suitable habitat to be impacted. If protocol surveys determine that the seasonally inundated ditch and depression features are not occupied by federally listed vernal pool branchiopod species, no further mitigation is required for impact to species habitat (mitigation for jurisdictional aquatic features consistent with Mitigation Measures BIO-1 and BIO-2 may still apply). If protocol surveys detect the presence of federally listed species, then the following measures shall be implemented:

    1. Prior to the initiation of construction, construction crews shall attend an Environmental Awareness Training Program that will include information regarding the potential presence of listed vernal pool branchiopod species and the importance of avoiding impacts to these species and their habitat.
    2. All work shall be conducted during the dry season when potential habitat features on or near the proposed pipeline installation areas are dry.
    3. Fencing shall be placed and maintained around any avoided (preserved) seasonally inundated ditch and depression features to prevent encroachment. A qualified biologist shall oversee the installation of fencing. Once fencing is installed, a biologist will inspect fencing weekly to ensure its integrity and effectiveness.
    4. A USFWS approved biologist shall monitor construction activities in known or potential vernal pool branchiopod habitat that results in temporary or permanent impacts.
    5. For temporary impacts that will be restored after construction, a Site Restoration Plan outlining requirements for topsoil collection, preservation, and restoration will be prepared and approved by the USFWS. Implementation of the approved Plan shall include the following requirements at minimum. Prior to excavation in locations with potential or known vernal pool branchiopod habitat, the uppermost soil layer that may contain branchiopods eggs (cysts) shall be collected, labelled, and stored

under appropriate climatic conditions until construction in temporary impact areas is complete. Once construction is complete, topsoil shall be placed back in the feature from which it was collected.

6. For permanent impacts, loss of vernal pool branchiopod habitat shall be mitigated through the use of USFWS approved mitigation credits in accordance with mitigation ratios approved by the USFWS.

B. If OPUD or its contractor chooses not to conduct protocol-level surveys, they may assume presence of listed vernal pool branchiopod species within seasonally inundated ditch and depression features that provide potentially suitable habitat. If presence of listed species is assumed, then measures BIO-5A (1) through (6) as set forth above shall apply to mitigate impacts to a less-than-significant level.

Mitigation Measure BIO-6

A. Prior to the initiation of construction, implement Mitigation Measure BIO-3. Measures and requirements outlined in agency authorizations may supersede the following measures.

B. A 20-foot exclusion zone extending from the dripline of the shrub shall be maintained during construction in all directions away from the pavement. The exclusion zone will be reduced on the pavement side of the shrub to the edge of gravel roadway shoulder so that the fencing will not interfere with the roadway. Consistent with measures outlined by the USFWS to mitigate potential impacts to VELB, the following measures shall be implemented:

1. Fence and flag the elderberry shrub to be avoided and provide a minimum setback of at least 20 feet from the dripline of the elderberry plant for ground disturbance activities (e.g., trenching) to ensure that activities will not damage or kill the elderberry shrub. Due to its location at the edge of pavement on Forty Mile Road, the 20-foot setback will be adjusted (reduced) consistent with the edge of the gravel road shoulder so that fencing does not interfere with the paved roadway.
2. Prior to the initiation of any construction, environmental training shall brief the contractors and key employees of the need to avoid any impacts to elderberry plants, and to advise them of penalties associated with damage or destruction of the plants. The work crew shall be instructed regarding the status of the VELB and the need to protect its elderberry host plant, and possible penalties for non-compliance with avoidance and minimization measures.
3. A qualified biologist shall monitor the work area at project-appropriate intervals to assure that all avoidance and minimization measures are implemented. The amount and duration of monitoring will depend on the timing of project activities, and shall be determined in coordination with the USFWS biologist.
4. As much as feasible, all activities within 165 feet of the elderberry shrub will be conducted outside the flight season of the VELB (March-July).
5. No insecticides, herbicides, fertilizers, or other chemicals that might harm the VELB or its host plant shall be used within 100 feet of the elderberry plant with a stem measuring 1.0 inch or greater in diameter at ground level.
6. Mechanical vegetation removal within the dripline of the elderberry shrub shall be limited to the season when adult VELB are not active (August-February) and shall avoid damaging the elderberry.
7. Erosion control will be implemented, and the affected construction area shall be revegetated with appropriate native plants.

Mitigation Measure BIO-7

Implement the following measures:

A. Prior to the initiation of construction, construction staff shall attend an Environmental Awareness Training Program that will include information regarding identification of giant gartersnake and its habitat, protection measures for the species, and procedures to follow if a giant gartersnake or unknown snake is observed.
B. Construction of Lift Station 23 will occur when the rice field is inactive and has been dry for a minimum of 15 days.
C. Construction of Lift Station 22, Lift Station 23, and the HDD installation of pipelines under Kimball Creek, including all activities within 200 feet of Kimball Creek and the rice field at Lift Station 23, shall be restricted to the period between May 1 and October 1. This is the active period for GGS when the potential for direct mortality is reduced because GGS can actively avoid disturbance.
D. Prior to the start of the Kimball Creek HDD, construction of Lift Station 22, or the construction of Lift Station 23, a qualified biologist shall conduct a preconstruction survey for GGS at these locations prior to the initiation of disturbance. Exclusion fencing shall be installed, as directed by the qualified biologist, to isolate the workspace within 200 feet of suitable aquatic habitat and exclude snakes from the work areas. Exclusion fencing will be buried at the base to prevent snakes from moving under the fence into the construction area. Exclusion fencing shall be maintained for the duration of work in these areas and shall be routinely inspected by the qualified biologist to ensure the fencing is intact and effective. The workspace shall be inspected prior to the start of work each day to ensure that no snakes have entered the work area.
E. If a GGS is observed, the USFWS and CDFW shall be notified immediately. Construction will be suspended in the area until the snake leaves the site of its own volition.
F. All excavations within 200 feet of suitable GGS habitat shall be covered or have escape ramps installed to prevent entrapment prior to the end of work each day. These excavations shall be inspected by the qualified biologist prior to the start of work the following day.
G. Erosion control materials shall consist of tightly woven fibers and netting to prevent entanglement of reptiles and amphibians. No monofilament materials will be allowed.
H. For permanent impacts associated with construction of Lift Station 22 and Lift Station 23, loss of suitable GGS habitat shall be mitigated through the use of USFWS and CDFW approved mitigation credits or fee title acquisition with a conservation easement to protect managed marsh habitat in accordance with mitigation ratios approved by the USFWS and CDFW.

Mitigation Measure BIO-8

Implement the following measures:

A. A preconstruction survey for western pond turtle shall be conducted no more than 48 hours prior to the start of construction within 150 feet of the drainages or other suitable wetland habitat. If no western pond turtles are observed, no further mitigation would be necessary.
B. If a western pond turtle is observed within the project area, a qualified biologist shall relocate the individual to a suitable habitat location outside of the construction area.
C. If a pond turtle nest is identified, exclusion fencing shall be placed a minimum of 25 feet around the nest and disturbance to the area will be avoided until the hatchlings have

emerged. The nest will be monitored daily by the qualified biologist to ensure nestlings emerge to a suitable habitat area safely outside the construction zone.

Mitigation Measure BIO-9 (Nest disturbance)

A. If construction or vegetation removal work occurs outside of Swainson's hawk nesting season (August 31 to Feb 1), impacts to the Swainson's hawk would be avoided. Surveys would not be required for work conducted during that part of the year, and no further mitigation for nest disturbance would be required.
B. If project activities occur between February 1 to August 31, surveys shall be conducted by a qualified biologist for active Swainson's hawk nests. OPUD or its contractor shall conduct a protocol-level survey in conformance with the "Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley," Swainson's Hawk Technical Advisory Committee (https://www.wildlife.ca.gov/conservation/survey-protocols#377281284-birds) (May 31, 2000) hereby incorporated by reference. This protocol prescribes minimum standards for survey equipment, mode of survey, angle and distance to tree, speed, visual and audible clues, distractions, notes and observations, and timing of surveys. If the surveys show that there are no active Swainson's hawk nests within 0.25-mile of construction activities, no further mitigation for nest disturbance will be required. If active Swainson's hawk nests are identified near the project area, a 0.25-mile nest protection buffer shall be identified, and the following measures shall be required:
    1. Apply a nest protection buffer with a minimum distance of 0.25-mile from an active nest. Postpone project activities within the nest protection buffer until after the young have fledged and are no longer dependent on the nest tree. The minimum nest protection buffer may be reduced in coordination with CDFW if existing site conditions, habituation to disturbance, proposed disturbance levels, and nest concealment or barriers between the nest and activities indicate a reduced buffer would be effective.
    2. If it is not possible to postpone project activities within the minimum nest protection buffer, construction activities may proceed with CDFW approval and monitoring of the nest by a qualified raptor biologist. If the monitoring biologist observes signs of distress, they shall have the authority to stop construction work and coordinate with CDFW to establish additional protection measures to ensure avoidance of nest abandonment prior to the re-start of project activities.
C. A written report summarizing the pre-construction survey results shall be provided to CDFW within 30 days of survey completion.

Mitigation Measure BIO-10 (Foraging habitat)

If nesting occurrences of Swainson's hawks occur within 10 miles of the permanent impact areas (e.g., pump station, lift station, and WP sites) mitigation for loss of foraging habitat shall be required. Generally, CDFW requires mitigation for loss of Swainson's hawk foraging habitat based on the presence of active nests within 10 miles of the project. If an active nest site occurs within ten miles of the project, OPUD or its contractor will be required by CDFW to provide off-site foraging habitat management lands at a specified Mitigation Ratio that is based on nest proximity to the project site, as follows:

Distance from Project Boundary	Mitigation Acreage Ratio*
Within 1 mile	1.00:1**
Between 1 and 5 miles	0.75:1
Between 5 and 10 miles	0.50:1
*Ratio means [acres of mitigation land] to [acres of foraging habitat impacted]. **This ratio shall be 0.5:1 if the acquired lands can be actively managed for prey production.	

CDFW provides options for off-site habitat management by fee title acquisition or conservation easement acquisition with a CDFW-approved management plan, and by the acquisition of comparable habitat. Mitigation credits may be obtained through a CDFW-approved mitigation bank for Swainson's hawk with a service area that covers the project site.

Mitigation Measure BIO-11

A. A pre-construction survey of areas providing suitable burrowing owl habitat within 1,640 feet (500 meters) of construction at the WWTP shall be conducted by a qualified raptor biologist within 14 days prior to ground disturbance. Surveys shall follow guidelines outlined by CDFW in the Staff Report on Burrowing Owl Mitigation (CDFW 2012). If the required pre-construction surveys show there are no active burrowing owl nests within the 1,640 feet (500 meters) of construction activities, no further mitigation for burrowing owl nest disturbance will be required.

B. If an occupied burrow is discovered during pre-construction surveys, a protective buffer consistent with CDFW guidelines shall be established. Appropriate protective buffers depend on the type of burrowing owl occurrence (nesting or overwinter), level of project disturbance, and time of year that the disturbance occurs. Nest protective buffers consistent with CDFW guidelines are outlined below.

Location	Time of Year	Level of Disturbance		
		Low	Med	High
Nesting Site	April 1 – Aug 15	200 m	500 m	500 m
Nesting Site	Aug 16 – Oct 15	200 m	200 m	500 m
Nesting Site	Oct 16 – March 31	50 m	100 m	500 m

A reduced buffer may be implemented upon CDFW approval and based upon site specific conditions, nesting phenology, and the recommendation of the qualified biologist.

C. A written report summarizing the pre-construction survey results shall be provided to OPUD and CDFW within 30 days of survey completion.

D. If occupied burrows cannot be avoided, OPUD or its contractor shall conduct a survey during the non-nesting season (September 30 through January 31) to identify occupied burrows within the disturbance footprint, exclude burrowing owls from burrows within the disturbance footprint, and then collapse the burrows in accordance with methodology outlined by the CDFW. Burrowing owl exclusion and burrow collapse must be conducted in coordination with CDFW and with the approval of CDFW.

Mitigation Measure BIO-12

A. If construction or vegetation removal work occurs outside of nesting season (August 31 to Feb 1), impacts would be avoided. Surveys would not be required for work conducted during this part of the year, and no further mitigation for nest disturbance would be required.
B. If vegetation removal or construction activities occur between February 1 to August 31, pre-construction surveys shall be conducted by a qualified biologist of suitable habitat within 500 feet of worksites and disturbance areas for passerines, and within 0.25-mile of worksites and disturbance areas for raptors. Pre-construction surveys shall be conducted within 14 days prior to the start of construction of vegetation removal. If nests are identified, a suitable nest protection buffer shall be recommended by the qualified biologist based on the species, nest phenology, and site-specific conditions. Construction activities shall be prohibited within the established buffer zones until the young have fledged. If a lapse in project-related activities occurs for 14 days or longer during the nesting season, another focused survey shall be conducted before construction activities can be reinitiated.
C. A written report summarizing the pre-construction survey results shall be provided to OPUD and CDFW within 30 days of survey completion.

Mitigation Measure BIO-13

A. Prior to the initiation of construction, OPUD or its contractor shall conduct a preliminary aquatic resource delineation of the project site to define the limits of jurisdictional areas and determine the extent of project impacts. The delineation will be verified by the Corps. The verified delineation will provide OPUD with the impact acreage necessary for preparing a Waters of the US/Wetland Mitigation Plan and/or permit application if impacts to jurisdictional areas cannot be avoided. If the project can fully avoid delineated aquatic resources, no further mitigation would be required. If the project cannot fully avoid delineated aquatic resources, Mitigation Measure BIO-13 B will apply.
B. If project impacts to federal and State jurisdictional areas are identified, OPUD shall obtain all necessary permits for impacts to Waters of the US and wetlands from the Corps and RWQCB and/or for potential impacts to stream features from CDFW prior to project implementation. Implementation of the project shall comply with all permit conditions. Compensatory mitigation must be consistent with the Corps' standards pertaining to mitigation type, location, and ratios, but will be accomplished with a minimum of 1:1 replacement ratio.

   If compensatory mitigation is needed, OPUD may satisfy all or a portion of Waters of the US and wetlands mitigation through the purchase of "credits" at a mitigation bank approved by the Corps, RWQCB, and/or CDFW for compensatory mitigation of impacts to hydrologically similar Waters of the US, or through other means, such as on- or off-site wetland creation, conservation easement, contribution to approved in-lieu habitat fund, etc. The Mitigation Plan must be approved by the permitting agencies, and shall be implemented by OPUD subsequent to plan approval.

Mitigation Measure BIO-14

The proposed HDD installations under regulated drainages have a small potential to "frac out" or inadvertently release drilling muds to the surface during drilling operations. Because of the potential for a frac-out to impact waters and wetlands at the drainage crossings, OPUD or its contractor shall prepare and implement an Inadvertent Returns Contingency Plan that outlines the measures that will be taken to prevent inadvertent returns, and outlines the response measures to be employed and response equipment to be maintained on site for use in the unlikely event of an inadvertent return during drilling operations.

Mitigation Measure CUL-1

A. If buried cultural resources such as chipped or ground stone, midden deposits, historic debris, building foundations, human bone, or paleontological resources are inadvertently discovered during ground-disturbing activities, work shall stop in that area and within 100 feet of the find until a qualified archaeologist or paleontologist can assess the significance of the find and, if necessary, develop responsible treatment measures in consultation with Yuba County and other appropriate agencies.
B. If remains of Native American origin are discovered during proposed project construction, it shall be necessary to comply with state laws concerning the disposition of Native American burials, which fall within the jurisdiction of the Native American Heritage Commission (NAHC). If any human remains are discovered or recognized in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:
    - The County coroner has been informed and has determined that no investigation of the cause of death is required; and
    - If the remains are of Native American origin:
        - √ The most likely descendants of the deceased Native Americans have made a recommendation to the landowner or person responsible for the excavation work for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC 5097.98; or
        - √ The NAHC has been unable to identify a descendant, or the descendant failed to make a recommendation within 24 hours after being notified.
C. According to the California Health and Safety Code, six or more human burials at one location constitute a cemetery (Section 8100), and disturbance of Native American cemeteries is a felony (Section 7052). Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the NAHC.

Mitigation Measure EN-1

Implement Mitigation Measures AQ2 (b-f, and p) and AQ-3 (b and c).

Mitigation Measure GEO-1

Implement Mitigation Measures HYD-1, HYD-2, and HYD-3.

Mitigation Measure GEO-2

A. In additional to civil drawing for the project, a final geotechnical engineering report for the proposed project shall be produced by a California Registered Civil Engineer or Geotechnical Engineer and submitted to Yuba County for review. The geotechnical engineering report measures shall address construction conditions, including but not limited to: excavation conditions, site clearing specifications, ground and subgrade preparation, general fill placement and compaction, dewatering, and foundations. Following approval in the geotechnical report by Yuba County, construction shall be completed in accordance with the geotechnical recommendations in the report, Yuba County Standard Specifications, and Cal OSHA requirements. Proof shall be provided for engineering inspection and certification that earthwork has been performed in conformity with recommendations contained in the report. (Preliminary geotechnical recommendations are included in Appendix E of this Initial Study).

B. The Contractor shall retain an engineer to evaluate the impact of construction traffic vibrations, actual soil conditions exposed in the open excavations, seepage and/or groundwater conditions, surcharges adjacent to excavations, proximity of excavations to existing structures, and other factors that may promote excavation wall instability or cause excavation related damage to existing facilities and improvements and adjust excavation sloping/shoring methods accordingly.

Mitigation Measure GEO-3

Consistent with Yuba County 2030 General Plan policies, if potential paleontological resources are found during construction, work shall stop and consultation is required to avoid further impacts. If potential paleontological resources are detected during construction, work shall stop and consultation shall be required to avoid further impacts. Actions after work stoppage will be designed to avoid significant impacts to the greatest extent feasible. These measures should include construction worker education, consultation with a qualified paleontologist, coordination with experts on resource recovery and curation of specimens, and/or other measures, as appropriate.

Mitigation Measure GHG-1

Implement Mitigation Measures AQ-1, AQ-2, and AQ-3.

Mitigation Measure HAZ-1

A. Prohibit or restrict equipment refueling, fluid leakage, equipment maintenance, and road surfacing activities near wetlands and other sensitive areas. Require placement of fuel storage and refueling sites in safe areas well away from wetlands and other sensitive habitats. Safe areas include paved or cleared roadbeds, within contained areas such as lined truck beds, or other appropriate fuel containment sites. Inspect equipment and vehicles for hydraulic and oil leaks regularly. Require the use of drip pans below equipment stored onsite. Require that vehicles and construction equipment are in good working condition, and that all necessary onsite servicing of equipment be conducted away from wetlands or other sensitive areas.

B. Require all contractors to possess, and all vehicles to carry, emergency spill containment materials. Absorbent materials should be on hand at all times to absorb any minor leaks and spills.

Mitigation Measure HAZ-2

The contractor shall conduct all grading operations in accordance with the Department of Toxic Substances, Caltrans Soil Management Agreement for Aerially Deposited Lead-Contaminated Soils (Agreement), June 30, 2016, and with the awareness that lead impacted soils are present on McGowan Parkway and Rancho Road. Construction project documents shall include a site-specific Health and Safety Plan and special Soil Management Plan (SMP) to address elevated levels of lead along McGowan Parkway and Rancho Road. The SMP shall be in accordance with all applicable Cal/OSHA requirements and, at a minimum, the SMP shall include measures to control worker exposure to soil, airborne dust, and control runoff along both McGowan Parkway and Rancho Road.

Mitigation Measure HAZ-3

The contractor shall use general dust controls during paint striping removal on McGowan Parkway Road. In addition, the contractor shall include measures to minimize dust or debris leading to or near storm drains, waterways, and other sources of water during construction activities that include removal of paint striping.

Mitigation Measure HAZ-4

Implement Mitigation Measure TRA-1.

Mitigation Measure HYD-1

A. OPUD or its contractor shall submit Permit Registration Documents (PRD) for the Construction General Permit Order 2009-0009-DWQ to the State Water Resources Control Board, and comply with, and implement, all requirements of the permit. A Legally Responsible Person (LRP) shall electronically submit PRDs prior to commencement of construction activities in the Storm Water Multi-Application Report Tracking System. PRDs consist of the Notice of Intent, Risk Assessment, Post-Construction Calculations, a Site Map, the Storm Water Pollution Prevention Plan (SWPPP), a signed certification statement by the LRP, and the first annual fee. Following submittal of a Notice of Intent package and development of a SWPPP in accordance with the Construction General Permit, OPUD or its contractor will receive a Waste Discharge Identification Number from the SWRCB. All requirements of the site-specific SWPPP, including any revisions, shall be included in construction documents for the project. Prior to the initiation of any construction, proof of registration shall be submitted to the Yuba County Director of Public Works for review and approval and shall remain on the project site during all phases of construction.

B. For those project components within the Olivehurst urban area, OPUD or its contractor will apply for and obtain an Erosion and Sediment Control Plan in accordance with Yuba County Department of Public Works Improvement Standards and Specifications, and implement all identified erosion control measures set forth in the Plan.

Mitigation Measure HYD-2

Groundwater elevations were taken during the geotechnical exploration phase of the project design, and noted in the Geotechnical Data Report. However, groundwater elevations in the project areas will vary by season, and it is known that overall groundwater elevations in the South Yuba Basin are trending to rising slightly since surface water has been substituted for groundwater for agricultural use in the project area. OPUD or its contractor shall monitor groundwater and conduct construction operations in a manner intended to avoid pumping for groundwater control, using one or more of the following sub-measures:

A. Monitor groundwater elevations on a seasonal basis, and construct improvements (for all project components, but specifically auger bores, pump and lift station wet wells, and pipelines) during those time periods when pumping for groundwater control can be avoided.
B. If possible, given the depth of encountered groundwater, tremie concrete could be used in the bottom of pump and lift station wet wells, or
C. In the event that groundwater pumping is to be pursued by OPUD or its contractor, OPUD or the contractor shall apply for and obtain a Low Threat Discharge Permit and any other permits necessary for such pumping. Permits that may be required include NPDES permit requirements and CVRWQCB requirements, which may include the approval of a Dewatering Permit. Appropriate groundwater handling and disposal would be ensured as part of the SWPPP for the project and would include collection and treatment measures prior to discharge.

Mitigation Measure HYD-3

A. Implement Mitigation Measure HYD-1 and include the proposed water well and its settling basin within the NPDES permit.
B. In coordination with Yuba County, all construction activities shall implement stormwater pollution prevention Best Management Practices (BMP) designed to reduce potential impacts to water quality during construction of the water well, including, but not limited to:
    1. Protecting adjacent properties and waterways from the discharge of sediment or other contaminants from the well construction site,
    2. Scheduling as much project work as possible during the dry season,
    3. Using other BMPs as necessary, including applying rainy season erosion controls, managing stockpiles, disposing of well development water properly, and correctly managing and disposing of construction wastes,
    4. Maintaining all Best Management Practices, and
    5. Stabilizing the site after construction is complete, including removing sediment from the settling basin.

Mitigation Measure NSE-1

To reduce the effects of construction noise on affected residents, the project contractor shall implement the following measures for all project components:

A. All work necessary to implement the project components will be performed between the hours of 7:00 a.m. and 7:00 p.m. Monday through Sunday.
B. All equipment will be equipped with appropriate muffler devices to reduce the noise impacts of the construction operations.

C. Prior to the initiation of construction, OPUD or its contractor shall consult with the Yuba County Community Development and Services Agency (CDSA) to determine whether proposed construction activities would require an exemption permit pursuant to Chapter 8.20.710 of the Yuba County Code. If it is determined that such a permit would be necessary or beneficial, OPUD or its contractor will submit a permit application to the CDSA and abide by the terms of the permit.

Mitigation Measure TR-1

Prior to the initiation of construction, OPUD or its contractor will obtain encroachment permits from Yuba County and Caltrans for work within the County and State rights of way. OPUD or its contractor will prepare a Traffic Control Plan/Plans that meets the requirements of Yuba County and Caltrans. For Yuba County, the TCP shall meet the current TCP Checklist and TCP Conditions of Acceptance requirements of Yuba County. The TCP shall include all required topics, including: traffic handling during each stage of construction, maintaining emergency service provider access by, if necessary, providing alternate routes, repositioning emergency equipment, or coordinating with nearby service providers for coverage during construction closures, and covering trenches during the evenings and weekends. A component of the TCP will involve public dissemination of construction-related information through notices to the nearby residences, press releases, and/or the use of changeable message signs. The project contractor will be required to notify all affected residents, post the construction impact schedule, and place articles and/or advertisements in appropriate local newspapers regarding construction impacts and schedules.

6. PREPARERS OF THE INITIAL STUDY / MITIGATED NEGATIVE DECLARATION

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DETERMINATION

On the basis of this initial evaluation:

I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

X 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 Olivehurst Public Utility District. A 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, nothing further is required.

Signature | Date

3-7-23

John Tillotson, General Manager
Olivehurst Public Utility District

APPENDIX A

South County Infrastructure Project
Detail Information Tables

Table A-1 Pipelines Associated with the South Yuba Infrastructure Project									
Facilities	**Segment Boundaries**	**Approx. Length (feet)**	**Pipeline Type**	**Pipe Size (inches)**	**Pipeline Location**	**Trench Width (feet)**	**Max. Trench Depth**	**Associated Major Facilities**	**Potential for Utility Conflicts**
Component 1 SSO Reduction Measures									
Pump Station PS-1	*See Tables A-2 and A-3*								
Olivehurst Ave.	11th Ave. - 14th Ave.	1,440	Force Main	16	Centerline of paved roadway	2.25	12	(Pump Station) PS-1	High
McGowan Parkway	PS-26 - East side of SR 70 Overcrossing	1,900	Force Main	12	Centerline of paved roadway	2.0	10	PS-2/PS-26	High
SR 70 Crossing	*See Tables A-4 and A-5*								
McGowan Parkway – Existing Yuba County Constructed Segment	*East Side of SR 70 Overcrossing – PS-2*	*470*	*Force Main*	*12*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*
PS-2	*See Tables A-2 and A-3*								
Mary Avenue	PS-26 - WWTP	4,100	Force Main	30	Within east/south paved travel lanes; in unpaved south ROW near WWTP	3.5	22	PS-26/ WWTP imps	Medium
PS-26	*See Tables A-2 and A-3*								
Component 2 WWTP Improvements									
No new pipelines in this component.									
Components 3 & 5 - South County / Wheatland Wastewater Collection Systems									
Mary Avenue – see above									
PS-26	*See Tables A-2 and A-3*								
McGowan Parkway	PS-26 - East side of SR 70 Overcrossing	2,460	Force Main	24	Within paved east travel lane, diverging to the north to pass under SR 70	3.0	11	PS-26	High
McGowan Parkway – Existing Yuba County Constructed Segment	*East side of SR 70 Overcrossing – Olive Avenue*	*2,300*	*Force Main*	*24*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*

Table A-1 Pipelines Associated with the South Yuba Infrastructure Project									
Facilities	**Segment Boundaries**	**Approx. Length (feet)**	**Pipeline Type**	**Pipe Size (inches)**	**Pipeline Location**	**Trench Width (feet)**	**Max. Trench Depth**	**Associated Major Facilities**	**Potential for Utility Conflicts**
Olive Ave – Existing Yuba County Constructed Segment	*McGowan Parkway – connection point to 24 inch Force Main*	*100*	*Force Main*	*24*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*
Olive Avenue	End of County Constructed Segment – west SR 65 HDD tie-in	400	Force Main	24	Within northbound shoulder/unpaved easement	3.0	9	HDD crossing of SR 65	Low
SR 65 Crossing	*See Tables A-4 and A-5*								
Rancho Road	East SR 65 HDD tie-in – Reeds Creek Crossing	1,870	Force Main	24	Within southbound shoulder	3.0	6	HDD crossings of SR 65 and Reeds Creek	Medium
Reeds Creek Crossing	*See Table A-4 and A-5*								
Rancho Road	Reeds Creek Crossing – Hutchinson Creek Crossing	1,525	Force Main	24	Within southbound shoulder	3.0	10	HDD crossing of Reeds Creek	Medium
Hutchinson Creek Crossing	*See Tables A-4 and A-5*								
Hutchinson Creek Crossing – PS-21	*See Tables A-4 and A-5*								
PS-21	*See Tables A-2 and A-3*								
Rancho Road	PS-21 to Kimball Creek Crossing	4,330	Force Main	18	Within southbound travel lane	2.5	12	HDD Crossing of Kimball Creek, and PS-22	Medium
	PS-21 to Kimball Creek Crossing	4,000	Sanitary Sewer	10	Within southbound shoulder	2.0	20	HDD Crossing of Kimball Creek, and PS-22	Medium
	PS-21 to Kimball Creek Crossing	350	Force Main	6	Within southbound shoulder	1.5	5	HDD Crossing of Kimball Creek, and PS-22	Medium
Kimball Creek Crossing	*See Tables A-4 and A-5*								

Table A-1 Pipelines Associated with the South Yuba Infrastructure Project									
Facilities	**Segment Boundaries**	**Approx. Length (feet)**	**Pipeline Type**	**Pipe Size (inches)**	**Pipeline Location**	**Trench Width (feet)**	**Max. Trench Depth**	**Associated Major Facilities**	**Potential for Utility Conflicts**
Rancho Road	Kimball Creek Crossing – PS-22	160	Force Main	18	Within ROW adjacent to southbound lane	2.5	9.5	HDD Crossing of Kimball Creek, and PS-22	Medium
	Kimball Creek Crossing – PS-22	160	Force Main	6	Within ROW adjacent to southbound lane	1.5	9.5	HDD Crossing of Kimball Creek, and PS-22	Medium
PS-22	*See Tables A-2 and A-3*								
Rancho Road	PS-22 – Virginia Creek Crossing	5,600	Force Main	18	Within southbound travel lane	2.5	10	Pipe Ramming or Auger Boring at Virginia Creek	Low
	PS-22 – Virginia Creek Crossing	5,400	Sanitary Sewer	8	Within southbound shoulder	1.75	17	Pipe Ramming or Auger Boring at Virginia Creek	Low
	PS-22 – Virginia Creek Crossing	200	Force Main	6		1.5	15	Pipe Ramming or Auger Boring at Virginia Creek	Low
Virginia Creek Crossing	*See Tables A-4 and A-5*								
Rancho Road	Virginia Creek Crossing – LS-23	85	Force Main	6	Within southbound shoulder	1.5	6.5	LS-23	Low
LS-23	*See Tables A-2 and A-3*								
Rancho Road	Virginia Creek Crossing - Terminus	4,000	Force Main	18	Within southbound travel lane	2.5	11	None	Low
	LS-23 - terminus	4,000	Sanitary Sewer	8	Within southbound shoulder	1.75	16.5	LS-23	Low
Shimer Road	SR 65 to PS-21	1,460	Force Main	16	Within southbound travel lane	2.25	8	SR 65 Crossing / PS-21	Low
PS-21	*See Tables A-2 and A-3*								
SR 65 Crossing	*See Tables A-4 and A-5*								
Slaughter House Road	SR 65 Crossing to Forty Mile Road	1,020	Force Main	16	Within southbound shoulder	2.25	5.5	SR 65 Crossing	High

Table A-1 Pipelines Associated with the South Yuba Infrastructure Project									
Facilities	**Segment Boundaries**	**Approx. Length (feet)**	**Pipeline Type**	**Pipe Size (inches)**	**Pipeline Location**	**Trench Width (feet)**	**Max. Trench Depth**	**Associated Major Facilities**	**Potential for Utility Conflicts**
Forty Mile Road	Slaughter House Road – Kimball Creek Crossing	2,935	Force Main	16	Within northbound shoulder	2.25	5.5	Kimball Creek Crossing	Medium
Kimball Creek Crossing	*See Tables A-4 and A-5*								
Forty Mile Road	Kimball Creek Crossing – PS-25	105	Force Main	10	Within northbound travel lane/shoulder	2.0	16	PS-25	Medium
		130	Force Main	16	Within northbound travel lane/shoulder	2.25	5.5	PS-25	Medium
PS-25	*See Tables A-2 and A-3*								
Forty Mile Road	Forty Mile Road – PS-25	550	Sanitary Sewer	24	Within graded parking lot / equipment storage	3.0	17	PS-25	Slight
	Forty Mile Road – PS-25	550	Force Main	16	Within graded parking lot / equipment storage	2.25	17	PS-25	Slight
Forty Mile Road	PS-25 – LS-24	940	Sanitary Sewer	18	Within northbound travel lane/shoulder	2.5	15	LS-24	Medium
		4,450	Sanitary Sewer	15	Within northbound travel lane/shoulder	2.25	17	LS-24	Medium
LS-24	*See Tables A-2 and A-3*								
Forty Mile Road	LS-24 to MP 101+65	230	Sanitary Sewer	15	Within northbound travel lane/shoulder	2.25	12	LS-24	Medium
	MP 101+65 – Terminus	3,560	Sanitary Sewer	10	Within northbound shoulder	2.0	17	None	Medium
Component 4 Water Plant and Water Distribution Pipelines									
SR 65 McGowan Crossing	*See Table A-4*								
McGowan Parkway	SR 65 Crossing - Rancho Road	705	Water	18	Roadway Centerline	2.5	9	None	Medium
Rancho Road	McGowan Parkway intersection – Reeds Creek Crossing	120	Water	18	Outside of road prism/ Parallel to northbound lane	2.5	9	Reeds Creek Crossing	Low
Reeds Creek Crossing	*See Tables A-4 and A-5*								

Table A-1 Pipelines Associated with the South Yuba Infrastructure Project									
Facilities	**Segment Boundaries**	**Approx. Length (feet)**	**Pipeline Type**	**Pipe Size (inches)**	**Pipeline Location**	**Trench Width (feet)**	**Max. Trench Depth**	**Associated Major Facilities**	**Potential for Utility Conflicts**
Rancho Road	Reeds Creek Crossing - Hutchinson Creek Crossing	1,405	Water	18	Within northbound shoulder	2.5	10	Reeds Creek Crossing / Hutchinson Creek Crossing	Low
Hutchinson Creek Crossing	*See Tables A-4 and A-5*								
Rancho Road	Hutchinson Creek Crossing – Kimball Creek Crossing	5,905	Water	18	Within northbound shoulder	2.5	12	Hutchinson Creek Crossing / Kimball Creek Crossing	Low
Kimball Creek Crossing	*See Tables A-4 and A-5*								
Rancho Road	Kimball Creek Crossing – Virginia Creek Crossing	5,640	Water	18	Within northbound shoulder	2.5	10	Kimball Creek Crossing Virginia Creek Crossing	Low
Virginia Creek Crossing	*See Tables A-4 and A-5*								
Rancho Road	Virginia Creek Crossing – Terminus	4,475	Water	18	Within northbound shoulder	2.5	11	Virginia Creek Crossing	Low
Forty Mile Road	Forty Mile Road / Rancho Road Intersection – SR 65 Crossing	1,365	Water	18	Within northbound shoulder	2.5	5.5	SR 65 Crossing	Low
SR 65 Forty Mile Road Crossing	*See Table A-4*								
	SR 65 Crossing	350	Water	18	Northbound shoulder of existing overcrossing	2.5	n/a	None	Low
Forty Mile Road	SR 65 Crossing – Kimball Creek Crossing	3,705	Water	18	Within the southbound shoulder	2.5	5.5	Kimball Creek Crossing	Low
Kimball Creek Crossing	*See Tables A-4 and A-5*								
Water Plant	Forty Mile Road – WP	1,780	Water	24	Disturbed ground/parking lot	3.0	12	WP	Low

Table A-1 Pipelines Associated with the South Yuba Infrastructure Project									
Facilities	**Segment Boundaries**	**Approx. Length (feet)**	**Pipeline Type**	**Pipe Size (inches)**	**Pipeline Location**	**Trench Width (feet)**	**Max. Trench Depth**	**Associated Major Facilities**	**Potential for Utility Conflicts**
Forty Mile Road	Kimball Creek Crossing - Terminus	8,045	Water	18	Within the southbound shoulder	2.5	5.5	None	Low

Source: Jacobs/MHM 2023, Planning Partners 2023.
Note: *Italicized text* indicates existing facilities and/or references to other table(s) within this Appendix.

Table A-2 Pump Stations and Lift Stations Associated with the South Yuba Infrastructure Project								
Facility	**PS-1 Olivehurst Ave/ 11th Ave**	**PS-2 McGowan Pkwy/East of SR 70**	**PS-26 McGowan Pkwy/ Mary Ave**	**PS-21 Rancho Rd/ Shimer Rd**	**LS-22 Rancho Rd/ Kimball Crk**	**LS-23 Rancho Rd/ Virginia Crk**	**LS-24 40 Mile Rd**	**PS-25 40 Mile Rd**
Site Area (approx. square feet)	8,215	n/a	20,400	10,260	4,330	5,075	6,160	10,220
Depth of Wet Well(s) (feet below ground surface)	24 - 33	To be determined	40.5	41.3	23.4	27.2	40.7	37.05
Height of Soundwall (feet)	11	To be determined	11	11	11	11	11	11
Existing Facilities to be Abandoned or Improved	Existing Sewer Lift Station	Improvements to be determined	Existing 8" sanitary sewer in McGowan Pkwy west of PS 26	Existing fence	Existing fence	None	None	None
Outside of Existing Roadway Prism (Travel Lane + Improved Shoulder)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Potential Conflict with Existing Utilities	High	Low*	High	Moderate	Moderate	Low	Moderate	Low
Serves Component Number	1	1	1/3/5	3/5	3	3	3	3

Source: Jacobs/Domenichelli & Associates 2022.
Note: *– Potential improvements limited to existing disturbed area

Table A-3 Facility Improvements								
Facility	**PS-1 Olivehurst Ave / 11th Ave**	**PS-2 McGowan Pkwy / East of SR 70**	**PS-26 McGowan Pkwy / Mary Ave**	**PS-21 Rancho Rd / Shimer Rd**	**LS-22 Rancho Rd / Kimball Crk**	**LS 23 Ranch- Rd / Virginia Crk**	**LS-24 Forty Mile Rd**	**PS-25 Forty Mile Rd**
Wet Well and Pumps	✔	✔	✔	✔	✔	✔	✔	✔
Long Force Main	✔	✔	✔	✔			✔	
Short Force Main to Gravity System					✔	✔		✔
Diesel Generator		✔		✔	✔	✔	✔	✔
Security Fencing	✔	✔	✔	✔	✔	✔	✔	✔
Wash Down Pad	✔	✔	✔	✔	✔	✔	✔	✔
Odor Control		✔		✔			✔	
Flushing Station		✔		✔	✔	✔	✔	✔
Service Crane		✔		✔				
Flow Meter and Vault	Meter, no vault	✔	✔	✔	✔	✔	✔	✔

Source: Jacobs Engineering 2022.

Table A-4 Stream and Roadway Pipeline Crossings Associated with the South Yuba Infrastructure Project								
Crossing Name	**Utility**	**Length: Linear Feet**	**Casing Diameter Inches**	**Pipeline Diameter Inches**	**Crossing Type**	**Location Relative to Paved Section**	**Entry Location**	**Exit Location**
SR 70 / McGowan Pkwy	Wastewater	180	n/a	10	Existing Bridge	North of existing McGowan Pkwy overcrossing	n/a	n/a
SR 70 west of Power Line Rd - Dan Ave	Wastewater	1,517	48	18/16	HDD	North of existing McGowan Pkwy overcrossing	Within paved turn lane / Centerline of McGowan Pkwy	Within westbound paved travel lane or shoulder
SR 65 between Olive Ave / Rancho Rd	Wastewater	742	48	18/16	HDD	North of existing McGowan Pkwy overcrossing	Within unpaved area	Within paved roadway and unpaved shoulder area
SR 65 / McGowan Parkway	Water	365	n/a	16	Existing Bridge	Centerline of McGowan Pkwy	n/a	n/a
Rancho Rd / Reeds Creek	Wastewater	1,500	n/a	24	HDD	Parallel to southbound lane	Outside of roadway prism	Outside of roadway prism
Rancho Rd / Reeds Creek	Water	1,500	n/a	18	HDD	Parallel to northbound lane	Outside of roadway prism	Outside of roadway prism
Rancho Rd / Hutchinson Creek	Wastewater	746	n/a	24	HDD	Parallel to southbound lane	Outside of roadway prism	Outside of roadway prism
Rancho Rd / Hutchinson Creek	Water	590	n/a	18	HDD	Parallel to northbound lane	Outside of roadway prism	Outside of roadway prism
Rancho Rd / Kimball Creek	Wastewater	519	n/a	6/18	HDD	Parallel to southbound lane	Outside of roadway prism	Outside of roadway prism
Rancho Rd / Kimball Creek	Water	477	n/a	18	HDD	Parallel to northbound lane	Outside of roadway prism	Outside of roadway prism
Rancho Rd / Virginia Creek	Wastewater	50	36	6/18	Pipe ramming/ auger boring	Parallel to southbound lane	Within southbound travel lane	Within southbound travel lane
Rancho Rd / Virginia Creek	Water	50	30	18	Pipe ramming/ auger boring	Parallel to northbound lane	Within unpaved shoulder	Within unpaved shoulder
SR 65 between Slaughterhouse Rd / Shimer Rd	Wastewater	748	36	10/12	HDD	North of 40 Mile Rd overcrossing	Outside of roadway prism	Within paved travel lane

Table A-4 Stream and Roadway Pipeline Crossings Associated with the South Yuba Infrastructure Project								
Crossing Name	**Utility**	**Length: Linear Feet**	**Casing Diameter Inches**	**Pipeline Diameter Inches**	**Crossing Type**	**Location Relative to Paved Section**	**Entry Location**	**Exit Location**
SR 65 / 40 Mile Rd Overcrossing	Water	380	n/a	16	Existing bridge overcrossing	Northbound shoulder of existing overcrossing	n/a	n/a
40 Mile Rd / Kimball Creek	Wastewater	82	n/a	16	Pipe ramming/ auger boring	East side of road	Within or adjacent to developed roadway prism	Within or adjacent to developed roadway prism
40 Mile Rd / Kimball Creek	Water	82	n/a	18	Pipe ramming/ auger boring	Parallel to southbound lane	Within developed southbound roadway prism	Within developed southbound roadway prism

Source: Jacobs/MHM 2023, Planning Partners 2023.

Table A-5 Boring at Crossings Associated with the South Yuba Infrastructure Project									
Crossing Name	**Utility**	**Crossing Type**	**Surface Length: Linear Feet**	**Bore Length: Feet**	**Entry Location**	**Entry Work Area**	**Exit Location**	**Exit Work Area**	**Pipe String Area**
SR 70 west of Power Line Rd - Dan Ave	Waste water	HDD	1,517	1,317	Within paved turn lane/centerline of McGowan Pkwy	Within paved turn lane/centerline of McGowan Pkwy	Within westbound paved travel lane or shoulder	Within westbound paved travel lane or shoulder	Within westbound unpaved shoulder
SR 65 between Olive Ave / Rancho Rd	Waste water	HDD	742	611	Within unpaved area / cultivated field	Within unpaved area / cultivated field	Within paved roadway and unpaved shoulder area	Within paved cul-de-sac	Within paved cul-de-sac / paved road
Rancho Rd / Reeds Creek	Waste water	HDD	1,500	1,468	Within unpaved area	Within unpaved area	Within unpaved area	Within unpaved area	Within unpaved area
Rancho Rd / Reeds Creek	Water	HDD	1,500	1,300	Within unpaved area	Within unpaved area	Within unpaved area	Within unpaved area	Within unpaved area
Rancho Rd / Hutchinson Creek	Waste water	HDD	746	532	Within unpaved area / cultivated field	Within unpaved area / cultivated field	Within unpaved area	Within unpaved area	Within unpaved area
Rancho Rd / Hutchinson Creek	Water	HDD	590	411	Within unpaved area	Within unpaved area	Within unpaved area	Within unpaved area	Within unpaved area
Rancho Rd / Kimball Creek	Waste water	HDD	519	467	Within unpaved area	Within unpaved area	Within unpaved area	Within unpaved area	Within unpaved area
Rancho Rd / Kimball Creek	Water	HDD	477	317	Within unpaved area	Within unpaved area	Within unpaved area	Within unpaved area	Within unpaved area
Rancho Rd / Virginia Creek	Waste water	Pipe ramming/ auger boring	50	50	Receiving Shaft: In paved area	Receiving Shaft: In paved area	Launch Shaft: Within unpaved shoulder area	Launch Shaft: Within unpaved shoulder area	n/a
Rancho Rd / Virginia Creek	Water	Pipe ramming/ auger boring	50	50	Receiving Shaft: Within unpaved area	Receiving Shaft: Within unpaved area	Launch Shaft: Within paved travel lane	Launch Shaft: Within paved travel lane	n/a

Table A-5 Boring at Crossings Associated with the South Yuba Infrastructure Project									
Crossing Name	**Utility**	**Crossing Type**	**Surface Length: Linear Feet**	**Bore Length: Feet**	**Entry Location**	**Entry Work Area**	**Exit Location**	**Exit Work Area**	**Pipe String Area**
SR 65 between Slaughterhouse Rd / Shimer Rd	Waste water	HDD	748	601	Within unpaved area	Within unpaved area	Within paved cul-de-sac	Within paved cul-de-sac and paved travel lane	Within paved cul-de-sac and paved travel lane
40 Mile Rd / Kimball Creek	Waste water	Pipe ramming/ auger boring	82	82	Receiving Shaft: Within paved travel lane	Receiving Shaft: Within paved travel lane	Launch Shaft: Within paved travel lane	Launch Shaft: Within paved travel lane	n/a
40 Mile Rd / Kimball Creek	Water	Pipe ramming/ auger boring	82	82	Receiving Shaft: Within paved travel lane	Receiving Shaft: Within paved travel lane	Launch Shaft: Within paved travel lane	Launch Shaft: Within paved travel lane	n/a

Source: Jacobs/MHM 2023, Planning Partners 2023.

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APPENDIX B

Yuba County 2030 General Plan Final EIR
Executive Summary

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2 EXECUTIVE SUMMARY

2.1 INTRODUCTION

This summary provides an overview of the EIR for the 2030 Yuba County General Plan (the project). The 2030 General Plan is summarized here (with more detail in Chapter 3, "Project Description"), along with alternatives to the project, which are described in detail in Chapter 5, "Alternatives to the Proposed Project." Table 2-1, at the end of this chapter, summarizes the environmental impacts identified for the project in each of the environmental issue sections of this draft environmental impact report (DEIR). These impacts are described in detail throughout Chapter 4, "Environmental Analysis." The summary table at the end of this chapter outlines environmental impacts, the significance without mitigation, proposed mitigation measure(s), and the significance of the impact with implementation of identified mitigation measures.

2.2 SUMMARY OF THE PROJECT DESCRIPTION

The "project site," as defined by CEQA, consists of the unincorporated areas of Yuba County. The 2030 General Plan proposes an update of the County's existing 1996 General Plan. The updated General Plan has been significantly revised and reorganized. The overarching purpose of the updated plan is to provide policy guidelines for future development and conservation in and adapt to issues that have emerged since the creation of the previously written elements. The General Plan provides the framework for decisions guiding where and how development should occur and the priorities given to the County's natural resources in order to achieve the highest quality of life possible for its residents. The General Plan is comprehensive in scope, addressing land use, transportation, housing, conservation of resources, economic development, public facilities and infrastructure, public safety, and open space, among many other subjects.

Although the General Plan is a policy document that does not directly propose construction projects, assumptions must be made for the purposes of analysis. It is estimated that the updated General Plan could accommodate the construction of between 32,000 and 42,000 housing units and 80,000 to 100,000 additional people living in unincorporated areas of Yuba County at full buildout. Between 47,000 and 67,000 jobs could be located in the County at full buildout of the 2030 General Plan. The presentation of broad ranges for buildout of the General Plan is appropriate for a long-range planning document. The actual population and number of jobs added between present and buildout will depend on changes in the local economy, demographic trends, and other factors, many of which are beyond the direct control of the County. Please refer to the 2030 General Plan for more detail regarding buildout assumptions.

2.3 SUMMARY OF PROJECT ALTERNATIVES

Project alternatives are intended to reduce or eliminate the potentially significant adverse environmental effects of the project, while attempting to meet the project objectives. An EIR is required to contain a discussion of a reasonable range of alternatives to the proposed project that could feasibly attain the basic objectives of the project (California Environmental Quality Act (CEQA) Guidelines, Section 15126.6[a]).

The following sections summarize the alternatives to the 2030 General Plan that are addressed in this DEIR. Chapter 5, "Alternatives to the Proposed Project" provides a more detailed description of these alternatives, as well as any alternatives that were originally considered, but then rejected.

2.3.1 ALTERNATIVE 1: NO PROJECT (1996 GENERAL PLAN).

This alternative assumes that the 2030 General Plan would not be implemented and instead the County would build out as provided in the 1996 General Plan.

2.3.2 ALTERNATIVE 2: GROWTH SCENARIO 1.

This alternative would have a smaller, more compact overall development footprint compared to the 2030 General Plan. This alternative describes land use change that would be anticipated for unincorporated areas if the county grew at a rate similar to high growth rates experienced in places such as Placer County during the 1990s and between 2000 and 2009. Development under this alternative would occur in areas with access to existing water, wastewater, transportation, and drainage facilities. This alternative would place a higher proportion of housing within close proximity to destination land uses, such as retail, services, and jobs. With the more compact footprint and a greater focus on infill development and redevelopment, public transit, bicycling, and walking will be viable for a greater proportion of residents for meeting daily travel needs.

2.3.3 ALTERNATIVE 3: BLUEPRINT PREFERRED ALTERNATIVE.

The Sacramento Area Council of Governments (SACOG) Board of Directors adopted the Blueprint Preferred Scenario in December 2004. The Blueprint represents an approach to land use and transportation investments that promotes more compact, mixed-use development, access to transit, improves air quality, and preserves open space, as an alternative to low-density and dispersed development patterns. SACOG used the Blueprint Preferred Scenario to guide preparation of the 2035 Metropolitan Transportation Plan, which identifies priority regional transportation investments. This alternative is guided by the level and mix of development in unincorporated Yuba County included in the Blueprint Preferred Scenario. Relative to the project, this alternative includes a reduced amount of population and employment growth. The land use mix with this alternative is similar to the 2030 General Plan. This alternative reduces the overall footprint of development compared to the 2030 General Plan.

2.3.4 ALTERNATIVE 4: GROWTH SCENARIO 2.

Like Alternatives 2 and 3, this alternative would have a smaller, more compact overall development footprint compared to the 2030 General Plan. This alternative describes land use change that would be anticipated for unincorporated areas if the county grew at a high rate between present and 2030, including buildout of some areas along the Highway 65 corridor between Ostrom Road and South Beale Road.

2.3.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

In addition to the discussion and comparison of impacts of the alternatives to the proposed project, CEQA requires that an "environmentally superior" alternative among the alternatives considered be selected and the reasons for such selection disclosed. In general, the environmentally superior alternative is the alternative that would generate the fewest or least severe adverse impacts.

For the purposes of this EIR, Alternative 3 is environmentally superior. Alternative 3 would reduce environmental impacts, compared to the 2030 General Plan, for each of the environmental topic areas analyzed. Alternatives 2 and 4 would also reduce impacts in the same number of topic areas as Alternative 3. In addition to the impacts that would be reduced without changing the impact conclusion, Alternative 3 would also result in one impact area becoming less than significant (Land Use, Population, and Housing).

2.4 SUMMARY OF KNOWN CONTROVERSIAL ISSUES

The CEQA Guidelines require that the summary of an EIR include a synopsis of known issues of controversy that have been raised by agencies and the public (CEQA Guidelines Section 15123). A Notice of Preparation (NOP) was delivered to the Governor's Office of Planning and Research State Clearinghouse on June 17, 2010, anticipating a NOP review period starting June 18, 2010. The County held a scoping meeting on July 7, 2010, to receive comments on the NOP. The County has also conducted public outreach in various formats and settings to

support the 2030 General Plan and has received substantial email and website input from citizens and agencies. Although social and economic issues were raised during this outreach, many environmental issues were also raised. The following is a summary of the issues raised during this scoping process:

- flood hazards;
- hazardous materials;
- access management for state highway system;
- alternatives to the state highway system for local trips;
- impacts to state highway system intersections, ramps, ramp intersections, mainline segments;
- land use strategies to reduce travel demand;
- wildfire risk in foothill areas;
- soil stability and erosion;
- water quality;
- transportation safety related to conflicts between travel modes;
- safety at at-grade railroad crossings;
- loss of agricultural and forest lands;
- air quality, including airborne toxics, and greenhouse gas emissions;
- availability of public transportation;
- water supply;
- waste disposal;
- drainage, including impacts to OPUD facilities;
- direct, indirect, and cumulative impacts to biological resources, including rare species;
- evacuation in the case of wildfire;
- effects of extending utilities to the Magnolia Ranch Specific Plan Area;
- energy conservation measures;
- deer herds;
- orderly provision of urban services in the unincorporated areas;
- analysis of environmental impacts associated with providing public services;
- traffic impacts to Marysville;

- impacts to the Highway 70 bridge;
- impacts to the Spenceville Recreation and Wildlife Preserve;
- visual impacts of foothills development;
- encroachment on existing mining operations;
- incorporating low impact development and smart growth concepts in order to mitigate impacts related to urbanization;
- provision of fire, emergency medical, and other public safety services;
- traffic impacts within Wheatland Fire Authority's service area that could impact emergency response;
- fire flow;
- impacts related to increased vehicle miles traveled;
- land use planning and population and housing impacts;
- traffic impacts to major roads in and around the City of Wheatland;
- groundwater supplies;
- impacts of future wastewater treatment needs;
- solid waste and landfill capacity;
- alternative that focuses on areas with existing municipal services;
- impacts to mineral resources, especially aggregate operations; and
- impacts to species using rice lands.

A copy of the NOP and a complete listing of the letters received during the comment periods are provided in Appendix A.

2.5 SUMMARY TABLE

Information in Table 2-1, "Summary of Environmental Impacts and Mitigation Measures," has been organized to correspond with the environmental issues discussed in Chapter 4, "Environmental Analysis," of this document. The summary table is arranged in four columns: environmental impacts; level of significance without mitigation; recommended mitigation measures; and level of significance with implementation of mitigation measures.

A series of mitigation measures are noted when more than one mitigation measure is required to reduce an impact to a less-than-significant level.

2.6 SUMMARY OF CUMULATIVE IMPACTS

The following provides a summary of the project's cumulative environmental impacts. A detailed discussion of the project cumulative impacts is provided in Section 6.2, "Cumulative Impacts," of this EIR.

2.6.1 AESTHETICS

Development in Sutter County, Butte County, Nevada County, and Yuba County and cities in the region would cause substantial changes to the exiting visual character. Important visual resources present in Yuba County (agricultural lands, views of the Sutter Buttes and the Sierra Nevada, waterways, etc.) would be affected by land use change under the cumulative scenario by related projects and plans. As development occurs in the unincorporated County and surrounding areas, substantial changes in visual conditions would continue as open viewsheds are replaced by urban development. Increased urban development would also lead to increased nighttime light and glare in the region and more limited views of the night sky and sky glow effects, and would disrupt the rural nature of the area. The effect of these changes, when considering the related projects, on aesthetic resources from past and planned future projects is a cumulatively **significant** impact.

Despite the range of policies and programs in the 2030 General Plan that would reduce or avoid adverse aesthetics impacts throughout Yuba County, urban development of agricultural lands and open space would occur. Growth and development in adjacent counties (Sutter County, Butte County, Nevada County and Placer County) would involve similar conversion of former agricultural lands, open space, and elements of the rural landscape. Given the large scale of this development and the rural nature of the regional setting, the impacts on visual resources from implementing projects accommodated under the 2030 General Plan is **cumulatively considerable**.

2.6.2 AGRICULTURAL AND FOREST RESOURCES

Conversion of Important Farmland in the Sacramento Valley is a **significant** cumulative impact resulting from urbanization. The cumulative loss of forestland through development in the region is considered a **significant** cumulative impact, also. The loss of Important Farmland is a cumulatively considerable impact when considered in connection with the **significant** cumulative losses that would occur through implementation of the proposed project, past farmland conversions, and planned future development.

The forest land areas that could potentially be affected by implementation of the General Plan are within the existing (1996) Rural Community Boundary Areas. The conversion of forestland in Yuba County combined with timberland conversion in adjacent counties as a result of rural community development and rural subdivisions is a **significant** cumulative impact. The 2030 General Plan, while maintaining existing (1996) rural community boundaries, would make a **considerable contribution** to this significant cumulative impact.

2.6.3 AIR QUALITY

Air quality in the region does not meet State of California standards. Construction and operation of projects accommodated under regional plans could have a long-term impact on a region's emission profile and ability to attain and maintain NAAQS and CAAQS. The cumulative effects from short- and long-term criteria pollutants generated from the proposed 2030 General Plan, combined with related projects, creates a **significant** cumulative impact.

Construction-related and operational criteria air pollutant emissions associated with General Plan buildout would exceed FRAQMD significance thresholds. Therefore, the 2030 General Plan would have a **cumulatively considerable** contribution to air pollutants in the region.

Toxic air contaminants are considered in land use planning in association with sensitive land uses. Projects and plans throughout the region would contribute roadway and railway traffic that could occur near sensitive receptors, resulting in a **significant** cumulative impact. The County considers the contribution of the 2030 General Plan to be **cumulatively considerable**.

2.6.4 BIOLOGICAL RESOURCES

Past development in Yuba County, ranging from conversion of land to agricultural production to recent expansion of urban development, has resulted in a substantial loss of native habitat to other uses. This is a **significant cumulative impact**. Implementing the 2030 General Plan could result in further loss of special status species and their habitat. Continued development of natural resources areas will result in the incremental decline in the amount of habitat remaining to support special-status species and sensitive natural communities. The 2030 General Plan would contribute to an ongoing decline of special status species and habitats. The 2030 General Plan policies and actions require avoidance of impacts to special-status species and their habitats. The Natural Resources Element also designates various types of open space, including open space required to protect critical habitat and other important biological resources. Therefore, the 2030 General Plan's contribution to a significant cumulative impact would be reduced by implementing the General Plan policies and actions. However, it may not be feasible to completely avoid direct and indirect impacts, while still allowing full build out of the designated land uses and therefore the 2030 General Plan would have a **cumulatively considerable** contribution to this significant cumulative impact.

In Yuba County, most established riparian vegetation occurs along the largest rivers; the Feather River, Yuba River, and Bear River, and south Honcut Creek. Important riparian corridors also occur along Dry Creek and other tributaries to Honcut Creek and the Yuba River. Riparian vegetation is present in the surrounding region along the Sacramento River and in the Sutter Bypass. Agricultural, residential, and industrial water use and land development have resulted in **a significant cumulativ**e reduction in the extent of riparian habitats in the county and surrounding region. The 2030 General Plan would have a **cumulatively considerable** contribution to this significant cumulative impact.

The alteration of the hydrologic condition supporting long-term soil saturation and conversion to other uses, primarily agriculture, has resulted in a **significant cumulative impact** to freshwater emergent wetlands in Yuba County and the surrounding region. Implementing the 2030 General Plan could result in the loss of freshwater emergent wetland and vernal pool complex with vernal pools and swales. Implementing the General Plan policies and actions listed above, along with the additional mitigation measures, is expected to reduce significant impacts on wetland and other waters of the United States requiring delineation and avoidance of these habitats to the maximum extent feasible, establishment of wetland habitat buffers, and by providing compensation for unavoidable impacts in a manner that would ensure no net loss of overall wetland habitat in the County. Complete avoidance would not be possible while still allowing full build out of the designated land uses. Therefore, the 2030 General Plan would have a **cumulatively considerable** contribution to this significant cumulative impact.

2.6.5 CULTURAL RESOURCES

Cultural resources in the region generally consist of prehistoric sites, historic sites, historic structures, and isolated artifacts. During the 19th and 20th centuries, localized urbanization and intensive agricultural use in the region caused the destruction or disturbance of numerous prehistoric sites, while many structures now considered to be historic were erected. Development of projects and plans assumed in the cumulative scenario has the potential to result in the discovery of undocumented subsurface cultural resources or unmarked historic-era or prehistoric Native American burials. Cumulative gains in population, households, and jobs would require a commensurate increase in infrastructure, capital facilities, services, housing, and commercial uses in Yuba County, its incorporated cities, and areas adjacent counties. The impact on archaeological deposits, human remains, and paleontological resources would be substantial given the past extent of urban development, and anticipated gains in population, jobs, and housing. There is a **significant** cumulative impact to cultural resources. Full buildout of the 2030 General Plan would involve substantial development and earth disturbance and the impact is **cumulatively considerable**.

2.6.6 GEOLOGY AND SOILS

The cumulative loss of access to mineral resources is a **significant** cumulative impact resulting from encroachment by development into areas with mineral resources. Implementation of the proposed policies and actions of the 2030 General Plan and implementation of existing regulations for SMARA Mineral Resource Zones, would reduce the impacts of buildout of the 2030 General Plan on mineral resources. Nonetheless, it is possible that development of the County's Rural Community Boundary Areas could preclude extraction of important County mineral resources along the Yuba River. One of the key objectives of the 2030 General Plan is to proactively guide development of rural areas of the County, including those that could be within areas of important mineral resources. The County has included all feasible mitigation as a part of the 2030 General Plan. The 2030 General Plan would have a **cumulatively considerable** contribution to a significant cumulative impact. All feasible mitigation is included as policies and actions of the 2030 General Plan.

The fact that vertebrate fossils have been recovered throughout the Sacramento and San Joaquin Valleys in these sediments suggests that there is a potential for uncovering additional similar fossil remains during construction-related earthmoving activities. Development under the cumulative scenario could adversely affect these resources, resulting in a **significant** cumulative impact. Implementation of the policies and actions of the 2030 General Plan would reduce the impacts of buildout of the 2030 General Plan on paleontological resources. However, the 2030 General Plan would have a **cumulatively considerable** contribution to a significant cumulative impact.

2.6.7 GREENHOUSE GAS EMISSIONS

Greenhouse gas (GHG) emissions have the potential to adversely affect the environment because such emissions contribute, on a cumulative basis, to global climate change. Global climate change has the potential to result in sea level rise (resulting in flooding of low-lying areas), to affect rainfall and snowfall (leading to changes in water supply), to affect temperatures and habitats (affecting biological resources), and to result in many other adverse effects. Global GHG emissions represent a **significant** cumulative impact.

Because the 2030 General Plan would generate higher GHG emissions per service population than is needed at the state level to achieve the AB 32 target, and since a substantial quantity of GHG emissions would be generated through buildout of the General Plan, this impact is considered a **cumulatively considerable** contribution to the significant cumulative impact of global climate change.

In addition to GHG emissions from implementation of the 2030 General Plan, another cumulative impact of climate change includes increased global average temperatures (global warming) through the intensification of the greenhouse effect, and associated changes in local climatic conditions. This is a **significant** cumulative impact. Policies and actions in the in the 2030 General Plan would reduce the extent and severity of climate change–associated impacts by proactively planning for changes in climate and conditions, and providing methods for adapting to these changes. For the purposes of this EIR, the impact is considered **cumulatively considerable**.

2.6.8 HYDROLOGY AND WATER QUALITY

The 2030 General Plan would potentially combine with development in the region to create **significant** cumulative hydrologic and water resource impacts. However, the General Plan's Public Health & Safety Element policies are designed to reduce the rate of runoff, filter out pollutants, and/or facilitate groundwater infiltration. Implementation of existing regulations and laws, along with the policies and actions of the 2030 General Plan would reduce the 2030 General Plan's contribution to this potentially significant cumulative impact to water quality. The 2030 General Plan would have a **less than cumulatively considerable** contribution to a significant cumulative impact related to water quality impacts assuming application of existing regulations and policies and actions of the 2030 General Plan.

Development and land use change in Yuba County and in the surrounding region could result in additional impervious surfaces, and the diversion of groundwater to surface water through subsurface drainage features or localized dewatering measures. As a result, levels of groundwater recharge in the underlying groundwater basin would decline. Reductions in groundwater recharge in a given area could affect groundwater levels and the yield of hydrologically connected wells. This is considered a **significant cumulative impact**. 2030 General Plan policies would be implemented in coordination with the Yuba County Groundwater Management Plan on a regional level to ensure conjunctive use, perennial yield, and avoidance of groundwater overdraft within the County and in surrounding areas that are hydrologically connected to it. The impact is **less than cumulatively considerable**.

Much of the floodplain area of Yuba County and adjacent Sutter County is protected by levees along the Feather River, Yuba River, Bear River, and Honcut Creek. Riverine flooding can overwhelm the integrity of the local or regional levee system. This is a potentially **significant** cumulative impact. Adoption and implementation of the proposed policies in the 2030 General Plan, as well as existing state and local regulations, would reduce the risk for people and structures involving flooding that could result from failure of a levee. Implementation of the 2030 General Plan policies and actions, the 2030 General Plan would have a **less than cumulatively considerable** contribution to a significant cumulative impact.

2.6.9 LAND USE, HOUSING, AND POPULATION

General plans in the region, along with specific plans that are outside the development assumptions from local general plans, would potentially accommodate substantially greater population and employment growth compared to regional forecasts and planning efforts. Population and employment growth beyond those included in local and regional land use and transportation plans could induce population growth, which could have a **significant** cumulative impact.

The County has designed the 2030 General Plan to balance land uses in order to avoid growth inducement elsewhere. However, the 2030 General Plan could accommodate a substantially greater population and employment growth than is included in existing forecasts and plans. The 2030 General Plan would have a **cumulatively considerable** contribution to this significant cumulative impact.

Regional growth could displace existing housing and population, requiring the construction of housing elsewhere, representing a **significant** cumulative impact. The 2030 General Plan does not propose to remove existing housing or displace existing population or housing units. However, it is possible that some housing could be removed during buildout. The 2030 General Plan could have a **cumulatively considerable** contribution to this significant cumulative impact.

2.6.10 NOISE

Traffic noise levels will increase along major regional roadway corridors as a result of the additional traffic generated by buildout of the 2030 General Plan, coupled with regional growth. This represents a **significant** cumulative impact. The primary factor for a cumulative noise impact analysis is the consideration of future traffic volumes. Implementation of the 2030 General Plan, along with regional growth and traffic conditions, would cause changes in traffic noise levels over existing traffic noise levels. The 2030 General Plan would make a **cumulatively considerable** contribution to this significant cumulative impact.

2.6.11 PUBLIC SERVICES AND FACILITIES

Development and operation of new parks that may be needed to serve additional population accommodated under the General Plan could result in adverse impacts on the physical environment. The 2030 General Plan establishes the overall parkland standard as "a diversity of park types at a ratio of at least 5 acres for every 1,000 residents." Implementation of this standard will require land dedication and/or fees and planning for parkland of different

types that is integrated into new growth areas, as well as redevelopment areas. The County, however, is not the primary provider of developed park facilities or recreational programming for all unincorporated areas. Because the County cannot guarantee the full implementation of parkland and recreational policies and actions, and because it is possible that parkland and recreational facilities may not be provided at an adequate rate to avoid overuse of existing facilities, a **potentially significant** cumulative impact related to park facilities would occur. The 2030 General Plan would make a **cumulatively considerable** contribution to a significant cumulative impact.

2.6.12 TRANSPORTATION AND TRAFFIC

Regional population and employment growth is anticipated to result in traffic volumes along regional roadways, such as SR 70, that could exceed acceptable levels of service. This represents a **significant** cumulative impact.

While the 2030 General Plan includes various policies to reduce traffic demand and mitigation for roadway segments and intersections, traffic is anticipated to exceed level of service standards at certain roadway segments and intersections. The 2030 General Plan would make a **cumulatively considerable** contribution to this significant cumulative impact.

Table 2-1
Summary of Environmental Impacts and Mitigation Measures

Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
4.1 Aesthetics			
4.1-1: Adverse Impacts on Scenic Vistas. Yuba County contains varying topography and land cover that provides many different types of views and scenic vistas. Prominent aesthetic resources visible within Yuba County include the Sutter Buttes, Sierra Nevada foothills and mountains, the valley floor, expansive agricultural lands, rivers and river valleys, and lakes and reservoirs. Future development anticipated under the General Plan could potentially block or result in changes to certain scenic views. This impact would be potentially significant.	PS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	SU
4.1-2: Damage to Scenic Resources within a State Scenic Highway. There are no officially-designated State Scenic Highways in Yuba County, although SR 49 is an eligible highway. There would be no impact.	NI	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	NI
4.1-3: Degradation of Visual Character. Implementation of the 2030 General Plan would substantially alter the visual character of the unincorporated communities in Yuba County through conversion of agricultural and other open space lands to developed urban uses. This impact would be potentially significant.	PS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	SU
4.1-4: Increase in Nighttime Lighting and Daytime Glare. Development projects would require nighttime lighting and could include construction of buildings with reflective surfaces that inadvertently cast light and glare toward motorists the County's highways and roadways. Development under the 2030 General Plan would increase the amount of daytime and nighttime light and glare and would introduce a new source of nighttime lighting in an existing rural area. This impact would be potentially significant.	PS	EIR references mitigating 2030 General Plan policies but not technically EIR mitigation measures	SU

NI = No Impact LTS = Less than Significant S = Significant PS = Potentially Significant SU = Significant and Unavoidable

Table 2-1
Summary of Environmental Impacts and Mitigation Measures

Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
4.2 Agriculture and Forestry Resources			
4.2-1: Loss of Important Farmland and Conversion of Agricultural Land to Non-Agricultural Uses. Buildout of the 2030 General Plan could result in the conversion of as many as 5,682 acres of Important Farmland and 44,901 acres of grazing land to nonagricultural uses. This impact is considered potentially significant.	PS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	SU
4.2-2: Loss of Forest Land or Conversion of Forest Land to Non-Forest Use. Implementation of the 2030 General Plan would not result in large-scale conversion of forest lands to non-forest uses, but some timberland areas in Rural Community Boundary Areas could be affected by implementation of the 2030 General Plan. This impact is considered potentially significant.	PS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	SU
4.3 Air Quality			
4.3-1: Generation of Long-Term Operational, Regional Emissions of Criteria Air Pollutants and Precursors and Consistency with Air Quality Planning Efforts. Future development in Yuba County would generate emissions of criteria air pollutants (PM_{10} and $PM_{2.5}$) and ozone precursors, both of which affect regional air quality. The 2030 General Plan would accommodate additional population and employment development, which would lead to operational (mobile-source and area-source) emissions that are not accounted for in the current applicable air quality plan and would exceed FRAQMD thresholds. This impact is considered significant.	PS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	SU
4.3-2: Generation of Short-Term Construction-Related Emissions of Criteria Air Pollutants and Precursors. Emissions of Criteria Air Pollutants and precursors resulting from construction activities accommodated under the 2030 General Plan would exceed FRAQMD's significance thresholds of 25 lb/day for ROG and NO_X and 80 lb/day for PM_{10}. Policies in the 2030 General Plan would support compliance with FRAQMD-recommended standard construction mitigation practices. This would appreciably reduce construction-generated air pollutant emissions from buildout of the	PS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	SU

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Table 2-1
Summary of Environmental Impacts and Mitigation Measures

Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
2030 General Plan. However, due to the large amount of total development proposed over the buildout period, construction-generated emissions of criteria air pollutants and precursors is considered substantial, and could violate an ambient air quality standard, contribute substantially to an existing or predicted air quality violation, and/or expose sensitive receptors to substantial pollutant concentrations. As a result, this impact is considered significant.			
4.3-3: Generation of Long-Term, Operational, Local Mobile-Source Emissions of CO. Local mobile-source emissions of CO would not be expected to substantially contribute to emissions concentrations that would exceed the 1-hour ambient air quality standard of 20 ppm or the 8-hour standard of 9 ppm. As a result, this impact would be less than significant.	LTS	No mitigation is required.	LTS
4.3-4: Exposure of Sensitive Receptors to Emissions of Toxic Air Contaminants. Implementation of the 2030 General Plan would reduce the potential for exposure of sensitive land uses to substantial concentrations of TACs. This impact is considered significant.	PS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	SU
4.3-5: Exposure of Sensitive Receptors to Emissions of Odors. Implementation of the 2030 General Plan could result in the exposure of sensitive receptors to emissions of objectionable odors. As a result, this impact is considered significant.	PS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	SU
4.4 Biological Resources			
4.4-1: Impacts to Special Status Wildlife and Fish Species. 37 special-status wildlife and fish species are known to occur within areas that could be affected by implementation of the 2030 General Plan. Special-status species could occur in suitable habitats throughout areas that could be affected by implementation of the 2030 General Plan. Implementation of the 2030 General Plan would result in loss or degradation of existing populations or of suitable habitat for these species. This impact is considered potentially significant.	PS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	SU

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Table 2-1
Summary of Environmental Impacts and Mitigation Measures

Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
4.4-2: Impacts to Special-Status Plants. Adopting and implementing the 2030 General Plan would accommodate development in areas of the County that support habitat for special-status plant species, which could result in loss of special-status plants either through direct removal or through habitat degradation, if they are present. This impact is considered potentially significant.	PS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	LTS
4.4-3: Loss and Degradation of Sensitive Habitats. Implementation of the 2030 General Plan would accommodate development in areas that support oak woodland and riparian habitats. Development in these areas would result in direct impacts on these sensitive habitats through vegetation removal. Loss and degradation of these habitat types could also result from indirect effects, such as altered hydrology, introduction of invasive species, and habitat fragmentation. This impact is considered potentially significant.	PS	**4.4-3a: Oak Woodland Habitats.** The following measures shall be implemented until the County has adopted an oak woodland preservation and mitigation ordinance. The County oak woodland preservation and mitigation plan may incorporate many of the measures listed below. ► During evaluation of development proposals, require that impacts on oak woodlands such as direct conversions, habitat fragmentation and adverse effects from adjacent land uses be avoided to the greatest extent feasible through project design and modification. This shall be accomplished through mapping oak woodland resources on the project site and establishing buffers around existing stands to prevent adverse effects. ► Require implementation of BMPs while working near oak woodlands to avoid inadvertent damage to oak trees. BMPs should include establishment of buffers to prevent root and crown damage, soil compaction, introduction and spread of invasive species and other indirect effects. ► For those impacts on oak woodland that cannot be avoided, the County shall require the project applicant to minimize adverse affects. All impacts that cannot be avoided shall be mitigated to ensure that loss of oak woodland habitat in the county is reduced to the maximum extent feasible. Mitigation shall include the following steps: mapping of oak woodlands on the project site, quantification of oak woodland impacts resulting from project implementation, determination of appropriate mitigation measures (avoidance, minimization, compensation), development of an oak woodland mitigation plan, and implementation of the plan including monitoring and remedial measures.	SU

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Summary of Environmental Impacts and Mitigation Measures

Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		► Measures proposed in the oak woodland mitigation plan may include planting acorns and container stock from a local seed source; however planting may not account for more than 50% of the required mitigation and must occur on lands that are protected in perpetuity. Other measures to be included in the mitigation plan may include the enhancement of degraded stands of oak woodland, purchase of fee title of land and transfer to a public agency for management, and purchase of conservation easements. ► Oak woodland habitat placed under conservation easements should be at appropriate ratios to offset the loss of habitat functions and values of the oak woodland to be lost. Oak woodland habitat preserved this way should have similar tree sizes and densities, species composition, site condition, and landscape context to the oak woodland to be removed to serve the same function and have similar habitat value. The County may also consider the establishment of an oak woodland conservation fund which project applicants may contribute to for a percentage of their mitigation requirements, however a cap should be established for fund contributions, similar to the cap for replacement planting; fund moneys would be used solely for purchase of conservation easements or for public lands to protect oak woodland resources. ► Wherever possible, mitigation lands shall be contiguous with lands already protected and managed for the long term protection of oak woodland and the associated plant and wildlife species to maximize the likelihood of mitigation success. The oak woodland plan shall be developed by a qualified professional such as a professional biologist, arborist or registered forester using the best available science and shall clearly state all mitigation measures required. ► The plan shall designate responsible parties for funding, implementing mitigation, monitoring, reporting and annual review, and shall include remedial action measures if the initial plan fails or if success levels fall below the thresholds specified in the plan. The County shall require the mitigation plan and	

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Table 2-1
Summary of Environmental Impacts and Mitigation Measures

Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		proof of sufficient means to implement the plan prior to project approval and shall require annual reports for the implementation timeframe of the plan. **4.4-3b: Riparian Habitats** The following measures shall be implemented as necessary to avoid significant impacts to riparian habitats. ► If complete avoidance is not feasible, and projects require encroachment into the riparian habitat, project applicants shall be required to develop a riparian habitat mitigation plan resulting in a no- net- loss of riparian habitat functions and values. ► Mitigation may be accomplished through replacement, enhancement of degraded habitat, or off -site mitigation at an established mitigation bank. ► If a proposed project requires work on the bed and bank of a stream or other water body, the project applicant shall also obtain a streambed alteration agreement under Section 1600 et al. of the Fish and Game Code from DFG prior to project implementation, and shall implement all requirements of the agreement in the timeframes required therein.	
4.4-4: Interference with Movement or Migratory Patterns of Fish or Wildlife Species. Construction of infrastructure, roadways, or developments as part of the buildout of the 2030 General Plan could result in modifications to potential migratory routes or resting locations for fish or wildlife species. In addition, buildout of the 2030 General Plan would accommodate land use change that could alter migratory patterns for wildlife species. This impact is considered potentially significant.	PS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	SU
4.4-5: Potential for Direct and Indirect Impacts on Federally Protected Wetlands and Other Waters of the United States. Implementation of the 2030 General Plan could result in direct impacts to federally protected wetlands and other waters of the United States, including vernal pools, freshwater emergent wetlands, and rivers, streams, and other water bodies. Impacts could occur	PS	**4.4-5: Waters of the United States.** The following measures shall be implemented, in addition to the 2030 General Plan policies and actions, to reduce significant impacts on wetlands and other waters of the United States: ► A permit from the USACE will be require for any activity resulting in impacts of "fill" of wetlands and other waters of the	LTS

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Table 2-1
Summary of Environmental Impacts and Mitigation Measures

Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
through habitat conversion, encroachment, routine maintenance, or other activities in the immediate vicinity of rivers and other water bodies and in habitat supporting wetlands. Indirect impacts could result from adjacent development that leads to habitat modifications such as changes in hydrology. This impact is considered potentially significant.		United States. If the impact acreage is below one half acre, the project may qualify for a Nationwide Permit. If impacts exceed one half acre, a letter of permission or individual permit from the USACE will be required prior. Project applicants shall be required to obtain this permit prior to project initiation. A wetland mitigation plan that satisfies USACE requirements will be needed as part of the permit application. ► Projects applicants that obtain a Section 404 permit will also be required to obtain certification from the Regional Water Quality Control Board (RWQCB) pursuant to Section 401 of the CWA. If the project involves work on the bed and bank of a river, stream or lake, a Streambed Alteration Agreement for CDFG pursuant to Section 1600 et al. of the Fish and Game Code will also be needed. Project applicants shall be required to obtain all needed permits prior to project implementation, to abide by the conditions of the permits, including all mitigation requirements, and to implement all requirements of the permits in the timeframes required therein.	
4.4-6: Conflict with an Adopted HCP/NCCP or Local Policies Protecting Biological Resources. Yuba and Sutter Counties are currently in the process of developing a combined Natural Community Conservation Plan (NCCP) / Habitat Conservation Plan (HCP). This plan has yet to be adopted. During the planning horizon of the 2030 General Plan, if the NCCP/HCP is adopted, policies within the 2030 General Plan will ensure consistency with the NCCP/HCP. This impact would be less than significant.	LTS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	LTS
4.5 Cultural Resources			
4.5-1: Damage to Identified Historical Resources and Unique Archaeological Resources. The 2030 General Plan contains policies and a growth template that would allow construction and development, as depicted in the Land Use Diagram. Yuba County has a high density of identified cultural resources. Many of these resources, upon evaluation, are likely to qualify as historical resources or unique archaeological resources under CEQA.	PS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	SU

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Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Construction activity under the General Plan could affect one or more of these resources, resulting in significant impacts by either direct disturbance through excavation or by changes to the setting. These impacts are potentially significant.			
4.5-2: Damage of Previously Unidentified Cultural Resources. Buildout of the areas designated for development within the planning area identified 2030 General Plan has the potential to damage or disturb previously unidentified cultural resources. The density of known cultural resources within Yuba County is high; indicating that additional resources occur that have not been recorded and which could be damaged by construction prior to discovery. This impact is potentially significant.	PS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	SU
4.5-3: Disturbance and Damage to Human Remains. Buildout of the 2030 General Plan would allow construction in areas that could contain previously undiscovered buried human remains. Previously identified cultural resources within the County include prehistoric archaeological sites with human burials. In addition, historic archaeological deposits may include human remains and cemeteries. It is possible that ground-disturbing work that would be performed during buildout of the General Plan will encounter such remains, and potentially result in damage. This impact is potentially significant.	PS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	SU
4.6 Geology, Soils, Mineral Resources, and Paleontological Resources			
4.6-1: Potential for Exposure to Seismic Ground Shaking. Buildout of the 2030 General Plan would not result in development of areas prone to strong seismic ground shaking. Implementation of policies and actions in the 2030 General Plan and compliance with existing regulations would reduce the potential for substantial adverse effects due to exposure to seismic ground shaking. This impact would be less than significant.	LTS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	LTS
4.6-2: Potential for Seismic Ground Failure or Other Unstable Soil Conditions. Buildout of the 2030 General Plan could accommodate development of areas located on a geologic unit or soil that is unstable or that could become unstable with moderate potential for seismic-related ground failure, including liquefaction or landslides and subsidence.	LTS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	LTS

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Implementation of policies and actions in the 2030 General Plan and existing regulations would reduce the potential for substantial adverse effects due to exposure to seismic ground failure or other unstable soil conditions. This impact is considered less than significant.			
4.6-3: Soil Erosion or Loss of Topsoil. Buildout of the 2030 General Plan could accommodate substantial construction and development, which could potentially cause soil erosion or the loss of topsoil. Implementation of policies and actions in the 2030 General Plan and existing regulations would reduce potential soil erosion and topsoil loss. This impact is considered less than significant.	LTS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	LTS
4.6-4: Construction in Areas with Expansive Soils. Buildout of the 2030 General Plan would result in construction of occupied structures in areas with expansive soils. General Plan policies and existing regulations will require measures to reduce impacts related to expansive soils. This impact is considered less than significant.	LTS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	LTS
4.6-5: Construction in Areas with Soils with Poor Septic Suitability. Buildout of the 2030 General Plan would result in construction of occupied structures in areas with soils poorly suited to septic systems. Should septic systems be used, implementation of policies and programs in the 2030 General Plan and existing regulations would require use of best practices for septic systems. This impact is considered less than significant.	LTS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	LTS
4.6-6: Loss of Availability of Known Mineral Resources. Buildout of the 2030 General Plan could result in construction in areas near existing or potential future mineral resource development. While regionally significant mineral deposits located within Yuba County, including MRZ-2 zones located along the Yuba River between Marysville and Smartsville, will be preserved, it is possible that development under the 2030 General Plan would encroach on mining operations. However, narrative policy of the 2030 General Plan is structured to reduce impacts to areas with substantial mineral resources. This impact would be less than significant.	LTS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	SU

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Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
4.6-7: Possible Damage to Unknown, Potentially Unique Paleontological Resources. Construction activities could disturb previously unknown paleontological resources in areas addressed by the 2030 General Plan. This impact would be potentially significant.	PS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	SU
4.6-8: Potential damage from a seiche. The 2030 General Plan Land Use Diagram and Open Space Diagram indicate that new development would be limited around Collins Reservoir and substantial new development would not be consistent with the General Plan around New Bullards Bar Reservoir. However, it is possible that buildout of the 2030 General Plan could accommodate a very limited amount development in areas located at risk of damage from a seiche. Enclosed water bodies within the County are potential locations for a seiche to occur as a result of an earthquake and lake users, lake shorelines, and areas downstream of dams are at risk of potential damage from a seiche. This impact is considered potentially significant.	PS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures.	LTS
4.7 Climate Change			
4.7-1: Increase in Greenhouse Gas Emissions. The 2030 General Plan would accommodate land use change that would increase GHG emissions. Buildout of the 2030 General Plan Update would result in substantially higher GHG emissions compared with existing levels. Climate change attributable to human-caused GHG emissions is a significant cumulative impact. 2030 General Plan GHG mass emissions could be cumulatively considerable when compared to existing mass emissions in. For this reason, this impact is considered potentially significant.	PS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	SU
4.7-2: Impacts of Climate Change on Yuba County. Climate change is expected to result in a variety of effects that could potentially impact Yuba County: alterations to agricultural production; changes to terrestrial and aquatic ecosystems; increased energy demand; decreased water supply; increased risk of flooding; and increased frequency and intensity of wildfire. Substantial negative effects on residents, resources, structures, and the economy could result. This impact would be potentially significant.	PS	The 2030 General Plan Update contains many goals, policies, and programs which have the potential to aid the County's adaptation to climate change (reducing energy demand, reducing flood potential, decreasing wildfire risk, ensuring adequate water supply, increasing water conservation, preserving important habitat and open space areas). These policies and actions are shown in Table 4.7-4 and included throughout the 2030 General Plan.	SU

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Summary of Environmental Impacts and Mitigation Measures

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4.8 Hazards and Hazardous Materials			
4.8-1: Routine Transport, Use, or Disposal and Possible Release of Hazardous Materials from Upset or Accident Conditions. Future population growth through buildout of the 2030 General Plan would result in an increase in the routine transport, use, and/or disposal of hazardous materials, which could result in greater exposure of the public to such materials and exposure of increasing numbers of people through either routine use or accidental release. Implementation of 2030 General Plan policies, in combination with existing federal and state regulations, would reduce the potential impacts related to the routine transportation of hazardous materials. This impact would be less than significant.	LTS	EIR references mitigating 2030 General Plan policy but not technically EIR mitigation measures	LTS
4.8-2: Emission or Handling of Hazardous or Acutely Hazardous Materials, Substances, or Waste within One-Quarter Mile of an Existing or Proposed School. Implementation of the 2030 General Plan could result in development of uses that would emit or handle hazardous waste in proximity to new or existing schools. However, implementation of 2030 General Plan policies and compliance with existing regulations would ensure that the impact is less than significant.	LTS	EIR references mitigating 2030 General Plan policies but not technically EIR mitigation measures	LTS
4.8-3: Public Health Hazards from Project Development on a Known Hazardous Materials Site Compiled Pursuant to Government Code Section 65962.5. Several sites within the County are listed on the Cortese List as known hazardous materials sites. Implementation of the proposed project could expose construction workers to hazards and hazardous materials from these sites during construction activities, and hazardous materials on-site could create an environmental or health hazard if left in place. This impact would be less than significant.	LTS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	LTS

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4.8-4: Safety Hazards Associated with Public and Private Airports. Implementation of the 2030 General Plan could locate development within the vicinity of a public-use or private airstrip, potentially resulting in a safety hazard for people residing or working in the area. Policies and actions included in the 2030 General Plan, along with existing state local regulations associated with development in the vicinity of airports, would address these hazards. This impact would be less than significant.	LTS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	LTS
4.8-5: Interference with an Adopted Emergency Response Plan and Evacuation Plan. Implementation of the 2030 General Plan would add additional traffic and residences requiring evacuation in case of an emergency. Implementation of 2030 General Plan policies would ensure conformance with local emergency-response programs and continued cooperation with emergency-response service providers. This impact would be less than significant.	LTS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	LTS
4.8-6: Exposure of People and Structures to Urban and Wildland Fires. Development of the 2030 General Plan could potentially increase risk to fire for both people and property. However, implementation of 2030 General Plan policies and actions, along with existing regulations would ensure that people and structures would not be exposed to a significant risk of loss of injury involving fires. This impact is considered less than significant.	LTS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	LTS
4.9 Hydrology and Water Quality			
4.9-1: Violation of Water Quality Standards. Development anticipated under the 2030 General Plan would result in additional discharges of pollutants to receiving water bodies from nonpoint sources. Such pollutants would result in adverse changes to the water quality of local water bodies. However, with adoption and implementation of the proposed policies and actions in the 2030 General Plan, combined with current land use, stormwater, grading, and erosion control regulations, this impact would be less than significant.	LTS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	LTS

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Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
4.9-2: On-Site and Downstream Erosion and Sedimentation and Alteration of Drainage Patterns. Development and land use change consistent with the 2030 General Plan would increase the amount of impervious surfaces, thereby increasing the total volume and peak discharge rate of stormwater runoff. This could alter local drainage patterns, increasing watershed flow rates above the natural background level (i.e., peak flow rates). Increased peak flow rates may exceed drainage system capacities, exacerbate erosion in overland flow and drainage swales and creeks, and result in downstream sedimentation. Sedimentation, in turn, could increase the rate of deposition in natural receiving waters and reduce conveyance capacities, resulting in an increased risk of flooding. Erosion of upstream areas and related downstream sedimentation typically leads to adverse changes to water quality and hydrology. However, with adoption and implementation of the proposed policies and actions in the 2030 General Plan, combined with current grading, erosion, and flood control regulations, this impact is considered less than significant.	LTS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	LTS
4.9-3: Construction-Related Water Quality Impacts. Construction and grading activities during development consistent with the 2030 General Plan could result in excess runoff, soil erosion, and stormwater discharges of suspended solids and increased turbidity. Such activities could mobilize other pollutants from project construction sites as contaminated runoff to on-site and ultimately off-site drainage channels. Many construction-related wastes have the potential to degrade existing water quality. Project construction activities that are implemented without mitigation could violate water quality standards or cause direct harm to aquatic organisms. However, with implementation of existing regulations and water quality policies and actions contained in the 2030 General Plan, this impact would be less than significant.	LTS	EIR references mitigating 2030 General Plan policies but not technically EIR mitigation measures	LTS

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4.9-4: Interference with Groundwater Recharge or Substantial Depletion of Groundwater Supplies. Development and land use change consistent with the 2030 General Plan could result in additional impervious surfaces and the diversion of groundwater to surface water. Resulting reductions in groundwater recharge in the groundwater basins underlying the Planning Area could affect groundwater levels and the yield of hydrologically connected wells. However, with implementation of the proposed policies and actions in the 2030 General Plan, this impact would be less than significant.	LTS	EIR references mitigating 2030 General Plan but not technically EIR mitigation measures	LTS
4.9-5: Exposure of People or Structures to Flood Hazards. Development and land use changes consistent with the 2030 General Plan could result in the development of residential or commercial structures in floodplains, thereby exposing people and structures to flood hazards. However, implementation of the proposed policies and programs in the 2030 General Plan, combined with enforcement of existing flood control regulations would reduce this impact to a less-than-significant level. This impact would be less than significant.	LTS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	LTS
4.9-6: Potential for Failure of a Levee. Levees can fail because of earthquake-induced slumping, landslides, liquefaction, overtopping, and high volume flows. Levee failure results in exposure of people and structures to inundation, and death, injury, or loss of property could result. The Feather River Levee system protects the Sutter Basin area, which includes much of Western Yuba County. Extensive levee systems have been constructed along the Yuba, and Bear Rivers, and Western Pacific Interceptor Canal to provide flood protection. Implementation of the proposed policies and programs in the 2030 General Plan, combined with other relevant state and local regulations, would reduce the potential for effects on the area from levee failure. The impact is considered less than significant.	LTS	EIR references mitigating 2030 General Plan policies but not technically EIR mitigation measures	LTS

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Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
4.9-7: Potential for Failure of a Dam. The Yuba County Water Agency Multi-Hazard Mitigation Plan has identified five dams in or outside the County where dam inundation has the potential to result in major loss of life and property in Yuba County in the unlikely event of dam failure, and three dams that would result in major damage on a smaller scale. Implementation of the proposed policies and programs in the 2030 General Plan, combined with other relevant state and local regulations, would minimize the potential for effects from dam failure. This impact would be less than significant.	LTS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	LTS
4.10 Land Use Planning, Population, and Housing			
4.10-1: Disrupt or Divide an Established Community. Compliance with goals and policies in the 2030 General Plan would ensure that development pursuant to the 2030 General Plan would not disrupt or divide established communities. This impact is considered less than significant.	LTS	EIR references mitigating 2030 General Plan policies but not technically EIR mitigation measures	LTS
4.10-2: Conflicts with Other Plans. The goals, policies, and actions proposed in the 2030 General Plan would not conflict with other land use plans, policies, or agency regulations with jurisdiction over projects that could be developed under the 2030 General Plan. The impact is less than significant.	LTS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	LTS
4.10-3: Potential Conflict with Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP). Implementation of the 2030 General Plan would not conflict with an adopted habitat conservation plan or natural community conservation plan. There would be no impact.	NI	EIR references mitigating 2030 General Plan policy but not technically EIR mitigation measures	LTS
4.10-4: Induce Population Growth. Implementation of the 2030 General Plan could induce population growth in unincorporated Yuba County. This impact is considered potentially significant.	PS	EIR references mitigating 2030 General Plan policy but not technically EIR mitigation measures	SU

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4.10-5: Displacement of Existing Population and Housing. The 2030 General Plan provides overarching guidance for development and conservation. The 2030 General Plan does not propose to remove existing housing or displace existing population or housing units. However, it is possible that areas designated for development could involve removal of existing housing. The impact is considered potentially significant.	PS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	SU
4.11 Noise and Vibration			
4.11-1: Potential for Temporary, Short-Term Exposure of Sensitive Receptors to Construction Noise. Short-term construction source noise levels could exceed the applicable County standards at nearby noise-sensitive receptors. In addition, if construction activities were to occur during more noise-sensitive hours, construction source noise levels could also result in annoyance and/or sleep disruption to occupants of existing and proposed noise-sensitive land uses and create a substantial temporary increase in ambient noise levels. However, the 2030 General Plan would include policies to ensure construction noise levels do not exceed established standards. This impact would be less than significant.	LTS	EIR references mitigating 2030 General Plan policy but not technically EIR mitigation measures	LTS
4.11-2: Exposure to or Generation of Noise Levels in Excess of Local Standards. Future development of new noise-sensitive land uses would occur under the 2030 General Plan within areas that either are currently affected by noise from both transportation and non-transportation noise sources, or will be in the future. Uses allowed under the General Plan could potentially expose existing or planned noise-sensitive uses to noise levels that exceed local standards. However, the 2030 General Plan would include policies and actions to reduce the potential for noise levels to exceed established standards .Nevertheless, even with the implementation of these General Plan policies and actions, this impact is considered potentially significant.	PS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	SU
4.11-3: Increases in Ambient Noise Levels. Under the 2030 General Plan, future development of new noise-generating land uses	PS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	SU

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could occur within areas containing noise-sensitive land uses. The impact is considered potentially significant.			
4.11-4: Increases in Vibration Levels. Construction of projects accommodated under the 2030 General Plan could cause a temporary, short-term disruptive vibration if construction activities were to occur near sensitive receptors. Under the 2030 General Plan, future development of new vibration-sensitive land uses could occur within vibration-generating areas (e.g., railroads). However, the 2030 General Plan would also include policies and actions to reduce the potential for vibration levels to exceed established standards. This impact would be potentially significant.	PS	EIR references mitigating 2030 General Plan policies but not technically EIR mitigation measures	LTS
4.11-5: Noise Levels Near Airports. Future development of noise-sensitive land uses would occur under the 2030 General Plan within areas that are affected by noise from airport operations. However, the 2030 General Plan would also include policies and actions to reduce the potential for noise levels to exceed established standards at noise-sensitive receptors. This impact would be potentially significant.	PS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	LTS
4.12 Public Services and Facilities			
4.12-1: Demand for Additional Fire Protection and Emergency Services Facilities. Implementation of the 2030 General Plan would result in an increase in population in Yuba County and increase the demand for fire protection services, which would result in the need for additional and/or expanded fire protection facilities. This impact would be less than significant.	LTS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	LTS
4.12-2: Demand for Additional Law Enforcement Facilities. Implementation of the 2030 General Plan would accommodate an increase in population and commerce in Yuba County, thereby increasing the demand for police protection and law enforcement services, which could result in the need for additional and/or expanded police protection facilities. This impact would be less than significant.	LTS	EIR references mitigating 2030 General Plan policies but not technically EIR mitigation measures	LTS

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Table 2-1
Summary of Environmental Impacts and Mitigation Measures

Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
4.12-3: Demand for Additional School Facilities. Implementation of the 2030 General Plan would accommodate a population increase in the unincorporated areas of Yuba County, which also increase the number of school-aged children requiring educational services. The increased demand for services could result in the need for new or expanded school facilities. However, the environmental effects of such facilities expansion are analyzed throughout the environmental subsections of Section 4.0 of this EIR and there are no additional significant impacts beyond that which is already fully addressed. In addition, school impact fees will be required to address increased demand for educational services. This impact is considered less than significant.	LTS	EIR references mitigating 2030 General Plan policies but not technically EIR mitigation measures	LTS
4.12-4: Need for New or Expanded Parks and/or Recreation Facilities and Potential for Accelerated Deterioration of Existing Parks. Implementation of the 2030 General Plan would result in an increase in population in Yuba County, which would result in an increase in demand for parks and recreation services and require the construction of additional and/or expanded parks and recreation facilities. The construction of facilities could potentially have adverse impacts on the physical environment. Increased population in the unincorporated County could result in heavier use of existing parks within and outside of the unincorporated County, which could lead to accelerated deterioration of such facilities. The General Plan provides the policy direction necessary to fund and construct parks and recreational facilities needed to respond to increased demand. However, this would depend on the cooperation of agencies outside the County's direct control. Therefore, the impact is considered potentially significant.	PS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	SU
4.12-5: Demand for Additional Library Facilities. Implementation of the 2030 General Plan would generate new population in Yuba County, which would create an increase in demand for library services, which could potentially result in the need for new or expanded library facilities. This impact would be less than significant.	LTS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	LTS

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Table 2-1
Summary of Environmental Impacts and Mitigation Measures

Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
4.13 Transportation and Traffic			
4.13-1: Increase in Traffic Levels. Implementation of the 2030 General Plan would result in increases in traffic levels on roadways within Yuba County. This impact is considered significant.	S	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	SU
4.13-2: Degradation of Roadway Levels of Service. Implementation of the 2030 General Plan would result in roadways and intersections degrading below their current operations. Increased congestion is not in and of itself an adverse physical environmental impact under CEQA. Indirect impacts associated with increased traffic and congestion are analyzed in other sections of this EIR. This impact is considered less than significant.	LTS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	LTS
4.13-3: Potential Traffic Impacts in Other Jurisdictions. Implementation of the 2030 General Plan would contribute to roadways and intersections degrading below the applicable LOS standard of the incorporated Cities of Wheatland, Marysville, and Yuba City, and the adjacent Counties of Sutter, Placer, Butte, and Nevada. This impact is considered potentially significant.	PS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	SU
4.13-4: Traffic Impacts on Caltrans' Facilities. Implementation of the 2030 General Plan would result in Caltrans' facilities degrading below the applicable LOS standard. This impact would be significant.	S	EIR references mitigating 2030 General Plan policies but not technically EIR mitigation measures	SU
4.13-5: Increased Vehicle Miles of Travel (VMT). Implementation of the 2030 General Plan would result in greater VMT compared to existing conditions. This impact is considered potentially significant.	PS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	SU
4.13-6: Result in Change in Air Traffic Patterns. Implementation of the 2030 General Plan would not result in a change in air traffic patterns that would result in substantial safety risks. This impact would be less than significant.	LTS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	LTS
4.13-7: Introduce New Traffic Hazards. Implementation of the 2030 General Plan would not introduce new traffic hazards due to a design feature or incompatible use. The General Plan, however, would add traffic across existing at-grade railroad crossings and to areas where the County anticipates ongoing movement of	PS	**4.13-7: Railroad Crossings** ► For developments that would add substantial traffic, defined as adding 5,000 or more daily trips, across existing at-grade railroad crossings, traffic analysis shall be submitted to the County for review. This analysis and report shall estimate daily	SU

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Table 2-1
Summary of Environmental Impacts and Mitigation Measures

Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
agricultural equipment. This impact would be potentially significant.		and peak-hour traffic at the subject at-grade crossing, as well as accident data; estimates of train, vehicle, bicycle, and pedestrian travel at the crossing; and a description of existing and planned and funded equipment at at-grade rail crossings. ► The County will review traffic data in communication with the California PUC to identify improvements needed to ensure the public safety. ► As appropriate and feasible, the County will condition approval of projects and plans that add substantial traffic across at-grade crossings to participate in the funding for improvements needed to ensure the public safety as determined by the County. Such improvements may include coordinated highway/rail traffic signals, enhanced rail crossing signage, warning equipment, and markings, and grade-separations. ► Depending on the outcome of these studies, the County may include improvements in future updates to its Capital Improvement Program.	
4.13-8: Adverse Effects on Emergency Access. Implementation of the 2030 General Plan would not adversely affect access to emergency services. This impact would be less than significant.	LTS	EIR references mitigating 2030 General Plan policies but not technically EIR mitigation measures	LTS
4.13-9: Conflicts with Policies Supporting Alternative Transportation. Implementation of the 2030 General Plan would not conflict with adopted plans, policies, or programs supporting alternative transportation. This impact would be less than significant.	LTS	No mitigation is required.	LTS
4.14 Utilities and Service Systems			
4.14-1: Exceed Wastewater Treatment Requirements. Implementation of the 2030 General Plan would result in the development of new residential, commercial, industrial, and civic uses, which would increase local demand for wastewater treatment facilities. It is possible that land use change could exceed the capacity of wastewater treatment facilities. It is possible that, depending on the specific uses developed under the 2030 General	PS	**4.14-1: Wastewater Treatment Verification.** The County shall implement the following measures to ensure the availability of adequate wastewater collection and removal systems for land development projects in the unincorporated county under the 2030 General Plan: ► Before approval of any tentative subdivision map for a proposed residential project, the County shall formally consult with the	LTS

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Table 2-1
Summary of Environmental Impacts and Mitigation Measures

Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Plan, wastewater treatment requirements may be exceeded. This impact is considered potentially significant.		appropriate wastewater system provider that would serve the proposed subdivision to make a factual showing or impose conditions to ensure the availability of an adequate wastewater removal system for the proposed development. ► Before recordation of any final subdivision map, or before County approval of any project-specific discretionary approval or entitlement for nonresidential land uses, the project applicant shall demonstrate, based on substantial evidence, the availability of a long-term, reliable wastewater collection and treatment system for the amount of development that would be authorized by the final subdivision map or project-specific discretionary nonresidential approval or entitlement. Such a demonstration shall consist of a written verification that existing treatment capacity is, or will be available and that needed physical improvements for treating wastewater from the project site will be in place before occupancy.	
4.14-2: Construction of New or Expanded Water or Wastewater Facilities. Implementation of the 2030 General Plan would result in the development of new residential, commercial, industrial, and civic uses, which would increase local demand for water conveyance and wastewater collection, conveyance, and treatment facilities. In addition, implementation of the 2030 General Plan could accommodate development in areas that currently are not served by water systems or a wastewater treatment provider. Construction of new or expanded water and wastewater facilities could have adverse effects on the physical environment. This impact is potentially significant.	PS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	SU
4.14-3: New or Expanded Storm Water Drainage Facilities. Buildout of the 2030 General Plan would accommodate an expansion of the urbanized landscape and construction of new impermeable surfaces that would generate additional stormwater runoff compared to baseline conditions. New land uses would be expected to include residential, commercial, industrial, and civic uses. Each of these land uses could involve addition of impermeable surfaces, with associated increases in stormwater runoff. The	PS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	SU

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Table 2-1
Summary of Environmental Impacts and Mitigation Measures

Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
construction of new facilities and conveyance infrastructure or the expansion of existing facilities and infrastructure to handle this runoff could generate significant environmental effects. This impact is considered potentially significant.			
4.14-4: Insufficient Water Supplies to Meet the Future Water Demand in Unincorporated Areas Served by the County. Implementation of the 2030 General Plan would designate land uses that, if developed to full buildout, would increase water demand. Reductions in agricultural cultivation caused by conversion of agricultural land would decrease water consumption within Yuba County. Existing regulations require additional water conservation measures in new development and for large developments to demonstrate ongoing reliable water supply. Considering existing regulations that require conservation and demonstration of water supply and that the overall change in water demand compared to existing supply is not substantial, the impact is considered less than significant.	LTS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	LTS
4.14-5: Increased Demand for Solid Waste Disposal and Compliance with Solid Waste Requirements. Buildout of the 2030 General Plan would accommodate an increase in population and commerce. This would result in an associated increase in solid waste streams of approximately 82,125 tons of solid waste per year, conservatively estimated. Because available capacity can meet this demand, no new facilities would need to be constructed to serve 2030 General Plan buildout. For these reasons this impact would be less than significant.	LTS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	LTS
4.15 Energy			
4.15-1: Effects on Energy Consumption from Land Use Locations and Patterns. Implementation of the 2030 General Plan would result in an increased demand for energy. New residential, commercial, industrial, and civic uses will increase local energy demands. However, the policies and actions of the General Plan that guide growth and development are designed to avoid wasteful, inefficient, and unnecessary consumption of energy. This impact	LTS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	LTS

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Table 2-1
Summary of Environmental Impacts and Mitigation Measures

Impacts	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
would be less than significant.			
4.15-2: Increased Energy Demand and Need for Additional Energy Infrastructure. Implementation of the2030 General Plan would increases energy demand and would result in the need to extend services and infrastructure to new users in Yuba County. Policies of the 2030 General Plan, as well as existing regulations and project-level review would reduce energy demand. However, the future energy demand would require construction and operation of energy-related facilities that would have potentially significant impacts.	PS	EIR references mitigating 2030 General Plan policies and actions but not technically EIR mitigation measures	SU

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APPENDIX C

South County Infrastructure Project
Air and Greenhouse Gas Emissions Report:
Methodology And Calculations

SOUTH COUNTY INFRASTRUCTURE PROJECT AIR AND GREENHOUSE GAS EMISSIONS REPORT: METHODOLOGY AND CALCULATIONS

For the South County Infrastructure project, air pollutant and greenhouse gas (GHG) emissions from construction and limited operational activities were estimated using the Sacramento Metropolitan Air Quality Management District (SMAQMD) Roadway Construction Emissions Model (Version 9.0) and California Emissions Estimator Model (CalEEMod) Version 2020.4.0. Activities proposed for construction and operation that would result in air emissions and assumptions used to complete the modeling are outlined below.

The project would be constructed beginning in early 2024. Exact phasing will be up to the contractor; however, based on funding, it is assumed the SSO reduction measures and the City of Wheatland pipeline connector would be constructed first. Because the wastewater treatment plant (WWTP) improvements are a component of the SSO reduction measures, it is likely these improvements would occur next. This analysis assumes no pipeline construction will overlap, and multiple passes are expected on Rancho Road. The analysis also assumes pump and lift station construction may individually overlap with pipeline construction, as will construction of WWTP and water treatment plant facilities. Using a typical equipment list of off-road heavy-duty equipment required for this type of project and information provided by the project applicant, reasonable assumptions were made to modify the Roadway Model and CalEEMod default values.

Project Component	Assumptions
Phase I (2024)	
SSO force main and crossings and City of Wheatland Pipeline Connector Trenching for force main and HDD for crossings 36,758 lineal feet (7.0 miles)	– Assumes 2.5 acres disturbed based on trenching width average of 3 feet and lineal feet of pipe (with a maximum of 0.02 acres/day) – Assumes 7 months based on proportion of total pipeline construction over 27 months – Estimated using the Roadway Construction Emissions Model – Default equipment modified based on off-road equipment and hauling information provided by engineer – Hauling information based on estimated imports of concrete, Class 2AB, CLSM, asphalt, and other project materials, and export of 95% of excavated materials as provided by engineer
SSO Pump Station PS 1 8,215 square feet; 200 hp generator *SSO Pump Station PS 2* 8,215 square feet; 200 hp generator (assumed information) *SSO Pump Station PS 26* 20,400 square feet; 335 hp generator *Pump Station PS 21 (Wheatland)* 10,260 square feet; 335 hp generator	– Assumes 2 trips per month for maintenance and generator testing (included in PS 1 modeling) – Assumes 30 minutes per month for back-up generator testing (max 0.5 hrs per day, 6 hrs per month) – Construction equipment provided by project engineer – Construction duration would result in construction emissions in both Phase I and Phase II – Estimated using CalEEMod with default values beyond equipment type

South County Service Area Wastewater Pipelines *Force main and crossings* Trenching for force main and HDD for crossings 44,440 lineal feet (8.4 miles)	– Assumes 3.1 acres disturbed based on trenching width average of 3 feet and lineal feet of pipe (with a maximum of 0.02 acres/day) – Assumes 8.5 months based on proportion of total pipeline construction over 27 months – It is assumed construction of the South County force main would begin upon conclusion of the SSO force main and Wheatland connector in 2024, and carry over into 2025 – Estimated using the Roadway Construction Emissions Model – Default equipment modified based on off-road equipment provided by engineer – Hauling information based on estimated imports of concrete, Class 2AB, CLSM, asphalt, and other project materials, and export of 95% of excavated materials as provided by engineer
Phase II (2025)	
Wastewater Treatment Plant Improvements Approximately 69,000 square feet of area *Emergency Storage Basin* Approximately 4 acres.	– Assumes 150,401 cubic yards of export – Assumes 4,403 cubic yards of concrete imported – Phasing, equipment, and worker trips provided by engineer – Estimated using CalEEMod
South County Service Area Wastewater Pipelines *Force main and crossings*	– Construction assumptions included above in Phase I; a portion of this project component would be constructed in 2025
SSO PS 1, SSO PS 2, SSO PS 26, & PS 21	– Construction assumptions included above in Phase I; a portion of this project component would be constructed in 2025
Phase III (2026)	
Water Supply and Delivery Pipelines Trenching for pipeline and HDD for crossings 36,939 lineal feet (7.0 miles)	– Assumes 2.5 acres disturbed based on trenching width average of 3 feet and lineal feet of pipe (with a maximum of 0.02 acres/day) – Assumes 7 months based on proportion of total pipeline construction over 27 months – Estimated using the Roadway Construction Emissions Model – Default equipment modified based on off-road equipment and hauling information provided by engineer – Hauling information based on estimated imports of concrete, Class 2AB, CLSM, asphalt, and other project materials, and export of 95% of excavated materials as provided by engineer
Water Plant Area of Improvements – 42,000 square feet 600 KW back-up generator (805 hp)	– Assumes 30 minutes per month for back-up generator testing (operations) – Assumes 2 trips per month for maintenance and generator testing – Construction equipment provided by project engineer – Estimated using CalEEMod

South County Service Area Sanitary Sewer pipelines Trenching for pipelines 23,130 lineal feet (4.4 miles)	– Assumes 1.6 acres disturbed based on trenching width average of 3 feet and lineal feet of pipe (with a maximum of 0.02 acres/day) – Assumes 4.5 months based on proportion of total pipeline construction over 27 months – Estimated using the Roadway Construction Emissions Model – Default equipment modified based on off-road equipment and hauling information provided by engineer – Hauling information based on estimated imports of concrete, Class 2AB, CLSM, asphalt, and other project materials, and export of 95% of excavated materials as provided by engineer
Lift Station LS 22 4,330 square feet; 45 hp generator *Lift Station LS 23* 5,075 square feet; 45 hp generator *Lift Station LS 24* 6,160 square feet; 165 hp generator *Pump Station PS 25* 10,220 square feet; 240 hp generator	– Assumes 2 trips per month for maintenance and generator testing (included in PS 1 modeling) – Assumes 30 minutes per month for back-up generator testing (max 0.5 hrs per day, 6 hrs per month) – Construction equipment provided by project engineer – Estimated using CalEEMod with default values beyond equipment type

APPENDIX D

South County Infrastructure Project
Biological Resources Technical Report

OLIVEHURST PUBLIC UTILITY DISTRICT SOUTH COUNTY INFRASTRUCTURE PROJECT

BIOLOGICAL TECHNICAL REPORT

YUBA COUNTY, CALIFORNIA

Project No. 2002-6911

Prepared for:

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1.0 INTRODUCTION

The purpose of this report is to detail the findings of the biological reconnaissance surveys of the proposed Olivehurst Public Utility District (OPUD) South County Infrastructure Project Site in the community of Olivehurst in Yuba County, California. This Biological Technical Report includes a review of pertinent literature, a review of regulatory requirements, results of reconnaissance field surveys, and a preliminary analysis of general impacts of project implementation on biological resources.

Following this introduction, there is a description of the OPUD South County Infrastructure Project (Project), followed by the methodology section, which describes field studies and analytical methods used to assess the project site. The methodology section includes a review of the regulatory requirements; a review of literature concerning special-status species, sensitive habitats, and general biological conditions; and a description of field reconnaissance survey methods. The environmental setting describes abiotic and biotic conditions at the project site including climate, soils, typical habitats and associated plant and wildlife species, and special-status species reported in or near the project area. The final section details the anticipated impacts of project implementation along with suggested general mitigation measures to reduce project impacts to less than significant levels.

2.0 PROJECT DESCRIPTION

OPUD provides urban water and wastewater services within and adjacent to the community of Olivehurst in an unincorporated area of Yuba County (Figure 1). OPUD is proposing to expand its water and sewer systems to accommodate planned urban development within the recently annexed South Yuba County Service Area. The proposed Project is intended to provide water and sewer conveyance system improvements, including improvements to assist in the mitigation of sanitary sewer overflows (SSO) within the existing service area of historic Olivehurst, upgrades to the existing wastewater treatment plant, and construction of a water plant as part of a five component Project identified as the South County Infrastructure Project. Following are the five components of the proposed Project:

- Wastewater Pipeline SSO Reduction Measures
- Wastewater Treatment Plant Upgrades
- Wastewater Pipelines in the South County Service Area
- Water Plant and Distribution Pipelines
- Wheatland Wastewater Pipeline Connector

2.1 WASTEWATER PIPELINE SSO REDUCTION MEASURES (COMPONENT 1)

All facilities associated with wastewater Pipeline SSO Reduction Measures are located within the existing urbanized community of Olivehurst. Pipelines associated with Component 1 would be constructed within paved travel lanes of existing roadways. Two new pump stations would be constructed (PS-1 and PS-26) and an existing pump station (PS-2) would be fitted with upgraded equipment.

The identified collection system improvements are intended to reduce the hydraulic grade line in the Old Olivehurst sewage collection system, thereby reducing the possibility of overflows during peak rainfall events. SSO components to be constructed with implementation of the proposed project include:

- Increase the capacity of Pump Station 1 (PS-1), decommission and remove the existing pump station and replace with a new pump station at the same general location
- Construct a new 16-inch diameter force main from the new PS-1 to 14th Avenue
- Re-equip the existing PS-2 and revise the downstream piping from PS-2 so that flow will be diverted to a new PS-26 at McGowan Parkway and Mary Avenue.
- Replace the existing 8-inch force main in poor condition with a 12-inch force main on McGowan Parkway from PS-2 to PS-26.
- Abandon the existing 8-inch force main within McGowan Parkway from PS-26 to Donald Drive.
- Construct a new PS-26, sized to divert sewage from the existing 8-inch diameter gravity collector sewer in McGowan Parkway into the project pipeline.

2.2 WASTEWATER TREATMENT PLANT UPGRADES (COMPONENT 2)

Improvements and modifications to OPUD's wastewater treatment plant would take place within the existing plant site located at the westerly terminus of Mary Avenue. OPUD is implementing modifications to their wastewater collection system to provide SSO relief and accept wastewater from the City of Wheatland. An increase in Average Dry Weather Flows (ADWF) capacity would not be provided as part of the South County Infrastructure Project, because the WWTP has sufficient ADWF capacity to handle near term flow increases. However, peak wet weather flows (PWWF) are expected to increase as a result of SSO mitigation described above.

The improvements are required to increase the PWWF capacity of the WWTP, and to upgrade and replace existing equipment. The SSO mitigation improvements will result in up to 3.0 mgd of additional PWWF being conveyed to the WWTP during periods of significant rainfall. Increasing the amount of wastewater that the collection system can convey to the WWTP will result in lower hydraulic grade lines in the collection system, thereby resulting in fewer SSO events. WWTP improvements consist of the addition of new equipment, modification and upgrades to existing equipment, and the addition of a concrete lined Emergency Storage Basin at the south end of the plant site to act as an equalization basin that will store increased flows that occur during significant storms. A dewatering pump station will also be added in this area to allow for sending stored secondary effluent back to plant headworks. All of the proposed improvements would be within the developed and disturbed footprint of the existing WWTP.

2.3 WASTEWATER PIPELINES IN THE SOUTH COUNTY SERVICE AREA (COMPONENT 3) AND WHEATLAND WASTEWATER PIPELINE CONNECTOR (COMPONENT 5)

Facilities to be constructed within Components 3 and 5 are located primarily in an undeveloped area south of the existing community of Olivehurst. Pipelines would be constructed primarily within the paved travel lanes of existing roadways. These components consist of sewer pipelines, pump stations, and lift stations required to provide a backbone wastewater collection and transmission system to serve future demands for the South County Services Area consistent with the Yuba County General Plan and to convey City of Wheatland wastewater to the Olivehurst WWTP.

Wastewater system improvements include force mains and gravity sewer pipelines ranging in size from 8 to 30 inches in diameter. The size of the sewer conveyance system is based on the demands from the service area and the City of Wheatland. Some private facilities (e.g., Pacific Gas and Electric [PG&E] yard, Hard Rock Fire Mountain Casino, and Toyota Amphitheatre) are currently served by an on-site wastewater disposal system or another WWTP. Plans for connecting these proposed facilities to the OPUD's sewer collection system are assumed for sizing, but they may not connect until a later date. The estimated wastewater ADWF for the South County Service Area at buildout and City of Wheatland contributions is 5.0 mgd. This amount includes 1.5 mgd ADWF for the City of Wheatland.

Pipelines associated with Components 1, 3, and 5 are summarized in Table 1.

Table 1. Wastewater Pipeline Summary

Type	Size Range (inches)	Overall Length (feet)	Overall Length (miles)	Number of Pump Stations	Number of Lift Stations	Number of Crossings	
						Roadway	*Waterway*
Force Main	6 - 30	44,440	8.4	5	n/a	3	5
Sanitary Sewer	8 - 24	23,130	4.4	n/a	3	2	5
Total Length of Wastewater Pipelines	n/a	65,570	12.8	n/a	n/a	n/a	n/a

Source: Jacobs/MHM/Planning Partners 2023.

The vertical alignment of trench installed pipelines within roadways would maintain a minimum of 48 inches from the top of pipe to the pavement surface. Trench depths would range from 60 inches to 22 feet. All pipeline alignments would provide for a one-foot separation from the pipe edge to any existing utility being crossed while maintaining the minimum cover. Any existing utilities would be surveyed and potholed by the design engineer/team to determine the proposed vertical alignment and crossing method. At culvert crossing locations where trench installed pipeline is proposed within the paved roadway or shoulder, the pipeline will be installed under shallow culverts within the trench in the paved roadway without disturbance to the culvert or the waterway it conveys. For large waterway crossings, trenchless methods are proposed.

2.3.1 Pipeline Crossings

Trenchless installations at roadway and waterway crossings would be achieved using attachment to an existing bridge where possible, such as the wastewater crossing on McGowan Parkway Bridge across SR 70. Horizontal directional drill (HDD) or pipe ramming/auger bore trenchless installation methods are proposed where bridge attachment is not feasible. Table 2 outlines the trenchless stream and roadway pipeline crossing methodology proposed for wastewater pipeline crossings in Component 3 and water pipeline crossings in Component 4. Following is a brief summary of the trenchless pipeline installations and existing site conditions at the crossing locations:

<u>McGowan Parkway at SR 70 Crossing (Sewer Force Main)</u>

At this location the pipeline will be installed under SR 70 using HDD techniques. The HDD entry location, exit location and HDD workspace, including the pipe string location occur entirely within paved roadway of McGowan Parkway and an adjacent parking lot within an urban developed area (Figure 2D)

<u>Olive Avenue to Rancho Road at SR 65 Crossing (Sewer Force Main)</u>

At this location the pipeline will be installed under SR 65 using HDD techniques. The HDD entry location is located in upland annual grasslands adjacent to Olive Avenue. The HDD exit location is on the paved roadway and unpaved shoulder of Rancho Road. The pipe string staging area extends from a paved cul-de-sac into an undeveloped disturbed area between a residence and the railroad track with seasonally wet depressions (Figure 2E).

Rancho Road at Reeds Creek Crossing (Sewer Force Main and Water Main)

At this location the wastewater and water pipelines will be installed under Reeds Creek using HDD techniques. The HDD entry locations on both sides of Rancho Road are within an unpaved roadside area with roadside ditches and depressions that are seasonally inundated northwest of the Reeds Creek crossing. The HDD exit locations and pipe string staging areas on both sides of Rancho Road are within upland annual grasslands southeast of the Reeds Creek crossing (Figure 2F).

Rancho Road at Hutchinson Creek Crossing (Sewer Force Main and Water Main)

At this location the wastewater and water pipelines will be installed under Hutchinson Creek using HDD techniques. The HDD Entry locations on both sides of Rancho Road are within upland annual grassland areas with some tree cover. The HDD exit location and pipe string laydown area on the southwest side of Rancho Road is within upland annual grassland with Eucalyptus (*Eucalyptus globulus*) tree cover. The HDD exit location and pipe string laydown area northeast of Rancho Road is primarily within upland annual grasslands. There is a roadside ditch at this location, but it does not support seasonal inundation or wetland vegetation (Figure 2G).

Rosser Road to Shimer Road at SR 65 Crossing (Sewer Force Main)

At this location the wastewater pipeline will be installed under SR 65 using HDD techniques. The HDD entry location is within an unpaved area adjacent to Rosser Road and the HDD workspace is located in cattle grazed pastureland. Portions of this pasture northwest of the workspace appear to be wet meadow pastureland; however, the pasture was not surveyed due to access constraints. The HDD exit location and pipe string staging area are within a paved roadway (Shimer Road) (Figure 2H).

Rancho Road at Kimball Creek Crossing (Sewer Force Mains and Water Main)

At this location the wastewater and water pipelines will be installed under Kimball Creek using HDD techniques. The HDD entry locations on both sides of Rancho Road are within an unpaved roadside area with roadside ditches and depressions that are seasonally inundated northwest of the Kimball Creek crossing. The HDD exit location on the northeast side of Rancho Road is within an unpaved roadside area that is upland annual grassland. The pipe string staging area is primarily within upland annuals grassland with an adjacent seasonally wet depression. The HDD exit location and pipe string laydown area on southwest side of Rancho Road is within an upland annual grassland area and the road shoulder (Figure 2J).

Rancho Road at Virginia Road Crossing (Sewer Force Mains and Water Main)

At this location the wastewater and water pipelines will be installed under Virginia Creek using pipe ramming/auger bore techniques. The bore launch shafts and receiving shafts are within the paved roadway and unpaved shoulder for both trenchless crossings at this location. There are wet depressions within roadside ditches that are seasonally inundated on both sides of Rancho Road at this location (Figure 2L).

40 Mile Road at Kimball Creek Crossing (Sewer Force Main and Water Main)

At this location the pipelines will be installed under Kimball Creek using pipe ramming/auger bore techniques. The bore launch shafts and receiving shafts are within the paved roadway and unpaved shoulder for both trenchless crossings at this location (Figure 2O).

Table 2. Trenchless Crossing Details

Crossing Name	Utility	Crossing Type	Surface Length: Linear Feet	Bore Length: Feet	Entry Location	Entry Work Area	Exit Location	Exit Work Area	Pipe String Area
SR 70 west of Power Line Rd - Dan Ave	Waste water	HDD	1,517	1,317	Within paved turn lane/centerline of McGowan Pkwy	Within paved turn lane/centerline of McGowan Pkwy	Within westbound paved travel lane or shoulder	Within westbound paved travel lane or shoulder	Within westbound unpaved shoulder
SR 65 between Olive Ave / Rancho Rd	Waste water	HDD	742	611	Within unpaved area / cultivated field	Within unpaved area / cultivated field	Within paved roadway and unpaved shoulder area	Within paved cul-de-sac	Within paved cul-de-sac / unpaved area
Rancho Rd / Reeds Creek	Waste water	HDD	1,500	1,468	Within unpaved area	Within unpaved area	Within unpaved area	Within unpaved area	Within unpaved area
Rancho Rd / Reeds Creek	Water	HDD	1,500	1,300	Within unpaved area	Within unpaved area	Within unpaved area	Within unpaved area	Within unpaved area
Rancho Rd / Hutchinson Creek	Waste water	HDD	746	532	Within unpaved area / cultivated field	Within unpaved area / cultivated field	Within unpaved area	Within unpaved area	Within unpaved area
Rancho Rd / Hutchinson Creek	Water	HDD	590	411	Within unpaved area	Within unpaved area	Within unpaved area	Within unpaved area	Within unpaved area
Rancho Rd / Kimball Creek	Waste water	HDD	519	467	Within unpaved area	Within unpaved area	Within unpaved area	Within unpaved area	Within unpaved area
Rancho Rd / Kimball Creek	Water	HDD	477	317	Within unpaved area	Within unpaved area	Within unpaved area	Within unpaved area	Within unpaved area

Crossing Name	Utility	Crossing Type	Surface Length: Linear Feet	Bore Length: Feet	Entry Location	Entry Work Area	Exit Location	Exit Work Area	Pipe String Area
Rancho Rd / Virginia Creek	Waste water	Pipe ramming/ auger boring	50	50	Receiving Shaft: In paved area	Receiving Shaft: In paved area	Launch Shaft: Within unpaved shoulder area	Launch Shaft: Within unpaved shoulder area	n/a
Rancho Rd / Virginia Creek	Water	Pipe ramming/ auger boring	50	50	Receiving Shaft: Within unpaved area	Receiving Shaft: Within unpaved area	Launch Shaft: Within paved travel lane	Launch Shaft: Within paved travel lane	n/a
SR 65 between Slaughterhouse Rd / Shimer Rd	Waste water	HDD	748	601	Within unpaved area	Within unpaved area	Within paved cul-de-sac	Within paved cul-de-sac and paved travel lane	Within paved cul-de-sac and paved travel lane
40 Mile Rd / Kimball Creek	Waste water	Pipe ramming/ auger boring	82	82	Receiving Shaft: Within paved travel lane	Receiving Shaft: Within paved travel lane	Launch Shaft: Within paved travel lane	Launch Shaft: Within paved travel lane	n/a
40 Mile Rd / Kimball Creek	Water	Pipe ramming/ auger boring	82	82	Receiving Shaft: Within paved travel lane	Receiving Shaft: Within paved travel lane	Launch Shaft: Within paved travel lane	Launch Shaft: Within paved travel lane	n/a

Source: Jacobs/MHM 2023, Planning Partners 2023.

2.3.2 Pump Stations and Lift Stations

Most of the pump stations and lift stations are located in upland annual grasslands or disturbed and developed areas. Following is a brief summary of the pump station and lift station locations and details regarding the construction of pump stations and lift stations associated with the proposed wastewater pipeline are outlined in Table 3.

Pump station 1 and pump station 26 are both within vacant lots within urban areas. These areas support upland annual grasslands or ruderal (weedy) vegetation. Pump station 21 and lift station 24 are in upland annual grasslands adjacent to the paved roadway. Pump station 25 is located within a dirt parking lot and staging area east of 40 Mile Road. The pipeline connection to Pump station 25 may cross a roadside channel or ditch with wetland vegetation. Pump station 22 is within upland annual grassland adjacent to Rancho Road; however, this pump station is immediately adjacent to Kimball Creek and associated wetlands. Lift station 23 is partially within a rice field along Rancho Road and will remove a small portion of the field used for rice cultivation. The footprint of lift station 23 also extends into a wet depression within a roadside ditch that is seasonally inundated between Rancho Road and the rice field.

Table 3. Pump Station and Lift Station Details

Facility	PS 1 Olivehurst Ave/ 11th Ave	PS 2 McGowan Pkwy/East of SR 70	PS 26 McGowan Pkwy/ Mary Ave	PS 21 Rancho Rd/ Shimer Rd	LS 22 Rancho Rd/ Kimball Crk	LS 23 Rancho Rd/ Virginia Crk	LS 24 40 Mile Rd	PS 25 40 Mile Rd
Site Area (approx. square feet)	8,215	n/a	20,400	10,260	4,330	5,075	6,160	10,220
Depth of Wet Well(s) (feet below ground surface)	24 - 33	To be determined	40.5	41.3	23.4	27.2	40.7	37.05
Height of Soundwall (feet)	11	To be determined	11	11	11	11	11	11
Existing Facilities to be Abandoned or Improved	Existing Sewer Lift Station	Improvements to be determined	Existing 8" sanitary sewer in McGowan Pkwy west of PS 26	Existing fence	Existing fence	None	None	None
Outside of Existing Roadway Prism (Travel Lane + Improved Shoulder)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Serves Component Number	1	1	1/3/5	3/5	3	3	3	3

Source: Jacobs/Domenichelli & Associates 2022/Planning Partners 2023.
Note: *– Potential improvements limited to existing disturbed area

2.4 WATER PLANT AND DISTRIBUTION LINES (COMPONENT 4)

Facilities to be constructed within Component 4 include a new water well and water plant east of Forty Mile Road. This component consists of a production well and water plant to meet a portion of the demand for treated water for municipal and industrial needs and fire protection, and a backbone distribution system to meet future treated water demands for the South County Services Area consistent with the Yuba County General Plan.

Water Plant

As proposed, the water plant (WP) would be constructed on a 0.95-acre site located east of Forty Mile Road and north of the newly constructed Hard Rock Casino. The WP would consist of a new water well (OPUD Well #35), well pump, reservoir, booster station, and chorine feed system. As planned, the new well would provide 1,500 gallons per minute (gpm), although ultimate production could approach 3,000 gpm depending upon the type and timing of future development within the WP service area. A new welded steel reservoir would be constructed with an approximate capacity of 1,017,000 gallons. The tank dimensions would be 76-foot diameter by 32-foot shell height. The tank color is planned to be equivalent to Engard's "Desert Sand" or Glidden's "Pelt" subject to final approval by the District. The booster station is designed to pump out of the reservoir and maintain a desired pressure of 65 pounds per square inch (psi) with a pressure range of between 60 and 70 psi in the water system. A chlorine feed system would inject chlorine to be used for disinfection as part of the WP's treatment process. A backup generator supplied by an on-site propane tank would be provided to power the WP if necessary. Water provided by the WP and transmitted to the regional grid in Forty Mile Road would be provided by a 24-inch pipeline from the WP to a proposed pipeline to be constructed along the southbound travel lane of Forty Mile Road.

Water needs during construction would be provided by a temporary above ground pipeline from an existing agricultural well south of the Hard Rock Casino which would be removed upon completion of construction.

Water Distribution Pipelines

This subcomponent consists of treated water pipelines required to provide a backbone water distribution system to serve future demands for the South County Services Area consistent with the Yuba County General Plan. Water system improvements include water pipelines ranging in size from 16 to 24 inches in diameter.

The size of the water distribution system is based on the projected demands from future urban uses within the South Yuba County Service area. Additionally, the water distribution system would connect with the existing OPUD water system serving the community of Olivehurst. Pipelines associated with Component 4 are summarized in Table 4.

Table 4. Treated Water Pipeline Summary

Type	Size Range (inches)	Overall Length (feet)	Overall Length (miles)	Crossings	
				Roadway	Waterway
Water Main	16 – 24	36,939	7.0	2	5

Source: Jacobs/MHM/Planning Partners 2023.

The vertical alignment of trench installed pipelines within roadways would maintain a minimum of 48 inches from the top of pipe to the pavement surface. Trench depths would range from 60 inches to 12 feet. All pipeline alignments would provide for a one-foot separation from the pipe edge to any existing utility being crossed while maintaining the minimum cover. Any existing utilities would be surveyed and potholed by the design engineer/team to determine the proposed vertical alignment and crossing method.

Trenchless installations at roadway and waterway crossings would be achieved using attachment to an existing bridge where possible, such as the water line crossing on the McGowan Parkway Bridge over SR 65. Horizontal directional drill (HDD) or pipe ramming/auger bore trenchless installation methods are proposed where bridge attachment is not feasible. Table 2 above outlines the trenchless stream and roadway pipeline crossing methodology proposed for wastewater pipeline crossings in Component 3 and water pipeline crossings in Component 4.

3.0 METHODOLOGY

3.1 LITERATURE REVIEW

Padre biologists reviewed available project information, county soil survey maps, topographic maps, and other environmental documents. The California Natural Diversity Database (CNDDB) was queried for records of special-status species reported within the Olivehurst and Wheatland, California quadrangles and the surrounding seven quadrangles (California Department of Fish and Wildlife [CDFW], 2022). A list of federally listed Threatened and Endangered species was obtained from the U.S. Fish and Wildlife Service (USFWS) (USFWS, 2022a). An unofficial species list was obtained from the National Marine Fisheries Service (NMFS) for the two quadrangles that the project occurs within (NMFS, 2022). The federal species lists and CNDDB query results are included in Appendix A and Appendix B. Special-status taxa that are known to exist or have the potential to exist on the project site were also identified through a review of relevant literature (California Native Plant Society [CNPS], 2022; Zeiner et al., 1988; 1990a, b). A query of the National Wetland Inventory (NWI) was reviewed for information regarding mapped waters and wetlands in the project area (USFWS, 2022b).

3.2 FIELD RECONNAISSANCE SURVEYS

Reconnaissance level field surveys were conducted by Padre biologists between February 15-17, 2022 to assess the biological resources and to determine the likelihood of occurrence for special-status species or sensitive and regulated habitats on the project site. Follow-up surveys were conducted in June 2022 for the purposes of detecting elderberry shrubs during the blooming season, and follow-up surveys were conducted of various aspects of the project in August and December 2022 and January 2023 to resurvey areas for changes to the project design and to review the depressional features along Rancho Road during the wet season to confirm areas of inundation.

Detection methods included direct observation with binoculars; examination and identification of tracks, scats, burrows/diggings, and carcasses/skeletal remains; and identification of vocalizations (calls and songs). No trapping or netting was performed during surveys. Plants not identified in the field were collected and returned to the lab for identification using standard taxonomic references (Baldwin, 2012). Prior to the field surveys, the CNDDB query was reviewed to identify occurrences of special-status plant and animal species in the project vicinity. During the field surveys, vegetative cover types and significant habitat features, such as wetlands, potential nest trees, and potential dens or burrow clusters, were noted and mapped for avoidance to the extent feasible during Project design and planning. Lists of plants and wildlife observed during surveys were compiled and are included in Appendix C and Appendix D.

It should be noted that some portions of the study area were on private property that was inaccessible during the field surveys, including the HDD workspace adjacent to Rosser Road. Reconnaissance surveys for this location were conducted using binoculars from the fence line and aerial imagery. Aquatic resource features were generally mapped based on surface indicators; an aquatic resource delineation was not performed.

4.0 ENVIRONMENTAL SETTING

4.1 LOCATION

The Project study area is located within the community of Olivehurst and unincorporated area of southern Yuba County approximately 40 miles north of Sacramento and four miles south of Marysville (Olivehurst and Wheatland, California 7.5-minute USGS quadrangle) (USGS, 1947; USGS, 1952) (Figure 1). The study area within the existing urbanized community of Olivehurst is surrounded by residential and commercial properties. The study area within the south County area is primarily surrounded by agricultural and rural residential land along with areas supporting industrial uses and sports and entertainment uses (Hard Rock Casino). There are several natural drainages that run from northeast to southwest across the study area.

4.2 GEOLOGY/GEOMORPHOLOGY

The project is situated in the Butte Sink-Sutter Basin subsection of the Great Valley Ecological Region of California (Miles and Goudey, 1997).

The Butte Sink-Sutter Basin subsection is on the alluvial plain between the Feather and Sacramento Rivers. Elevations in the subsection range from approximately 30 to 150 feet. Fluvial erosion and deposition are the main geomorphic processes (Miles and Goudey, 1997).

4.3 CLIMATE

The project site is situated in Climate Zone 8, which includes California's cold air basins of the Central Valley. This zone has hot summers and mild winters and is outside of the influence of the Pacific Ocean (Clark, 1985).

The nearest meteorological station (045385) is located in Marysville, just to the north of the project site. Based on the 110-year period of record (1897 through 2007) at the station, the average maximum monthly temperature ranges from 54.1°F in January to 96.3°F in July (Western Regional Climate Center, 2022). The average minimum monthly temperature ranges from 37.7°F in January to 61.3°F in July. The average annual temperature ranges from 49.0°F to 75.3°F. The average monthly precipitation ranges from 0.03 inches in July to 4.01 inches in January. The total average annual precipitation is 20.96 inches (Western Regional Climate Center, 2022).

4.4 SOILS

A review of the U.S. Department of Agriculture's Web Soil Survey for Yuba County (Natural Resource Conservation Service [NRCS], 2022) identified nine soil mapping units within the study area (Appendix E). These include Hollenbeck silty clay loam, 0 to 1 percent slopes (131); Hollenbeck-Urban land complex, 0-1 percent slopes (134); Conejo loam, 0 to 1 percent slopes, MLRA 17 (141); Conejo loam, 0 to 2 percent slopes, occasionally flooded, MLRA 17 (142); Conejo-Urban land complex, 0 percent slopes, MLRA 17 (143); Oakdale sandy loam, 0 to 5 percent slopes (197); Oakdale-Urban land complex, 0 to 1 percent slopes (198); San Joaquin loam, 0 to 1 percent slopes (214); Urban land-San Joaquin complex, 0 to 1 percent slopes (217). None of these soil mapping units are hydric, though five of them (131,134,143, 214, and 217) include minor components that are considered hydric.

4.5 HABITAT DESCRIPTIONS AND VEGETATION

The majority of the study area consists of lands within developed urban areas, disturbed habitat along roadway shoulders or in vacant lots, and land within or adjacent to agricultural fields. Wetlands and riparian cover types occur along the waterways at the trenchless crossing locations. The agricultural fields in the area are primarily used to produce rice and other grain crops. Disturbed areas and road shoulders that had vegetation present support annual grassland and ruderal cover types. Proposed pipeline alignments are limited to developed lands within the paved roadway and disturbed shoulder with minimal vegetation present. Workspace associated with HDD crossings are within natural and undeveloped lands or agricultural lands. Pump stations and lift stations are within developed and disturbed lands, vacant lots, natural and undeveloped lands, or agricultural lands.

Dominant species observed in annual grasslands and ruderal habitat include ripgut grass (*Bromus diandrus*), rye grass (*Festuca perennis*), soft chess (*Bromus hordeaceous*), wild oat (*Avena fatua*), Medusa head (*Elymus caput-medusae*), redstem filaree (*Erodium cicutarium*), yellow star thistle (*Centauria solstitialis*), black mustard (*Brassica nigra*), Dove's-foot geranium (*Geranium molle*), and California burclover (*Medicago polymorpha*).

There are several natural drainage crossings throughout the pipeline alignments. These include crossings of Hutchinson Creek, Reeds Creek, Kimball Creek, and Virginia Creek. At these crossings, the vegetation communities observed were a mix of natural riparian communities, emergent wetland vegetation, and annual grassland cover types. Dominant species observed at these drainage crossings varied from crossing to crossing. Kimball Creek supported predominantly emergent wetland vegetation with little or no riparian corridor. Hutchinson Creek and Reeds Creek supported a riparian corridor. Virginia Creek is a channelized canal that supports little to no vegetation (See Section 4.5.1 below for more detail regarding the drainage crossings). The dominant species observed at the drainage crossings that had emergent vegetation include dense stand of broad-leaved cattail (*Typha latifolia*) and tule (*Schoenoplectus acutus* var. *occidentalis*). Drainage crossings with a riparian canopy often included Valley oak (*Quercus lobata*), Oregon ash (*Fraxinus latifolia*), Fremont cottonwood (*Populus fremontii*), Eucalyptus (*Eucalyptus* sp.), willow (*Salix* sp.) and Himalayan blackberry (*Rubus armeniacus*) growing along the banks. Annual grasslands around these crossings had a cover of herbaceous species similar to the grasslands described above.

At multiple locations along the pipeline alignment, roadside ditches and depressions are present that support a range of hydrologic characteristics which affect the types of vegetation that grow. Ditches with prolonged or perennial inundation supported wetland species like broad-leaved cattail, iris-leaved rush (*Juncus xiphoides*), tall cyperus (*Cyperus eragrostis*), and creeping spikerush (*Eleocharis macrostachya*). The roadside ditches with a shorter hydroperiod supported more facultative wetland species like curly dock (*Rumex crispus*) and rye grass or were barren of vegetation. Many of these ditches supported algal matting or biotic crust on the ground’s surface, an indicator of hydrology and inundation during the wet season.

See Figure 4 for site photos of locations described above, including photos of each of the drainage crossing locations. A complete list of plant species observed during the field survey is compiled in Appendix C.

4.5.1 Waters and Wetlands

The site was examined for evidence of regulated habitats, such as waters and wetlands, under regulatory authority of the U.S. Army Corps of Engineers (Corps) under Section 404 of the Clean Water Act. The National Wetland Inventory (NWI) map of the study area was reviewed to assist in the identification of waters and wetlands on the Site (USFWS, 2022b).

There are several riverine features identified on the NWI map within the project area. These include Hutchinson Creek, Reeds Creek, Kimball Creek, and Virginia Creek. In addition to the natural riparian crossings, NWI identifies several man-made features including stock ponds, irrigation canals, and the artificially flooded portions of the Olivehurst Public Utility District Wastewater Treatment Plant. In addition to the features mapped on NWI, there were many roadside ditches and depressions that had evidence of wetland vegetation and hydrology. The potential wetland areas were defined by the presence of hydrophytic vegetation and supported a combination of facultative (FAC), facultative-wetland (FACW), and obligate wetland (OBL) plant species. In addition, evidence of hydrology was commonly noted as in the form of algal matting and saturated soil.

The northernmost trenchless creek crossing is Reeds Creek on Rancho Road. Reeds Creek at the Rancho Road crossing has a mix of emergent wetland vegetation and shrubby riparian cover. Growing from the bed of the channel were dense stands of emergent wetland plants like tule and overhanging the banks were thick patches of Himalayan blackberry. In addition to the blackberry, willow trees and shrubs grew along the banks in varying densities. Reeds Creek is mapped as an intermittent waterway (USGS, 1952).

The next major riparian crossing along Rancho Road is Hutchison Creek. Hutchison Creek at this location supported a tall riparian canopy composed primarily of eucalyptus trees with some Valley oaks. Similar to Reed's Creek, dense blackberry briar patches cover much of Hutchison Creek's banks. There was very little emergent wetland vegetation growing from the channel. Hutchinson Creek is mapped as an intermittent waterway (USGS, 1952).

The next riparian crossing along Rancho Road is Kimball Creek. The Kimball Creek crossing can be characterized by two elements that make it distinct from the other creek crossings. On both the north and south sides of Rancho Road, the creek forms a wide sprawling wetland rather than a narrow and defined channel. Additionally, Kimball Creek can be characterized by an almost complete cover of dense cattail growing from the creek's bed. There was little to no riparian cover at this location with several scattered willows growing from the wetland area but not forming a canopy. As Kimball Creek flows to the southwest, it meets Forty Mile Road and the pipeline alignment crosses at that location as well. At the Forty Mile Road crossing of Kimball Creek, there was a thick dominant cover of cattail; however, the channel was narrower and water could be seen through the cattails. Kimball Creek is mapped as an intermittent waterway (USGS, 1952); however, based on a review of historic aerial imagery Kimball Creek appears to support summer water in the low flow channel as evidenced by imagery from August of 2016 and September of 2018 (GoogleEarth Pro, 2023).

The southernmost creek crossing on Rancho Road is Virginia Creek. Virginia Creek is a highly altered waterway that has been channelized to flow around the perimeter of agricultural farmland within the study area. There was no emergent wetland vegetation growing from Virginia Creek and the banks of the channel were barren. The top of bank supports weedy grassland

species like black mustard and no riparian canopy was present. Virginia Creek is not mapped on the USGS Wheatland, CA 7.5-minute quadrangle map (USGS, 1947) and based on historic aerial imagery appears to have been constructed sometime between 1988 and 1993 (GoogleEarth Pro, 2023).

The pipeline alignment crosses another significant waterway and wetland feature in the southern portion of the alignment along Forty Mile Road consisting of a channelized canal that's connected to the Virginia Creek canal and appears to have been constructed around the same time. This waterway is characterized by a wide sprawling wetland dominated by emergent wetland vegetation with no riparian corridor. The dominant species in the wetland was tule, although cattail was dominant in some areas. A channelized canal was approximately 15 feet wide, conveys water to the west through three large culverts under Forty Mile Road.

The Project is designed to avoid impacts to drainage crossings by using trenchless methods at all major waterway crossings. Trenchless methods include HDD crossings at some locations and pipe ramming or auger boring methods in the roadway at other locations. At these trenchless crossing locations, temporary impact footprints will be sited outside of the riparian community and/or adjacent wetlands. In several cases, culverted crossings may be trench installed within the paved roadway and beneath the existing shallow culverts without disturbance to the culverts or the waterway.

In addition to the waterway crossings, there are multiple roadside ditches and depressions that support a range of hydrologic characteristics. Roadside ditches that have been constructed for drainage were prevalent along much of the pipeline alignments in roadways. These features range from unvegetated roadside ditches or dry roadside ditches supporting a mix of upland or facultative wetland grasses to wet roadside ditches supporting emergent wetland vegetation. In addition, roadside depressions occur, primarily along Rancho Road and often in the low lying area between the roadway and the adjacent railroad tracks. Many of these depressions had indicators of hydrology and inundation during the wet season including algal mat or biotic crust formation. Some of these depressions support wetland plant species like creeping spikerush and California loostrife (*Lythrum hyssopifolia*). Because of their proximity to the road, these areas often had deep tire ruts from vehicular use during the wet season and are highly disturbed wet depressions.

4.6 WILDLIFE

Wildlife observed at the project site were characteristic of the region and the time of year that surveys were conducted. Species observed during the survey are listed in Appendix D. Special-status wildlife species occurring, or potentially occurring, within the study area are discussed in Section 4.7 below.

The vegetation communities within and surrounding the study area provide habitat for resident and migratory wildlife species. The composition, density, distribution, and physical characteristics of vegetative communities determine the diversity and abundance of wildlife species residing in the project area. Wildlife species observed and expected within the vegetative cover types present on the site are discussed below.

A large portion of the study area is in active agricultural production or is surrounded by urban development that limits use by wildlife. However, the waterways, riparian corridors and wetlands provide forage and cover for a variety of resident and migratory wildlife species. In

addition, certain types of agricultural fields, such as rice, can provide wildlife habitat. Surveys were conducted during the non-nesting season; therefore, many species observed are non-resident migratory species that would not be present in the project area during the spring and summer breeding season.

Some of the species observed include house finch (*Haemorhous mexicanus*), northern mockingbird (*Mimus polyglottos*), brewer's blackbird (*Euphagus cyanocephalus*), turkey vulture (*Cathartes aura*), and black phoebe (*Sayornis nigricans*). At the waterway crossings and in riparian habitat, some of the bird species observed included red-winged blackbird (*Agelaius phoeniceus*), marsh wren (*Cistothorus palustris*), American goldfinch (*Spinus tristis*), Nuttall's woodpecker (*Picoides nuttallii*), and ruby-crowned kinglet (*Regulus calendula*). Signs of mammals moving through the riparian corridors were observed for several species including raccoon (*Procyon lotor*), coyote (*Canis latrans*), and mink (*Mustela vison*).

Species observed in ponded agricultural fields included killdeer (*Charadrius vociferus*), greater yellowlegs (*Tringa melanoleuca*), great egret (*Ardea alba*). Long-range migratory birds including snow goose (*Chen caerulescens*), greater white-fronted goose (*Anser albifrons*), and Canada goose (*Branta canadensis*) were also observed in these ponded areas. Raptors observed soaring above the project site included red-tailed hawk (Buteo jamaicensis), northern harrier (Circus hudsonius), white-tailed kite (*Elanus leucurus*), red-shouldered hawk (*Buteo lineatus*), and American kestrel (*Falco sparverius*).

4.7 SPECIAL-STATUS SPECIES

Based on the literature review and species list from USFWS (Project Code: 2022-0002318) and NMFS, a list of special-status species that have been reported in the vicinity of the project site (Olivehurst quadrangle and surrounding eight quadrangles), or within Yuba County, has been compiled. Special-status species that have the potential to occur in the vicinity of the project site are listed in Table 5.

An analysis of the likelihood of occurrence for each species was conducted on the basis of species ranges, previous observations, contemporary sightings, and presence of suitable habitat elements within the study area. The Project site may be located outside of the known range of some species, or it may be within the geographic range for a certain species, but suitable habitat, such as chenopod scrub, chaparral, or cismontane woodland is absent within the study area. For the purpose of this analysis, potential special-status species that occur in the general area of the project and for which the project may provide habitat are discussed in greater detail in Sections 4.7.1 and 4.7.2 below.

Table 5. Special-Status Species Potentially Occurring in the Vicinity of the South County Infrastructure Project

Scientific Name **Common Name**	**Status[1]**	**Habitat**	**Likelihood of Occurrence**	**Rationale**
PLANTS				
Astragalus tener var. *ferrisiae* Ferris' milk-vetch	CRPR 1B.1	Vernally mesic meadows and seeps and subalkaline flats of Valley and foothill grasslands at elevations ranging from 5 to approximately 245 feet. Blooms from April to May.	Low	Habitat along the pipeline alignment is poor quality and alkaline soils not present. Nearest occurrence (Occ. #16) is from 1891 and is approximately 3.9 miles north of the northernmost extent of the project.
Delphinium recurvatum Recurved larkspur	CRPR 1B.2	Chenopod scrub, valley and foothill grassland, cismontane woodland. On alkaline soils; often in valley saltbush or valley chenopod scrub. Found regionally in slightly alkaline beds of vernal pools. Occurs at elevations ranging from 10 to approximately 2,250 feet. Blooms from March to June.	None	No suitable habitat present. Nearest occurrence (Occ. #104) is from 1900 and is approximately 3.9 miles north of the northernmost extent of the project. This occurrence is considered extirpated and there are no recent occurrences near the project site.
Downingia pusilla Dwarf downingia	CRPR 2B.2	Valley and foothill grasslands and vernal pools at elevations ranging from 1 to 1,460 feet. Blooms from March to May.	Low	Potentially suitable habitat occurs in seasonally inundated depressions and ditches. Due to proximity to roads, habitat is highly disturbed by offroad vehicle use. The nearest occurrence (Occ. #95) from 1999 is approximately 2.8 miles east of the project site.
Hibiscus lasiocarpos var. *occidentalis* Woolly rose-mallow	CRPR 1B.2	Freshwater marshes and swamps, often on the side of levees at elevations ranging from sea level to approximately 400 feet. Blooms from June to September.	Low	Potentially suitable habitat occurs along waterways. Project activities will avoid waterways through trenchless installation methods. Nearest occurrence (Occ. #69) from 2009 is approximately 9.4 miles west of the project site in levees along the Sutter Bypass.

Scientific Name **Common Name**	**Status[1]**	**Habitat**	**Likelihood of Occurrence**	**Rationale**
Legenere limosa Legenere	CRPR 1B.1	Vernal pools at elevations ranging from sea level to approximately 2,900 feet. Blooms from April to June.	Low	Potentially suitable habitat occurs in seasonally inundated depressions and ditches. Due to proximity to road habitat is highly disturbed by offroad vehicle use. The nearest occurrence (Occ. #52) from 1999 is approximately 4.7 miles northeast of the project site.
Monardella venosa Veiny monardella	CRPR 1B.1	Cismontane woodlands and Valley and foothill grasslands, usually in clayey soil, at elevations ranging from 195 to approximately 1,345 feet. Blooms from May to July.	None	No suitable habitat is present at the project site. One historic occurrence in the area is considered extirpated.
Navarretia leucocephala ssp. *Bakeri* Baker's navarretia	CRPR 1B.1	Mesic cismontane woodlands, lower montane coniferous forests, meadows and seeps, valley and foothill grasslands, and vernal pools. Typically occurs at elevations ranging from 15 to approximately 5,700 feet. Blooms from April to July.	Low	Potentially suitable habitat occurs at in seasonally inundated depressions and ditches. Due to proximity to road habitat is highly disturbed by offroad vehicle use. Nearest occurrence (Occ. #56) from 1999 is approximately 11.7 miles northwest of the project site.
Pseudobahia bahiifolia Hartweg's golden sunburst	FE, SE, CRPR 1B.1	Cismontane woodlands and Valley and foothill grasslands, often in acidic clayey soil, at elevations ranging from 50 to approximately 490 feet. Blooms from March to April.	None	No suitable habitat is present at the project site. One historic occurrence in the area is considered extirpated.
Sagittaria sanfordii Sanford's arrowhead	CRPR 1B.2	Assorted freshwater habitats including swamps and marshes at elevations ranging from 0 to 2130 feet. Blooms from May to October, sometimes into November.	Moderate	Potentially suitable habitat present at the waterway crossings along the pipeline alignment or in roadside ditches that have a long period of inundation. Project activities will avoid waterways through trenchless installation methods at waterway crossings. Nearest occurrence

Scientific Name **Common Name**	**Status[1]**	**Habitat**	**Likelihood of Occurrence**	**Rationale**
				(Occ. #98) from 1955 is approximately 3.1 miles southwest of the project site.
Wolffia brasiliensis Brazilian watermeal	CRPR 2B.3	Shallow freshwater marshes and swamps at elevations ranging from 65 to approximately 330 feet. Blooms from April to December.	Moderate	Potentially suitable habitat present at drainage crossings along pipeline alignment with shallow ponded water. Project activities will avoid waterways through trenchless installation methods at waterway crossings. Nearest occurrence (Occ. #5) from 2002 is approximately 10.2 miles east of the project site.
INVERTEBRATES				
Branchinecta conservation Conservancy fairy shrimp	FE	Large, cool-water vernal pools with moderately turbid water where pools generally last until June; however, the shrimp are gone long before then.	Low	Wet depression and inundation in roadside ditches within the study area would not remain inundated for the duration of time typical of vernal pools that support this species. Nearest occurrence (Occ. #36) from 2012 is approximately 10.6 miles south of the southernmost extent of the pipeline alignment.
Branchinecta lynchi Vernal pool fairy shrimp	FT	Endemic to the grasslands of the central valley, central coast mountains, and south coast mountains, in astatic rain-filled pools. Regionally inhabits small, clear-water sandstone depression pools and grass swale, earth slump or basalt-flow vernal pools.	High	Potentially suitable habitat occurs in seasonally inundated depressions and ditches. Due to proximity to roads habitat in the study area is highly disturbed by offroad vehicle use; however, other occurrences in region occur in similar habitat. Two occurrences are located less than 0.5 miles from the northern portion of the project site. Occ #708 from 2007 was in an irrigation ditch along Bernice Avenue and occ #709 from 2013 occurs in pools

Scientific Name **Common Name**	**Status[1]**	**Habitat**	**Likelihood of Occurrence**	**Rationale**
				surrounded by mowed grassland east of Powerline Road in Olivehurst.
Danaus plexippus Monarch butterfly	FC	Monarchs roost in eucalyptus, Monterey cypress, Monterey pine, and other trees in groves along the Pacific coastline of California, arriving starting in late October. Dispersal from these roosts generally begins in mid-February. Milkweed and nectar plant availability throughout the spring, summer and fall is important for monarch migration. In areas of the desert southwest, monarchs use nectar and milkweed plants throughout much of the year.	None	There is no suitable habitat (milkweed) to support this species within the study area. The nearest occurrence is over 60 miles southwest of the site.
Desmocerus californicus dimorphus Valley elderberry longhorn beetle	FT	Occurrences of the VELB are primarily in the vicinity of moist valley oak woodlands associated with riparian corridors in the lower Sacramento River and upper San Joaquin River drainages (U.S. Fish and Wildlife Service, 1984). Blue elderberry plants are obligate hosts for the VELB, providing a source of food and brood wood.	Low (Habitat present)	Surveys during the blooming season identified four elderberry shrubs within 165 feet (VELB encroachment buffer) along Rancho Road; however, these shrubs were east of the railroad and would not be impacted by the Project. A single elderberry shrub occurs on the shoulder of Forty Mile Road and within 20 feet of Project activities (VELB core area), but this shrub was very small and exposed to disturbance due to proximity to road and utility pole. No emergence holes occur and disjunct from riparian or other elderberry shrubs. Nearest occurrence of VELB (Occ. #193) from 1998 is approximately 0.4 miles south of the southernmost extent of the pipeline alignment; however, all elderberry shrubs at this location have been removed and the occurrence is considered extirpated.

Scientific Name **Common Name**	**Status[1]**	**Habitat**	**Likelihood of Occurrence**	**Rationale**
				The nearest recent occurrence (Occ. #190) from 2006 is approximately 3.8 miles west of the project site.
Lepidurus packardi Vernal pool tadpole shrimp	FE	Inhabits vernal pools and swales in the central valley containing clear to highly turbid water. Pools commonly found in grass-bottomed swales of unplowed grasslands. Some pools are mud bottomed and highly turbid.	Moderate	Potentially suitable habitat occurs in seasonally inundated depressions and ditches. Due to proximity to roads habitat in the study area is highly disturbed by offroad vehicle use. There are three occurrences located less than 1 mile from the northern portions of the project stie. Occurrence #380 from 2016 is located approximately 700 feet from the pipeline alignment on Mary Avenue in artificial seasonal wetlands. Occurrence #221 from 2004 is located approximately 0.3 miles from the wastewater treatment plant in a field that has since been developed.
FISHES				
Acipenser medirostris pop. 1 Green sturgeon – Southern DPS	FT	Anadromous fish species found in near shore marine and estuarine environments from Alaska to Baja California, Mexico. Green sturgeon depend on large rivers to spawn, typically in deep pools in large turbulent mainstem rivers. The Sacramento River watershed is the only confirmed present and historical spawning area. Spawning occurs in the Sacramento River and has recently been documented in the Feather River and Yuba River (tributaries to the Sacramento River).	None	No suitable habitat present. Project activities will avoid waterways through trenchless installation methods and will result in no impact to fish. Nearest known occurrences in Feather and Yuba River.

Scientific Name **Common Name**	**Status[1]**	**Habitat**	**Likelihood of Occurrence**	**Rationale**
Hypomesus transpacificus Delta smelt	FT, SE	Endemic to the Sacramento/San Joaquin Delta, they occur in the Delta primarily below Isleton on the Sacramento River, below Mossdale on the San Joaquin River, and in Suisun Bay. Delta smelt mainly inhabits the freshwater-saltwater mixing zone of the estuary, except during its spawning season, when it moves into freshwater during the early spring months from March until May.	None	No suitable habitat present. Project activities will avoid waterways through trenchless installation methods and will result in no impact to fish.
Oncorhyncus mykiss irideus pop. 11 Steelhead – Central Valley DPS	FT	Sacramento and San Joaquin Rivers and their tributaries.	Low	Project activities will avoid waterways through trenchless installation methods and will result in no impact to fish.
Oncorhynchus tshawytscha pop. 11 Chinook salmon – Central Valley spring-run ESU	FT, ST	Sacramento and San Joaquin Rivers and their tributaries.	Low	Project activities will avoid waterways through trenchless installation methods and will result in no impact to fish.
Pogonichthys macrolepidotus Sacramento splittail	CSC	Slow moving rivers, lakes, and sloughs in the Sacramento San Joaquin valleys.	Low	Project activities will avoid waterways through trenchless installation methods and will result in no impact to fish.
AMPHIBIANS				
Rana draytonii California red-legged frog	FT, CSC	Marshes, lakes, reservoirs, ponds, slow moving segments of streams, and other usually permanent water in lowlands, foothill woodlands, and grasslands. Requires aquatic habitat with extensive emergent vegetation.	None	The project site is outside of the known range of the species. Nearest occurrence (Occ. #814) from 2005 is approximately 29.9 miles south of the project site.

Scientific Name **Common Name**	**Status[1]**	**Habitat**	**Likelihood of Occurrence**	**Rationale**
Spea hammondii Western spadefoot	CSC	Primarily found in grasslands but can be found in other open areas of woodlands, coastal sage scrub, and chaparral. Breeding requires ponded water, often occurring seasonally from rainfall.	Low	Poor quality habitat occurs at in seasonally inundated depressions and ditches. Due to proximity to roads, habitat is highly disturbed by offroad vehicle use. Nearest occurrence (Occ. #1295) from 2016 is approximately 10.4 miles southeast of the project site
REPTILES				
Emys marmorata Western pond turtle	CSC	Ponds, marshes, rivers, streams and irrigation ditches with aquatic vegetation. Needs basking sites and suitable upland habitat (sandy banks, grassy open fields) for egg laying	Moderate	Potentially suitable habitat occurs at several of the drainage crossings along the pipeline alignment. Nearest occurrence (Occ. #334) from 1998 is approximately 2.2 miles south of the project site.
Thamnophis gigas Giant gartersnake	FT, ST	Freshwater marshes and streams with summer water, emergent wetland vegetation and suitable basking habitat. Has adapted to drainage canals and irrigation ditches. Rice fields in the Central Valley are known to support GGS.	Moderate	Suitable habitat within Kimball Creek and rice fields in the area. Rice fields have been shown to be suitable aquatic habitat in the absence of natural aquatic habitat. Nearest contemporary occurrence (Occ. #192) from 2014 is located in a rice field approximately 8.2 miles west of the project site.
BIRDS				
Accipiter cooperii Cooper's hawk	WL	Typical nesting and foraging habitat includes riparian woodland, dense oak woodland, and other woodland near water. Breeding range from Central Valley and Sierra Nevada and Coast ranges.	Moderate	Species could forage or nest within trees in or near the project site. Nesting occurrences of this species are not always reported to CNDDB although it is relatively common in the region of project.

Scientific Name **Common Name**	**Status[1]**	**Habitat**	**Likelihood of Occurrence**	**Rationale**
Accipiter striatus Sharp-shinned hawk	WL	Species feeds and nests in oak and pine woodlands and preys mainly on small birds but will also eat small mammals and insects.	Low	Species could forage in the vicinity of the project site, primarily in forested riparian at crossings. Nesting habitat along the pipeline alignment is very limited.
Agelaius tricolor Tricolor blackbird	ST, CSC	Colonial nesting species. Nesting habitat is often found near a source of water and in emergent wetland, grassland, or agricultural cropland.	High	Suitable nesting habitat is present within the study area, primarily at riparian crossings or in nearby wetlands with emergent vegetation. Individuals were observed during field surveys. There are approximately 8 occurrences of tricolor blackbird within 0.5 miles of the pipeline alignment. Notably, occurrence #508 from 2014 is located along the pipeline alignment on Forty Mile Road in blackberry habitat.
Ammodramus savannarum Grasshopper sparrow	CSC	Forages and nests in grasslands, fields, and prairies. Often nests in open fields with tall grasses and forbes and may nest in overgrown pastures and hayfields.	Low	Species is a very rare breeder in the region surrounding the project site. Potentially suitable nesting habitat is present along the pipeline alignment in several locations that support weedy grasslands. Nearest occurrence (Occ. #3) from 1994 is approximately 10.4 miles east of the project site.
Athene cunicularia Burrowing owl	CSC, BCC	Dry, open short grass, treeless plains that are associated with burrowing species. Underground nesting habitat in burrows.	High	Suitable burrowing habitat is present in the berm at the southern end of the wastewater treatment plant. An extensive California ground squirrel colony was observed and several of the burrows showed sign of renovation by burrowing owl. Nearest contemporary occurrence (Occ. #2003) from 2016 is approximately 8.1 miles southeast of the project site.

Scientific Name **Common Name**	**Status[1]**	**Habitat**	**Likelihood of Occurrence**	**Rationale**
Branta hutchinsii leucopareia Cackling (=Aleutian Canada) goose	WL	Breeds in the Aleutian Islands and winters in the Central Valley of California. During the winter, it occurs in agricultural fields and pastures.	High (foraging) / None (nesting)	Overwintering foraging habitat is present in agricultural land surrounding the study area. Nearest occurrence (Occ. #12) from 1997 is located approximately 9.6 miles west of the project site.
Buteo swainsoni Swainson's hawk	ST, BCC	Breeds in stands with few trees in juniper-sage flats, riparian areas and in oak savanna. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	High	Suitable nesting habitat is present in study area within riparian corridors or other areas with large trees like Valley oak and eucalyptus. There are approximately 73 nesting occurrences within 10 miles of the pipeline alignment. Nearest occurrence (Occ. # 1529) from 2003 is less than 400 feet west of the pipeline alignment on Forty Mile Road.
Circus hudsonius Northern harrier	CSC	Forages and nests in freshwater and brackish marshes and their adjacent grasslands.	Present	Species was observed foraging over emergent wetland habitat during surveys. Potentially suitable nesting habitat occurs in grasslands that receive minimal levels of disturbance. Nearest occurrences (Occ #38) include nesting occurrences from 2000 at Beale Air Force Base approximately 4.5 miles east of the site.
Coccyzus americanus occidentalis Western yellow-billed cuckoo	FT, SE, CSC, BCC	During the summer breeding season, it can be rarely found in valley foothill and desert riparian habitats in California. Typically breeds in dense deciduous riparian vegetation.	Low	Potentially suitable habitat present at drainage crossings with riparian cover; however, riparian habitat in the Project area is lacking preferred size and density for nesting. Nearest occurrence (Occ. #91) from 1976 is approximately 2.9 miles northwest of the project site.
Elanus leucurus	FP	Rolling foothills / valley margins with scattered oaks and river bottomlands or	Present	Species was observed foraging near the project site during surveys. Potentially

Scientific Name **Common Name**	**Status[1]**	**Habitat**	**Likelihood of Occurrence**	**Rationale**
White-tailed kite		marshes next to deciduous woodland. Forages over grasslands, marshes, and oak savannas close to isolated, dense-topped trees for nesting and perching.		suitable nesting habitat is located within the study area primarily in riparian corridors with trees.
Laterallus jamaicensis coturniculus California black rail	ST, FP, BCC	Permanent resident of brackish and freshwater marshes with tall, dense, emergent vegetation.	Low	Potentially suitable habitat is present at waterway crossings in the study area with dense emergent vegetation; however, the likelihood of occurrence is low due to a paucity of occurrences in the region. Occurrences of the year-round resident Sierra Nevada populations of California black rail are located approximately 10 miles east of the project site. Occurrence #235 from 2006 is located approximately 8.4 miles west of project site adjacent to a rice field.
Melospiza melodia Song sparrow (“Modesto” population)	CSC	Marsh and riparian scrub; Resident of the north-central portion of the Central Valley. Nests in emergent freshwater marshes, riparian habitat, and vegetated irrigation canals.	High	Suitable habitat is present within the study area particularly at waterway crossings and wetland habitat. Song sparrows were observed during surveys. The nearest contemporary occurrence (Occ. #86) from 2005 is approximately 8.5 miles southwest of the project site.
Riparia riparia Bank swallow	ST	Can be found along rivers and streams along the steep eroded banks where they nest. Can also be found nesting in quarries and road cuts.	None	There is no suitable nesting habitat at any of the waterway crossings along the pipeline alignment. Although the species may pass through or forage in the area, there is no suitable nesting habitat present. Nearest occurrences are located along the Feather River approximately 3 miles west of the project site.

Scientific Name **Common Name**	**Status[1]**	**Habitat**	**Likelihood of Occurrence**	**Rationale**
Vireo bellii pusillus Least Bell's vireo	FE, SE	Typically nests in riparian habitat with dense shrub cover and a structurally diverse canopy.	Low	Potentially suitable nesting habitat present at riparian crossings along the pipeline alignment with dense tree and shrub cover. The species is very rare in the region. Nearest occurrence (Occ. #524) from 1878 is approximately 4 miles northwest of the project site. The nearest contemporary occurrence of this species is approximately 36 miles south of the project site.
MAMMALS				
Antrozous pallidus Pallid bat	CSC	Day roosts is caves and crevices; occasionally roosts in hollow trees and buildings.	Low	Preferred habitat is not present at the project site. Potentially suitable habitat present in snags along riparian crossings. Nearest occurrence (Occ. #425) from 2015 is approximately 9.3 miles south of the project site.
Corynorhinus townsendii Townsend's big-eared bat	CSC	Coniferous forests, deciduous riparian woodlands, and semi-desert and montane shrub lands. Roost in dark places like caves and buildings.	None	No suitable habitat present at the project site.

[1] Status:
FE = Federal Endangered
FT = Federal Threatened
FC = Federal Candidate
SE = California State Endangered
ST = California State Threatened
SCT = California State Candidate Threatened
SCT = California State Candidate Endangered
FP = CDFW Fully Protected
California Rare Plant Rank (CRPR) 1B.1 = Threatened in California and elsewhere, seriously threatened in California
CRPR 1B.2 = Threatened in California and elsewhere, moderately threatened in California
CRPR 2B = Plants rare, threatened, or endangered in California but more common elsewhere
CRPR 3 = Plants about which more information is needed
CRPR 4 = Plants of limited distribution
CSC = California Species of Special Concern
BCC = USFWS Bird of Conservation Concern
WL = CDFW Watchlist

4.7.1 Special-Status Plants

4.7.1.1 Sanford's arrowhead (*Saggitaria sanfordii*)

Sanford's arrowhead is a CRPR 1B.2 species. This species occurs in shallow freshwater wetland habitat. It is a perennial herbaceous species that blooms from May to October. The nearest occurrence (Occ. #98) which is an occurrence from 1955 located approximately 3.1 miles southwest of the project site. There is potentially suitable habitat for this species within creeks and large ditches or depressions supporting prolonged hydroperiod.

4.7.1.2 Brazilian watermeal (*Wolffia brasiliensis*)

Brazilian watermeal is a CRPR 2B.3 species. This species occurs in shallow freshwater marshes with perennial water. It is a perennial herbaceous species that floats above the water and blooms from April to December. The nearest occurrence (Occ. #5) from 2002 is located approximately 10.2 miles east of the project site. There is potentially suitable habitat for this species within the perennially ponded areas in drainage crossings. The proposed Project will avoid impacts to these areas through trenchless installation methods at waterway crossings and perennial ponded habitat.

4.7.2 Special-Status Wildlife

4.7.2.1 Vernal pool fairy shrimp (*Branchinecta lynchi*)

Vernal pool fairy shrimp is a Federally threatened species that occurs through much of the Central Valley and as far south as the Santa Rosa Plateau in Riverside County. This species occurs in two types of vernal pools; pooled water in small depressions of sandstone outcrops surrounded by foothill grasslands, and ponded water in small swales or depression basins with grassy or muddy bottoms in un-plowed grasslands (Eriksen and Belk, 1999). The habitat characteristics typical of the pools that support the vernal pool fairy shrimp include small, cool water pools, low to moderate concentrations of dissolved solids, and short and unpredictable durations. The vernal pool fairy shrimp can also occur in wet depression features with an appropriate hydroperiod.

There are two occurrences located less than 0.5 miles from the northern portion of the project site (CNDDB, 2022) that occur in roadside habitat similar to wet depression habitat observed along Rancho Road. Occurrence 708 is an occurrence within an irrigation ditch on Bernice Avenue recorded in 2007. Occurrence 709 is within pools surrounded by mowed grassland east of Powerline Road in Olivehurst recorded in 2013. Potentially suitable habitat occurs in seasonally inundated ditches and depressions, primarily along Rancho Road (Figures 2A through 2T). Due to proximity to the roadway, habitat in the study area is often highly disturbed by offroad vehicle use, trash dumping, and other urban influences and may be suboptimal for fairy shrimp occurrence; however, given proximity to other occurrences of this species in similar roadside habitat, occurrence cannot be ruled out. The southern portion of the existing WWTP emergency storage basin also supports ponded areas in the wet season; however, because of it's location within the existing WWTP and the routine disturbance of this area associated with WWTP operations, it was not considered suitable habitat.

4.7.2.2 Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)

Valley elderberry longhorn beetle (VELB) is a federally threatened insect species. It is a moderate-sized, brightly colored, and sexually dichromatic beetle, and was listed as a Threatened species by the USFWS on August 10, 1980. The range of the VELB extends throughout California's Central Valley and associated foothills from about the 2,200-foot elevation contour on the east and the watershed of the Central Valley on the west According to Barr (1991), the evidence of VELB occurrence extends from Shasta County to the north, Kern County to the south, Placer and El Dorado counties to the east, and along the Middle River southwest of Stockton, San Joaquin County to the west.

Occurrences of the VELB are primarily in the vicinity of moist valley oak woodlands associated with riparian corridors in the lower Sacramento River and upper San Joaquin River drainages (U.S. Fish and Wildlife Service, 1984). Blue elderberry (*Sambucus mexicana)* plants are obligate hosts for the VELB, providing a source of food and broodwood. Because of the relatively large size of the VELB (0.5 to 1.0 inch), it is generally restricted to the larger branches and stems of older elderberry plants. Emergence holes are circular-to-slightly oval and usually 0.25 to 0.5-inch in diameter. Emergence holes are generally found on plants with branch and trunk girths with an average diameter of 3.3 inches but can occur in stems one inch or larger. Emergence holes have been found from a few inches above ground up to 10 feet, but over 70 percent are found are below 4 feet (Barr 1991).

The adult VELB lays eggs on the bark of the elderberry stem. The eggs hatch and the larvae bore into and feed upon the pith of the stem. When the larvae are ready to pupate, they bore exit holes in the stem, and then return to complete pupation. Adult beetles emerge from the pupae in late spring and can be found on foliage, flowers, stems, adjacent vegetation, or flying among elderberry plants between late April and early June. The entire life cycle is believed to encompass about two years from egg laying until the adults die (U.S. Fish and Wildlife Service, 1984).

The nearest recent occurrence (Occ. #190) is from 2006 and is approximately 3.8 miles west of the project site (CDFW, 2022). Surveys during the blooming season identified four elderberry shrubs within 165 feet (VELB encroachment buffer) of the project site along Rancho Road; however, these shrubs were east of the railroad and would not be impacted by the Project. A single elderberry shrub occurs on the shoulder of Forty Mile Road and within 20 feet (VELB core area) of proposed trench installed pipeline within the paved roadway. This shrub was very small though several stems were greater than one inch in diameter and is exposed to disturbance within the VELB Core Area due to its location at the edge of pavement on Forty Mile Road. No emergence holes occur on the shrub and this shrub is highly disjunct from riparian habitat and other elderberry shrubs. It is very unlikely this the VELB occurs in the study area, though habitat is present due to the presence of this single shrub.

4.7.2.3 Vernal pool tadpole shrimp (*Lepidurus packardi*)

Vernal pool tadpole shrimp is a Federally Endangered species. Vernal pool tadpole shrimp occurs in vernal pools within the Central Valley and the Sacramento-San Joaquin Delta east of San Francisco Bay (Rogers, 2001). This species inhabits freshwater habitats

containing clear to highly turbid water, with water temperatures ranging from 50 to 84 degrees Fahrenheit and pH ranging from 6.2 to 8.5.

There are three occurrences located less than one mile from the northern portion of the project stie. Occurrence #380 is located approximately 700 feet from the pipeline alignment on Mary Avenue in artificial seasonal wetlands recorded in 2016. Occurrence #221 is a 2004 occurrence located approximately 0.3 miles from the wastewater treatment plant in a field that has since been developed. Potentially suitable habitat occurs in seasonally inundated ditches and depressions. Due to proximity to the roadway, habitat in the study area is often highly disturbed by offroad vehicle use and may be suboptimal for tadpole shrimp occurrence.

4.7.2.4 Western pond turtle (*Emys marmorata*)

Western pond turtle (WPT) is a California species of special concern. The WPT occurs in open water habitats throughout much of California, although at much lower numbers and fewer localities than historical populations, especially in urban areas. WPT prefer slack or slow water habitats with dense stands of submergent or emergent vegetation for food and cover, and with abundant basking habitat. WPT are a semi-aquatic species inhabiting streams, marshes, ponds, and irrigation ditches within woodland, grassland, and open forest communities, but they require upland sites for nesting and over-wintering. Presence of nearby nesting sites and lack of exotic predators are also good habitat components (Bury, 1986).

The nearest occurrence (Occ. #334) is from 1998 and is approximately 2.2 miles south of the project site (CDFW, 2022). The project site has potentially suitable habitat for western pond turtle at several of the drainage crossings in the study area. There was, however, limited basking habitat identified during surveys and no western pond turtles were observed during field surveys.

4.7.2.5 Giant gartersnake (*Thamnophis gigas*)

Giant gartersnake (GGS) is a State and federally listed Threatened species found in emergent marsh habitats associated with waterways during spring and summer and hibernates in adjacent upland habitat during the winter. Due to extensive habitat loss, giant gartersnakes now inhabit remaining wetlands as well as highly modified habitats, such as agricultural areas. Active rice fields and their associated irrigations systems serve as an alternative habitat that is commonly used by giant gartersnake. These fields provide the habitat components typically required by giant gartersnake. Essential components of giant gartersnake habitat include:

- A fresh-water aquatic component with adequate water from early spring through fall to provide foraging habitat and cover;
- Emergent herbaceous wetland vegetation to provide foraging habitat, cover, and basking areas;
- An upland component near the aquatic habitat that can be used for thermoregulation, cover, and retreat; and

- An upland refugia component at higher elevation sites that will serve as winter hibernacula and provide cover and refuge from flood waters (Hansen and Brode, 1980; USFWS, 1997).

The nearest contemporary occurrence (Occ. #192) of GGS is a 2014 occurrence located in a rice field approximately 8.2 miles west of the project site. Potentially suitable habitat occurs within Kimball Creek and active rice fields in the area based on the presence of summer water, emergent wetland vegetation, and surrounding upland habitat. Reeds Creek may also provide potentially suitable habitat for GGS; however, the pipeline will be installed using trenchless techniques under Reeds Creek and all Project activities are setback more than 200 feet from Reeds Creek, and therefore will not impact GGS or its habitat at this location.

Hutchinson Creek has riparian cover and does not provide potential habitat for this species. Virginia Creek does not support emergent wetland vegetation thereby limiting its potential to provide suitable habitat for this species. Some other agricultural ditches or rice fields in the study area may provide suitable aquatic habitat for GGS; however, Project activities will be limited to pipeline installation activities within the paved roadway and will avoid disturbance to suitable aquatic or upland habitat at these locations.

4.7.2.6 Cooper's hawk (*Accipiter cooperii*)

Cooper's hawk is on the CDFW Watch List. These birds breed over much of California in forests, open woods and streamside trees. They utilize additional habitats for hunting, including chaparral and other scrub communities. Cooper's hawks have also become well adapted to heavily treed urban environments where they are commonly observed in public parks and around bird feeders. Nests can be built in a variety of trees, typically at heights ranging from 25 to 50 feet off of the ground. There are no recorded occurrences of this species near the project site and it was not observed during reconnaissance surveys (CDFW, 2022), however, nesting occurrences of this species are not commonly reported to CNDDB and this species is common in the region of the Project. Suitable foraging and nesting habitat for this species occurs along the pipeline alignment at forested riparian crossings.

4.7.2.7 Tricolored blackbird (*Agelaius tricolor*)

Tricolored blackbird is a state-listed Threatened species, California Species of Special Concern, and a Bird of Conservation Concern. The tricolored blackbird is a nomadic resident of the Sacramento and San Joaquin Valleys and lower foothills of the Sierra Nevada. This species is a colonial nesting species that nests near freshwater in dense cattails and bulrush, and also in thickets of willow, blackberry, wild rose, and tall herbs (Zeiner et al., 1990a). Estimates for colony size range from 15 to 47,000 birds. Flooded lands, pond margins, grass fields and agricultural fields constitute typical foraging habitat. Individual tricolored blackbirds were observed during field surveys along Forty Mile Road and Rancho Road.

There are approximately eight occurrences of tricolor blackbird within 0.5 miles of the pipeline alignment (CNDDB, 2022). Occurrence #508 is a 2014 occurrence located along the pipeline alignment on Forty Mile Road in a blackberry bramble that is still in

place near the southernmost waterway crossing. Suitable nesting habitat is present in many locations within the study area, but primarily at the waterway crossings with emergent vegetation and in the dense blackberry patch along Forty Mile Road.

4.7.2.8 Burrowing owl (*Athene cunicularia*)

Burrowing owl is a California Species of Special Concern and a Bird of Conservation Concern. The burrowing owl is a small, long-legged owl that differs from other species of owls by its use of underground burrows and its diurnal activity pattern (Mallette and Gould, 1976). It occurs throughout California except in humid northwest coastal forests and high mountains (Zeiner et al., 1990a). It's breeding range is dry, open short grass, treeless plains associated with burrowing mammals. It is also found on golf course, cemeteries, road rights-of-way, airports, vacant lots in residential areas, campuses, and fairgrounds (Haug et al., 1993).

Burrowing owls are semicolonial with 5 to 6 pairs per acre. The owls usually enlarge burrows excavated by ground squirrels or other fossorial species, but may excavate their own in soft, friable soils. The owls show a high level of site fidelity, and reuse burrows, but burrows may be used by different pairs in different years. Several burrows may be excavated with one used for nesting, while satellite burrows are used for escape, perching, and observation. They will also use pipes, culverts, debris piles, and nest boxes in areas where burrows are scarce. Burrows are generally surrounded by bare ground or short grass that afford unrestricted views. High perches and elevated areas with clear lines-of-sight, such as mounds, fences, or other structures, are used as for hunting and detecting predators including skunks, badgers, bobcats, coyotes, and barn owls.

The nearest recorded occurrence (Occ. #2003) is from 2016 and is approximately 8.1 miles southeast of the project site. Suitable burrowing owl habitat is present at the southern end of the wastewater treatment plant where an extensive California ground squirrel colony was observed on an earthen berm. Within this colony, several of the burrows showed signs of renovation by burrowing owls.

4.7.2.9 Swainson's hawk (*Buteo swainsoni*)

Swainson's hawk is a state-listed Threatened species and a Bird of Conservation Concern. This species breeds in open habitats in western North America from Alaska south to Mexico. It breeds in California, found mainly in the Central Valley, Klamath Basin, Northeastern Plateau, and Mojave Desert. It winters primarily on the pampas of southern South America, and Mexico, and a few winter in California, the southwestern U.S. and Florida.

This species forages in grassland or areas of sparse trees or shrubs, and often forages in agricultural areas in the Central Valley. It nests in the scattered trees within these habitats, particularly those along waterways. During the breeding season, it feeds primarily on small mammals and reptiles. During other seasons, large insects (especially grasshoppers) are the bulk of its diet.

In California, it usually arrives in March and April and departs in September or October. Loss of habitat is the major threat to this species in California. Residential and commercial development continues to replace Swainson's hawk habitat. Pesticides and

herbicides are also a major threat, particularly on their wintering grounds. They are also sensitive to disturbance while nesting and may abandon nests if disturbed before the eggs hatch.

The project site is in a region that has very high Swainson's hawk nesting activity. There are approximately 73 nesting occurrences within 10 miles of the study area. The nearest occurrence (Occ. # 1529) is from 2003 and is less than 400 feet west of the pipeline alignment on Forty Mile Road (CDFW, 2022). This species was not observed during field surveys because surveys were conducted during the winter when Swainson's hawk is not present in California. Suitable nesting habitat is present in many locations along the pipeline alignments particularly within riparian corridors with large trees like Valley oak, Fremont cottonwood, and eucalyptus. Swainson's hawk foraging habitat also occurs within agricultural fields and grasslands in the area.

4.7.2.10 Northern harrier (*Circus hudsonius*)

Northern harrier is a California Species of Special Concern. The Northern Harrier inhabits meadows, grasslands, open rangelands, desert sinks, fresh and saltwater emergent wetlands; seldom found in wooded areas. It forages mostly on voles and other small mammals, birds, frogs, small reptiles, crustaceans, insects, and, rarely on fish. Breeding typically occurs April to September, with peak activity June through July. Destruction of wetland habitat, native grassland, and moist meadows, and the burning and plowing of nesting areas during early stages of breeding cycle, are major reasons for the decline (Remsen, 1978).

Nearest occurrences are nesting occurrences at Beale Air Force Base approximately 4.5 miles east. This species was observed foraging over emergent wetland habitat within the study area during surveys. Potentially suitable nesting habitat occurs in grasslands in the area that receive minimal levels of disturbance.

4.7.2.11 White-tailed kite (*Elanus leucurus*)

White-tailed kite is a California Fully Protected species. It is a small raptor with a total length of about 12 inches and is often identified from a distance by its hovering or "kiting" behavior while hunting. White-tailed kites primarily prey on voles and other diurnal mammals, but will occasionally prey on birds, insects, reptiles, and amphibians. It typically forages over open grasslands and emergent wetlands. White-tailed kites nest in dense foliage in treetops near grassy foothills, marshes, riparian woodland, savanna, and partially cleared fields. Preferred nesting trees include oak, willow, sycamores, or other tree stands. White-tailed kites range from western California and southwestern Oregon to southeastern Arizona, and along the Gulf Coast from Texas to Florida (Wheeler and Clark, 1995).

There are no recorded occurrences of this species near the project site; however, it was observed foraging in the study area during surveys. The project site provides suitable foraging habitat for this species and suitable nesting habitat is present in the area.

4.7.2.12 Song sparrow ("Modesto population") (*Melospiza medlodia*)

The Modesto population of the song sparrow is endemic to California, where it resides only in the north-central portion of the Central Valley. Highest densities occur in the Butte Sink area of the Sacramento Valley and in the Sacramento-San Joaquin Delta. Song sparrows breed from mid-March to early August and are resident species of the Sacramento Valley and Delta. Song sparrows are frequently seen within mature riparian corridors, such as the Cosumnes and Stanislaus Rivers, and less frequently within irrigation canals and levees. The Modesto population of song sparrow has an affinity for emergent freshwater marshes dominated by bullrush and cattails as well as riparian willow (*Salix* sp.) thickets. Song sparrows also nest in riparian forests of valley oak (*Quercus lobata*) with a sufficient understory of blackberry, along vegetated irrigation canals and levees (Shuford et al., 2008); however, nest appear to be more successful in early succession riparian wetland communities, such as restoration sites.

The nearest contemporary occurrence (Occ. #86) is a 2005 occurrence approximately 8.5 miles southwest of the project site. Suitable habitat is present within the study area particularly at waterway crossings and in emergent wetland habitat. Song sparrows were observed during surveys.

4.8 WILDLIFE CORRIDORS

Wildlife migration corridors are generally defined as connections between fragmented habitat patches that allow for physical and genetic exchange between otherwise isolated wildlife populations. Migration corridors may be local, such as those between foraging and nesting or denning areas, or they may be regional in extent. Migration corridors are not unidirectional access routes; however, reference is usually made to source and receiver areas in discussions of wildlife movement networks. "Habitat linkages" are migration corridors that contain contiguous strips of native vegetation between source and receiver areas. Habitat linkages provide cover and forage sufficient for temporary inhabitation by a variety of ground-dwelling animal species. Wildlife migration corridors are essential to the regional fitness of an area as they provide avenues of genetic exchange and allow animals to access alternative territories as fluctuating dispersal pressures dictate.

Within the study area there are several natural drainages and riparian corridors that provide suitable migratory corridors for an array of species. These drainages and riparian areas include Reeds Creek, Hutchinson Creek, Kimball Creek, and Virginia Creek and other smaller unnamed waterways. These creeks help to provide access for wildlife to move from foothill habitat areas to valley habitat areas, including the Feather River, Sutter National Wildlife Refuge, and other wildlife areas. At the drainage crossings within the study area, the vegetation communities observed were a mix of natural riparian communities, emergent wetland vegetation, and annual grassland cover types. Signs of mammals moving through the riparian corridors were observed for several species including raccoon, coyote, and mink.

The Project is designed to avoid impacts to the drainage crossings and associated riparian corridors using trenchless installation methods for pipeline crossings at these

locations. Impacts to wildlife corridors will be limited to indirect temporary disturbance during construction, primarily during daytime hours.

5.0 REGULATORY SETTING

5.1 FEDERAL REGULATIONS

5.1.1 Federal Endangered Species Act.

The federal Endangered Species Act (FESA), administered by the USFWS and the NMFS (collectively referred hereafter as the "Services"), provides protection to species listed as Threatened (FT) or Endangered (FE), or proposed for listing as Threatened (PFT) or Endangered (PFE). The Services maintain lists of species that are neither formally listed nor proposed but could be listed in the future. These federal candidate species (FC) include taxa for which substantial information on biological vulnerability and potential threats exists and are maintained in order to support the appropriateness of proposing to list the taxa as an endangered or threatened species.

Projects that will result in the "take" of a federally listed or proposed species (as defined by FESA Section 9) are required to consult with the Services. The objective of consultation is to determine whether the project will jeopardize the continued existence of a listed or proposed species, and to determine what mitigation measures will be required to avoid jeopardy. Consultations are conducted under Sections 7 or 10 of FESA depending on the involvement by the federal government.

Under Section 7, the Services are authorized to issue Incidental Take Permits (ITP) for the take of a listed species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by the federal agency. A Biological Assessment is usually required as part of the Section 7 consultation to provide sufficient information for the Services to fully determine the project's potential effect on listed species. The Services must make one of three possible findings for each species potentially affected:

No effect: The proposed action will not affect the listed species or critical habitat;

Not likely to adversely affect: Effects of the proposed action on the listed species are expected to be discountable (extremely unlikely to occur), insignificant (minimal impact without take), or beneficial; and

Likely to adversely affect: An adverse effect may occur as a direct or indirect result of the proposed action, and the effect is not discountable, insignificant, or beneficial.

Section 10 consultation is conducted when there is no federal involvement in a project except compliance with FESA.

5.1.2 Magnuson-Stevens Fishery Conservation and Management Act.

The NMFS administers the Magnuson-Stevens Fishery Conservation and Management Act (MSA) (16 USC 1801 et seq.). The MSA is the primary law governing marine fisheries management in U.S. Federal waters. The MSA was first enacted in 1976 and amended in 1996. Amendments to the 1996 MSA require the identification of Essential Fish Habitat (EFH) for federally managed species and the implementation of measures to conserve and enhance this habitat. Any project requiring Federal authorization is required to complete and submit an EFH Assessment with the application and either show that no significant impacts to the essential habitat of managed species

are expected or identify mitigations to reduce those impacts. Under the MSA, Congress defined EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" (16 USC 1802(10)). The EFH provisions of the MSA offer resource managers a means to heighten consideration of fish habitat in resource management. Pursuant to section 305(b)(2), Federal agencies shall consult with the NMFS regarding any action they authorize, fund, or undertake that might adversely affect EFH.

5.1.3 Migratory Bird Treaty Act / Bald Eagle and Golden Eagle Protection Act

The USFWS administers the federal Migratory Bird Treaty Act (MBTA) of 1918 (16 USC 703-711) and the Bald Eagle and Golden Eagle Protection Act (16 USC 668-688). The MBTA prevents the removal of trees, shrubs, and other structures containing active nests of migratory bird species that may result in the loss of eggs or nestlings. Adherence to construction windows either before the initiation of breeding activities or after young birds have fledged is a typical step to protect migratory birds and comply with the MBTA. The Bald Eagle and Golden Eagle Protection Act prohibits the taking or possession of bald and golden eagles, their eggs, or their nests without a permit from the USFWS.

5.1.4 Clean Water Act

The Corps and the U.S. Environmental Protection Agency (EPA) regulate the discharge of dredge and fill material into jurisdictional "waters of the United States" and wetlands under Section 404 of the Clean Water Act.

The Corps is responsible for the issuance of permits for the placement of dredged or fill material into Waters of the U.S. (WoUS) pursuant to Section 404 of the Clean Water Act (33 USC 1344). As defined by the Corps at 33 CFR 328.3(a)(3), WoUS are those waters that are used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including waters which are subject to the ebb and flow of the tide; tributaries and impoundments to such waters; interstate waters including interstate wetlands; and, territorial seas.

The Corps asserts jurisdiction over traditional navigable waters (TNW) and adjacent wetlands. Under Corps and EPA regulations, wetlands are defined as: "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

In non-tidal waters, the lateral extent of Corps jurisdiction is determined by the ordinary high water mark (OHWM) which is defined as the: "…line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas." (33 CFR 328[e]).

5.1.5 Rivers and Harbors Act

The Corps regulates activities affecting "navigable waters of the United States" under Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403). Navigable waters are defined as "…those waters of the United States that are subject to the ebb and flow of the tide shoreward to the mean high water mark and/or are presently used, or have been used in the past, or may be susceptible to use to transport interstate or foreign commerce." Structures or work under or over a navigable WoUS is considered to have an impact on the navigable capacity of the waterbody.

5.2 STATE REGULATIONS

5.2.1 California Endangered Species Act

CESA was enacted to protect fish, wildlife, and plant species in danger of, or threatened with, extinction in the State of California (Fish and Game Code §2051). CESA prohibits "take" of a state-listed species. Take is defined as "hunt, pursue, catch, capture, or kill or attempt to hunt, pursue, catch, capture, or kill" (Fish and Game Code §86). Under Section 2081 of CESA, CDFW may authorize an incidental take permit allowing the otherwise unlawful take of a SE or ST species.

CDFW maintains lists of Candidate-Endangered species (SCE) and Candidate-Threatened species (SCT). These candidate species are afforded the same level of protection as listed species. CDFW designates Species of Special Concern (SSC) that are species of limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational, or educational value. These species do not have the same legal protection as listed species but may be added to official lists in the future. The SSC list is intended by CDFW as a management tool for consideration in future land use decisions.

5.2.2 Fully Protected Species, Fish and Game Code Sections 3511, 4700, 5050, and 5515

This section of the California Fish and Game Code provides particular and special state protection to a list of 37 wildlife species and prohibits take or possession "at any time" with few exceptions and the CDFW cannot authorize incidental take of fully protected species.

5.2.3 California Fish and Game Code Section 3503

This section of the California Fish and Game Code prohibits the take, possession or needless destruction of nests or eggs of birds. It also prohibits the take, possession, or destruction of hawks or owls and the nests or eggs of any hawk or owl.

5.2.4 California Native Plant Protection Act

CDFW manages the California Native Plant Protection Act (NPPA) of 1977 (F&G Code Section 1900, et seq.), which was enacted to identify, designate, and protect rare plants. There are 64 species, subspecies, and varieties of plants that are designated rare under the NPPA. F&G Code Section 1913 provides utilities with an exemption from CESA permitting requirements for listed plants within the utility right of way. Specifically, Section 1913(b) states: "…the removal of endangered or rare native plants from a canal, lateral ditch, building site, road, or other right-of-way by the owner of the land or his agent, or the

performance by a public agency or a publicly or privately owned public utility of its obligation to provide service to the public, shall not be restricted because of the presence of rare or endangered plants." Section 1913(c) of the CNPPA requires the landowner to provide the CDFW with at least 10 days' notice to allow for plant salvage prior to affecting the species. In addition to NPPA designated rare plants, all California Rare Plant Rank (CRPR) 1 (A and B), Rank 2 (A and B), Rank 3, and some Rank 4 plants meet the definition of Rare or Endangered under the CEQA Guidelines §15125 and/or §15380. Potential impacts to these species are considered during CEQA review of a proposed project.

5.2.5 California Fish and Game Code Section 1600

Pursuant to Section 1602 of the Fish and Game Code, a Lake or Streambed Alteration Agreement (LSAA) between the CDFW and state or local governmental agency, public utility, or private citizen is required before the initiation of a construction project that will: (1) divert, obstruct, or change the natural flow or the bed, channel, or bank of a river, stream, or lake; (2) use materials from a streambed; or (3) result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake. The CDFW claims jurisdiction over the bed, bank, and channel of drainage features with regard to activities regulated under Section 1602 of the California Fish and Game Code.

5.2.6 Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act mandates that waters of the State of California shall be protected. Current policy in California is that activities that may affect waters of the State shall be regulated to attain the highest quality. Waters of the State include any surface water or groundwater, including saline waters, and any aquatic features that meet the state definition of a wetland, within the boundaries of the state. The Porter-Cologne Act establishes that the state assumes responsibility for implementing portions of the federal Clean Water Act, rather than operating separate state and Federal water pollution control programs in California. Consequently, the state is involved in activities such as setting water quality standards, issuing discharge permits, and operating grant programs.

5.2.7 Clean Water Act

Pursuant to Section 401 of the Clean Water Act, the Corps cannot issue a federal permit until the State of California first issues a water quality certification to ensure that a project will comply with state water quality standards. The California State Water Resources Control Board or one of the nine Regional Water Quality Control Boards (RWQCB) issues water quality certifications.

5.2.8 Oak Woodland Protection

California Senate Concurrent Resolution No. 17 (1989) is a Senate resolution that requests that… "all state agencies having land use planning duties and responsibilities…to assess and determine the effects of their land use decisions or actions within any oak woodland" and that agencies ...preserve and protect native oak woodlands to the maximum extent feasible…or provide for replacement plantings where designated oak species are removed from oak woodlands".

The Oak Woodlands Conservation Act (Section 1363 of the Fish and Game Code) was enacted in 2001. The program, which is managed by the Wildlife Conservation Board, is intended to:

- Support and encourage voluntary, long-term private stewardship and conservation of California oak woodlands by offering landowners financial incentives to protect and promote biologically functional oak woodlands;
- Provide incentives to protect and encourage farming and ranching operations that are operated in a manner that protect and promote healthy oak woodlands;
- Provide incentives for the protection of oak trees providing superior wildlife values on private land, and;
- Encourage planning that is consistent with oak woodlands preservation.

5.3 LOCAL AND REGIONAL PLANS

5.3.1 Yuba County General Plan

The Yuba County General Plan contains goals and policies that are relevant to biological resource issues. The project site and pipeline alignments are within the County of Yuba and is therefore within the jurisdiction of this general plan. Policies within the general plan applicable to the proposed project are outlined below. The applicable sections of the General Plan are under the Natural Resources Element. Policies within the general plan applicable to the proposed project are outlined below (County of Yuba, 2011).

5.3.1.1 Biological Resources

Goal: Protect and restore habitat for special-status species that have the potential to occur in Yuba County.

Implementing Policies

Policy NR-5.1: New developments that could adversely affect special-status species habitat shall conduct a biological resources assessment and identify design solutions that avoid such adverse effects. If, after examining all feasible means to avoid impacts to special-status species habitat through project design, adverse effects cannot be avoided, then impacts shall be mitigated in accordance with guidance from the appropriate state or federal agency charged with the protection of the subject species, including pre-construction surveys conducted according to applicable standards and protocols, where necessary.

Policy NR-5.2: The County will coordinate its environmental review and mitigation requirements with the Yuba-Sutter NCCP/HCP, once adopted.

Policy NR-5.3: The County will support the continued development and implementation of the Yuba-Sutter NCCP/HCP, once adopted.

Policy NR-5.4: New developments shall be located and designed to preserve and incorporate existing native vegetation to the maximum extent feasible. Fire safety standards may override consideration of retaining existing vegetation in certain circumstances.

Policy NR-5.5: The County will support cooperative restoration, development, and promotion of natural resources with the U.S. Fish and Wildlife Service, the Army Corps of Engineers, the Bureau of Reclamation, the U.S. Forest Service, and other public agencies with an interest in the Yuba County's water and wildlife assets.

Policy NR-5.6: The County will seek funding to enhance and restore habitat along the Yuba River, in coordination with development of recreational facilities and public access.

Policy NR-5.7: New developments and public investments near Yuba County's streams and rivers shall be designed to avoid tree removal, erosion, or other modifications that would adversely affect salmonid habitat.

Policy NR-5.8: New private developments adjacent to riparian areas shall provide a buffer designed and maintained to preserve existing wildlife habitat; provide habitat conditions favorable to native local wildlife; restrict activities that may adversely affect wildlife habitat quality; and restore degraded habitat, where feasible.

Policy NR-5.9: New developments shall be designed to avoid the loss of jurisdictional wetlands. If loss is unavoidable, the County will require applicants to mitigate the loss on a "no net loss" basis through a combination of avoidance, minimization, restoration, and/or constructed wetlands, in accordance with federal and state law.

Policy NR-5.10: The County will encourage measures on agricultural lands that conserve or restore habitat.

Policy NR-5.11: The County will support the use of mitigation fees from the Yuba-Sutter Natural Community Conservation/Habitat Conservation Plan to fund preservation and restoration elements of the County's open space strategy.

Policy NR-5.12: Any new developments adjacent to the Spenceville Wildlife Refuge, Marysville Wildlife Area, Feather River Wildlife Area, Daugherty Hill Wildlife Area, or Starbend Fishing Access shall be buffered from wildlife areas or otherwise designed to avoid adverse direct and indirect effects on wildlife. Buffers related to firearm use, if necessary, should occur within the public wildlife area.

Policy NR-5.13: New developments that could adversely affect wildlife movement corridors shall conduct a biological assessment and avoid placing any temporary or permanent barriers within such corridors, if they are determined to exist on-site. Avoiding barriers to wildlife movement may be accomplished at the project or community plan level.

Policy NR-5.14: The County will discourage development that would substantially and adversely affect the designated winter and critical winter range of the Mooretown or Downieville deer herd.

Policy NR-5.15: Roads, water lines, sewer lines, drainage facilities, and other public facilities constructed to serve unincorporated County development shall be located and designed to avoid substantial impacts to stream courses, associated riparian areas, and wetlands, to the greatest extent feasible.

5.3.1.2 Trees and other Important Vegetation

Goal: Preserve the County's trees and other vegetation that provide aesthetic and habitat benefits.

Implementing Policies

Policy NR-10.1: Building placement, grading, and circulation should be planned to retain as much existing native vegetation as feasible, with a priority on preserving existing oak trees that have a diameter at breast height (dbh) of 6 inches or greater and all other trees that have a dbh of 30 inches or greater. The County's policies and standards for fire safety may override consideration of retaining existing vegetation in certain circumstances.

Policy NR-10.2: The County will encourage the preservation of healthy, attractive native vegetation during land development. Where this is not feasible, the County will require landscaping that uses climate-appropriate plant materials.

6.0 SIGNIFICANCE CRITERIA

The impact of the project on biological resources was evaluated in terms of mandatory findings of significance at Section 15065 of CEQA and Appendix G of the State CEQA Guidelines (Governor's Office of Planning and Research, 1999). The various components of the project were considered in association with site conditions and were evaluated against CEQA criteria and County General Plan policies pertaining to biological issues. In accordance with these CEQA Guidelines, a project will normally result in a significant impact if any of the following conditions would result from project implementation:

- 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 CDFW, USFWS, or NMFS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulation, or by the CDFW, USFWS, or NMFS;
- 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;
- 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 site;
- Conflict with any local polices or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and,
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State Habitat Conservation Plan.

Additionally, the CEQA Guidelines Initial Study Land Use and Planning checklist notes that conflicts with applicable land use plans, policies, or regulations of an agency with jurisdiction over the project should be considered during a project's environmental review.

7.0 IMPACTS AND MITIGAITON MEASURES

Effects on biological resources in the Project area will be primarily temporary with permanent impact limited to above ground project features such as the WTP and lift stations and pump stations. There will be temporary impacts to wildlife habitat during pipeline installation and construction of above ground structures. General construction may temporarily alter the natural movement and behavior of wildlife in the Project area. Construction may also result in indirect impacts that affect the quality of habitat in the Project area.

7.1 IMPACT CATEGORIES

Short-term and long-term impacts are analyzed for the proposed project. Each impact statement is classified as to the level of significance, based on the significance thresholds from Section 6.0, and the availability of measures to feasibly mitigate project effects. Impact categories include:

- **Potentially Significant Impact** is an adverse effect that cannot be mitigated. This category of impact is one for which a solution has not been formulated, either because of the limits of technical and/or scientific knowledge, or unfeasibility from a technical, economic, and/or political perspective. Under CEQA, a Significant Unavoidable impact would require a “finding of overriding consideration” by the Lead Agency to approve the project;
- **Less than Significant with Mitigation** is an adverse environmental effect that can be mitigated to less than significant levels. Measures have been identified that can feasibly be implemented and will avoid the impact altogether by not taking a certain action or parts of an action; minimize impacts by limiting the degree or magnitude of the action and its implementation; rectify the impact by repairing, rehabilitating, or restoring the affected environment; or compensate for the impact by replacing or providing substitute resources or environments;
- **Less than Significant Impact** is an environmental effect that is less than significant or has no identified impact. These impacts may be adverse, but are not of a sufficient magnitude, intensity, or duration to disrupt the environment, and have no serious consequences. As a result, no mitigation is required; and
- **No Impact** is when the Project would not result in any impact in the category, or the category does not apply.

7.2 PROJECT IMPACTS

Effects on biological resources in natural or semi-natural areas due to development take the form of direct impacts, including habitat loss and fragmentation, introduction of barriers to movement and dispersion, and conversion of native communities to developed conditions. Development may also result in indirect impacts that affect the quality of habitat on the project site and in the project area. Indirect impacts include invasion of non-native plants into natural areas, noise disturbances, and declines in air and water quality. The proposed improvements associated with the South County Infrastructure Project are

primarily within developed areas in the community of Olivehurst and in developed roadways and disturbed areas in rural southern Yuba County. All of the proposed alignments for trench installed pipelines are within the paved roadway and disturbed shoulder, with the exception of short overland connections to permanent above ground features (e.g. WP, Lift Stations, and Pump Stations). Trenchless construction methods are proposed for large drainage crossings to avoid impacts to waterways and riparian habitat. Permanent above ground Project features are sited within upland areas and disturbed or developed areas to the extent feasible to minimize habitat loss.

The following analysis provides an assessment of potential impacts from the proposed Project activities and includes Project-specific applicant proposed measures, and/or prescribed mitigation measures to reduce impacts to special-status species or other biological resources to a level of less than significant.

7.2.1 Vegetation Communities

The permanent, above ground features associated with this Project will result in approximately 2.43 acres of conversion to developed lands. Construction of the Pump Stations and Lift Stations and the WP will occur in annual grassland, ruderal, developed, disturbed, and agricultural lands. Installation of the pipeline alignments using trench installation and bored trenchless methods will result in temporary impacts, primarily within the paved roadway and unvegetated road shoulder but include pipeline connections to pump stations, lift stations, and the WP through overland areas including annual grassland, disturbed lands, and roadside ditches and depressions that are seasonally inundated. HDD installed highway and waterway crossings will result in temporary impacts from the HDD workspace and the pipe string staging area. Table 6 summarizes the permanent and temporary impacts associated with the Project.

Table 6. South County Infrastructure Project Impacts

Feature	Cover Type	Impact Area (Acres)
Permanent Impacts		
Pump Station 1	Annual Grassland, Ruderal (urban vacant lot)	0.19
Pump Station 26	Annual Grassland, Ruderal (urban vacant lot)	0.46
Pump Stations 21	Annual Grassland	0.24
Lift Station 22	Annual Grassland	0.10
Lift Station 23	Agricultural (rice), Roadside ditch / depression (seasonally inundated)	0.12
Pump Station 25	Disturbed land (Unpaved parking lot)	0.23

Feature	Cover Type	Impact Area (Acres)
Pump Station 24	Annual Grassland	0.14
Water Plant	Disturbed land (Stockpile / staging area)	0.95
Temporary Impacts		
SR 70 HDD (McGowan Pkwy)	Developed land (paved roadway)	0.29
SR 65 HDD (Olive Ave – Rancho Rd)	Annual Grassland, Wet depression (seasonally inundated)	0.95
Reeds Creek HDD (Rancho Rd)	Disturbed land (road shoulder), Roadside ditch / depression (seasonally inundated), annual grassland, agricultural	0.88
Hutchinson Creek HDD (Rancho Rd)	Annual grassland, Disturbed land (road shoulder), agricultural	1.28
SR 65 HDD (Rosser Rd – Shimer Rd)	Grazed pasture, developed land (paved road)	0.69
Kimball Creek HDD (Rancho Rd)	Annual grassland, Roadside ditch / depression (seasonally inundated)	0.90
Virginia Creek Bore (Rancho Rd)	Developed land (paved road), disturbed land (road shoulder)	0.02
Kimball Creek Bore (Forty Mile Rd)	Developed land (paved road)	0.03
Trench Installed Pipeline[1]	Developed land (paved road), Disturbed land (road shoulder), Annual Grassland, Roadside ditch / depression (seasonally inundated)	--
[1]Total acreage not available for 32.6 miles of trench installed pipeline because trench width and depths are variable and not fully defined. Trench installed pipeline will occur primarily in existing roadways in developed and disturbed land.		

Temporary disturbance areas within or near sensitive areas (e.g. riparian corridors, waterways and wetlands, and suitable habitat for special-status species) will require work within designated workspace and delineation of the work areas to prevent encroachment on sensitive areas. Limited tree removal may occur in some of these work areas though the number, type, and size of trees that may need to be removed is unknown.

No mitigation is proposed for permanent or temporary impacts to developed lands, disturbed lands, and upland annual grasslands and ruderal areas. Yuba County does not have a tree ordinance that would require mitigation for the loss of individual oak trees and no mitigation for tree removal is proposed.

Cover types that are regulated habitats or potentially suitable habitat for special-status species will be addressed by recommended mitigation outlined by resource or species below.

7.2.2 Aquatic Resources

The proposed Project may result in impacts to aquatic resources at Lift Station 23, several of the HDD workspace areas, and several of the pipeline connection crossings. Additionally, the HDD waterway crossings will involve the use of drilling fluids that present the unlikely potential for inadvertent returns to the waterways. These aquatic resources may be regulated by the Corps under Section 404 of the Clean Water Act, the RWQCB under Section 401 of the Clean Water Act, and/or the CDFW under Section 1600 of the California Fish and Game Code. These areas were identified and mapped for the purposes of avoidance during biological reconnaissance surveys (Figures 2A through 2T). A preliminary aquatic resource delineation was not conducted as part of the reconnaissance surveys and full avoidance of these features may not be feasible; therefore, some of the following authorizations may be required:

- Clean Water Act Section 404 Discharge/Fill Permit by the Corps;
- Clean Water Act Section 401 Water Quality Certification by the CVRWQCB; and,
- Fish and Game Code Section 1600 Lake/Streambed Alteration Agreement with CDFW

Construction of the project may result in impacts to regulated aquatic resources. **(Potentially significant)**

Mitigation BIO-1:

BIO-1A: Prior to the initiation of construction, OPUD or its contractor shall conduct a preliminary aquatic resource delineation of the project site to define the limits of jurisdictional areas and determine the extent of project impacts. The delineation will be verified by the Corps. The verified delineation will provide OPUD with the impact acreage necessary for preparing a WoUS/Wetland Mitigation Plan and/or permit application if impacts to jurisdictional areas cannot be avoided. If the Project can fully avoid delineated aquatic resources, no further mitigation would be required. If the Project cannot fully avoid delineated aquatic resources, 1A-1 will apply.

1B-1: If project impacts to federal and state jurisdictional areas are identified, OPUD shall obtain all necessary permits for impacts to WoUS and wetlands from the Corps and RWQCB and/or for potential impacts to stream features from CDFW prior to project implementation. Implementation of the Project shall comply with all permit conditions. Compensatory mitigation must be consistent with the Corps' standards pertaining to mitigation type, location, and ratios, but will be accomplished with a minimum of 1:1 replacement ratio.

If compensatory mitigation is needed, OPUD may satisfy all or a portion of WoUS and wetlands mitigation through the purchase of "credits" at a mitigation bank approved by the Corps, RWQCB, and/or CDFW for compensatory mitigation of

impacts to hydrologically similar WoUS, or through other means, such as on- or off-site wetland creation, conservation easement, contribution to approved in-lieu habitat fund, etc. The mitigation plan must be approved by the permitting agencies and shall be implemented by OPUD subsequent to plan approval.

BIO-1B: The proposed HDD installations under regulated drainages have a small potential to "frac out" or inadvertently release drilling muds to the surface during the drilling operations. Because of the potential for a frac-out to impact waters and wetlands at the drainage crossings, OPUD or its contractor shall prepare and implement an Inadvertent Returns Contingency Plan that outlines the measures that will be taken to prevent inadvertent returns and outlines the response measures to be employed and response equipment to be maintained onsite for use in the unlikely event of an inadvertent return during drilling operations.

7.2.3 Special-Status Plants

The likelihood of occurrence of special-status plant species within Project disturbance areas is limited because most impacts are within cover types not known to support special status plants. Potential for occurrence of special-status plants within suitable habitat areas is limited due to the level of disturbance in roadside ditches and depressions that provide seasonally inundated habitat. Two plant species were identified as having a moderate potential for occurrence within creeks or large ditches or depressions that support a prolonged hydroperiod. The Project will avoid impacts to the drainage crossings through the use of trenchless pipeline construction methods; however, impacts to seasonally inundated ditches and depressions may provide habitat for Sanford's arrowhead, particularly in large ditch or depression features that support a prolonged hydroperiod, such as those along the southern portion of Rancho Road. Project impacts to some of these areas can not be avoided.

Because of this, there is some potential for Project related impact to special-status plants in locations where impacts to seasonally inundated ditches and depressions could not be avoided or where workspaces and trench installed pipeline will occur in close proximity to these features. Construction of these features may have an impact on special-status plants. **(Potentially significant)**

Mitigation BIO-2:

BIO-2A: Pre-construction special-status species plant surveys shall be conducted by OPUD or its contractor in all impact areas that provide potentially suitable habitat for special-status plants prior to initiating Project construction activities. All surveys shall be conducted in accordance with agency approved survey protocols during the appropriate blooming period. If no special-status species are identified in protocol surveys, no additional mitigation is required. If surveys determine that special-status species occur within impact areas, BIO-2B shall apply.

BIO-2B: If special-status plants are identified within Project impact areas, one of the following measures shall apply:

2B-1: If feasible, the Project shall be adjusted to avoid impacts to special-status plants. If modifications can be made to avoid special-status species, the installation of protective fencing may be necessary to prevent accidental encroachment. If

adjustment of construction areas or methods is not feasible, MM BIO 2B-2 shall apply.

2B-2: If there is no feasible alternative to special-status plant species impacts, OPUD shall mitigate for impacts to special-status plants. A Mitigation Plan shall be prepared and implemented that provides for plant salvage, transplantation, seed collection and replanting, and/or topsoil collection and replacement as appropriate for the species identified within the project impact area. Transplantation or seed placement shall be within suitable habitat within restored habitat after completion of construction for temporary impacts or within offsite habitat at a mitigation site for permanent impacts. The Mitigation Plan shall outline monitoring requirements to ensure successful establishment of special-status plants, performance criteria established are achieved, and no net loss of special-status plants after the prescribed monitoring period.

7.2.4 Special-Status Wildlife

7.2.4.1 Vernal Pool Branchiopods

Seasonally inundated wetlands, vernal pools, ditches and depressions provided suitable habitat for vernal pool branchiopods (VPBs) including the listed vernal pool fairy shrimp (*Branchinecta lynchi*) and vernal pool tadpole shrimp (*Lepidurus packardi*). There are two occurrences of vernal pool fairy shrimp located less than 0.5 miles from the northern portion of the project site (CNDDB, 2022) that occur in seasonally inundated roadside habitat similar to wet ditch and depression habitat observed within the study area. There are no classic vernal pool landscapes within the study area, but potentially suitable habitat for VPBs occurs in seasonally inundated ditches and depressions that provide a sufficient hydroperiod primarily along Rancho Road (Figures 2A through 2T). Due to proximity to the roadway, habitat in the Project area is often highly disturbed by offroad vehicle use, trash dumping, and other urban influences and therefore may be suboptimal for fairy shrimp occurrence; however, given proximity to other occurrences of this species in similar roadside habitat, occurrence cannot be ruled out.

Project impacts to seasonally inundated ditches and depressions may provide habitat for VPBs, particularly the vernal pool fairy shrimp. Because of this, there is some potential for Project related impacts to VPBs in locations where impacts to seasonally inundated ditches and depressions could not be avoided or where workspaces and trench installed pipeline will occur in close proximity to these features. Construction of these features may have an impact on VPBs. **(Potentially significant).**

Mitigation BIO-3:

A Section 7 Consultation with USFWS shall be conducted to analyze the direct and indirect effects on listed species and to obtain regulatory permits and authorizations for impacts to listed species and loss of habitat. Measures and requirements outlined in agency authorizations may supersede the following measures.

Indirect Impacts:

The trench installed pipeline within Rancho Road is proposed to be constructed in or on the shoulder of the existing paved roadway and will not directly impact seasonally inundated ditch or depression features. Trench installation of the pipeline alignment on

this road will involve construction in close proximity to potentially suitable habitat for VPBs in seasonally inundated ditches and depressions immediately adjacent to the roadway. Additionally, HDD workspace at several locations occurs immediately adjacent to potentially suitable habitat for VPBs. Indirect impacts could occur in areas where construction will be in close proximity to seasonally inundated ditch and depression features. These include the following:

- Pipe string staging area off north end of Rancho Road at the SR 65 HDD crossing
- Trench installed pipelines in the paved roadway or disturbed road shoulder on Rancho Road
- Pipe string staging area adjacent to Shimer Road at the SR HDD crossing
- HDD workspace and pipe stating area southeast of Kimball Creek and northeast side of Rancho Road
- Bore pit locations in the paved road and disturbed road shoulder on Rancho Road at the Virginia Creek crossing.

BIO-3A: Trench excavation and stockpiling for pipeline installation shall be entirely located within the paved roadway or disturbed shoulder on Rancho Road in areas where seasonally wet ditches and depressions were mapped adjacent to the roadway. Equipment staging and trench excavation in these areas will be limited to designated workspace areas in the paved roadway and shoulder. To reduce the potential for indirect impacts to seasonally inundated ditches and depressions in close proximity to construction activities, but where no direct impacts will occur, the following measures shall apply:

3A-1: Prior to the initiation of construction, crews shall attend an environmental Awareness Training Program will include information regarding the potential presence of listed branchiopod species and the importance of avoiding impacts to these species and their habitat.

3A-2: All work shall be conducted during the dry season when potential habitat features on or near the proposed pipeline installation areas are dry.

3A-3: Fencing shall be placed and maintained to delineate the approved work areas and prevent encroachment on seasonally inundated ditch and depression features. A qualified biologist shall oversee the installation of fencing. Once fencing is installed, a biologist will inspect fencing weekly to ensure its integrity and effectiveness.

3A-4: All excavation, construction staging, and stockpiles shall be limited to paved roadways, disturbed shoulder, and approved work areas.

3A-5: Storm water BMPs (silt fencing and straw waddles) shall be placed around construction disturbance and dirt stockpiles to reduce potential for erosion and sedimentation into potential branchiopod habitat features.

3A-6: No application of water (e.g., dust suppression) shall occur in seasonally inundated ditch or depression features without additional measures (such as barriers and/or use of low flow water truck nozzles) in place to keep water out of potential or known VPB habitat features during the dry season.

3A-7: Any groundwater encountered within the trench excavation shall not be discharged to areas where seasonally inundated ditch or depression features are located.

Direct Impacts:

Direct impacts may occur in areas where impacts to seasonally inundated ditch and depressions cannot be avoided including HDD workspace areas at two of the drainage crossings and Lift Station 23. These include:

- Pipe string staging area off north end of Rancho Road at the SR 65 HDD crossing
- HDD workspace on the northwest side of the Reed Creek crossing on Rancho Road
- HDD workspace on the northwest side of the Kimball Creek crossing on Rancho Road
- Lift Station 23 and the pipeline connection to Lift Station 23

BIO-3B: If avoidance of habitat features as outlined in BIO-3A is not feasible and direct impacts (temporary or permanent) will occur to seasonally inundated ditch and depression features, compliance with one of the following mitigation measures (3B-1 or 3B-2) shall be required:

3B-1: Prior to the initiation of construction, surveys conducted in accordance with USFWS protocols shall be conducted in all potentially suitable habitat to be impacted. If protocol surveys determine that the seasonally inundated ditch and depression features are not occupied by federally listed vernal pool branchiopod species, no further mitigation is required for impact to species habitat (mitigation for jurisdictional aquatic features consistent with BIO-1 may still apply). If protocol surveys detect the presence of federally listed species, then the following measures shall be implemented:

(a) Prior to the initiation of construction, construction crews shall attend an Environmental Awareness Training Program will include information regarding the potential presence of listed branchiopod species and the importance of avoiding impacts to these species and their habitat.
(b) All work shall be conducted during the dry season when potential habitat features on or near the proposed pipeline installation areas are dry.
(c) Fencing shall be placed and maintained around any avoided (preserved) seasonally inundated ditch and depression features to prevent encroachment. A qualified biologist shall oversee the installation of fencing. Once fencing is installed, a biologist will inspect fencing weekly to ensure its integrity and effectiveness.
(d) A USFWS approved biologist shall monitor construction activities in known or potential vernal pool branchiopod habitat that results in temporary or permanent impacts.
(e) For temporary impacts that will be restored after construction, a Site Restoration Plan outlining requirements for topsoil collection, preservation, and

restoration will be prepared and approved by the USFWS. Implementation of the approved Plan shall include the following requirements at minimum. Prior to excavation in locations with potential or known vernal pool branchiopod habitat, the uppermost soil layer that may contain branchiopods eggs (cysts) shall be collected, labelled, and stored under appropriate climatic conditions until construction in temporary impact areas is complete. Once construction is complete, topsoil shall be placed back in the feature from which it was collected.

(f) For permanent impacts, loss of vernal pool branchiopod habitat shall be mitigated through the purchase of mitigation credits at a USFWS approved mitigation bank in accordance with mitigation ratios approved by the USFWS.

3B-2: If the applicant chooses not to conduct protocol-level surveys, they may assume presence of listed vernal pool branchiopod species within seasonally inundated ditch and depression features that provide potentially suitable habitat. If presence of listed species is assumed, then measures 3B-1(a) and 3B-1(f) outlined above shall apply to mitigate impacts to a less than significant level.

7.2.4.2 Valley Elderberry Longhorn Beetle

Surveys during the blooming season identified four elderberry shrubs within 165 feet (VELB encroachment buffer) of Project activities along Rancho Road; however, these shrubs were east of the railroad and would not be impacted by the Project by accidental encroachment. A single elderberry shrub occurs on the shoulder of Forty Mile Road and within 20 feet (VELB core area) of a proposed trench installed pipeline within the paved roadway. This shrub was very small, though several stems were greater than one inch in diameter. The shrub is exposed to frequent disturbance within 20 feet of the canopy due to its location at the edge of pavement on Forty Mile Road. No emergence holes occur on the shrub and this shrub is highly disjunct from riparian habitat and other elderberry shrubs. It is very unlikely that the VELB occurs, though habitat is present due to the presence of this single shrub and could be indirectly impacted **(Potentially significant).**

Mitigation BIO-4:

Implementation of the Project will not require removal of the shrub; however, a 20-foot protective buffer is not possible because that would extend the buffer into the paved travel lane. The following measures will ensure that the blue elderberry shrub is not directly impacted by the Project. Prior to the initiation of construction, a Section 7 Consultation with USFWS shall be conducted to analyze the direct and indirect effects on listed species and to obtain regulatory permits and authorizations for impact to listed species and loss of habitat. Measures and requirements outlined in agency authorizations may supersede the following measures.

BIO-4A: A 20-foot exclusion zone extending from the dripline of the shrub shall be maintained during construction in all directions away from the pavement. The exclusion zone will be reduced on the pavement side of the shrub to the edge of gravel roadway shoulder so that the fencing will not interfere with the roadway. Consistent with measures outlined by the USFWS to mitigate potential impacts to VELB, the following measures shall be implemented:

4A-1: Fence and flag the elderberry shrub to be avoided and provide a minimum setback of at least 20 feet from the dripline of the elderberry plant for ground disturbance activities (e.g. trenching) to ensure that activities will not damage or kill the elderberry shrub. Due to its location at the edge of pavement on Forty Mile Road, the 20-foot setback will be adjusted (reduced) consistent with the edge of the gravel road shoulder so that fencing does not interfere with the paved roadway.
4A-2: Prior to the initiation of any construction, environmental training shall brief the contractors and key employees of the need to avoid any impacts to the elderberry plants, and to advise them of penalties associated with damage or destruction of the plants. The work crew shall be instructed regarding the status of the VELB and the need to protect its elderberry host plant, and possible penalties for non-compliance with avoidance and minimization measures.
4A-3: A qualified biologist shall monitor the work area at project-appropriate intervals to assure that all avoidance and minimization measures are implemented. The amount and duration of monitoring will depend on the timing of Project activities, and shall be determined in coordination with the USFWS biologist.
4A-4: As much as feasible, all activities within 165 feet of the elderberry shrub, will be conducted outside the flight season of the VELB (March-July).
4A-5: No insecticides, herbicides, fertilizers, or other chemicals that might harm the VELB or its host plant shall be used within 100 feet of any elderberry plant with a stem measuring 1.0 inch or greater in diameter at ground level.
4A-6: Mechanical vegetation removal within the dripline of an elderberry shrub shall be limited to the season when adult VELB are not active (August-February) and shall avoid damaging the elderberry.
4A-7: Erosion control will be implemented, and the affected construction area shall be revegetated with appropriate native plants.

7.2.4.3 Giant Garter Snake

Potentially suitable habitat occurs within Kimball Creek and active rice fields in the Project area based on the presence of the three habitat components necessary to support giant garter snake (GGS), which include, aquatic habitat in the summer with emergent vegetation and a prey base, an upland component near aquatic habitat for thermoregulation and summer shelter in burrows, and an upland refugia component for use as winter hibernacula (USFWS, 1993). Reeds Creek may also provide potentially suitable habitat for GGS; however, the pipeline will be installed using trenchless techniques under Reeds Creek and all Project activities are setback more than 200 feet from Reeds Creek, and therefore will not impact GGS or its habitat at this location. Other suitable habitat in the study area, including agricultural ditches and rice fields along Forty Mile Road, were in areas where pipeline installation activities are limited to the paved roadway and will avoid impacts to suitable aquatic or upland habitat.

Impacts associated with the construction of Lift Station 22 adjacent to Kimball Creek will impact suitable upland habitat for GGS and the loss of a small portion of suitable aquatic habitat within the northwest corner of a rice field associated with construction of Lift Station 23, which will be inactive at the time of construction, will result in a small amount of suitable aquatic habitat for GGS (**Potentially Significant).**

Mitigation BIO-5:

BIO-5A: The Project will result in approximately 0.12-acre of loss of rice field for the construction of Lift Station 23 and 0.10-acre of upland grassland habitat adjacent to Kimball Creek. Because these features provide potentially suitable upland and aquatic habitat for GGS, the following measures are identified.

5A-1: Prior to the initiation of construction, construction staff shall attend an Environmental Awareness Training Program that will include information regarding identification of giant gartersnake and its habitat, protection measures for the species, and procedures to follow if a giant gartersnake or unknown snake is observed.

5A -2: Construction of Lift Station 23 will occur when the rice field is inactive and has been dry for a minimum of 15 days.

5A -3: Construction of Lift Station 22 and Lift Station 23 and the HDD installation of pipelines under Kimball Creek, including all activities within 200 feet of Kimball Creek and the rice field at LS 23, shall be restricted to the period between May 1 and October 1. This is the active period for GGS when the potential for direct mortality is reduced because GGS can actively avoid disturbance.

5A -4: Prior to the start of the Kimball Creek HDD, construction of Lift Station 22, or the construction of Lift Station 23, a qualified biologist shall conduct a preconstruction survey for GGS at these locations prior to the initiation of disturbance. Exclusion fencing shall be installed, as directed by the qualified biologist, to isolate the workspace within 200 feet of suitable aquatic habitat and exclude snakes from the work areas. Exclusion fencing will be buried at the base to prevent snakes from moving under the fence into the construction area. Exclusion fencing shall be maintained for the duration of work in these areas and shall be routinely inspected by the qualified biologist to ensure the fencing is intact and effective. The workspace shall be inspected prior to the start of work each day to ensure that no snakes have entered the work area.

5A -5: If a GGS is observed, the USFWS and CDFW shall be notified immediately. Construction will be suspended in the area until the snake leaves the site of its own volition.

5A -6: All excavations within 200 feet of suitable GGS habitat shall be covered or have escape ramps installed to prevent entrapment prior to the end of work each day. These excavations shall be inspected by the qualified biologist prior to the start of work the following day.

5A -7: Erosion control materials shall consist of tightly woven fibers and netting to prevent entanglement of reptiles and amphibians. No monofilament materials will be allowed.

7.2.4.4 Western pond turtle

The project site has potentially suitable habitat for western pond turtle at the drainage crossings and wetlands in the study area, though suitable basking habitat was limited.

Suitable habitat for western pond turtle includes aquatic habitat with basking sites available for thermoregulation and nearby upland breeding habitat. Because of the proximity of the Project to potential western pond turtle habitat, there is potential for impact to the western pond turtle. **(Potentially significant)**.

Mitigation BIO-6:

BIO-6A: A preconstruction survey for western pond turtle shall be conducted no more than 48 hours prior to the start of construction within 150 feet of the drainages or other suitable wetland habitat. If no western pond turtles are observed, no further mitigation is necessary. If a western pond turtle is observed within the Project area, a qualified biologist will relocate the individual to a suitable habitat location outside of the construction area. If a pond turtle nest is identified, exclusion fencing shall be placed a minimum of 25 feet around the nest and disturbance to the area will be avoided until the hatchlings have emerged. The nest will be monitored daily by the qualified biologist to ensure nestlings emerge to a suitable habitat area safely outside the construction zone.

7.2.4.5 Swainson's Hawks

Nest Disturbance. The state-threatened Swainson's hawk is known to nest and forage in the Project vicinity and suitable nest trees occur within the study area, particularly within riparian habitat with large trees surrounded by foraging habitat in agricultural fields and grasslands. The project site is in a region that has very high Swainson's hawk nesting activity. There are approximately 73 nesting occurrences within 10 miles of the study area. The nearest occurrence (Occ. # 1529) is from 2003 and is less than 400 feet west of the pipeline alignment on Forty Mile Road (CDFW, 2022). This species was not observed during field surveys because surveys were conducted during the winter when Swainson's hawk is not present in California.

Because Swainson's hawk is a State-listed species, and there are known nesting occurrences in the vicinity of the Project area, there is the potential that construction near Swainson's hawk nesting areas could disrupt breeding activities if construction occurs during the nesting season.

The following mitigation measure would reduce impacts to nesting Swainson's hawk resulting from Project construction **(Potentially significant).**

Mitigation BIO-7 – Nest Disturbance:

BIO-7A: If construction or vegetation removal work occurs outside of Swainson's hawk nesting season (August 31 to Feb 1), impacts to the Swainson's hawk would be avoided. Surveys would not be required for work conducted during that part of the year, and no further mitigation for nest disturbance would be required. If construction is scheduled to occur during the Swainson's hawk nesting season (Feb 1 to August 31), the following measures would be required to reduce impacts to a less than significant level.

BIO-7B: If project activities occur between February 1 to August 31, surveys shall be conducted by a qualified biologist for active Swainson's hawk nests. OPUD or its contractor shall conduct a protocol-level survey in conformance with the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley,* (Swainson's Hawk Technical Advisory Committee, 2000) hereby incorporated by

reference. This protocol prescribes minimum standards for survey equipment, mode of survey, angle and distance to tree, speed, visual and audible clues, distractions, notes and observations, and timing of surveys. If the surveys show that there are no active Swainson's hawk nests within 0.25-mile of construction activities, then no further mitigation for nest disturbance will be required. If active Swainson's hawk nests are identified near the project area, a 0.25-mile nest protection buffer shall be identified, and the following measures shall be required:

> **7B-2:** Apply a nest protection buffer with a minimum distance of 0.25-mile from an active nest. Postpone Project activities within the nest protection buffer until after the young have fledged and are no longer dependent on the nest tree. The minimum nest protection buffer may be reduced in coordination with CDFW if existing site conditions, habituation to disturbance, proposed disturbance levels, and nest concealment or barriers between the nest and activities indicate a reduced buffer would be effective.
>
> **7B-3:** If it is not possible to postpone Project activities within the minimum nest protection buffer, construction activities may proceed with CDFW approval and monitoring of the nest by a qualified raptor biologist. If the monitoring biologist observes signs of distress, they shall have the authority to stop construction work and coordinate with CDFW to establish additional protection measures to ensure avoidance of nest abandonment prior to the re-start of Project activities.

BIO-7C: A written report summarizing the pre-construction survey results shall be provided to OPUD and CDFW within 30 days of survey completion.

Loss of Foraging Habitat: Swainson's hawks generally forage within 10 miles of their nest tree, and more commonly within five miles of their nest tree (CDFW, 1994). According to the CDFW Staff Report regarding Mitigation for Impacts to Swainson's Hawks (CDFW, 1994), the following vegetation types are considered small mammal and insect foraging habitat for Swainson's hawks: alfalfa; fallow fields; beet, tomato, and other low-growing row or field crops; dry-land and irrigated pasture; rice land (when not flooded); and cereal grain crops (including corn after harvest). Small disjunct parcels of habitat seldom provides foraging habitat; therefore, infill development in urbanized areas which have less than five acres of foraging habitat and are surrounded by existing urban development, would not be considered foraging habitat unless within 0.25-mile of a nest tree (CDFW, 1994).

Swainson's hawk is a state-listed species, because approximately 0.6-acre of foraging habitat (annual grassland and agricultural land) would be removed with construction of Pump Station 21 (0.24-acre), Lift Station 22 (0.10-acre), Lift Station 23 (0.12-acre) and Pump Station 24 (0.14-acre), and due to the abundance of potential nesting habitat in close proximity to the pipeline alignment, this would be a potentially significant impact, and the following compensatory mitigation would be required. **(Potentially significant).**

Mitigation BIO-8 – Foraging Habitat:

BIO-8A: If nesting occurrences of Swainson's hawks occur within 10 miles of the permanent impact areas (e.g. pump station, lift station, and WP sites) mitigation for loss of foraging habitat shall be required. Generally, CDFW requires mitigation for loss of Swainson's hawk foraging habitat based on the presence of active nests within 10 miles of the Project. If an active nest site occurs within ten miles of the Project, the applicant will be required by CDFW to provide off-site foraging habitat management lands at a specified Mitigation Ratio that is based on nest proximity to the project site, as follows:

Distance from Project Boundary	Mitigation Acreage Ratio*
Within 1 mile	1.00:1**
Between 1 and 5 miles	0.75:1
Between 5 and 10 miles	0.50:1
*Ratio means [acres of mitigation land] to [acres of foraging habitat impacted]. **This ratio shall be 0.5:1 if the acquired lands can be actively managed for prey production.	

CDFW provides options for off-site habitat management by fee title acquisition or conservation easement acquisition with a CDFW-approved management plan, and by the acquisition of comparable habitat. Mitigation credits may be obtained through a CDFW-approved mitigation bank for Swainson's hawk with a service area that covers the Project site.

7.2.4.6 Burrowing Owl

The burrowing owl, a California Species of Special Concern, is known to occur within grassland habitat in the region. Suitable burrowing owl habitat is present at the southern end of the wastewater treatment plant where an extensive California ground squirrel colony was observed on an earthen berm. Within this colony, several of the burrows showed signs of renovation by burrowing owls. Additionally, grassland habitat with ground squirrel burrows present could provide habitat. Due to the proximity of suitable habitat, impact to nesting burrowing owls could occur as a result of construction disturbance. Nest disturbance would be a potentially significant impact, and the following mitigation is recommended **(Potentially significant).**

Mitigation BIO-9

BIO-9A: A pre-construction survey of areas providing suitable burrowing owl habitat within 1,640 feet (500 meters) of construction at the WWTP shall be conducted by a qualified raptor biologist within 14 days prior to ground disturbance. Surveys shall follow guidelines outlined by CDFW in the *Staff Report on Burrowing Owl Mitigation* (CDFW, 2012).

If the required pre-construction surveys show there are no active burrowing owl nests within the 1,640 feet (500 meters) of construction activities, then no further mitigation for burrowing owl nest disturbance will be required. If occupied burrows are identified during surveys the following shall be required:

BIO-9B: If an occupied burrow is discovered during pre-construction surveys, a protective buffer consistent with CDFW guidelines shall be established. Appropriate protective buffers depend on the type of burrowing owl occurrence (nesting or overwinter), level of

project disturbance, and time of year that the disturbance occurs. Nest protective buffers consistent with CDFW guidelines are outlined below.

Location	Time of Year	Level of Disturbance		
		Low	Med	High
Nesting Site	April 1 – Aug 15	200 m	500 m	500 m
Nesting Site	Aug 16 – Oct 15	200 m	200 m	500 m
Nesting Site	Oct 16 – March 31	50 m	100 m	500 m

A reduced buffer may be implemented upon CDFW approval and based upon site specific conditions, nesting phenology, and the recommendation of the qualified biologist.

BIO-9C: A written report summarizing the pre-construction survey results shall be provided to OPUD and CDFW within 30 days of survey completion.

BIO-9D: If occupied burrows cannot be avoided, the applicant shall conduct a survey during the non-nesting season (September 30 through January 31) to identify occupied burrows within the disturbance footprint, exclude burrowing owls from burrows within the disturbance footprint, and then collapse the burrows in accordance with methodology outlined by the CDFW. Burrowing owl exclusion and burrow collapse must be conducted in coordination with CDFW and with the approval of CDFW.

7.2.4.7 Nesting Birds

The Project has the potential to impact nesting migratory birds, including special-status species such as tricolored blackbird, Modesto song sparrow, and other MBTA protected species. Suitable habitat for tree and ground-nesting raptors, including special-status species such as northern harrier, or white tailed kite occur in the Project area. Construction disturbance has the potential to impact nesting birds and the following mitigation is recommended **(Potentially significant).**

Mitigation BIO-10:

BIO-10A: If construction or vegetation removal work occurs outside of nesting season (August 31 to Feb 1), impacts would be avoided. Surveys would not be required for work conducted during this part of the year, and no further mitigation for nest disturbance would be required. If construction is scheduled to occur during nesting season (Feb 1 to August 31), the following measures would reduce impacts to a less than significant level.

BIO-10B: If vegetation removal or construction activities occur between February 1 to August 31, pre-construction surveys shall be conducted by a qualified biologist of suitable habitat within 500 feet of worksites and disturbance areas for passerines and within 0.25-mile of worksites and disturbance areas for raptors. Pre-construction surveys shall be conducted within 14 days prior to the start of construction of vegetation removal. If nests are identified, a suitable nest protection buffer shall be recommended by the qualified biologist based on the species, nest phenology, and site-specific conditions. Construction

activities shall be prohibited within the established buffer zones until the young have fledged. If a lapse in Project-related activities occurs for 14 days or longer during the nesting season, another focused survey shall be conducted before construction activities can be reinitiated.

BIO-10C: A written report summarizing the pre-construction survey results shall be provided to OPUD and CDFW within 30 days of survey completion.

7.3 EVALUATION OF COMPLIANCE WITH FEDERAL REGULATIONS

This biological technical report considers the potential for Project activities to affect biological resources protected by State and Federal regulation, including species listed as Threatened or Endangered by the FESA or CESA, wetlands and WoUS, and migratory birds protected by the MBTA (see Section 7.2 above for impacts analysis to resources protected by these regulations). This section of the report includes an analysis of compliance with other Federal Environmental Regulations related to biological resources.

7.3.1 Bald and Golden Eagle Protection Act

The Project has the potential to affect nesting bald or golden eagles protected by the Bald and Golden Eagle Protection Act. Implementation of Measure BIO-10 (Section 7.2) addresses the potential for Project activities to affect raptors, including eagles, and provides mitigation measures to reduce those impacts.

7.3.2 Federal Endangered Species Act and Fish and Wildlife Coordination Act

The Project has the potential to affect listed species. A Section 7 Consultation will be conducted between the Federal Lead Agency and the USFWS. A Biological Assessment has been prepared to facilitate the Section 7 Consultation and ensure compliance with the FESA.

The Project will not impact the waters of a stream or other water body by impounding, diverting, or deepening a channel or otherwise modify flow as a result of this Project and will not require compliance with the Fish and Wildlife Coordination Act.

7.3.3 Magnuson-Stevens Fishery Conservation and Management Act (MSA)

EFH is defined as "…those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity". "Waters", as used in this definition, are defined as "aquatic areas and their associated physical, chemical, and biological properties that are used by fish". These may include "…areas historically used by fish where appropriate; 'substrate' to include sediment, hard bottom, structures underlying the waters, and associated biological communities. Necessary" means, "the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem." EFH is described as a subset of all habitats occupied by a species (NMFS, 1998).

The Olivehurst area is within the Honcut Headwaters-Lower Feather River and Upper Bear River-Below Camp Far West watersheds (Hydrologic Unit Code 18020159 and 18020126), which are mapped as Chinook salmon EFH. However, there is no potential for the Project to affect EFH because Project activities will avoid impacts to waterways through trenchless installation methods and will result in no impacts to fish.

7.3.4 Marine Mammal Protection Act

The Project has no potential to affect marine mammals due to the distance of the Project site from marine habitat and because marine mammals are not expected to occur within the Project area.

7.3.5 Migratory Bird Treaty Act

The Project has the potential to affect migratory birds protected by the MBTA. Implementation of measure BIO-10 (Section 7.2) addresses the potential for Project activities to affect bird species protected by the MBTA and provides mitigation measures to reduce those impacts.

7.3.6 Wetlands Protection (Section CWA Section 404 and 401 Wetlands)

Natural drainage crossings, wetlands, and other aquatic resources occur within the Project site that are potential waters of the U.S. and/or wetlands regulated under Sections 404 and 401 of the Clean Water Act. Project design measures such as trenchless pipeline installation under waterways are included in the Project Description to minimize the potential for impact to Waters of the U.S. Implementation of measure BIO-1 (Section 7.2) will ensure compliance with the Federal Clean Water Act.

7.3.7 Rivers and Harbors Act

There are no Navigable Waters of the U.S. on the project site, and Project implementation will have no effect on navigable waters of the U.S.

7.3.8 Wild and Scenic Rivers Act

The project site is within the Honcut Headwaters-Lower Feather River and Upper Bear River watersheds (Hydrologic Unit Code 18020159 and 18020126). There are no designated Wild and Scenic Rivers adjacent to the project site, and Project implementation will not affect any designated Wild and Scenic Rivers.

8.0 REFERENCES

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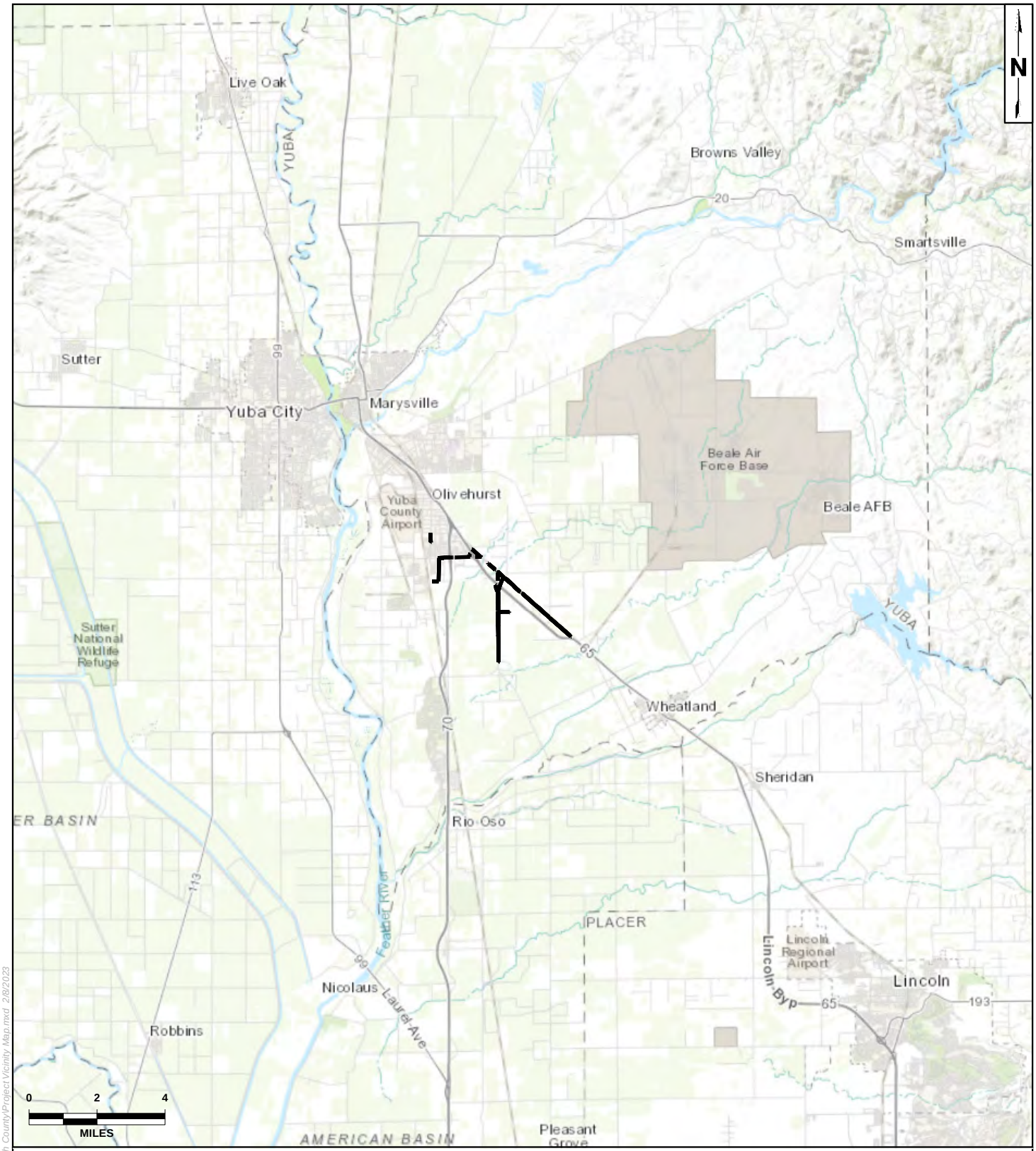
FIGURES



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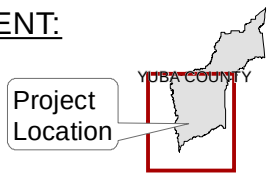

Source: Esri Online Topo Basemap, County of Yuba
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Notes: This map was created for informational and display purposes only.

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ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME:	PROJECT NUMBER:	DATE:
OPUD SOUTH COUNTY INFRASTRUCTURE PROJECT YUBA COUNTY, CA	2002-6911	February 2023

PROJECT VICINITY MAP

FIGURE 1

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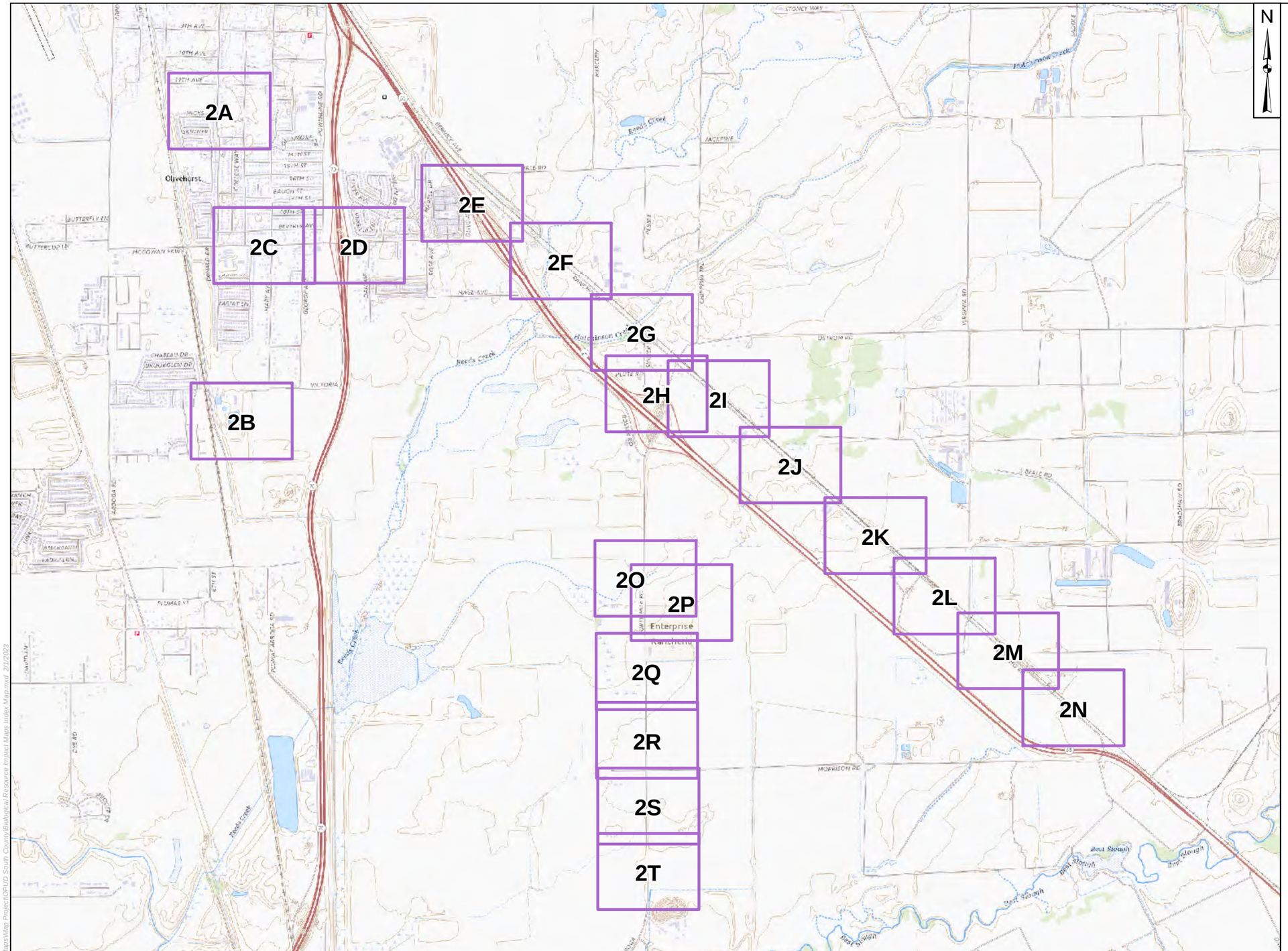

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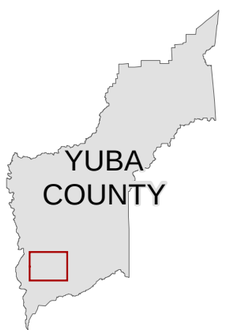
Mapbook Extent

MAP EXTENT:



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FEET

1 inch = 2,500 feet

Source: Esri Online Imagery Basemap
Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet
Notes: This map was created for informational and display purposes only.

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PROJECT NAME: OPUD WATER/WASTEWATER IMPROVEMENTS PROJECT YUBA COUNTY, CA

PROJECT NUMBER: 2002-6911

DATE: February 2023

BIOLOGICAL RESOURCE IMPACT INDEX MAP

FIGURE 2

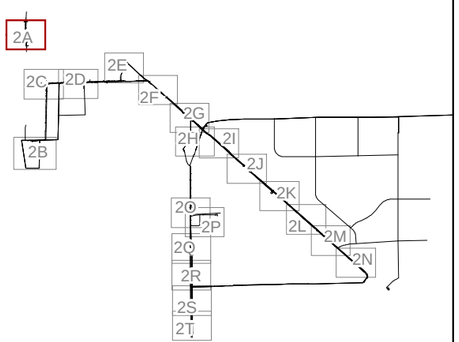
Z:\GIS Projects\GIS Mxds\Map Project\OPUD South County\Biological Resource Impact Maps Index Map.mxd 2/1/2023

N

LEGEND:

- Proposed Force Main
- Lift Station
- Pump Station

MAP EXTENT:



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Source: Esri Online Imagery Basemap
Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet
Notes: This map was created for informational and display purposes only.

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PROJECT NAME:	OPUD SOUTH COUNTY INFRASTRUCTURE PROJECT YUBA COUNTY, CA
PROJECT NUMBER:	2002-6911
DATE:	February 2023

BIOLOGICAL RESOURCE IMPACT MAP

FIGURE 2A

Z:\GIS Projects\GIS Maps\Map Project\OPUD South County\Biological Resource Impact Maps_Dec2022.mxd 2/13/2023

N

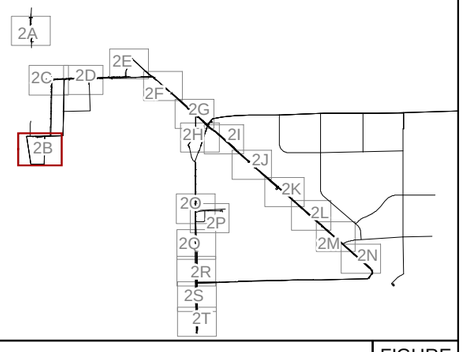
LEGEND:

- Proposed Force Main

Biological Resources

- Large Burrow Cluster

MAP EXTENT:



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PROJECT NAME:	OPUD SOUTH COUNTY INFRASTRUCTURE PROJECT YUBA COUNTY, CA
PROJECT NUMBER:	2002-6911
DATE:	February 2023

BIOLOGICAL RESOURCE IMPACT MAP

FIGURE 2B

Z:\GIS Projects\GIS Maps\Map Project\OPUD South County\Biological Resource Impact Maps_Dec2022.mxd, 2/13/2023

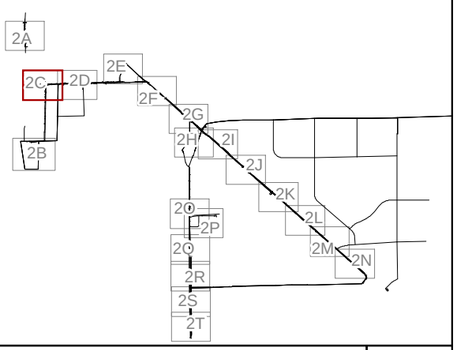
N

LEGEND:

Project Features

- △ HDD / Bore Pit Location
- Proposed Force Main
- Proposed Sanitary Sewer
- Trenchless Crossing - Sewer
- HDD / Boring Workspace
- Pump Station

MAP EXTENT:



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1 inch = 200 feet

Source: Esri Online Imagery Basemap
Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet
Notes: This map was created for informational and display purposes only.

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PROJECT NAME:	OPUD SOUTH COUNTY INFRASTRUCTURE PROJECT YUBA COUNTY, CA
PROJECT NUMBER:	2002-6911
DATE:	February 2023

BIOLOGICAL RESOURCE IMPACT MAP

FIGURE 2C

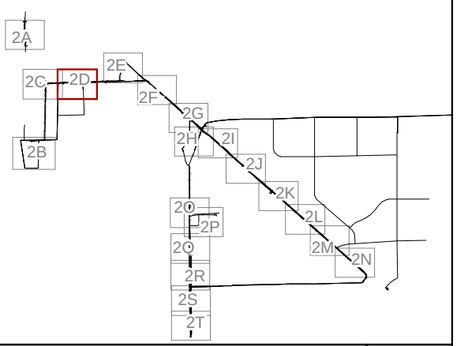
Z:\GIS Projects\GIS Maps\Map Projects\OPUD South County\Biological Resource Impact Maps_Dec2022.mxd 2/13/2023

LEGEND:

Project Features

- △ HDD / Bore Pit Location
- Proposed Force Main
- Trenchless Crossing - Sewer
- HDD / Boring Workspace
- Pipe String Laydown Space
- Roadside Ditch / Depression, Seasonally Inundated

MAP EXTENT:



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1 inch = 200 feet

Source: Esri Online Imagery Basemap
Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet
Notes: This map was created for informational and display purposes only.

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PROJECT NAME:	OPUD SOUTH COUNTY INFRASTRUCTURE PROJECT YUBA COUNTY, CA
PROJECT NUMBER:	2002-6911
DATE:	February 2023

BIOLOGICAL RESOURCE IMPACT MAP

FIGURE 2D

Z:\GIS Projects\GIS Maps\Map Projects\OPUD South County\Biological Resource Impact Maps_Dec2022.mxd, 2/13/2023

LEGEND:

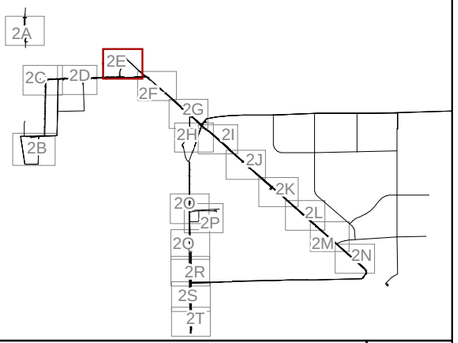
Project Features

- HDD / Bore Pit Location
- Proposed Force Main
- Proposed Water Main
- Trenchless Crossing - Sewer
- Trenchless Crossing - Water
- HDD / Boring Workspace
- Pipe String Laydown Space

Biological Resources

- Wet Depression, Seasonally Inundated
- Roadside Ditch / Depression, Seasonally Inundated

MAP EXTENT:



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

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PROJECT NAME: OPUD SOUTH COUNTY INFRASTRUCTURE PROJECT YUBA COUNTY, CA
PROJECT NUMBER: 2002-6911
DATE: February 2023

BIOLOGICAL RESOURCE IMPACT MAP

FIGURE 2E

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N

LEGEND:

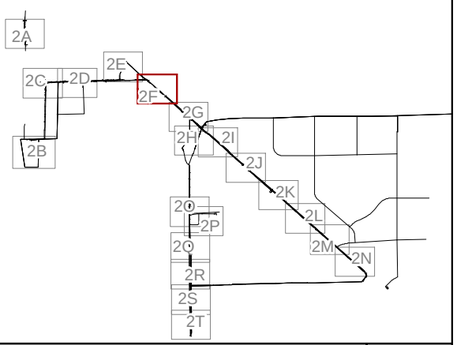
Project Features

- HDD / Bore Pit Location
- Fire Hydrant
- Proposed Force Main
- Proposed Water Main
- Trenchless Crossing - Sewer
- Trenchless Crossing - Water
- HDD / Boring Workspace
- Pipe String Laydown Space

Biological Resources

- Wet Depression, Seasonally Inundated
- Roadside Ditch, Wetland Vegetation
- Roadside Ditch / Depression, Seasonally Inundated

MAP EXTENT:



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PROJECT NAME:	OPUD SOUTH COUNTY INFRASTRUCTURE PROJECT YUBA COUNTY, CA
PROJECT NUMBER:	2002-6911
DATE:	February 2023

BIOLOGICAL RESOURCE IMPACT MAP

FIGURE 2F

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LEGEND:

Project Features

- HDD / Bore Pit Location
- Fire Hydrant
- Proposed Force Main
- Proposed Sanitary Sewer
- Proposed Water Main
- Trenchless Crossing - Sewer
- Trenchless Crossing - Water
- HDD / Boring Workspace
- Pipe String Laydown Space
- Pump Station

Biological Resources

- Blue Elderberry Shrub Location
- VELB Core Area (Avoidance Fencing)
- VELB Encroachment Buffer
- Roadside Ditch / Depression, Seasonally Inundated

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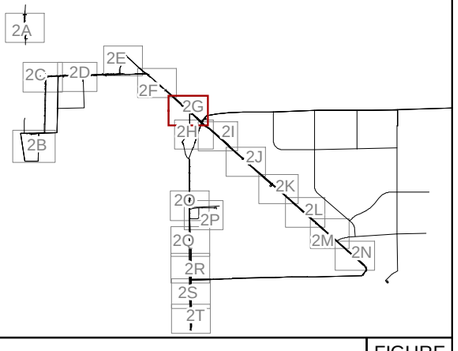

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PROJECT NAME:	OPUD SOUTH COUNTY INFRASTRUCTURE PROJECT YUBA COUNTY, CA
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DATE:	February 2023

BIOLOGICAL RESOURCE IMPACT MAP

FIGURE 2G

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N

LEGEND:

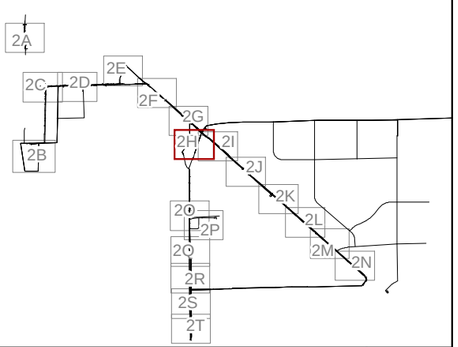
Project Features

- HDD / Bore Pit Location
- Fire Hydrant
- Proposed Force Main
- Proposed Sanitary Sewer
- Proposed Water Main
- Trenchless Crossing - Sewer
- HDD / Boring Workspace
- Pipe String Laydown Space

Biological Resources

- Wet Depression, Seasonally Inundated
- Roadside Ditch / Depression, Seasonally Inundated

MAP EXTENT:



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PROJECT NAME: OPUD SOUTH COUNTY INFRASTRUCTURE PROJECT YUBA COUNTY, CA
PROJECT NUMBER: 2002-6911
DATE: February 2023

BIOLOGICAL RESOURCE IMPACT MAP

FIGURE 2H

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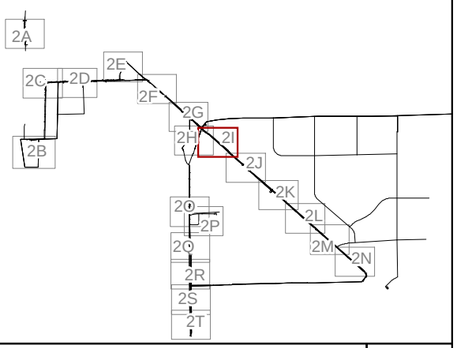
LEGEND:

- Fire Hydrant
- Proposed Force Main
- Proposed Sanitary Sewer
- Proposed Water Main
- Pipe String Laydown Space

Biological Resources

- Wet Depression, Seasonally Inundated
- Roadside Ditch / Depression, Seasonally Inundated

MAP EXTENT:



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PROJECT NAME: OPUD SOUTH COUNTY INFRASTRUCTURE PROJECT YUBA COUNTY, CA
PROJECT NUMBER: 2002-6911
DATE: February 2023

BIOLOGICAL RESOURCE IMPACT MAP

FIGURE 2I

Z:\GIS Projects\GIS Maps\Map Project\OPUD South County\Biological Resource Impact Maps_Dec2022.mxd 2/13/2023

LEGEND:

Project Features

- HDD / Bore Pit Location
- Fire Hydrant
- Proposed Force Main
- Proposed Sanitary Sewer
- Proposed Water Main
- Trenchless Crossing - Sewer
- Trenchless Crossing - Water
- HDD / Boring Workspace
- Pipe String Laydown Space
- Pump Station

Biological Resources

- Wet Depression, Seasonally Inundated
- Wetland Vegetation
- Roadside Ditch / Depression, Seasonally Inundated

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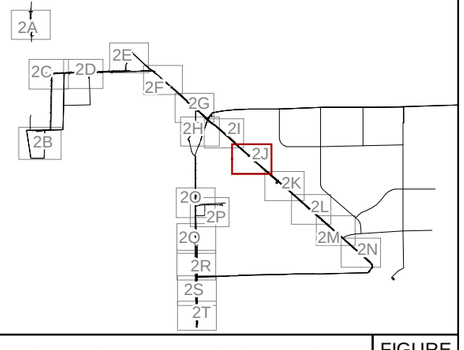

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PROJECT NAME:	OPUD SOUTH COUNTY INFRASTRUCTURE PROJECT YUBA COUNTY, CA
PROJECT NUMBER:	2002-6911
DATE:	February 2023

BIOLOGICAL RESOURCE IMPACT MAP

FIGURE 2J

Z:\GIS Projects\GIS Maps\Map Project\OPUD South County\Biological Resource Impact Maps_Dec2022.mxd, 2/13/2023

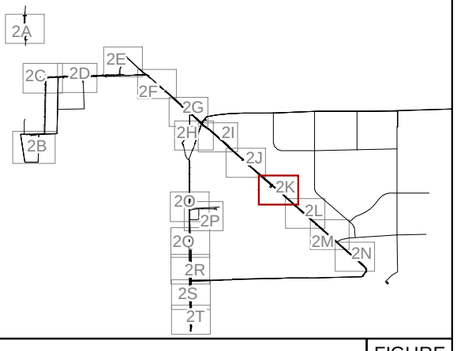
LEGEND:

- Fire Hydrant
- Proposed Force Main
- Proposed Sanitary Sewer
- Proposed Water Main

Biological Resources

- Wet Depression, Seasonally Inundated
- Roadside Ditch / Depression, Seasonally Inundated

MAP EXTENT:



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PROJECT NAME:	OPUD SOUTH COUNTY INFRASTRUCTURE PROJECT YUBA COUNTY, CA
PROJECT NUMBER:	2002-6911
DATE:	February 2023

BIOLOGICAL RESOURCE IMPACT MAP

FIGURE 2K

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N

LEGEND:

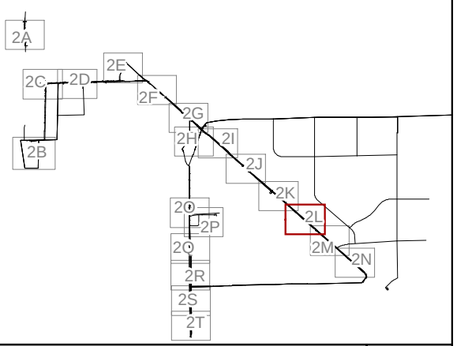
Project Features

- HDD / Bore Pit Location
- Fire Hydrant
- Proposed Force Main
- Proposed Sanitary Sewer
- Proposed Water Main
- Trenchless Crossing - Sewer
- Trenchless Crossing - Water
- HDD / Boring Workspace
- Lift Station

Biological Resources

- Wet Depression, Seasonally Inundated
- Roadside Ditch / Depression, Seasonally Inundated
- Rice Field

MAP EXTENT:



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FEET
1 inch = 200 feet

Source: Esri Online Imagery Basemap
Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet
Notes: This map was created for informational and display purposes only.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: OPUD SOUTH COUNTY INFRASTRUCTURE PROJECT YUBA COUNTY, CA

PROJECT NUMBER: 2002-6911

DATE: February 2023

BIOLOGICAL RESOURCE IMPACT MAP

FIGURE 2L

Z:\GIS Projects\GIS Maps\Map Projects\OPUD South County\Biological Resource Impact Maps_Dec2022.mxd 2/13/2023

N

LEGEND:

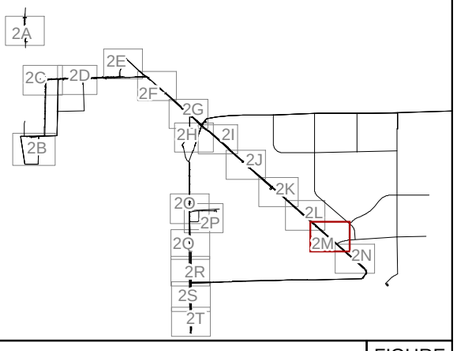
Project Features

- HDD / Bore Pit Location
- Fire Hydrant
- Proposed Force Main
- Proposed Sanitary Sewer
- Proposed Water Main
- Trenchless Crossing - Sewer
- Trenchless Crossing - Water
- HDD / Boring Workspace
- Lift Station

Biological Resources

- Wet Depression, Seasonally Inundated
- Roadside Ditch / Depression, Seasonally Inundated
- Approximate Wetland Boundary
- Rice Field

MAP EXTENT:



0 100 200
FEET
1 inch = 200 feet

Source: Esri Online Imagery Basemap
Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet
Notes: This map was created for informational and display purposes only.

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ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: OPUD SOUTH COUNTY INFRASTRUCTURE PROJECT YUBA COUNTY, CA
PROJECT NUMBER: 2002-6911
DATE: February 2023

BIOLOGICAL RESOURCE IMPACT MAP

FIGURE 2M

Z:\GIS Projects\GIS Maps\Map Project\OPUD South County\Biological Resource Impact Maps_Dec2022.mxd 2/13/2023

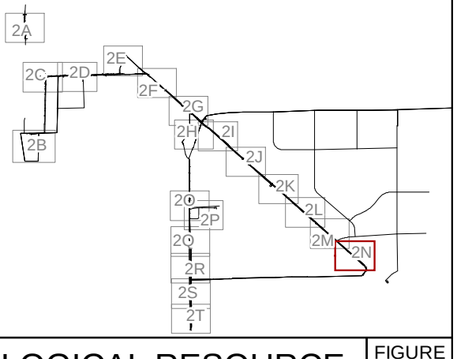
LEGEND:

- Fire Hydrant
- Proposed Force Main
- Proposed Sanitary Sewer
- Proposed Water Main

Biological Resources

- Wet Depression, Seasonally Inundated
- Roadside Ditch / Depression, Seasonally Inundated
- Approximate Wetland Boundary

MAP EXTENT:



0 100 200
FEET
1 inch = 200 feet

Source: Esri Online Imagery Basemap
Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet
Notes: This map was created for informational and display purposes only.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: OPUD SOUTH COUNTY INFRASTRUCTURE PROJECT YUBA COUNTY, CA
PROJECT NUMBER: 2002-6911
DATE: February 2023

BIOLOGICAL RESOURCE IMPACT MAP

FIGURE 2N

Z:\GIS Projects\GIS Maps\Map Project\OPUD South County\Biological Resource Impact Maps_Dec2022.mxd, 2/13/2023

N

LEGEND:

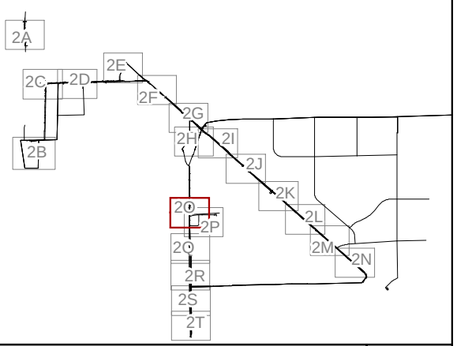
Project Features

- HDD / Bore Pit Location
- Fire Hydrant
- Proposed Force Main
- Proposed Sanitary Sewer
- Proposed Water Main
- Trenchless Crossing - Sewer
- Trenchless Crossing - Water
- HDD / Boring Workspace
- Lift Station

Biological Resources

- Wet Depression, Seasonally Inundated
- Roadside Ditch, Wetland Vegetation
- Rice Field

MAP EXTENT:



0 100 200
FEET
1 inch = 200 feet

Source: Esri Online Imagery Basemap
Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet
Notes: This map was created for informational and display purposes only.

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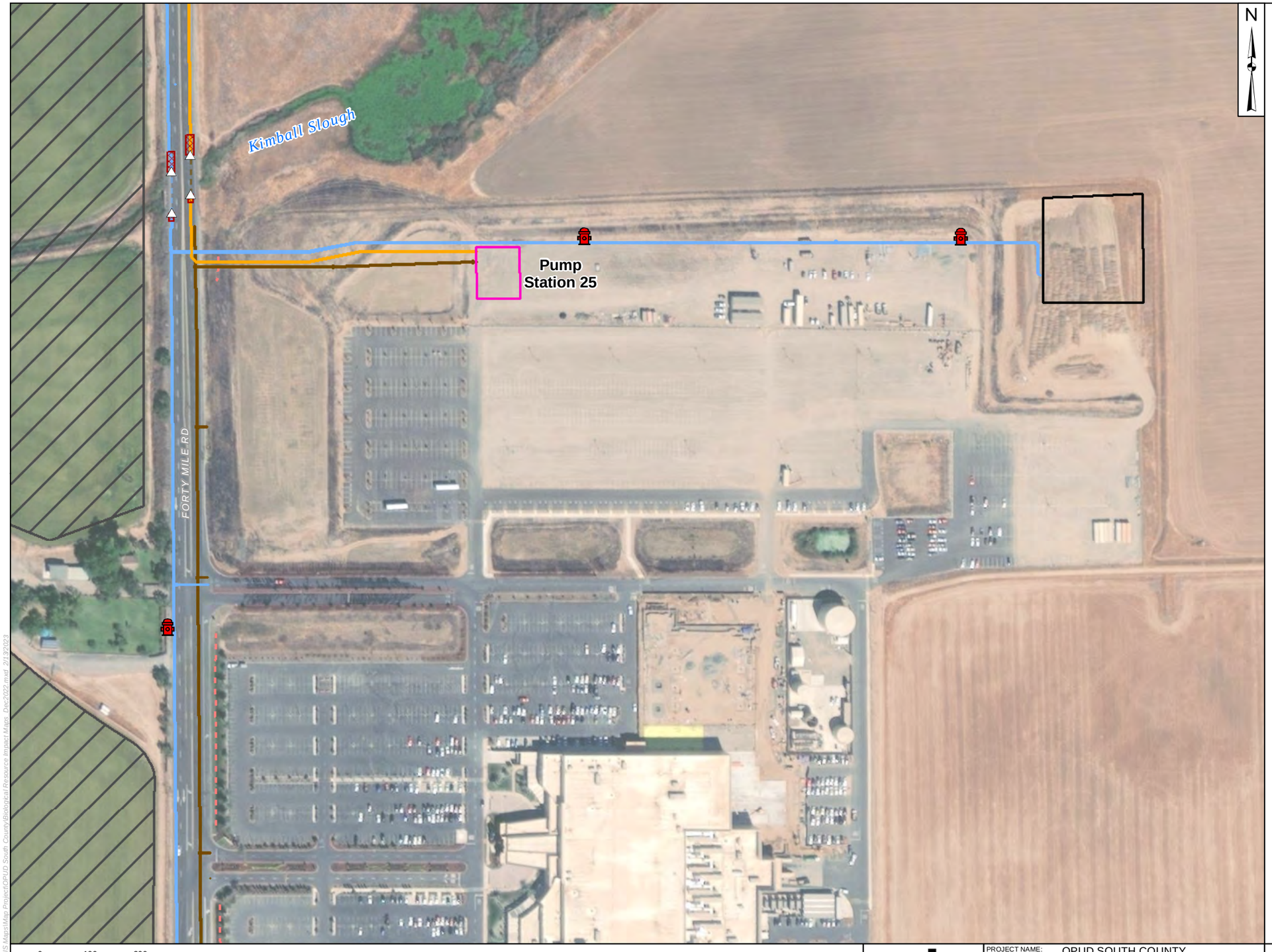
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: OPUD SOUTH COUNTY INFRASTRUCTURE PROJECT YUBA COUNTY, CA
PROJECT NUMBER: 2002-6911
DATE: February 2023

BIOLOGICAL RESOURCE IMPACT MAP

FIGURE 2O

Z:\GIS Projects\GIS Maps\Map Projects\OPUD South County\Biological Resource Impact Maps_Dec2022.mxd, 2/13/2023



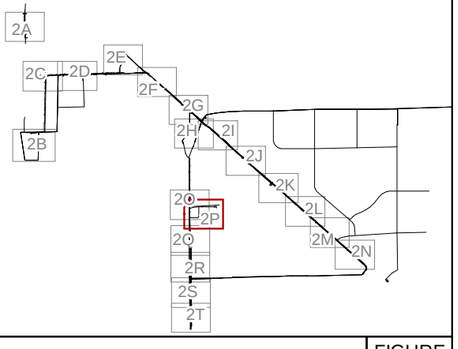
N

LEGEND:

Project Features

- HDD / Bore Pit Location
- Fire Hydrant
- Proposed Force Main
- Proposed Sanitary Sewer
- Proposed Water Main
- Trenchless Crossing - Sewer
- Trenchless Crossing - Water
- HDD / Boring Workspace
- Lift Station
- Water Plant
- Roadside Ditch, Wetland Vegetation
- Rice Field

MAP EXTENT:



0 100 200
FEET
1 inch = 200 feet

Source: Esri Online Imagery Basemap
Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet
Notes: This map was created for informational and display purposes only.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: OPUD SOUTH COUNTY INFRASTRUCTURE PROJECT YUBA COUNTY, CA
PROJECT NUMBER: 2002-6911
DATE: February 2023

BIOLOGICAL RESOURCE IMPACT MAP

FIGURE 2P

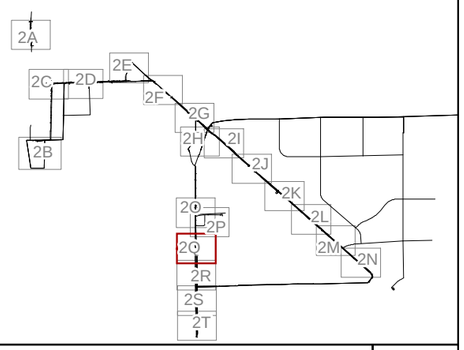
Z:\GIS Projects\GIS Maps\Map Projects\OPUD South County\Biological Resource Impact Maps_Dec2022.mxd 2/13/2023

N

LEGEND:

- Fire Hydrant
- Proposed Sanitary Sewer
- Proposed Water Main
- Roadside Ditch, Wetland Vegetation
- Rice Field

MAP EXTENT:



0 100 200
FEET
1 inch = 200 feet

Source: Esri Online Imagery Basemap
Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet
Notes: This map was created for informational and display purposes only.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: OPUD SOUTH COUNTY INFRASTRUCTURE PROJECT YUBA COUNTY, CA
PROJECT NUMBER: 2002-6911
DATE: February 2023

BIOLOGICAL RESOURCE IMPACT MAP

FIGURE 2Q

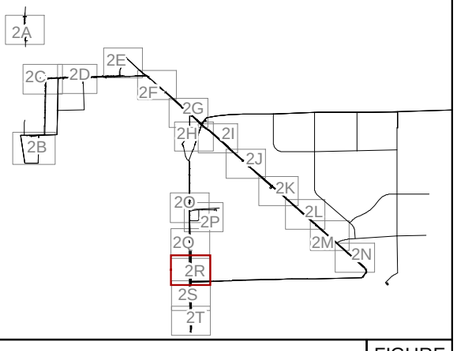
Z:\GIS Projects\GIS Maps\Map Project\OPUD South County\Biological Resource Impact Maps_Dec2022.mxd 2/13/2023

N

LEGEND:

- Fire Hydrant
- Proposed Sanitary Sewer
- Proposed Water Main
- Lift Station
- Roadside Ditch, Wetland Vegetation
- Rice Field

MAP EXTENT:



0 100 200
FEET
1 inch = 200 feet

Source: Esri Online Imagery Basemap
Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet
Notes: This map was created for informational and display purposes only.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: OPUD SOUTH COUNTY INFRASTRUCTURE PROJECT YUBA COUNTY, CA
PROJECT NUMBER: 2002-6911
DATE: February 2023

BIOLOGICAL RESOURCE IMPACT MAP

FIGURE 2R

Z:\GIS Projects\GIS Maps\Map Project\OPUD South County\Biological Resource Impact Maps_Dec2022.mxd 2/13/2023

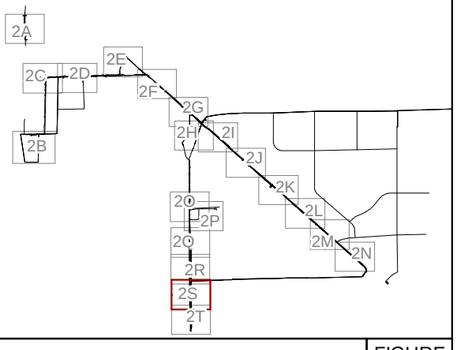
LEGEND:

- Fire Hydrant
- Proposed Sanitary Sewer
- Proposed Water Main

Biological Resources

- Blue Elderberry Shrub Location
- VELB Core Area (Avoidance Fencing)
- VELB Encroachment Buffer
- Roadside Ditch, Wetland Vegetation

MAP EXTENT:



0 100 200
FEET
1 inch = 200 feet

Source: Esri Online Imagery Basemap
Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet
Notes: This map was created for informational and display purposes only.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME:	OPUD SOUTH COUNTY INFRASTRUCTURE PROJECT YUBA COUNTY, CA
PROJECT NUMBER:	2002-6911
DATE:	February 2023

BIOLOGICAL RESOURCE IMPACT MAP

FIGURE 2S

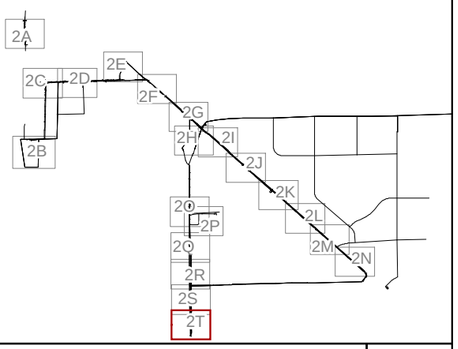
Z:\GIS Projects\GIS Maps\Map Projects\OPUD South County\Biological Resource Impact Maps - Dec2022.mxd 2/13/2023

N

LEGEND:

- Fire Hydrant
- Proposed Sanitary Sewer
- Proposed Water Main
- Roadside Ditch, Wetland Vegetation

MAP EXTENT:



0 100 200
FEET
1 inch = 200 feet

Source: Esri Online Imagery Basemap
Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet
Notes: This map was created for informational and display purposes only.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: OPUD SOUTH COUNTY INFRASTRUCTURE PROJECT YUBA COUNTY, CA

PROJECT NUMBER: 2002-6911

DATE: February 2023

BIOLOGICAL RESOURCE IMPACT MAP

FIGURE 2T

Z:\GIS Projects\GIS Maps\Map Project\OPUD South County\Biological Resource Impact Maps_Dec2022.mxd 2/13/2023

Figure 3 – Special Status Species Occurrences:

CNDDB Geospatial Data is Confidential - Figure available upon request.

APPENDIX A

USFWS SPECIES LIST

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: February 02, 2023
Project Code: 2022-0002318
Project Name: Olivehurst Public Utility District Water/Wastewater Improvements Project

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Project Code: 2022-0002318
Project Name: Olivehurst Public Utility District Water/Wastewater Improvements Project
Project Type: Water Supply Facility - Maintenance / Modification
Project Description: The proposed Project involves construction of a well site, water treatment plant, pump stations, and lift stations on approximately 2.5 acres of land, improvements within the existing wastewater treatment plant (WWTP) and the construction of approximately 13.6 miles of new water lines and sewer lines primarily in roadways or on the road shoulder, with some overland segments of pipeline alignment (approximately 3 miles of overland pipe). Additionally, 13 bore locations have been identified, seven bore crossings for pipeline installation under waterways, and six bore crossings for pipeline installation under highways.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.05587985,-121.49323332098848,14z

Counties: Yuba County, California

Endangered Species Act Species

There is a total of 9 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Giant Garter Snake *Thamnophis gigas* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate
Valley Elderberry Longhorn Beetle *Desmocerus californicus dimorphus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp *Branchinecta conservatio* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8246	Endangered
Vernal Pool Fairy Shrimp *Branchinecta lynchi* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp *Lepidurus packardi* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2246	Endangered

Flowering Plants

NAME	STATUS
Hartweg's Golden Sunburst *Pseudobahia bahiifolia* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1704	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPaC User Contact Information

Agency: Padre Associates Inc.
Name: Nathan Tallman
Address: 350 University Avenue, Suite 250
City: Sacramento
State: CA
Zip: 95827
Email ntallman@padreinc.com
Phone: 9163335920

APPENDIX B

CNDDB NINE QUAD SUMMARY TABLE

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Sutter (3912126) OR Yuba City (3912125) OR Browns Valley (3912124) OR Gilsizer Slough (3912116) OR Olivehurst (3912115) OR Wheatland (3912114) OR Sutter Causeway (3812186) OR Nicolaus (3812185) OR Sheridan (3812184))

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Acipenser medirostris pop. 1 green sturgeon - southern DPS	G2T1 S1	Threatened None	AFS_VU-Vulnerable IUCN_EN-Endangered	24 129	14 S:4	0	0	2	0	0	2	1	3	4	0	0
Agelaius tricolor tricolored blackbird	G1G2 S1S2	None Threatened	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_EN-Endangered NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	15 160	955 S:28	1	1	0	0	7	19	19	9	21	7	0
Anthicus antiochensis Antioch Dunes anthicid beetle	G1 S3	None None		20 20	6 S:1	0	0	0	0	0	1	1	0	1	0	0
Anthicus sacramento Sacramento anthicid beetle	G1 S4	None None	IUCN_EN-Endangered	20 20	13 S:1	0	0	0	0	0	1	1	0	1	0	0
Antrozous pallidus pallid bat	G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive	92 92	420 S:1	0	1	0	0	0	0	0	1	1	0	0
Astragalus tener var. ferrisiae Ferris' milk-vetch	G2T1 S1	None None	Rare Plant Rank - 1B.1		18 S:1	0	0	0	0	0	1	1	0	1	0	0
Athene cunicularia burrowing owl	G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	150 150	2011 S:1	0	0	0	0	0	1	1	0	1	0	0
Branchinecta conservatio Conservancy fairy shrimp	G2 S2	Endangered None	IUCN_EN-Endangered	100 100	53 S:1	0	1	0	0	0	0	0	1	1	0	0
Branchinecta lynchi vernal pool fairy shrimp	G3 S3	Threatened None	IUCN_VU-Vulnerable	52 174	796 S:15	2	4	0	2	0	7	2	13	15	0	0

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Branta hutchinsii leucopareia cackling (=Aleutian Canada) goose	G5T3 S3	Delisted None	CDFW_WL-Watch List	35 35	19 S:1	0	1	0	0	0	0	1	0	1	0	0
Buteo swainsoni Swainson's hawk	G5 S3	None Threatened	BLM_S-Sensitive IUCN_LC-Least Concern	10 130	2548 S:89	10	5	0	0	0	74	8	81	89	0	0
Cicindela hirticollis abrupta Sacramento Valley tiger beetle	G5TH SH	None None		15 25	6 S:2	0	0	0	0	2	0	2	0	0	0	2
Circus hudsonius northern harrier	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	82 120	54 S:4	0	2	2	0	0	0	4	0	4	0	0
Coastal and Valley Freshwater Marsh Coastal and Valley Freshwater Marsh	G3 S2.1	None None		35 35	60 S:1	0	0	0	0	0	1	1	0	1	0	0
Coccyzus americanus occidentalis western yellow-billed cuckoo	G5T2T3 S1	Threatened Endangered	BLM_S-Sensitive NABCI_RWL-Red Watch List USFS_S-Sensitive	25 50	165 S:4	0	0	0	0	0	4	4	0	4	0	0
Delphinium recurvatum recurved larkspur	G2? S2?	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_SBBG-Santa Barbara Botanic Garden		119 S:1	0	0	0	0	1	0	1	0	0	0	1
Desmocerus californicus dimorphus valley elderberry longhorn beetle	G3T2T3 S3	Threatened None		35 103	271 S:18	3	3	2	2	1	7	12	6	17	0	1
Downingia pusilla dwarf downingia	GU S2	None None	Rare Plant Rank - 2B.2	93 250	132 S:3	0	0	0	0	0	3	3	0	3	0	0
Elanus leucurus white-tailed kite	G5 S3S4	None None	BLM_S-Sensitive CDFW_FP-Fully Protected IUCN_LC-Least Concern	60 60	184 S:1	1	0	0	0	0	0	0	1	1	0	0
Emys marmorata western pond turtle	G3G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable USFS_S-Sensitive	25 150	1421 S:6	2	1	0	0	0	3	6	0	6	0	0

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Erethizon dorsatum North American porcupine	G5 S3	None None	IUCN_LC-Least Concern	47 102	523 S:2	0	0	0	0	0	2	1	1	2	0	0
Great Valley Cottonwood Riparian Forest Great Valley Cottonwood Riparian Forest	G2 S2.1	None None		35 50	56 S:4	0	0	2	0	0	2	4	0	4	0	0
Great Valley Mixed Riparian Forest Great Valley Mixed Riparian Forest	G2 S2.2	None None		33 50	68 S:2	0	1	0	0	0	1	2	0	2	0	0
Hibiscus lasiocarpos var. occidentalis woolly rose-mallow	G5T3 S3	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_UCBG-UC Botanical Garden at Berkeley	25 30	173 S:2	0	1	0	0	0	1	1	1	2	0	0
Laterallus jamaicensis coturniculus California black rail	G3T1 S1	None Threatened	BLM_S-Sensitive CDFW_FP-Fully Protected IUCN_EN-Endangered NABCI_RWL-Red Watch List	40 300	303 S:8	0	0	0	0	0	8	6	2	8	0	0
Legenere limosa legenere	G2 S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_UCBG-UC Botanical Garden at Berkeley	85 95	83 S:3	1	1	1	0	0	0	1	2	3	0	0
Lepidurus packardi vernal pool tadpole shrimp	G4 S3	Endangered None	IUCN_EN-Endangered	34 120	329 S:19	1	6	3	2	0	7	6	13	19	0	0
Linderiella occidentalis California linderiella	G2G3 S2S3	None None	IUCN_NT-Near Threatened	34 102	508 S:24	0	5	2	0	0	17	18	6	24	0	0
Melospiza melodia pop. 1 song sparrow ("Modesto" population)	G5T3?Q S3?	None None	CDFW_SSC-Species of Special Concern	60 60	92 S:1	0	0	0	0	0	1	1	0	1	0	0
Monardella venosa veiny monardella	G1 S1	None None	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_UCBG-UC Botanical Garden at Berkeley	100 100	4 S:1	0	0	0	0	1	0	1	0	0	1	0

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Navarretia leucocephala ssp. bakeri Baker's navarretia	G4T2 S2	None None	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	115 115	64 S:1	0	0	0	0	0	1	1	0	1	0	0
Northern Hardpan Vernal Pool Northern Hardpan Vernal Pool	G3 S3.1	None None		70 95	126 S:4	0	0	0	0	0	4	4	0	4	0	0
Oncorhynchus mykiss irideus pop. 11 steelhead - Central Valley DPS	G5T2Q S2	Threatened None	AFS_TH-Threatened		31 S:2	0	0	0	0	0	2	0	2	2	0	0
Oncorhynchus tshawytscha pop. 11 chinook salmon - Central Valley spring-run ESU	G5T2Q S2	Threatened Threatened	AFS_TH-Threatened	120 120	13 S:1	0	0	0	0	0	1	0	1	1	0	0
Pogonichthys macrolepidotus Sacramento splittail	G3 S3	None None	AFS_VU-Vulnerable CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	20 20	15 S:1	0	1	0	0	0	0	1	0	1	0	0
Pseudobahia bahiifolia Hartweg's golden sunburst	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden		27 S:1	0	0	0	0	1	0	1	0	0	0	1
Riparia riparia bank swallow	G5 S2	None Threatened	BLM_S-Sensitive IUCN_LC-Least Concern	20 60	299 S:24	0	6	0	0	0	18	9	15	24	0	0
Sagittaria sanfordii Sanford's arrowhead	G3 S3	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive		143 S:1	0	0	0	0	0	1	1	0	1	0	0
Spea hammondii western spadefoot	G2G3 S3S4	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened	103 103	1425 S:1	0	1	0	0	0	0	0	1	1	0	0
Thamnophis gigas giant gartersnake	G2 S2	Threatened Threatened	IUCN_VU-Vulnerable	20 65	373 S:38	2	24	0	0	0	12	6	32	38	0	0
Vireo bellii pusillus least Bell's vireo	G5T2 S2	Endangered Endangered	NABCI_YWL-Yellow Watch List	50 50	504 S:1	0	0	0	0	0	1	1	0	1	0	0

APPENDIX C

PLANT LIST

Plant Species Observed at the OPUD South County Infrastructure Project Site

Common Name/Family	*Scientific Name*	Growth Habit	Wetland Indicator Status	Sensitivity / Listing Status	Native Status
EQUISETACEAE (Horsetail Family)					
Scouring rush	*Equisetum hymale* ssp. affine	H	FACW	N	
ADOXACEAE (Muskroot Family)					
Blue elderberry	*Sambucus mexicana*	S	FACU	N	
APIACEAE (Carrot Family)					
Coyote thistle	*Eryngium* sp.	H		N	
Fennel	*Foeniculum vulgare*	H	NL	I	
APOCYNACEAE (Dogbane Family)					
Narrow-leaved milkweed	*Asclepias fascicularis*	H	FAC	N	
ASTERACEAE (Sunflower Family)					
Western ragweed	*Ambrosia psilostachya*	H	FACU	N	
Mayweed	*Anthemis cotula*	H	FACU	I	
Coyote brush	*Baccharis pilularis*	S	NL	N	
Italian thistle	*Carduus pycnocephalus* ssp. *pycnocephalus*	H	NL	I	
Yellow star-thistle	*Centaurea solstitialis*	H	NL	I	
Common spikeweed	*Centromadia pungens*	H	FAC	N	
Chicory	*Cichorium intybus*	H	FACU	I	
Bull thistle	*Cirsium vulgare*	H	FACU	I	
Stinkwort	*Dittrichia graveolens*	H	NL	I	
Gumplant	*Grindelia* sp.	H			
Hayfield tarweed	*Hemizonia congesta* ssp. *luzulifolia*	H	NL	N	
Cat's-ear	*Hypochaeris glabra*	H	NL	I	
Prickly lettuce	*Lactuca serriola*	H	FACU	I	
Cudweed	*Pseudognaphalium* sp.	H			
Common groundsel	*Senecio vulgaris*	H	FACU	I	
Milk thistle	*Silybum marianum*	H	NL	I	
Prickly sow thistle	*Sonchus asper* ssp. asper	H	FAC	I	
Common dandelion	*Taraxacum officinale*	H	FACU	I	
Salsify	*Tragopogon porrifolius*	H	NL	I	
Cocklebur	*Xanthium strumarium*	H	FAC	N	
BORAGINACEAE (Borage Family)					
Fiddleneck	*Amsinckia* sp.	H		N	
Common fiddleneck	*Amsinckia menziesii*	H	NL	N	
BRASSICACEAE (Mustard Family)					
Mouse-ear cress	*Arabidopsis thaliana*	H	NL	I	
Black mustard	*Brassica nigra*	H	NL	I	
Field mustard	*Brassica rapa*	H	FUPL	I	
Shepard's purse	*Capsella bursa-pastoris*	H	FACU	I	
Few-seed bittercress	*Cardamine oligosperma*	H	FAC	N	
Mediterranean mustard	*Hirschfeldia incana*	H	NL	I	
Peppergrass	*Lepidium nitidum*	H	FAC	N	
Radish	*Raphanus sativus*	H	NL	I	
CARYOPHYLLACEAE (Pink Family)					
Common chickweed	*Stellaria media*	H	FACU	I	

Plant Species Observed at the OPUD South County Infrastructure Project Site

Common Name/Family	*Scientific Name*	Growth Habit	Wetland Indicator Status	Sensitivity / Listing Status	Native Status
CHENOPODIACEAE (Goosefoot Family)					
Russian thistle	*Salsola tragus*	H	FACU	I	
CONVOLVULACEAE (Morning-Glory Family)					
Bindweed	*Convolvulus arvensis*	H	NL	I	
CRASSULACEAE (Stonecrop Family)					
Moss pygmy weed	*Crassula tillaea*	H	FACU	I	
DIPSACACEAE (Teasel Family)					
Wild teasel	*Dipsacus fullonum*	H	FAC	I	
EUPHORBIACEAE (Spurge Family)					
Turkey mullein	*Croton setiger*	H	NL	N	
Spotted spurge	*Euphorbia maculata*	H	UPL	I	
FABACEAE (Legume Family)					
Spanish clover	*Acmispon americanus* var. *americanus*	H	UPL	N	
Bird's-foot trefoil	*Lotus corniculatus*	H	FAC	I	
Miniature lupine	*Lupinus bicolor*	H	NL	N	
California burclover	*Medicago polymorpha*	H	FACU	I	
Clover	*Trifolium* sp.	H			
Rose clover	*Trifolium hirtum*	H	NL	I	
Vetch	*Vicia* sp.	H			
Spring vetch	*Vicia sativa*	H	FACU	I	
Winter vetch	*Vicia villosa*	H	NL	I	
FAGACEAE (Oak Family)					
Valley oak	*Quercus lobata*	T	FACU	N	
GERANIACEAE (Geranium Family)					
Storksbill	*Erodium* sp.	H			
Long-beaked storksbill	*Erodium botrys*	H	FACU	I	
Redstem filaree	*Erodium cicutarium*	H	NL	I	
Cut-leaf geranium	*Geranium dissectum*	H	NL	I	
Dove's-foot geranium	*Geranium molle*	H	NL	I	
JUGLANDACEAE (Walnut Family)					
Northern California black walnut	*Juglans hindsii*	T	FAC	N	1B.1
LAMIACEAE (Mint Family)					
Vinegar weed	*Trichostema lanceolatum*	H	FACU	N	
MALVACEAE (Mallow Family)					
Cheeseweed	*Malva parviflora*	H	NL	I	
MONTIACEAE (Miner's Lettuce Family)					
Red maids	*Calandrinia menziesii*	H	NL	N	
Miner's lettuce	*Claytonia perfoliata*	H	FAC	N	
MYRTACEAE (Myrtle Family)					
Eucalyptus	*Eucalyptus* sp.	T		I	
Blue gum	*Eucalyptus globulus*	T	NL	I	
OLEACEAE (Olive Family)					
Oregon ash	*Fraxinus latifolia*	T	FACW	N	
Olive	*Olea europaea*	T	NL	I	
ONAGRACEAE (Evening Primrose Family)					

Plant Species Observed at the OPUD South County Infrastructure Project Site

Common Name/Family	*Scientific Name*	Growth Habit	Wetland Indicator Status	Sensitivity / Listing Status	Native Status
Willow herb	*Epilobium* sp.				
Panicled willow herb	*Epilobium brachycarpum*	H	NL	N	
Floating water primrose	*Ludwigia peploides*	H	OBL	I	
OROBANCHACEAE (Broom-Rape Family)					
Butter-and-eggs	*Triphysaria eriantha*	H	NL	N	
OXALIDACEAE (Oxalis Family)					
Bermuda buttercup	*Oxalis pes-caprae*	H	NL	I	
PAPAVERACEAE (Poppy Family)					
California poppy	*Eschscholzia californica*	H	NL	N	
PLANTAGINACEAE (Plantain Family)					
English plantain	*Plantago lanceolata*	H	FAC	I	
POLYGONACEAE (Buckwheat Family)					
Willow weed	*Persicaria lapathifolia*	H	FACW	N	
Knotweed	*Polygonum aviculare*	H	FAC	I	
Sheep sorrel	*Rumex acetocella*	H	FACU	I	
Curly dock	*Rumex crispus*	H	FAC	I	
RANUNCULACEAE (Buttercup Family)					
Buttercup	*Ranunculus* sp.	H			
ROSACEAE (Rose Family)					
Himalayan blackberry	*Rubus armeniacus*	V	FAC	I	
RUBIACEAE (Madder Family)					
Bedstraw	*Galium* sp.	H			
California button willow	*Cephalanthus occidentalis*	S	OBL	N	
SALICACEAE (Willow Family)					
Fremont cottonwood	*Populus fremontii* ssp. *fremontii*	T	NL	N	
Lombardy poplar	*Populus nigra*	T	NL	I	
Willow	*Salix* sp.	T	OBL		
Gooding's black willow	*Salix goodingii*	T	FACW	N	
Arroyo willow	*Salix lasiolepis*	T	FACW	N	
URTICACEAE (Nettle Family)					
Stinging nettle	*Urtica dioica*	H	FACW	N	
VERBENACEAE (Vervain Family)					
Verbena	*Verbena lasiostachys*	H	FAC	N	
VISCACEAE (Mistletoe Family)					
Oak mistletoe	*Phoradendron leucarpum* ssp. *tomentosum*	H	NL	N	
ZYGOPHYLLACEAE (Caltrop Family)					
Puncture vine	*Tribulus terrestris*	H	NL	I	
CYPERACEAE (Sedge Family)					
Sedge	*Carex* sp.	H			
Tall cyperus	*Cyperus eragrostis*	H	FACW	N	
Spikerush	*Eleocharis* sp.	H			
Creeping spikerush	*Eleocharis macrostachya*	H	FACW	N	
Tule	*Schoenoplectus acutus* var. *occidentalis*	H	OBL	N	
JUNCACEAE (Rush Family)					

Plant Species Observed at the OPUD South County Infrastructure Project Site

Common Name/Family	*Scientific Name*	Growth Habit	Wetland Indicator Status	Sensitivity / Listing Status	Native Status
Rush	*Juncus* sp.	H			
Baltic rush	*Juncus balticus* ssp. *ater*	H	FACW	N	
Lamp rush	*Juncus effusus*	H	FACW	N	
Iris-leaved rush	*Juncus xiphoides*	H	OBL	N	
POACEAE (Grass Family)					
Slender wild oat	*Avena barbata*	G	NL	I	
Wild oat	*Avena fatua*	G	NL	I	
Little quaking grass	*Briza minor*	G	FAC	I	
Ripgut grass	*Bromus diandrus*	G	NL	I	
Soft chess	*Bromus hordeaceus*	G	FACU	I	
Bermuda grass	*Cynodon dactylon*	G	FACU	I	
Salt grass	*Distichlis spicata*	G	FAC	N	
Barnyard grass	*Echinochloa crus-galli*	G	FACW	I	
Medusa head	*Elymus caput-medusae*	G	NL	I	
Brome fescue	*Festuca bromoides*	G	FACU	I	
Rattail sixweeks grass	*Festuca myuros*	G	FACU	I	
Rye grass	*Festuca perennis*	G	FAC	I	
Mediterranean barley	*Hordeum marinum* ssp. *gussoneanum*	G	FAC	I	
Hare barley	*Hordeum murinum* ssp. *leporinum*	G	FACU	I	
Dallis grass	*Paspalum dilatatum*	G	FAC	I	
Harding grass	*Phalaris aquatica*	G	FACU	I	
Annual blue grass	*Poa annua*	G	FAC	I	
Rabbitfoot grass	*Polypogon monspeliensis*	G	FACW	I	
Johnson grass	*Sorghum halepense*	G	FACU	I	
Purple needlegrass	*Stipa pulchra*	G	NL	N	
THEMIDACEAE (Brodiaea Family)					
Brodiaea	*Brodiaea* sp.	H		N	
Blue dicks	*Dipterostemon capitatus*	H	FACU	N	
TYPHACEAE (Cattail Family)					
Broad-leaved cattail	*Typha latifolia*	H	OBL	N	

Wetland Indicator Status

OBL = Obligate wetland species, occurs almost always in wetlands (>99% probability)
FACW = Facultative wetland species, usually found in wetlands (67-99% probability)
FAC = Facultative species, equally likely to occur in wetland and non-wetlands (34-66% probability)
FACU = Facultative upland species, not usually found in wetlands (1-33% probability)
UPL = Upland species, almost never found in wetlands (<1% probability)
NI = No indicator has been assigned due to a lack of information to determine indicator status
NL = Not listed, assumed upland species

Growth Habit	Native Status
G = Grass H = Herb S = Shrub T = Tree	N = Native I = Introduced

APPENDIX D

WILDLIFE LIST

Wildlife Species Observed at the OPUD South County Infrastructure Project Site

Common Name/ Family	*Scientific Name*	Sensitivity / Listing Status[1]
AMPHIBIANS		
HYLIDAE (Tree Frogs)		
Pacific Treefrog	*Pseudacris sierra*	
REPTILES		
PHRYNOSOMATIDAE (spiny lizards)		
Western Fence Lizard	*Sceloporus occidentalis*	
BIRDS		
ANATIDAE (Ducks, Geese, and Swans)		
Greater White-fronted Goose	*Anser albifrons*	M
Snow Goose	*Chen caerulescens*	M
Canada Goose	*Branta canadensis*	M
Mallard	*Anas platyrhynchos*	M
PHASIANIDAE (Partridges, Grouse, Turkeys, and Old World Quail)		
Ring-necked Pheasant	*Phasianus colchicus*	
Wild Turkey	*Meleagris gallopavo*	
COLUMBIDAE (Pigeons and Doves)		
Rock Pigeon	*Columba livia*	
Eurasian Collared-Dove	*Streptopelia decaocto*	
Mourning Dove	*Zenaida macroura*	M
TROCHILIDAE (Hummingbirds)		
Anna's Hummingbird	*Calypte anna*	M
CHARADRIIDAE (Lapwings and Plovers)		
Killdeer	*Charadrius vociferus*	M
SCOLOPACIDAE (Sandpipers, Phalaropes, and Allies)		
Greater Yellowlegs	*Tringa melanoleuca*	M
LARIDAE (Gulls, Terns, and Skimmers)		
California Gull	*Larus californicus*	M, WL
Herring Gull	*Larus argentatus*	M
PHALACROCORACIDAE (Cormorants)		
Double-crested Cormorant	*Phalacrocorax auritus*	M, WL
ARDEIDAE (Bitterns, Herons, and Allies)		M
Great Blue Heron	*Ardea herodias*	M
Great Egret	*Ardea alba*	M
CATHARTIDAE (New World Vultures)		
Turkey Vulture	*Cathartes aura*	M
ACCIPITRIDAE (Hawks, Kites, Eagles, and Allies)		
White-tailed Kite	*Elanus leucurus*	M, FP
Northern Harrier	*Circus hudsonius*	M, CSC
Red-shouldered Hawk	*Buteo lineatus*	M
Red-tailed Hawk	*Buteo jamaicensis*	M
PICIDAE (Woodpeckers and Allies)		
Nuttall's Woodpecker	*Picoides nuttallii*	M
Northern Flicker	*Colaptes auratus*	M
FALCONIDAE (Caracaras and Falcons)		
American Kestrel	*Falco sparverius*	M
TYRANNIDAE (Tyrant Flycatchers)		

Wildlife Species Observed at the OPUD South County Infrastructure Project Site

Common Name/ Family	*Scientific Name*	Sensitivity / Listing Status[1]
Black Phoebe	*Sayornis nigricans*	M
CORVIDAE (Jays and Crows)		
California Scrub-Jay	*Aphelocoma californica*	M
American Crow	*Corvus brachyrhynchos*	M
Common Raven	*Corvus corax*	M
SITTIDAE (Nuthatches)		
Red-breasted Nuthatch	*Sitta canadensis*	M
TROGLODYTIDAE (Wrens)		
Marsh Wren	*Cistothorus palustris*	M
REGULIDAE (Kinglets)		
Ruby-crowned Kinglet	*Regulus calendula*	M
TURDIDAE (Thrushes)		
American Robin	*Turdus migratorius*	M
MIMIDAE (Mockingbirds and Thrashers)		
Northern Mockingbird	*Mimus polyglottos*	M
STURNIDAE (Starlings)		
European Starling	*Sturnus vulgaris*	
PASSERIDAE (Old World Sparrows)		
House Sparrow	*Passer domesticus*	
FRINGILLIDAE (Fringilline and Cardueline Finches and Allies)		
House Finch	*Haemorhous mexicanus*	M
Lesser Goldfinch	*Spinus psaltria*	M
American Goldfinch	*Spinus tristis*	M
PARULIDAE (Wood-Warblers)		
Yellow-rumped Warbler	*Setophaga coronata*	M
EMBERIZIDAE (Emberizids)		
Savannah Sparrow	*Passerculus sandwichensis*	M
Song Sparrow	*Melospiza melodia*	M
White-crowned Sparrow	*Zonotrichia leucophrys*	M
Golden-crowned Sparrow	*Zonotrichia atricapilla*	M
ICTERIDAE (Blackbirds)		
Red-winged Blackbird	*Agelaius phoeniceus*	M
Tricolor Blackbird	*Agelaius tricolor*	ST, CSC
Western Meadowlark	*Sturnella neglecta*	M
Brewer's Blackbird	*Euphagus cyanocephalus*	M
MAMMALS		
TALPIDAE (Moles)		
Broad-footed Mole	*Scapanus latimanus*	
LEPORIDAE (Rabbits and Hares)		
Black-tailed Hare	*Lepus californicus*	
SCIURIDAE (Chipmunks, Squirrels, and Marmots)		
California Ground Squirrel	*Spermophilus beecheyi*	
GEOMYIDAE (Pocket Gophers)		
Botta's Pocket Gopher	*Thomomys bottae*	
CRICETIDAE (Deer Mice, Voles, and Relatives)		
Western Harvest Mouse	*Reithrodontomys megalotis*	

Wildlife Species Observed at the OPUD South County Infrastructure Project Site

Common Name/ Family	*Scientific Name*	Sensitivity / Listing Status[1]
California Vole	*Microtus californicus*	
CANIDAE (Foxes, Wolves, and Relatives)		
Coyote	*Canis latrans*	
PROCYONIDAE (Raccoons and Relatives)		
Raccoon	*Procyon lotor*	
MUSTELIDAE (Weasels, Badgers, and Relatives)		
Mink	*Mustela vison*	
Striped Skunk	*Mephitis mephitis*	
FELIDAE (Cats)		
Domestic Cat	*Felis catus*	

Sensitivity / Listing Status[1]	
M = Protected under the federal Migratory Bird Treaty Act (MBTA) FE = Federally Endangered FT = Federally Threatened FDL = Federally Delisted FSS = Forest Service Sensitive SE = California State Endangered	ST = California State Threatened CSC = California Species of Special Concern FP = California Fully Protected Species BCC = USFWS Birds of Conservation Concern WL = CDFW Watch List

APPENDIX E

NRCS CUSTOM SOIL RESOURCE REPORT

United States Department of Agriculture

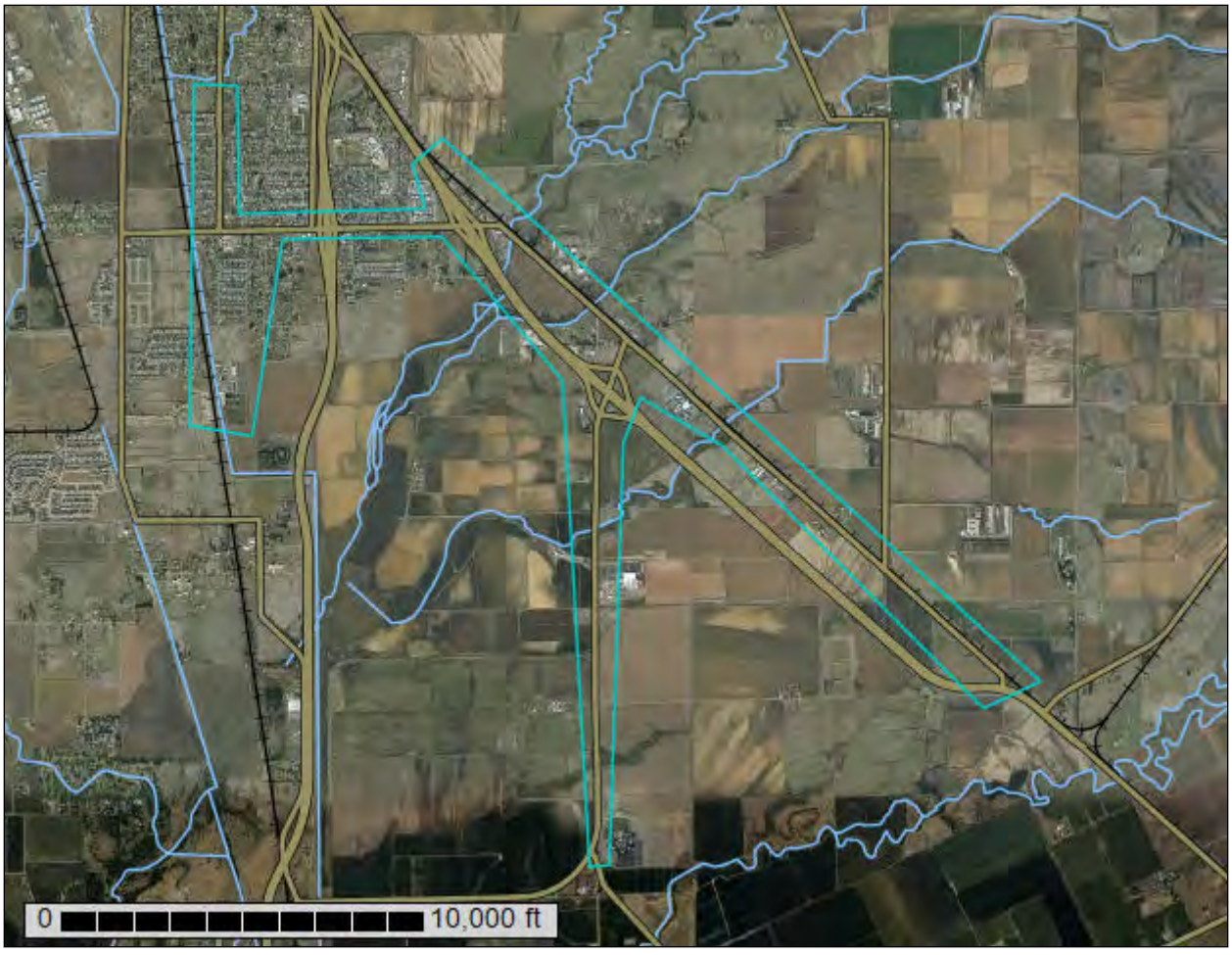
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Yuba County, California

OPUD Water/Wastewater Improvement Project



February 24, 2022

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

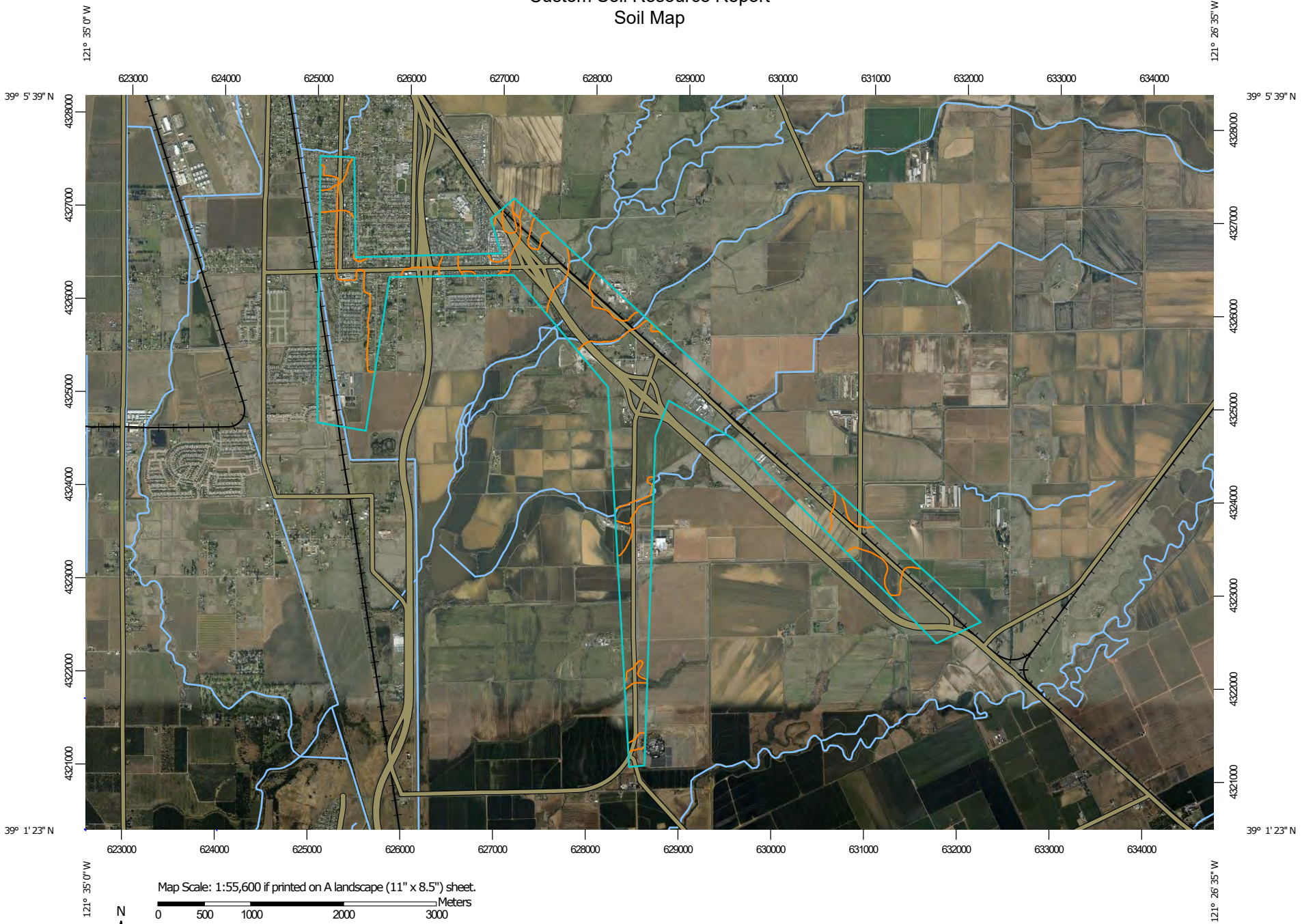
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Yuba County, California
Survey Area Data: Version 15, Sep 6, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 6, 2018—Jul 2, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
131	Hollenbeck silty clay loam, 0 to 1 percent slopes	106.7	6.4%
134	Hollenbeck-Urban land complex, 0 to 1 percent slopes	22.8	1.4%
141	Conejo loam, 0 to 1 percent slopes, MLRA 17	11.6	0.7%
142	Conejo loam, 0 to 2 percent slopes, occasionally flooded, MLRA 17	132.4	7.9%
143	Conejo-Urban land complex, 0 percent slopes, MLRA 17	21.5	1.3%
197	Oakdale sandy loam, 0 to 5 percent slopes	10.7	0.6%
198	Oakdale-Urban land complex, 0 to 1 percent slopes	11.8	0.7%
214	San Joaquin loam, 0 to 1 percent slopes	1,200.6	71.7%
217	Urban land-San Joaquin complex, 0 to 1 percent slopes	156.2	9.3%
Totals for Area of Interest		**1,675.1**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties

and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Yuba County, California

131—Hollenbeck silty clay loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: hg3g
Elevation: 30 to 120 feet
Mean annual precipitation: 18 to 20 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 270 to 290 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Hollenbeck, silty clay loam, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hollenbeck, Silty Clay Loam

Setting

Landform: Basin floors
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Clayey alluvium

Typical profile

H1 - 0 to 8 inches: silty clay loam
H2 - 8 to 43 inches: silty clay
H3 - 43 to 47 inches: clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: 39 to 65 inches to duripan
Drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: C
Ecological site: R017XY901CA - Clayey Basin Group
Hydric soil rating: No

Minor Components

Capay
Percent of map unit: 5 percent
Landform: Basin floors
Hydric soil rating: Yes

Kimball
Percent of map unit: 5 percent

San joaquin
Percent of map unit: 5 percent

134—Hollenbeck-Urban land complex, 0 to 1 percent slopes

Map Unit Setting
National map unit symbol: hg3n
Elevation: 50 to 60 feet
Mean annual precipitation: 14 to 20 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 270 to 290 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition
Hollenbeck, silty clay loam, and similar soils: 45 percent
Urban land: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hollenbeck, Silty Clay Loam

Setting
Landform: Basin floors
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Clayey alluvium

Typical profile
H1 - 0 to 8 inches: silty clay loam
H2 - 8 to 43 inches: silty clay
H3 - 43 to 47 inches: clay loam

Properties and qualities
Slope: 0 to 1 percent
Depth to restrictive feature: 43 to 65 inches to duripan
Drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Urban Land

Typical profile

H1 - 0 to 60 inches: variable

Properties and qualities

Slope: 0 to 1 percent
Frequency of flooding: Rare

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

Minor Components

San joaquin

Percent of map unit: 5 percent
Hydric soil rating: No

Capay

Percent of map unit: 5 percent
Landform: Basin floors
Hydric soil rating: Yes

Unnamed

Percent of map unit: 5 percent
Hydric soil rating: No

141—Conejo loam, 0 to 1 percent slopes, MLRA 17

Map Unit Setting

National map unit symbol: 2xc97
Elevation: 30 to 140 feet
Mean annual precipitation: 20 to 28 inches
Mean annual air temperature: 62 to 62 degrees F
Frost-free period: 319 to 328 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Conejo, loam, and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Conejo, Loam

Setting

Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy alluvium derived from igneous and metamorphic rock

Typical profile

Ap - 0 to 7 inches: loam
Bt - 7 to 30 inches: loam
Bw - 30 to 62 inches: loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 1.42 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: RareNone
Frequency of ponding: None
Maximum salinity: Nonsaline (0.2 to 0.5 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 4c
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Marcum

Percent of map unit: 7 percent
Hydric soil rating: No

Tisdale

Percent of map unit: 7 percent
Hydric soil rating: No

Perkins

Percent of map unit: 3 percent

Horst

Percent of map unit: 3 percent

142—Conejo loam, 0 to 2 percent slopes, occasionally flooded, MLRA 17

Map Unit Setting

National map unit symbol: 2y0fl
Elevation: 50 to 100 feet
Mean annual precipitation: 21 to 26 inches
Mean annual air temperature: 62 to 62 degrees F
Frost-free period: 319 to 327 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Conejo, loam, and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Conejo, Loam

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from igneous and metamorphic rock

Typical profile

Ap - 0 to 6 inches: loam
Bw1 - 6 to 12 inches: clay loam
Bw2 - 12 to 24 inches: clay loam
Bw3 - 24 to 48 inches: loam
Bw4 - 48 to 57 inches: loam
BC - 57 to 65 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.64 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: NoneOccasional
Frequency of ponding: None
Maximum salinity: Nonsaline (0.2 to 0.5 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C
Ecological site: R017XY903CA - Stream Channels and Floodplains

Hydric soil rating: No

Minor Components

Horst

Percent of map unit: 5 percent
Ecological site: R017XY903CA - Stream Channels and Floodplains
Hydric soil rating: No

143—Conejo-Urban land complex, 0 percent slopes, MLRA 17

Map Unit Setting

National map unit symbol: 2y0fp
Elevation: 60 feet
Mean annual precipitation: 22 to 22 inches
Mean annual air temperature: 62 to 62 degrees F
Frost-free period: 320 to 321 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Conejo, loam, and similar soils: 45 percent
Urban land: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Conejo, Loam

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from igneous and metamorphic rock

Typical profile

Ap - 0 to 6 inches: loam
Bw1 - 6 to 12 inches: clay loam
Bw2 - 12 to 24 inches: clay loam
Bw3 - 24 to 48 inches: loam
Bw4 - 48 to 57 inches: loam
BC - 57 to 65 inches: loam

Properties and qualities

Slope: 0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.64 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare

Frequency of ponding: None
Maximum salinity: Nonsaline (0.2 to 0.5 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 3c
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Urban Land

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear

Typical profile

H1 - 0 to 60 inches: variable

Properties and qualities

Slope: 0 percent
Runoff class: Very high
Frequency of flooding: Rare

Minor Components

Columbia

Percent of map unit: 4 percent
Landform: Flood plains
Hydric soil rating: Yes

San joaquin

Percent of map unit: 4 percent

Capay

Percent of map unit: 4 percent
Hydric soil rating: No

Unnamed

Percent of map unit: 3 percent
Hydric soil rating: No

197—Oakdale sandy loam, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: hg5z
Elevation: 50 to 150 feet
Mean annual precipitation: 18 to 22 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 270 to 290 days

Farmland classification: Prime farmland if irrigated

Map Unit Composition

Oakdale, sandy loam, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Oakdale, Sandy Loam

Setting

Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

H1 - 0 to 9 inches: sandy loam
H2 - 9 to 53 inches: sandy clay loam
H3 - 53 to 70 inches: loamy sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.9 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

San joaquin

Percent of map unit: 5 percent
Hydric soil rating: No

Oakdale, steep

Percent of map unit: 5 percent
Hydric soil rating: No

Unnamed

Percent of map unit: 5 percent
Hydric soil rating: No

198—Oakdale-Urban land complex, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: hg60
Elevation: 50 to 150 feet
Mean annual precipitation: 18 to 22 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 270 to 290 days
Farmland classification: Not prime farmland

Map Unit Composition

Oakdale, sandy loam, and similar soils: 45 percent
Urban land: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Oakdale, Sandy Loam

Setting

Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

H1 - 0 to 9 inches: sandy loam
H2 - 9 to 53 inches: sandy loam
H3 - 53 to 70 inches: loamy sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.9 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 3c
Hydrologic Soil Group: A
Hydric soil rating: No

Description of Urban Land

Typical profile

H1 - 0 to 60 inches: variable

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

Minor Components

San joaquin

Percent of map unit: 10 percent
Hydric soil rating: No

Unnamed

Percent of map unit: 5 percent
Hydric soil rating: No

214—San Joaquin loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: hg6j
Elevation: 60 to 130 feet
Mean annual precipitation: 18 to 22 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 270 to 290 days
Farmland classification: Not prime farmland

Map Unit Composition

San joaquin, loam, and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of San Joaquin, Loam

Setting

Landform: Fan terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

H1 - 0 to 16 inches: loam
H2 - 16 to 25 inches: clay
H4 - 25 to 35 inches: duripan

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches; 20 to 40 inches to duripan
Drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Available water supply, 0 to 60 inches: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: D
Ecological site: R017XD079CA - CLAYPAN TERRACE
Hydric soil rating: No

Minor Components

Unnamed

Percent of map unit: 5 percent
Hydric soil rating: No

Perkins

Percent of map unit: 5 percent
Hydric soil rating: No

Unnamed

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Redding

Percent of map unit: 5 percent
Hydric soil rating: No

217—Urban land-San Joaquin complex, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: hg6m
Elevation: 20 to 500 feet
Mean annual precipitation: 18 to 22 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 270 to 290 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 50 percent

San joaquin, loam, and similar soils: 40 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Typical profile

H1 - 0 to 60 inches: variable

Properties and qualities

Slope: 0 to 1 percent
Frequency of flooding: Rare

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

Description of San Joaquin, Loam

Setting

Landform: Fan terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

H1 - 0 to 16 inches: loam
H2 - 16 to 25 inches: clay
H4 - 25 to 35 inches: duripan

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches; 20 to 40 inches to duripan
Drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Available water supply, 0 to 60 inches: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Unnamed

Percent of map unit: 4 percent
Landform: Depressions
Hydric soil rating: Yes

Kilaga

Percent of map unit: 3 percent
Hydric soil rating: No

Perkins

Percent of map unit: 3 percent
Hydric soil rating: No

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APPENDIX E

South County Infrastructure Project
Updated Preliminary Geotechnical Basis of Design Report

UPDATED DRAFT PRELIMINARY GEOTECHNICAL BASIS OF DESIGN REPORT

Olivehurst Public Utilities District

South Yuba Sewer and Water Infrastructure Project

Olivehurst, CA

April 2021

Prepared for:

JACOBS®

2485 Natomas Park Drive, Suite 600
Sacramento, CA 95833

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Blackburn File No. 3842.X
April 30, 2021

Mr. Steve DeCou
Vice President and Principal Project Manager
Jacobs Engineering Group, Inc.
2485 Natomas Park Drive, Suite 600
Sacramento, CA 95833

Subject: **UPDATED DRAFT PRELIMINARY GEOTECHNICAL BASIS OF DESIGN REPORT**
Olivehurst Public Utilities District
South Yuba Sewer and Water Infrastructure Project
Olivehurst, California

Dear Mr. DeCou,

Blackburn Consulting (Blackburn) is pleased to submit this Updated Draft Preliminary Geotechnical Basis of Design Report for the Olivehurst Public Utilities District (OPUD) South Yuba County Sewer and Water Infrastructure project in Olivehurst, California. Blackburn prepared this report in accordance with our May 14, 2020 Proposal and August 21, 2020 Agreement. This updated report includes responses to Jacobs review comments. It does not include information on borings completed since our original report, because laboratory tests are pending.

Thank you for selecting Blackburn to be on your design team. Please call if you have questions or require additional information.

Sincerely,

BLACKBURN CONSULTING

Prepared by:

Rob Pickard, C.E.G.
Senior Engineering Geologist

Reviewed by:

Bob Lokteff, G.E., P.E.
Principal Geotechnical Engineer

Copies: 1 to Addressee (PDF).

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1 INTRODUCTION

1.1 Purpose

Blackburn Consulting (Blackburn) prepared this Updated Draft Preliminary Geotechnical Basis of Design Report (Draft Preliminary GBODR) for the Olivehurst Public Utility District (OPUD) South Yuba Sewer and Water Infrastructure Project (Project) in Olivehurst, California. This report includes the responses to Jacobs' review comments. It does not include information on borings completed since our original report, because laboratory tests are pending. This report contains descriptions of the surface and subsurface conditions, site geology, and preliminary geotechnical design considerations.

Blackburn prepared this report for Jacobs Engineering Group (Jacobs) and the project design team to use during preliminary design. This report shall not be used for final design or relied upon by others, or for different locations or improvements without the written consent of Blackburn. The design considerations in this report are based on limited information and knowledge of the project alignment and structure locations. Blackburn will perform additional subsurface exploration, laboratory testing, engineering analysis and prepare a Final GBODR for final design.

This report contains separate sections for Sewer and Water Pipelines, Trenchless Pipeline Crossings, Pump Stations and Lift Stations, WWTP Improvements, and Water Tank and Booster Station. Each section contains subsections on subsurface conditions, laboratory test results, site geology and seismicity, ground water, and design considerations (except for trenchless crossings). Jacobs Engineering Group, Inc. is providing geotechnical design recommendations for the trenchless crossings separate from this report. Geotechnical information pertinent to each project component is repeated in each report section as necessary to facilitate ease of preliminary design by different companies that are using this report.

1.2 Scope of Services

To prepare this report, Blackburn:

- Discussed the proposed improvements with Mr. Steve DeCou and Ms. Myra Au (Jacobs); Mr. Sean Minard (MHM); Joe Domenichelli, Sara Rogers, and Daryl Heigher (Domenichelli and Associates); and Jim Carson (Affinity Engineering).
- Reviewed the Draft Preliminary Plan and Profile sheets provided by MHM.
- Reviewed available geotechnical information for the Olivehurst WWTP and Caltrans Log of Test Borings for bridge structures near the project alignment.
- Observed the subsurface conditions in forty-three borings drilled along the project alignment in August and September 2020 and in five test pits excavated at the Olivehurst Wastewater Treatment Plant on October 19, 2020.
- Performed laboratory tests on representative soil samples obtained from the exploratory borings.
- Performed preliminary engineering analysis and calculations to develop our preliminary design considerations.
- Reviewed and responded to Jacobs' comments on our December 11, 2020 Draft Preliminary Geotechnical Basis of Design Report.

1.3 Project Description and Location

The proposed project components include:

- About 8½ miles of 8" to 24" diameter sewer gravity and force main,
- About 9 miles of 24" diameter water force water main,
- One Highway 70 water line trenchless crossing,
- One Highway 70 sewer line trenchless crossing,
- Two Highway 65 sewer line trenchless crossings,
- Six to eight sewer and/or water line creek/canal crossings,
- Eight new sewer pump/lift stations.
- Olivehurst WWTP improvements consisting of a new secondary clarifier, concrete-lined equalization basin, and on-site piping.
- A new water well site including a 1 MG steel storage tank, booster station and on-site piping near the Hard Rock Hotel and Casino.

Figure 1 shows the general location of the proposed improvements and Figure 2 shows the site location.

2 PROJECT GEOLOGY AND SOIL SURVEY

2.1 Geology and Soil Survey

We reviewed geology maps and the United States Department of Agriculture's (USDA) Web Soil Survey (https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm). The "Geologic Map of the Late Cenozoic Deposits of the Sacramento Valley and Northern Sierra Foothills, California" (Helley and Harwood, 1985) shows the project is underlain by:

- Holocene Alluvium - unweathered gravel, sand, and silt deposited by present-day stream and river systems.
- Holocene Basin Deposits - Undivided as silt and clay derived from the same sources as modern alluvium. Thickness in the valley varies from 3 to 6 ft. along the perimeter up to 200 ft. in the center.
- Upper Member, Modesto Formation - unconsolidated, unweathered gravel, sand, silt, and clay. Deposits belonging to the upper member of the Modesto are only a few meters thick and generally form a thin veneer deposited on older alluvial deposits.
- Upper Member, Riverbank Formation - Unconsolidated but compact, dark-brown to red alluvium composed of gravel, sand, silt and clay.

Figure 3 shows the geologic formations within the project area.

The Fault Activity Map of California[1] does not identify Historic or Holocene age faults (displacement within the last 11,700 years) within or adjacent to the project site. The nearest mapped fault is the Late

[1] Jennings, Charles W., and Bryant, William A., 2010 Fault Activity Map of California: California Geological Survey, Geologic Data Map No. 6.

Quaternary Foothills Fault System, Spenceville fault, located about 12 miles to the east. The nearest active mapped fault is the Cleveland Hill Fault located approximately 25 miles north of the site.
The USDA web soil survey indicates that the site is underlain by mostly San Joaquin loam (Map Unit 214, 217) and also Hollenbeck silty clay loam (Map Unit 131, 134), Conejo Loam (Map Units 141, 142, 143), and Oakdale Sandy loam (Map Unit 197, 198). Table 2.1 presents classification properties of these soil units according to the USDA soil survey.

Table 2.1: USDA Soil Properties

Map Unit Name/Symbol	Depth (in)	USCS Classification	Percent fines	Liquid Limit	Plasticity Index
San Joaquin loam/214, 217	0 to 25	Silt, Silty Clay, Lean Clay	50 to 70	15 to 50	0 to 35
Hollenbeck silty clay loam/131, 134	0 to 43	Lean Clay, Fat Clay	85 to 95	40 to 60	20 to 35
Conejo loam/141,142,143	0 to 65	Lean Clay	58 to 79	31 to 49	13 to 25
Oakdale Sandy loam/197, 198	0 to 70	Silty Sand, Clayey Sand	15 to 50	20 to 30	0 to 10

Figure 4 shows where these USDA soil units underlie the project site.

3 SEWER AND WATER PIPELINES

3.1 Site Location and Description

The proposed Project sewer and water pipeline alignments extend along the following streets in and near Olivehurst in South Yuba County, California:

- Olivehurst Avenue between 11th Avenue and 14th Avenue.
- Mary Avenue.
- McGowan Parkway between Mary Avenue and Rancho Road.
- Olive Avenue from McGowan Parkway approximately 500 ft north, where it crosses Highway 65 to the cul de sac at the north end of Rancho Road.
- Rancho Road, from the northern cul de sac south to where it crosses Highway 65 to Morrison Road.
- Forty Mile Road from the Toyota Amphitheater to Rancho Road.
- Rossler Road from Forty Mile Road approximately 1250 ft north, where it crosses Highway 65 to the cul de sac at the south end of Shimer Road.
- Shimer Road.

Pipeline depths will generally range from 5 to 18 feet below the ground surface (bgs) based on input from design team members. However, final pipe sizes and depths have not been determined.

The pipeline alignment is generally level, with ground surface elevations ranging from about 60 to 70 feet and up to about 76 feet in the south.

The western portion of the pipeline along Olivehurst Ave, Mary Ave, McGowan Pkwy, and Olive Ave extends predominantly through residential portions of Olivehurst. Photos 1 through 3 show the conditions along these streets.

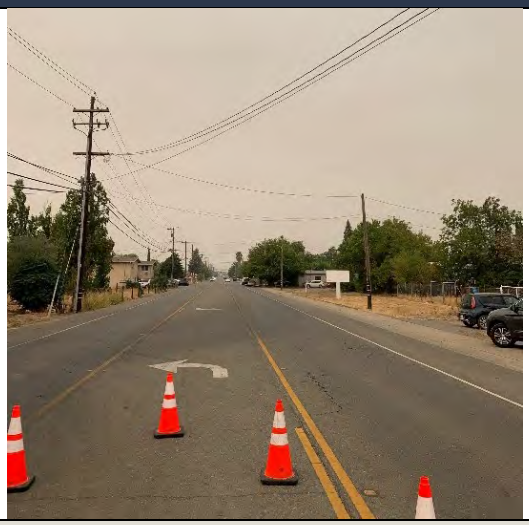
Photo 1: Olivehurst Avenue

Looking north on Olivehurst Avenue from 9th Ave.

Photo 2: Mary Avenue

Looking south along Project alignment near Station 118+00.

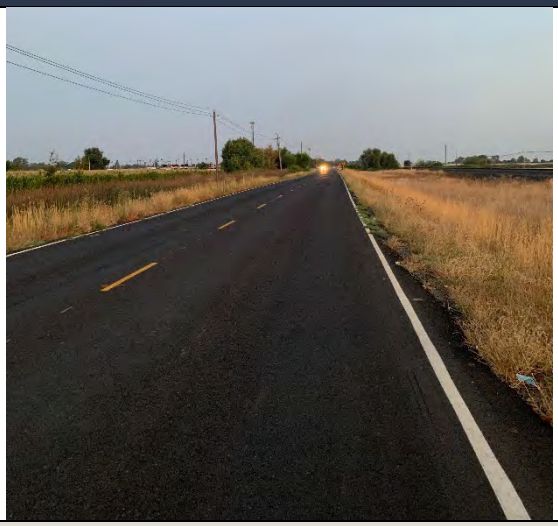
Photo 3: McGowan Avenue



Looking west along Project alignment near Station 206+60.

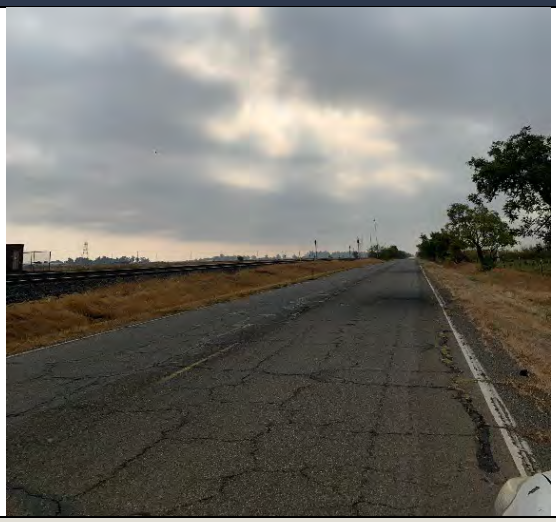
The eastern and southern pipeline alignments extend along rural roads (Rancho Rd, Morrison Rd, Forty Mile Rd, and Shimer Rd). The roads in these portions of the alignment are generally flanked by a drainage ditch on one or both sides. Photos 4 through 8 show the conditions along these streets.

Photo 4: Rancho Road



Looking northwest along Project alignment near Station 329+60.

Photo 5: Rancho Road

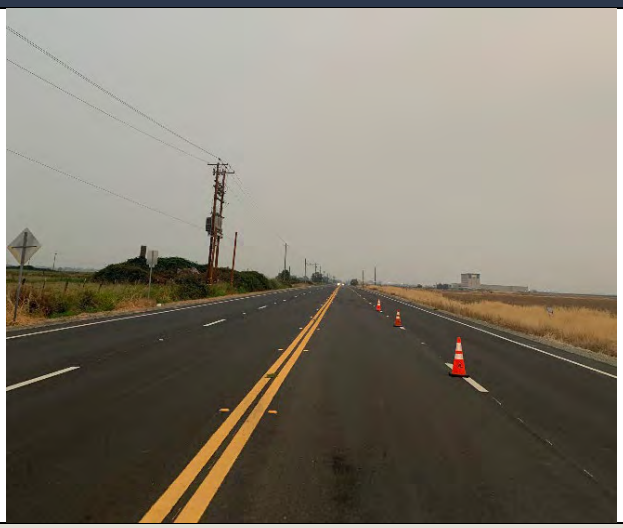


Looking southeast along Project alignment near Station 442+30.

Photo 6: Shimer Road

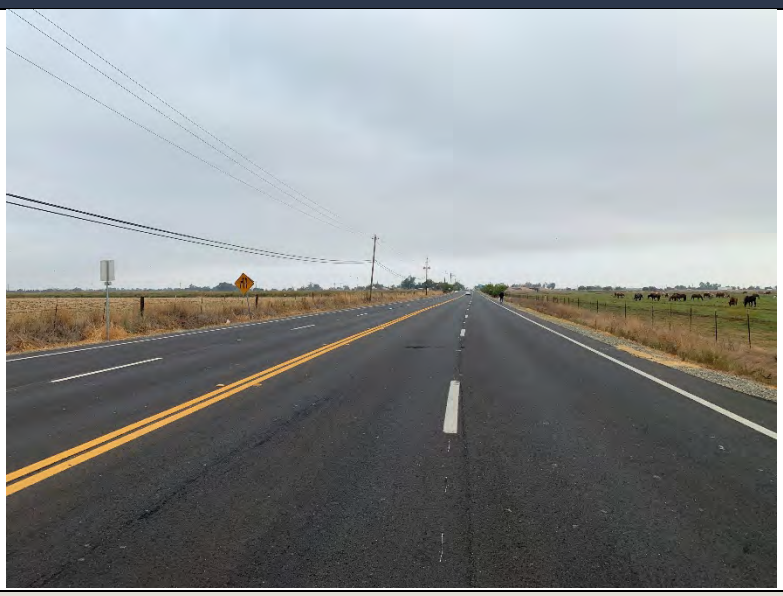
Looking south along Project Alignment towards intersection of Shimer Road and Plute Road near station 33+00.

Photo 7: Forty Mile Road



Looking north along Project alignment near Station 119+90.

Photo 8: Forty Mile Road



Looking north along Project alignment near Station 404+60.

Appendix A1 shows the proposed pipeline alignments and Figure 2 shows the pipeline alignments, our approximate subsurface exploratory boring locations (all pipeline boring locations have been drilled and laboratory testing is ongoing)and the proposed improvements.

3.2 Geology, Soil Survey, Faulting

See Section 2.1 for a discussion of geology and faulting along the pipeline alignment. Figure 3 shows the mapped geologic units within the project site. Figure 4 shows the USDA soil types mapped within the project area. Figure 2.1 shows the mapped geologic formations and USDA soil types within each pipeline segment.

3.3 Field Work and Laboratory Testing

3.3.1 Exploratory Borings

Blackburn drilled, logged and sampled 43 borings along the pipeline alignments to characterize the site subsurface conditions. Our subcontractor, Taber Drilling, drilled the borings to depths ranging from about 15 to 50 feet below the existing ground elevation. Appendix A1 shows the proposed site improvements and approximate boring locations. The borings logs are included in Appendix A2 (does not include borings where laboratory testing is ongoing).

Taber drilled the borings using a combination of 4-inch diameter solid-stem auger and mud-rotary. Soil samples were obtained by Taber at various intervals using a 3.0-inch O.D. Modified California (MC) sampler (equipped with 2.4-inch diameter steel liners) or 2–inch O.D. Standard Penetration (SPT) sampler. Samples were driven with an automatic hammer, weighing 140-pounds and falling approximately 30-inches per blow. We also collected bulk samples at various depths within the borings.

Blackburn's project engineers/geologists Daniel Contreras, Luke Morrell, and Sophie Stuart logged the borings and retained samples for laboratory testing.

3.3.2 Laboratory Testing

We performed the following laboratory tests on representative soil samples from the exploratory borings:

- Unit weight and moisture content tests for in-situ soil property characterization.
- Sieve analysis and Plasticity index for soil classification.
- Direct shear and unconfined compression tests for soil strength analysis.
- Soil corrosivity (pH, resistivity, sulfate and chlorides) for corrosion considerations.

Refer to Section 3.5.8 for a description and evaluation of the corrosivity test results.

The boring logs in Appendix A2 show unit weight and moisture content results. Appendix A3 presents the other laboratory test results.

3.4 Subsurface Findings

3.4.1 General Subsurface Soil Conditions

We predominantly encountered very stiff to hard clay and sandy clay in borings drilled along the proposed alignment. We encountered medium dense to very dense sand and clayey sand lenses in scattered areas throughout the alignment. Some of the soil layers contained gravel.

Table 3.1 summarizes the subsurface soil conditions we encountered along the pipeline alignment.

Table 3.1: Subsurface Soil Conditions

Street	Reach ID (Approximate Station)*	Boring ID	Boring Depth	Approximate Boring Station	Approximate Existing Pavement		Approximate Depth to GW (ft)	Mapped Geologic Unit*	USDA Soil Type*	General Subsurface Soil Conditions within upper 20 feet**
					AC (in)	AB (in)				
Mary Ave	Reach 1 (100+00 - 139+81)	P-1	21.5	102+00	6.5	Not Encountered	Not Encountered	Riverbank Formation	214	Very stiff to hard lean clay and sandy lean clay within the upper 15 ft., underlain by medium dense clayey sand and very stiff sandy clay.
		P-2	21.5	118+00	4	3	Not Encountered		217	
		P-3	21.5	132+70	1	6	Not Encountered		217	
McGowan Pkwy	Reach 2 (200+00 - 222+00)	LS-2	-	lab pending	-	-	-	Riverbank Formation	-	Hard sandy lean clay in upper 5 ft., underlain by hard lean clay with sand and medium stiff lean clay.
		P-4	15.0	206+60	6	15	Not Encountered		217	
		TC-1A	-	planned future boring	-	-	-		-	
		TC-1C	-	planned future boring	-	-	-		-	
	Reach 3 (222+00 - 232+00)	LS-3	-	planned future boring	-	-	-	Holocene Alluvium	-	Hard silt and lean clay in upper 9 ft., underlain by hard lean clay.
		P-5	21.5	229+60	3	3	Not Encountered		198	
	Reach 4 (232+00 - 264+36)	P-6	16.5	237+30	4	6	Not Encountered	Riverbank Formation and Basin Deposits	217	Lean clay to sandy lean clay.
		P-7	16.5	245+50	3	4	Not Encountered		217	
Olive Ave	Reach 5 (10+00 - 16+20)	TC-2AA	51.5	19+60	6	Not Encountered	29	Basin Deposits	134	Very stiff to hard lean clay and sandy lean clay.
Rancho Rd	Reach 6 (300+00 - 318+00)	TC-2C	51.5	300+10	2.5	12	27.5	Riverbank Formation	134	Hard lean clay, lean clay with sand, and silt.
		P-8	15.0	309+90	NA	NA	Not Encountered		214	
	Reach 7 (318+00 - 326+50)	TC-7A	51.5	321+30	9	12	23	Modesto Formation	214	Stiff to hard lean clay and lean clay with sand within the upper 15 ft., underlain by hard silt to sandy silt and lean clay.
		TC-7B	51.5	323+30	8.5	16	15		142	
	Reach 8 (326+50 - 396+00)	TC-8A	51.5	329+60	9	9	14	Riverbank Formation and Modesto Formation	142	Very stiff to hard lean clay and lean clay with sand within the upper 10 to 15 ft., underlain by approximately 1 to 6 ft. of medium dense to dense sand to clayey sand and stiff to very stiff sandy lean clay (pockets with gravel)
		TC-8B	51.5	331+10	8	16	15		142	
		P-9	15.0	340+60	NA	NA	Not Encountered		214	
		TC-9A	51.5	349+70	8	16	25		142	
		TC-9B	51.5	351+20	6	12	25		142	

Table 3.1: Subsurface Soil Conditions

Street	Reach ID (Approximate Station)*	Boring ID	Boring Depth	Approximate Boring Station	Approximate Existing Pavement		Approximate Depth to GW (ft)	Mapped Geologic Unit*	USDA Soil Type*	General Subsurface Soil Conditions within upper 20 feet**
					AC (in)	AB (in)				
		P-10	15.0	357+60	NA	NA	Not Encountered		214	
		LS-4	-	lab pending	-	-	-		214	
		P-11	21.5	376+10	NA	NA	Not Encountered		214	
		P-12	14.5	388+10	9	15	Not Encountered		214	
	Reach 9 (396+00 - 401+00)	TC-10A	51.5	400+00	7	10	24	Riverbank Formation	214	Very stiff to hard silt and clay with varying amounts of sand.
	Reach 10 (401+00 - 448+00)	TC-10B	51.5	402+60	NA	NA	24	Riverbank Formation	214	Stiff to hard lean clay to sandy lean clay in upper 12 to 16 ft., underlain by medium dense to dense sand to clayey sand (depth to sand generally decreases up station). Very dense clayey gravel present near Kimball creek.
		LS-5	-	lab pending	-	-	-		214	
		P-13	21.5	410+00	NA	NA	Not Encountered		214	
		TC-14	41.5	427+90	8	12	28		214	
		P-14	21.0	442+30	3	10	Not Encountered		214	
	Reach 11 (448+00 – 484+00)	P-15	16.5	450+10	NA	NA	Not Encountered	Riverbank Formation	131	Hard lean clay within the upper 5 ft, underlain by approximately 10 ft of medium dense clayey sand and hard sandy clay over hard lean clay.
		LS-6	-	planned future boring	-	-	-		131	
		P-16	21.5	468+40	4	32	Not Encountered		131	
		P-17	21.5	483+80	NA	NA	Not Encountered		214	
	Reach 12 (***)	P-18	15.0	***	NA	NA	Not Encountered	Riverbank Formation	214	Hard lean clay.
40 Mile Rd	Reach 14 (70+00 - 125+00)	P-24	15.0	70+00	7	10	Not Encountered	Basin Deposits and Riverbank Formation	214	Very stiff to hard lean clay, lean clay with sand, silt, silt with sand within the upper 20 ft. (Very dense poorly-graded sand with silt below 18 ft. in Boring P-26)
		P-25	20.0	78+30	7	10	Not Encountered		214	
		TC-13	51.4	85+80	6.5	12	26		214	
		P-26	21.5	94+60	6.5	14	Not Encountered		131	
		P-27	21.0	119+90	6	12	Not Encountered		214	
	Reach 15 (125+00 - 155+00)	P-28	21.5	139+00	6	12	Not Encountered	Riverbank Formation	214	Very stiff to hard lean clay to sandy lean clay within the upper 8 to 10 ft., underlain by a layer of very stiff to hard silt with sand which is approximately 13 ft. thick in boring TC-12B and pinches out to the

Table 3.1: Subsurface Soil Conditions

Street	Reach ID (Approximate Station)*	Boring ID	Boring Depth	Approximate Boring Station	Approximate Existing Pavement		Approximate Depth to GW (ft)	Mapped Geologic Unit*	USDA Soil Type*	General Subsurface Soil Conditions within upper 20 feet**
					AC (in)	AB (in)				
		TC-12A	51.5	147+50	3	4	24	and Modesto Formation	142	south (by boring P-28). Underlain by approximately 3 to 6 ft. of medium dense to very dense clayey sand over medium dense poorly-graded sand to poorly-graded sand with clay.
		TC-12B	51.5	149+80	7	12	17		142	
		LS-8	-	planned future boring	-	-	-		-	-
	Reach 16 (155+00 - 188+00)	P-29	16.5	163+50	6	12	Not Encountered	Riverbank Formation	214	Hard sandy lean clay and gravelly lean clay within the upper 4 to 5 ft., underlain by medium dense to dense clayey sand and stiff sandy lean clay to approximately 14 to 15 ft. deep.
		P-30	14.5	180+10	NA	NA	Not Encountered		214	
	Reach 17 (188+00 - 203+00)	P-32	15.0	196+90	NA	NA	Not Encountered	Riverbank Formation	214	Very stiff silt with sand within the upper 3 ft., underlain by hard lean clay and lean clay with sand to depth of 15 ft.
Rossler Rd	Reach 18 (550+00 - 562+70)	TC-4A	-	planned future boring	-	-	-	Riverbank Formation	-	
		TC-4B	-	planned future boring	-	-	-	Riverbank Formation	-	-
Olivehurst Ave	***	OS-1	21.5	***	6	6	Not Encountered	Riverbank Formation	217	Very stiff to hard lean clay and sandy lean clay within the upper 9 ft., underlain by approximately 6 ft of very dense clayey sand over very stiff lean clay. Hard sandy silt greater than 20 ft. below ground surface.
	***	OS-2	21.5	***	9	Not Encountered	Not Encountered	Riverbank Formation	217	Very stiff to hard lean clay and sandy lean clay.
		LS-1		lab pending	-	-	-		-	

*Refer to Section 2.1 for description of geologic formation and USDA mapped soil type.
**Depths are approximate.
***Stationing not available at time of this report.

3.4.2 Groundwater

We generally observed groundwater at depths of 23 to 29 feet below the ground surface in borings drilled August through September 2020. In three borings near Reeds Creek on Rancho Road, we observed groundwater at depths of 14 to 15 feet. We encountered groundwater 17 feet below the ground surface in one boring on Forty Mile Road just north of Kimball Creek.

Table 3.2 lists the borings and depths where we encountered groundwater.

Table 3.2: Groundwater Summary

Boring	Approximate Station	Boring Depth (ft)	Approximate Depth to Water (ft)
TC-2AA	19+60	51.5	29
TC-2C	300+10	51.5	27.5
TC-7A	321+30	51.5	23
TC-7B	323+30	51.5	15
TC-8A	329+60	51.5	14
TC-8B	331+10	51.5	15
TC-9A	349+70	51.5	25
TC-9B	351+20	51.5	25
TC-10A	400+00	51.5	24
TC-10B	402+60	51.5	24
TC-12A	147+50	51.5	24
TC-12B	149+80	51.5	17
TC-13	85+80	51.4	26
TC-14	427+90	41.5	28

We reviewed groundwater level data for nearby wells available at the California Department of Water Resources website (http://www.water.ca.gov/waterdatalibrary/) and using the Sustainable Groundwater Management Act (SGMA) data viewer (https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#gwlevels). Based on this information, the depth to groundwater across the site typically ranges from 20 to 30 feet, although it occasionally is measured above 20 feet or below 30 feet. Relatively shallow perched water may occur within the near-surface soils during the winter and spring months, and adjacent to the existing canals and streams.

Groundwater and perched water levels can fluctuate due to changes in precipitation, creek levels, canal levels, irrigation, pumping of wells, and other factors.

3.4.3 Existing Pavement Sections

We drilled 30 of the 43 borings in the paved roadway.

- Along Olivehurst Ave, the pavement section consisted of about 6 to 9 inches of AC over 0 to 6 inches of AB.
- Along Mary Ave, the pavement section consisted of about 1 to 6½ inches of Asphalt Concrete (AC) over 0 to 3 inches of Aggregate Base (AB).
- Along McGowan Ave west of Highway 70, the pavement section consisted of about 6 inches of AC over 15 inches of AB.
- Along McGowan Ave east of Highway 70, the pavement section consisted of about 3 to 6 inches of AC over 3 to 6 inches of AB.
- Along Rancho Rd, the pavement section consisted of about 2½ to 9 inches of AC over 9 to 16 inches of AB (Boring P-16 had approximately 32 inches of AB).
- Along Forty Mile Rd, the pavement section generally consisted of about 6 to 7 inches of AC over 10 to 14 inches of AB (boring log TC-12A indicates 3 inches of AC over 4 inches of AB).

Table 3.1 includes approximate pavement section thickness encountered in each boring.

3.5 Preliminary Design Considerations – Sewer and Gravity Force Main

3.5.1 Alignment Ground Suitability

The ground conditions along the proposed pipeline alignment will be suitable for the planned improvements when constructed in accordance with the project plans, industry standards, and our geotechnical recommendations.

3.5.2 Geologic Hazards

- Faulting—The potential for surface rupture or creep due to faulting at the site is very low. The Fault Activity Map of California[2] and the Geologic Map of the Sacramento Quadrangle[3] does not identify Historic or Holocene age faults (displacement within the last 11,700 years) within or immediately adjacent to the site. The site does not lie within or adjacent to an Alquist–Priolo Earthquake Fault Zone[4].
- Ground Shaking—For the Maximum Considered Earthquake, a peak horizontal ground acceleration (PGA) of approximately 0.21g could be expected.
- Liquefaction—Our investigation shows a soil profile that consists of stiff to hard clays and medium dense to dense silty and clayey sands that are not liquefiable. Therefore, the potential for damaging liquefaction at the site is very low.
- Landslides and Slope Stability—Due to the relatively low topographic relief and existing slope gradients we do not expect landslides or natural slope failure.

[2] Jennings, Charles W., and Bryant, William A., 2010 Fault Activity Map of California: California Geological Survey, Geologic Data Map No. 6.

[3] Saucedo, G.J. and Wagner, D.L., et al, 1992, Geologic map of the Chico quadrangle, California, 1: 250,000: California Division of Mines and Geology, Regional Geologic Map 7A, scale 1: 250,000.

[4] Bryant, W.A., and Hart, E.W., 2007 (Interim Revision), Fault-Rupture Hazard Zones in California: California Department of Conservation, Division of Mines and Geology, Special Publication 42.

- Seismically Induced Settlement—During a seismic event, ground shaking can cause densification of granular soil that can result in settlement of the ground surface. Considering the cohesive soils and medium dense to very dense sandy soils observed in the borings, we consider the potential for significant seismically induced settlement to be very low.

3.5.3 Seismic Design

Based on the mapped geology and our subsurface exploration, most of the preliminary pipeline alignment is underlain by stiff soil and a Site Class "D" (California Building Code, 2019).

Table 3.3 presents the California Building Code[5] (CBC) design parameters for the alignment. These values are based on Blackburn's review of design parameters at the approximate midpoint of the pipeline alignment.

Table 3.3: 2019 CBC Seismic Design Parameters (Site Class D)	
S_s – MCE_R ground motion (0.2 second period)	0.496 g
S_1 – MCE_R ground motion (1.0 second period)	0.241 g
F_a – Site Coefficient	1.403
F_v – Site Coefficient	2.12[1]
S_{MS} – Adjusted MCE* Spectral Response Acceleration Parameter	0.696 g
S_{M1} – Adjusted MCE* Spectral Response Acceleration Parameter	0.511 g[1]
S_{DS} – Design Spectral Acceleration Parameter	0.464 g
S_{D1} – Design Spectral Acceleration Parameter	0.341 g[1]
Seismic Design Category	D[1]
**T_L – Long Period Transition Period	12 sec
PGA	0.21

* Maximum Considered Earthquake
** Figure 22-14, ASCE 7-16
1 – We assume that the seismic response coefficient, Cs, is determined by ASCE 7-16 Eq. (12.8-2) for values of T ≤ 1.5Ts and taken as equal to 1.5 times the value computed in accordance with either ASCE 7-16 Eq. (12.8-3) for TL ≥T > 1.5Ts or Eq. (12.8-4) for T > TL. Contact Blackburn to re-evaluate the above parameters if this assumption is not valid.

If the proposed design does not meet the exception noted above (note 1) a site-specific response analysis will be required for final design.

3.5.4 Soil Excavatability and Trench Stability

We anticipate that the site soil will be excavatable with a medium to large size excavator (such as a CAT 320 or similar).

[5] California Building Code, 2016, California Code of Regulations, Title 24, Part 2 (Volume 2); published by International Conference of Building Officials and the California Building Standards Commission (CBSC).

Open excavations 5 feet or deeper will require sloping and/or shoring in accordance with Section 8.4 of the Yuba County Standard Specifications and Cal OSHA requirements. For planning and preliminary design, anticipate sloping/shoring requirements within the soil along the alignment for Type A soil. Excavations near waterway crossings or where perched groundwater/seepage or a sand layer is encountered will require shoring/sloping requirements for a Type C soil (shoring or sloping at a gradient of 1.5:1).

The contractor is responsible for the safety of all temporary excavations and must provide trench sloping and shoring in accordance with current Cal OSHA requirements based on exposed soil and groundwater/seepage conditions. The contractor is also responsible for the protection of existing facilities and improvements. The Contractor must retain an engineer to evaluate the impact of construction traffic vibrations, actual soil conditions exposed in the open excavations, seepage and/or groundwater conditions, surcharges adjacent to excavations, proximity of excavations to existing structures, and other factors that may promote excavation wall instability or cause excavation related damage to existing facilities and improvements and adjust excavation sloping/shoring methods accordingly.

3.5.5 Trench Dewatering

We did not encounter groundwater in our pipeline borings at anticipated trench depths. We anticipate that groundwater/seepage could be encountered at/near trenchless crossings or perched at shallower depths along the project alignment. Section 3.4.2 shows the depth of groundwater encountered in our borings. Groundwater levels may be higher during the late fall through late spring months, resulting from higher water levels in creeks and precipitation infiltrating the shallow surficial soil and ponding above the hard clay layers. Similarly, landscape irrigation along the project alignment could infiltrate and pond above the hard clay layer.

Sump pumps should be adequate to dewater excavations if groundwater/seepage is encountered. during excavation. The contractor is solely responsible for design and performance of dewatering systems.

We strongly recommend scheduling the project excavations and backfill during the summer through early fall months to reduce potential groundwater/seepage impacts.

Dewatering needs may differ near creak crossings. Refer to Jacobs' trenchless crossing design for dewatering recommendations for trenches near creek crossings.

3.5.6 Trench Backfill and Compaction

3.5.6.1 Pipe Bedding and Pipe Zone Material

Support pipe on a minimum of 4-inches of granular bedding and in accordance with the pipe manufacturer's recommendations. Although we do not anticipate soft, unsuitable pipe subgrade at any particular location, it can occur where shallow perched groundwater conditions or sandy soils are encountered. If unsuitable subgrade conditions exist, notify the project engineer and Blackburn for review and mitigation recommendations. Typical mitigation, to achieve a stable and non-yielding subgrade suitable for pipe placement and backfilling, may include replacement of unsuitable subgrade with ¾-inch

minus crushed rock (minimum of 6 inches), enclosed in geotextile filtration fabric such as Mirafi 140N (or equivalent). A granular pipe zone material may also be used.

Native soils will contain a significant amount of fines (passing #200 sieve) and will not be suitable for bedding or pipe zone backfill. For pipe zone backfill material (which extends a minimum 12 inches above the top of pipe), Yuba County, Department of Public Works, Standard Plans and Specifications specifies the following:

1. ¾-inch crushed rock or clean sand compacted to 95% or
2. 2 sack slurry

Use a modulus of soil reaction (E') of:

- 2,000 psi for granular pipe zone backfill outlined above (or another approved granular material) if compacted to >85% relative compaction (ASTM D 1557) or 4,000 psi at >90%.
- 3,000 psi for native soils that consist of stiff to hard clays.

3.5.6.2 Trench Backfill

Yuba County Department of Public Works Trench Details show backfill within existing roadways is to be ¾-inch Class 2 AB compacted to 95% relative compaction (based on ASTM 1557) unless recommended by an engineer and approved by the County. Intermediate trench backfill above the pipe zone material may consist of native excavated soil provided the following recommendations are followed. Fill should be free of debris and concentrations of vegetation.

If import fill is required for trench backfill, it should be graded and have material properties as follows:

- 100% passing the 1-inch sieve
- 75% to 100% passing the #4 sieve
- Minimum 12% passing the #200 sieve
- Plasticity Index not greater than 20
- Free of debris and concentrations of vegetation.

Use ¾-inch Class 2 AB in the upper 12-inches of the trench within roadways.

3.5.6.3 Trench Backfill Compaction

It is important to achieve compaction of Pipe Bedding and Pipe Zone materials at the pipe haunches and spring line; compaction below the pipe spring line will be a difficult task for the contractor. Follow the pipe manufacturer's requirements for initial backfill to avoid damage to the pipe. To facilitate compaction in the pipe zone area (top of bedding up to 12 inches above pipe), use a trench width that provides a minimum clearance of 12 inches between the pipe and trench wall. We recommend a compaction demonstration section to test placement and compaction means and methods for each material type that will be used.

Moisture condition trench backfill above the Pipe Zone material to within 2% of optimum moisture content. Compact pipe backfill:

- To a minimum 92% relative compaction (based on ASTM 1557) below depths of 10 feet.

- To a maximum of 90% relative compaction (based on ASTM 1557) above depths of 10 feet
- In roadways, compact upper 12-inches of AB subgrade to 95% relative compaction (based on ASTM 1557).

To protect the pipe, use a maximum loose lift thickness of 12 inches for the first lift of fill placed above the top of the pipe. Use a maximum loose lift thickness of 8 inches for subsequent lifts. . Jetting is not acceptable for compaction.

Test all trench backfill (bedding, pipe zone backfill, trench zone, etc.) at vertical increments of not more than 1 foot and at final grade or pavement subgrade. For horizontal testing frequency consider a frequency of at least one test for every 200 linear feet of pipe (both sides of pipe in pipe zone). Complete at least one compaction curve (Proctor) for each material type, source location (for import), and as changes in native materials occur. Material changes include a change in material designation based on the Unified Soil Classification System. Testing frequency can be adjusted based on contractor performance, ease of compaction, and material variability.

Soil excavated during pipe installation can have moisture contents well over optimum, especially during the winter and spring months or if perched water is encountered. In this case, it will be necessary to dry back the soil to within 2% of optimum moisture content prior to use as backfill.

3.5.6.4 Trench Backfill Settlement

The magnitude of potential trench backfill settlement will be largely dependent on the degree and uniformity of compaction; therefore, it is important that backfill materials and compaction are checked at frequent intervals to limit potential settlement.

3.5.7 Pipeline Thrust Blocks

We expect thrust blocks to be installed at depths greater than 10 feet. For design of thrust blocks, use a lateral bearing of 200 psf per foot of depth below the surface, up to a maximum of 3,000 psf.

3.5.8 Soil Corrosivity

Our sulfate and chloride content tests indicate that Type II or V Portland cement can be used for concrete mix design. Our pH and resistivity tests generally indicate that the onsite soil exhibits a corrosive to extremely corrosive potential to metal pipes. We are not corrosion consultants and cannot evaluate the potential corrosion impacts to metallic elements embedded in, or in contact with, the ground. A corrosion consultant should provide specific corrosion protection recommendations for buried metallic elements used at the site. Table 3.4 presents the soil corrosivity test results.

Table 3.4: Soil Corrosivity Test Results					
Sample No.	**Depth (ft.)**	**pH**	**Minimum Resistivity (ohm-cm)**	**Sulfate Content (ppm)**	**Chloride Content (ppm)**
P-2-3C	16-16.5	6.02	2,040	4.1	15.4
P-4-4C	14.5-15	6.03	3,220	0.2	6.7
P-7-3B	10-10.5	6.33	1,420	5.0	9.1
P-8-3B	10.5-11	6.24	1,150	19.8	3.1
P-11-3B	10.5-11	7.09	1,230	40.7	17.4
P-16-3C	15.5-16	7.26	1,630	7.5	2.2
P-18-4B	14-14.5	7.25	910	31.5	10.9
P-24-2B	5.5-6	7.18	1,020	40.6	1.3
P-28-1C	3-3.5	6.58	1,070	30.0	2.5
P-32-3B	10.5-11	7.33	1,630	8.0	1.5

4 TRENCHLESS PIPELINE CROSSINGS

4.1 Site Location and Description

The sewer and water pipelines described in Sections 1.3 and 3.1 will use trenchless technologies to cross various waterways and Caltrans freeways. The final size, depths, and trenchless methods have not been determined at this time. Table 4.1 summarizes the location of each trenchless Caltrans crossing and Table 4.2 summarizes the location of each waterway crossing.

Table 4.1: Caltrans Crossing Locations			
Pipeline(s)	**Freeway Crossed**	**Upstream Road**	**Downstream Road**
Water & Sewer	Hwy 70	McGowan Pkwy	McGowan Pkwy
Sewer	Hwy 65	Rancho Rd	Olive Ave
Sewer	Hwy 65	Rossler Rd	Shimer Rd

The Highway 70 grade at the McGowan Pkwy crossing and the Highway 65 grade at the Rancho Rd to Olive Ave crossing are approximately 15 to 20 feet lower than the adjacent roadway grades. At the Highway 65 Rossler Rd to Shimer Rd crossing, the Highway 65 grade is at a similar elevation to the surrounding area.

Table 4.2: Waterway Crossing Locations			
Pipeline(s)	**Waterway Crossed**	**Alignment Road**	**Approximate station of waterway**
Water & Sewer	Reeds Creek	Rancho Rd	322+00
Water & Sewer	Reeds Creek	Rancho Rd	330+00
Water & Sewer	Hutchinson Creek	Rancho Rd	350+00
Water & Sewer	Kimball Creek	Rancho Rd	401+00
Water & Sewer	Culvert	Rancho Rd	428+00
Water	Unnamed creek	Morrison Rd	879+50
Water & Sewer	Culvert	McGowan Pkwy	83+50
Water & Sewer	Kimball Creek	McGowan Pkwy	149+00

The depths of the waterways vary from crossing to crossing. Near the waterway crossings, the roadway is generally lined with trees, bushes and other vegetation.

4.2 Geology

4.2.1 Geology

Tables 4.3 and 4.4 show the mapped geologic formation and USDA soil type within each proposed trenchless crossing area.

4.3 Field Work and Laboratory Testing

4.3.1 Exploratory Borings

To characterize the site subsurface conditions, Blackburn drilled, logged and sampled 17 borings near proposed sending and receiving shaft locations. Jacobs reviewed and approved of the boring locations. Our subcontractor, Taber Drilling, drilled the borings to depths ranging from ± 40 to 50 feet below existing site grades. Appendix B1 shows the proposed site improvements and approximate boring locations. We include the borings logs of borings drilled as of November 10, 2020 in Appendix B2.

Taber drilled the borings using 4-inch diameter solid-stem auger. Soil samples were obtained by Taber at various intervals using a 3.0-inch O.D. Modified California (MC) sampler (equipped with 2.4-inch diameter steel liners) or 2–inch O.D. Standard Penetration (SPT) sampler. Samples were driven with an automatic hammer, weighing 140-pounds and falling approximately 30-inches per blow. We also

collected bulk samples at various depths within the borings. Blackburn's project engineers/geologist Daniel Contreras, Luke Morrell, and Sophie Stuart logged the borings and retained samples for laboratory testing.

4.3.2 Laboratory Testing

Jacobs assigned laboratory tests for trenchless crossing borings. We performed the following laboratory tests on representative soil samples from the exploratory borings as requested:

- Sieve analysis and Plasticity index
- Unconfined compressive strength tests.

Appendix B3 presents the laboratory test results (as of November 10, 2020).

4.4 Subsurface Findings

4.4.1 General Subsurface Soil Conditions

Table 4.3 and 4.4 summarize subsurface soil conditions at the trenchless crossing alignments (based on borings drilled as of November 10th, 2020).

Table 4.3: Subsurface Soil Conditions at Caltrans Trenchless Crossings

Crossing	Boring ID	Boring Depth (ft)	Approximate Boring Station	Approximate Existing Pavement		Approximate Depth to GW (ft)	Mapped Geologic Unit*	USDA Soil Type*	General Subsurface Soil Conditions**
				AC (in)	AB (in)				
McGowan Pkwy under Hwy 70	TC-1A	-	planned future boring	-	-	-	Riverbank Formation	214, 217	-
	TC-1C	-	planned future boring	-	-	-			
Olive Ave to Rancho Rd under Hwy 65	TC-2AA	51.5	19+60	6	NA	29	Basin Deposits	134, 214	Very stiff to hard lean clay and sandy lean clay.
	TC-2C	51.5	300+10	2.5	12	27.5			Hard silt and lean clay in upper 27 ft., underlain by 11 ft. of dense silty sand. Hard lean clay and sandy silt to depth of 50 ft.
Rossler Rd to Shimer Rd under Hwy 65	TC-4A	-	planned future boring	-	-	-	Riverbank Formation	214	-
	TC-4B	-	planned future boring	-	-	-			

*Refer to Section 2.1 for description of geologic formation and USDA mapped soil type.

**Depths are approximate

Table 4.4: Subsurface Soil Conditions

Crossing	Boring ID	Boring Depth (ft)	Approximate Boring Station	Approximate Existing Pavement		Approximate Depth to GW (ft)	Mapped Geologic Unit*	USDA Soil Type*	General Subsurface Soil Conditions**
				AC (in)	AB (in)				
Rancho Rd under Reeds Creek	TC-7A	51.5	321+30	9	12	23	Modesto Formation	214	Stiff to hard lean clay and lean clay with sand within the upper 15 ft., underlain by hard silt to sandy silt and lean clay to depth of 26 to 29 ft. Medium dense to very dense sand and clayey sand to maximum depth explored.
	TC-7B	51.5	323+30	8.5	16	15		142	
	TC-8A	51.5	329+60	9	9	14	Modesto Formation and Riverbank Formation	142, 214	Very stiff to hard lean clay and lean clay with sand within the upper 14 ft., underlain by approximately 10 (TC-8A) to 20 ft (TC-8B) of thickly bedded medium dense to dense sand with varying amounts of fines with thick interbeds of stiff to hard sandy lean clay. stiff to hard lean clay in TC-8A from approximately 24 to 38 ft deep. Both borings indicate dense clean sand to maximum depth explored.
	TC-8B	51.5	331+10	8	16	15			
Rancho Rd under Hutchinson Creek	TC-9A	51.5	349+70	8	16	25	Modesto Formation	142	Stiff to hard lean clay to sandy lean clay within the upper 30 ft. (layer of medium dense clayey sand from approximately 10.5 to 14 ft.) underlain by approximately 5 ft. of medium dense silty sand. Lean clay to sandy lean clay to maximum depth explored.

Table 4.4: Subsurface Soil Conditions

Crossing	Boring ID	Boring Depth (ft)	Approximate Boring Station	Approximate Existing Pavement		Approximate Depth to GW (ft)	Mapped Geologic Unit*	USDA Soil Type*	General Subsurface Soil Conditions**
				AC (in)	AB (in)				
	TC-9B	51.5	351+20	6	12	25			Stiff to hard lean clay, silty clay, and sandy lean clay within the upper 29 ft. (layer of medium dense clayey sand from approximately 23 to 25.5 ft.) underlain by 5 ft. of medium dense silty sand and very stiff silt. Very stiff sandy lean clay and loose to medium dense clayey sand to maximum depth explored.
Rancho Rd under Kimball Creek	TC-10A	51.5	400+00	7	10	24	Riverbank Formation	214	Very stiff to hard lean clay and sandy lean clay within the upper 9 ft. underlain by 5 ft. of medium dense clayey sand. Very stiff sandy silt from approximately 15 to 19 ft. above 7 feet of medium dense sand and sand with silt underlain by 3 ft. of very stiff sandy silt. Medium dense to dense sand and silty sand from 29 ft. deep to maximum depth explored.
	TC-10B	51.5	402+60	NA	NA	24			Stiff to hard lean clay within the upper 24 ft. (layer of very dense gravel with clay and sand from approximately 14 to 17 ft.) underlain by approximately 5 ft. of medium dense silty sand. Stiff to hard lean clay and sandy lean clay from 29 to 38 ft. deep underlain by dense sand and silty sand to maximum depth explored.

Table 4.4: Subsurface Soil Conditions

Crossing	Boring ID	Boring Depth (ft)	Approximate Boring Station	Approximate Existing Pavement		Approximate Depth to GW (ft)	Mapped Geologic Unit*	USDA Soil Type*	General Subsurface Soil Conditions**
				AC (in)	AB (in)				
Rancho Rd culvert	TC-14	41.5	427+90	8	12	28	Riverbank Formation	214	Hard lean clay to lean clay with sand in upper 13 ft., underlain by medium dense to very dense sand, silty sand, and clayey sand to depth of 38 ft. (layer of very dense clayey gravel from 24 ft. to 29 ft.). Stiff lean clay below 38 ft depth to maximum depth explored.
40 Mile Rd culvert	TC-13	51.4	85+80	6.5	12	26	Basin Deposits	131, 214	Stiff to hard lean clay and silt within the upper 35 ft. underlain by 11 ft. of hard sandy silt and dense silty sand. Very stiff silt from approximately 46 to 50 ft. deep underlain by very dense sand with silt.
40 Mile Rd under Kimball Creek	TC-12A	51.5	147+50	3	4	24	Basin Deposits underlain by Riverbank Formation	142, 214	Stiff to very stiff lean clay and silt with sand within the upper 15 ft. underlain by approximately 15 ft. of medium dense clayey sand and sand with silt. Hard silt from 30 ft. to 40 ft. underlain by very dense sand with silt to maximum depth explored.
	TC-12B	51.5	149+80	7	12	17			Hard lean clay and silt with sand within the upper 33 ft. (layer of medium dense clayey sand from 22 to 25.5 ft.) underlain by dense to very dense silty sand and sand to maximum depth explored (lens of very stiff sandy silt at approximately 40 ft. deep).

*Refer to Section 2.1 for description of geologic formation and USDA mapped soil type.

**Depths are approximate

4.4.2 Groundwater

We generally observed groundwater at depths of 23 to 29 feet below the ground surface in our borings drilled August through September 2020. In three (3) borings near Reeds Creek on Rancho Road, we observed groundwater at depths of 14 to 15 feet. We encountered groundwater 17 feet below ground surface in our boring on Forty Mile Road just north of Kimball Creek.

Table 4.5 lists the borings where we encountered groundwater and depth to groundwater.

Table 4.5: Groundwater Summary

Boring	Approximate Station	Approximate Depth to Water (ft.)
TC-2AA	19+60	29
TC-2C	300+10	27.5
TC-7A	321+30	23
TC-7B	323+30	15
TC-8A	329+60	14
TC-8B	331+10	15
TC-9A	349+70	25
TC-9B	351+20	25
TC-10A	400+00	24
TC-10B	402+60	24
TC-12A	147+50	24
TC-12B	149+80	17
TC-13	85+80	26
TC-14	427+90	28

We reviewed groundwater level data for nearby wells available at the California Department of Water Resources website (http://www.water.ca.gov/waterdatalibrary/) and using the Sustainable Groundwater Management Act (SGMA) data viewer (https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#gwlevels). Based on this information, the depth to groundwater at the site typically ranges from 20 to 30 feet, although it occasionally is measured above 20 feet. Relatively shallow perched water may occur within the near-surface soils during the winter and spring months, and adjacent to the existing canals and streams.

Groundwater and perched water levels can fluctuate due to changes in precipitation, creek and canal levels, irrigation, pumping of wells, and other factors.

4.4.3 Existing Pavement Sections

Table 4.6 shows approximate pavement conditions encountered in borings for the trenchless crossings.

Table 4.6: Pavement Conditions			
Boring	**Approximate Station**	**Approximate AC Thickness (in)**	**Approximate AB Thickness (in)**
TC-2AA	19+60	6	NA
TC-2C	300+10	2.5	12
TC-7A	321+30	9	12
TC-7B	323+30	8.5	16
TC-8A	329+60	9	9
TC-8B	331+10	8	16
TC-9A	349+70	8	16
TC-9B	351+20	6	12
TC-10A	400+00	7	10
TC-10B	402+60	NA	NA
TC-12A	147+50	3	4
TC-12B	149+80	7	12
TC-13	85+80	6.5	12
TC-14	427+90	8	12

5 PUMP STATIONS & LIFT STATIONS

5.1 Site Location and Description

Final pump station and lift station locations and wet well depths were not determined at the time of this report. Table 5.1 presents proposed lift and pump station locations based on available information from the design team.

Table 5.1: Lift/Pump Station Locations			
Lift/Pump Station	**Street**	**Nearest Cross Street of Creek**	**Approximate Station**
LS 1	Olivehurst Ave	11th Ave	*
PS 26	Mary Ave	McGowan Pkwy	139+10
PS 2	McGowan Pkwy	Dan Ave	226+30
PS 21	Rancho Rd	Ostrom Rd Or Shimer Rd	368+50 or 355+50
LS 22	Rancho Rd	Kimball Creek	404+60
LS 23	Rancho Rd	Virginia Rd	462+00
LS 24	Forty Mile Rd	Morrison Rd	102+90
PS 25	Forty Mile Rd	Kimball Creek	154+90

*Stationing not available at time of this report.

The preliminary locations are generally flat and covered in grassy vegetation. Photos 9 through 12 represent typical proposed pump/lift station locations.

Photo 9: Pump/Lift Stations

Looking northwest at proposed Lift Station #1 site on corner of Olivehurst Ave and 7th Ave.

Photo 10: Pump/Lift Stations

Looking west at proposed Pump Station #26 site on corner of Mary Ave and McGowan Pkwy.

Photo 11: Pump/Lift Stations

Looking south at proposed Lift Station #23 site on Rancho Rd near Virginia Rd.

Photo 12: Pump/Lift Stations

Looking southeast at proposed Pump Station #25 site on Forty Mile Rd near Kimball Creek. Hard Rock Hotel and Casino can be seen in the background.

5.2 Geology

Table 5.2 shows the geologic formation and USDA soil type mapped within each proposed lift/pump station location.

5.3 Field Work and Laboratory Testing

Field work or laboratory testing for pump or lift stations is ongoing at the time of this report. Blackburn will complete drilling borings and laboratory testing at each pump/lift station once the locations have been confirmed. The following subsurface sections are based on the exploratory borings Blackburn drilled, logged, and sampled for the pipeline and trenchless crossing preliminary design.

5.4 Subsurface Findings

5.4.1 General Subsurface Soil Conditions

Table 5.2 shows subsurface conditions in the borings drilled (as of November 10th, 2020) closest to the planned pump station/lift station location.

Table 5.2: Mapped Geology

Lift/Pump Station	Approximate Station	Geologic Formation*	USDA Soil Type*	Nearest borings **	General Subsurface Soil Conditions***
LS 1	****	Riverbank Formation	217	OS-1	Very stiff to hard lean clay and sandy lean clay within the upper 9 ft., underlain by approximately 6 ft of very dense clayey sand over very stiff lean clay. Hard sandy silt greater than 20 ft. below ground surface.
PS 26	139+10	Riverbank Formation	217	P-3, P-4	Hard lean clay to sandy lean clay within the upper 7 to 10 ft. underlain by medium stiff to very stiff lean clay and lean clay with sand to approximately 18 ft. deep. Medium dense clayey sand to maximum depth explored.
PS 2	226+30	Riverbank Formation or Holocene Alluvium	198	P-5	Very stiff to hard lean clay, sandy lean clay and silt.
PS 21	368+50 or 355+50	Riverbank Formation	214	TC-9B	Stiff to hard lean clay, silty clay, and sandy lean clay within the upper 29 ft. (layer of medium dense clayey sand from approximately 23 to 25.5 ft.) underlain by 5 ft. of medium dense silty sand and very stiff silt. Very stiff sandy lean clay and loose to medium dense clayey sand to maximum depth explored.

Table 5.2: Mapped Geology					
Lift/Pump Station	**Approximate Station**	**Geologic Formation***	**USDA Soil Type***	**Nearest borings ****	**General Subsurface Soil Conditions*****
				P-10	Hard lean clay and lean clay with sand within the upper 9 ft. underlain by dense to very dense clayey sand and silty sand.
LS 22	404+60	Riverbank Formation	214	TC-10B	Stiff to hard lean clay within the upper 24 ft. (layer of very dense gravel with clay and sand from approximately 14 to 17 ft.) underlain by approximately 5 ft. of medium dense silty sand. Stiff to hard lean clay and sandy lean clay from 29 to 38 ft. deep underlain by dense sand and silty sand to maximum depth explored.
				P-13	Hard lean clay to sandy lean clay within the upper 15 ft. underlain by medium dense sand with silt.
LS 23	462+00	Riverbank Formation	131	P-15, P-16	Stiff to hard lean clay within the upper 5 ft, underlain by 5 to 10 ft of medium dense clayey sand and hard sandy clay over hard lean clay and silt.
LS 24	102+90	Riverbank Formation	214	P-26, P-27	Very stiff to hard lean clay, lean clay with sand, silt with sand, and sandy silt within the upper 20 ft. (Very dense poorly-graded sand with silt below 18 ft. in Boring P-26)
PS 25	154+90	Riverbank Formation	214	TC-12B	Hard lean clay and silt with sand within the upper 33 ft. (layer of medium dense clayey sand from 22 to 25.5 ft.) underlain by dense to very dense silty sand and sand to maximum depth explored (lens of very stiff sandy silt at approximately 40 ft. deep).

*Refer to Section 2.1 for description of geologic formation and USDA mapped soil type.
**Nearest boring drilled by Blackburn as of Nov. 10, 2020
***Depths are approximate
****Stationing not available at time of this report.

5.4.2 Groundwater

We generally observed groundwater at depths of 24 to 29 feet below ground surface in the borings drilled nearest the proposed pump/lift station locations in August through September 2020. In boring TC-12B (near proposed Pump Station #25) we measured groundwater at a depth of 17 feet below ground surface.

We reviewed groundwater level data for nearby wells available at the California Department of Water Resources website (http://www.water.ca.gov/waterdatalibrary/) and using the Sustainable Groundwater Management Act (SGMA) data viewer (https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#gwlevels). Based on this information, the depth to groundwater at the site typically ranges from 20 to 30 feet, although it occasionally is measured above 20 feet. Relatively shallow perched water may occur within the near-surface soils during the winter and spring months, and adjacent to the existing canals and streams.

Groundwater and perched water levels can fluctuate due to changes in precipitation, creek and canal levels, irrigation, pumping of wells, and other factors.

Table 5.3 lists groundwater depth in the 2 borings nearest to each pump station in which the driller encountered groundwater.

Table 5.3 Groundwater Summary

Lift/Pump Station Proposed Location	Approximate Station	Nearest Borings	Approximate Distance from Lift/Pump Station (yd)	Approximate Depth to Water (ft.)**
LS 1	***	TC-2AA	2,230	29
		B8*	2,640	20.7
PS 26	139+10	B8*	1,380	20.7
		TC-2AA	1,620	29
PS 2	226+30	TC-2AA	870	29
		TC-2C	1,030	27.5
PS 21	368+50 or 355+50	TC-9B	Pump station location not determined at time of this report	25
		TC-10A		24
LS 22	404+60	TC-10B	30	24
		TC-10A	110	24
LS 23	462+00	TC-6A	1,500	NA
		TC-10B	1,960	24
LS 24	102+90	TC-13	540	26
		TC-12A	1,520	24
PS 25	154+90	TC-12B	160	17
		TC-12A	250	24

*Drilled in 2004 for CH2M HILL WWTP Expansion and Upgrade Project Schematic Design – Preliminary Geotechnical Exploration Report
** Depth to groundwater measured from ground surface at boring location. Elevation of ground surface at pump/lift station may differ from elevation of ground surface at boring location.
***Stationing not available at time of this report.

5.5 Preliminary Design Considerations – Pump/Lift Stations

The final locations of the pump/lift stations have not been determined. Our subsurface investigation and laboratory testing will be completed once Jacobs determines the final locations and obtains the Rights-

of-Entry. Based on nearby borings completed for the pipeline and trenchless crossings, we anticipate the soil conditions within the proposed pump/lift station sites will be suitable for the planned facilities when constructed in accordance with the project plans, industry standards, and our final geotechnical recommendations. The recommendations below are for preliminary design only and will need to be finalized after we complete the site-specific borings, laboratory tests, and further analysis.

5.5.1 Geologic Hazards

- Faulting—The potential for surface rupture or creep due to faulting at the site is very low. The Fault Activity Map of California[6] and the Geologic Map of the Sacramento Quadrangle[7] does not identify Historic or Holocene age faults (displacement within the last 11,700 years) within or immediately adjacent to the site. The site does not lie within or adjacent to an Alquist–Priolo Earthquake Fault Zone[8].
- Ground Shaking—For the Maximum Considered Earthquake, a peak horizontal ground acceleration (PGA) of approximately 0.21g could be expected.
- Liquefaction—Our investigation shows a soil profile that consists of stiff to hard clays and medium dense to dense silty and clayey sands that are not liquefiable. Therefore, the potential for damaging liquefaction at the site is very low.
- Landslides and Slope Stability—Due to the relatively low topographic relief and existing slope gradients, we do not expect landslides or natural slope failure.
- Seismically Induced Settlement—During a seismic event, ground shaking can cause densification of granular soil that can result in settlement of the ground surface. Considering the cohesive soils and medium dense soils observed in the borings, we consider the potential for significant seismically induced settlement to be very low.

5.5.2 Seismic Design

Based on the mapped geology and our boring data, use a Site Class “D” (stiff soil). Table 5.4 presents the 2019 *California Building Code* (Chapter 16) and ASCE 7-16 seismic design parameters for the site.

[6] Jennings, Charles W., and Bryant, William A., 2010 Fault Activity Map of California: California Geological Survey, Geologic Data Map No. 6.
[7] Saucedo, G.J. and Wagner, D.L., et al, 1992, Geologic map of the Chico quadrangle, California, 1: 250,000: California Division of Mines and Geology, Regional Geologic Map 7A, scale 1: 250,000.
[8] Bryant, W.A., and Hart, E.W., 2007 (Interim Revision), Fault-Rupture Hazard Zones in California: California Department of Conservation, Division of Mines and Geology, Special Publication 42.

Table 5.4: 2019 CBC Seismic Design Parameters (Site Class D)	
S_s – MCE_R ground motion (0.2 second period)	0.496 g
S_1 – MCE_R ground motion (1.0 second period)	0.241 g
F_a – Site Coefficient	1.403
F_v – Site Coefficient	2.12[1]
S_{MS} – Adjusted MCE* Spectral Response Acceleration Parameter	0.696 g
S_{M1} – Adjusted MCE* Spectral Response Acceleration Parameter	0.511 g[1]
S_{DS} – Design Spectral Acceleration Parameter	0.464 g
S_{D1} – Design Spectral Acceleration Parameter	0.341 g[1]
Seismic Design Category	D[1]
**T_L – Long Period Transition Period	12 sec
PGA	0.21

* Maximum Considered Earthquake
** Figure 22-14, ASCE 7-16
1 – We assume that the seismic response coefficient, Cs, is determined by ASCE 7-16 Eq. (12.8-2) for values of T ≤ 1.5Ts and taken as equal to 1.5 times the value computed in accordance with either ASCE 7-16 Eq. (12.8-3) for TL ≥T > 1.5Ts or Eq. (12.8-4) for T > TL. Contact Blackburn to re-evaluate the above parameters if this assumption is not valid.

If the proposed design does not meet the exception noted above (note 1) a site-specific response analysis will be required for final design.

5.5.3 General Grading Recommendations

5.5.3.1 Excavation Conditions

Based on the soil conditions and drilling performance for nearby explorations, excavation is likely possible with conventional equipment (common earthmoving equipment and large backhoe/excavator). The fine-grained and hard soil conditions can create slow excavation conditions.

5.5.3.2 Site Clearing

Prior to excavation or making any cuts and fills, remove existing underground utilities, foundations, vegetation (root balls and roots), debris, and other underground features in accordance with this Geotechnical Report. Remove loose and disturbed soil caused by the removal(s) and widen the excavation/depression so it is accessible to compaction equipment. Remove strippings from the site or use as landscape soil in designated areas.

5.5.3.3 Original Ground and Subgrade Preparation

After clearing, process and compact the exposed soil in at-grade, cut, and fill areas as follows:

- Scarify the exposed soil to a depth of approximately 8 inches.
- Moisture condition subgrade to within 3% of the optimum moisture content.
- Compact the subgrade soil to a minimum 90% relative compaction based on ASTM D1557

Where fill is placed on sloping ground, blade back slopes horizontally during placement of embankment fill to create a stepped (or benched) fill surface (such that a uniform, sloping fill surface is avoided). Benching must remove loose surficial soils and result in stepped benches, generally one to two feet in height and depth into the existing slope. The lower bench should be sloped a minimum of 2% into the slope. Where benching will interfere with existing structures, utilities, or vegetation, Blackburn can review modifications on a case-by-case basis.

5.5.3.4 General Fill Placement and Compaction

General Fill (not structure backfill) may consist of on-site soil. Fill should be free of debris and concentrations of vegetation.

If import fill is required, it should be graded and have material properties as follows:

- 100% passing the 1-inch sieve
- 75% to 100% passing the #4 sieve
- Minimum 12% passing the #200 sieve
- Plasticity Index not greater than 20
- Free of debris and concentrations of vegetation.
- Approval from Blackburn prior to placement

Place fill in maximum 8-inch thick loose lifts, moisture condition 1% to 2% above optimum, and compact to a minimum of 90% relative compaction based on ASTM D 1557 test procedure. Compact fill using a sheepsfoot or padded drum type roller.

Construct fill slopes no steeper than 2(H):1(V). To achieve adequate compaction on the face of fill slopes, over-build the slopes and then cut back to the design grade. Track-walking is not an adequate method to compact the face of slopes.

5.5.4 Dewatering

Dewatering may be required for installations greater than approximately 20 feet deep. Significant groundwater inflow may occur at the pump stations, particularly those located near water ways during winter and spring months.

Dewatering can consist of:

- Deep sumps within the excavation. Considering the presence of fine-grained soils and relatively flat lying bedding, sumps within the excavation are not likely to provide good drawdown.
- Well points. Well points will likely work better to cut off flow into the excavation and drawdown the water level over a larger area.

To facilitate work at the base of the excavation, groundwater should be drawn down at least 3 feet below the planned bottom of excavation. The need for dewatering can be reduced by planning excavations during the lowest anticipated seasonal water levels (expected during the late summer and fall months.

5.5.5 Temporary Excavations

Temporary excavations will require sloping and/or shoring in accordance with Cal OSHA requirements. Based on our subsurface exploration and laboratory testing, preliminary excavation and shoring design may be based on Type A soil to planned excavation depth that may be sloped at 3/4(H):1(V).

Where groundwater is present or cohesionless/uncemented granular soils are encountered, Type C soil conditions will apply and a 1.5(H):1(V) slope gradient is required.

The Contractor must retain an engineer to evaluate the impact of existing structures, traffic vibrations, actual soil conditions exposed in the open trenches, and other factors that may promote trench wall instability and adjust trench sloping/shoring accordingly. Surcharge loads such as trench spoils, equipment, etc. should not be placed adjacent to an open excavation (within a distance of ½ the height of the trench). ***The above is guideline information only.*** The contractor is responsible for the safety of all excavations and should provide appropriate excavation sloping and shoring in accordance with current Cal OSHA requirements and observe conditions observed during construction for necessary modification and safety.

5.5.6 Foundations

5.5.6.1 Below-Grade Foundations

5.5.6.1.1 Bearing Capacity

The pump/lift stations are below-grade structures and the net pressure exerted upon the subsurface will be similar to or less than the current soil pressure at the bottom of the pump station wet wells. Excavation for below-grade structures reduces the net pressure by removing soil that acts as a “preload” to the underlying soils, thus “unloading” the bearing materials before “loading” by placement of the structure.

We understand that below grade structures will use mat type foundations for support. For structures at depths greater than 15 feet:

- Use a maximum net contact pressure for mat foundation of 3,000 psf.
- Use a Modulus of Subgrade Reaction, k_s, equal to 25 pci.
- We expect settlement of mat foundations is expected to be less than 1 inch with differential settlement less than ½-inch across the pump station structure.
- Clean footing excavations of debris and loose soil prior to placing concrete.
- Blackburn must observe all footing excavations prior to reinforcement placement to verify competent bearing materials.
- For subgrade uniformity, Caltrans Class 2 aggregate baserock as underlayment (this is not geotechnically necessary provided a firm uniform subgrade is obtained). If an aggregate underlayment is used, place a minimum thickness of 6-inches and compact to a minimum of 95% relative compaction (per ASTM D 1557 test method).
- Crushed rock underlayment may also be used (and can benefit excavation dewatering). Underlay the crushed rock with a geotextile filter fabric (i.e., Mirafi 140N) and compact the rock with at least 6 passes of a static roller.

If isolated spread footings or piers are required for column support, Blackburn can provide additional recommendations when the planned design and approximate loading is available.

5.5.6.1.2 Structure Backfill

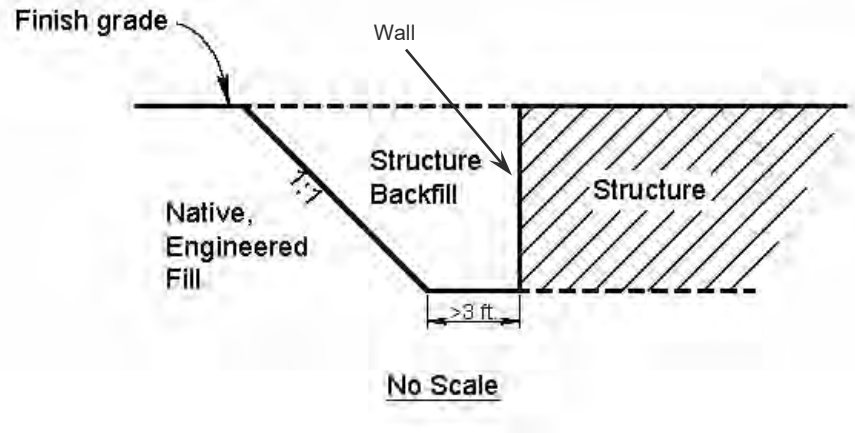
Native material encountered in our borings for the pipeline and trenchless crossings primarily consist of fine-grained soils and are not suitable for structure backfill.

Use the specifications in Table 5.5 for imported structure backfill for all below-grade structures:

Table 5.5: Import Structure Backfill Requirements

Gradation		Test Procedures	
Sieve Size	**Percent Passing**	**ASTM**	**Caltrans**
1 inch	100	D6913	202
¾ inch	70-100	D6913	202
No. 4	50-100	D6913	202
No. 200	12-40	D6913	202
Plasticity			
Plasticity Index	<12	D4318	204

As shown below, the zone of placement for structure backfill should extend up from the base of the wall at a slope of 1(H):1(V) and at least 3 feet behind the wall.



- Moisture condition structure backfill to within 2% of optimum and place in maximum 8-inch thick, horizontal, loose lifts.
- Compact structure backfill to a minimum 92% relative compaction based on the ASTM D 1557 test method.

To minimize the residual lateral earth pressures on structure walls, restrict compaction equipment behind the walls (by load and distance from wall) so that wall design values are not exceeded. We

recommend compaction within a horizontal distance equal to one-half of the wall height (to a maximum distance of 5 feet), be completed with hand-operated equipment (i.e., jumping jack).

To minimize the potential for significant settlement around deep walls, controlled low strength material (CLSM) can be used to backfill to the surface or to a manageable depth (e.g., 10 feet below grade).

5.5.6.1.3 Lateral Earth Pressures

The pump/lift stations are below grade structures that will act as restrained retaining structures. Walls will retain compacted select native soils and/or imported soils meeting the requirement for structure backfill. For evaluation of lateral earth pressures, use the backfill equivalent fluid weights (EFW) for level ground conditions shown below in Table 5.6.

Table 5.6: LATERAL EARTH PRESSURES

Condition	Equivalent Fluid Weight (pcf)	Seismic Equivalent Fluid Weight (pcf)
At-Rest	85	6
Passive	150	140*

*Total passive EFW for passive condition

The above pressures assume structure backfill placed against the structure wall in accordance with our recommendations, a saturated (total) unit weight of approximately 135 pounds per cubic foot (pcf) and a minimum internal angle of friction of 32 degrees. Notify Blackburn if these assumptions are not valid so that we may assess the situation and provide additional recommendations, if necessary. Backfill with CLSM is an acceptable alternative.

For seismic loading, add the Seismic EFW to the at-rest EFW and apply the total force as a uniform load on the wall with a resultant located at 0.5H where H is the backfill height. We estimated the EFWs for seismic loading using the Mononobe-Okabe equation and a horizontal seismic acceleration coefficient, k_h, of approximately ½ the expected PGA (0.22). This k_h value assumes that the walls displace at least 1-inch during the design seismic event.

Surface loads (footings, storage, vehicle traffic) applied near the wall will increase the lateral pressure on the wall. A uniform surface load of 240 psf to 300 psf is often used to approximate construction traffic loading on walls. In general, if surface loads are closer to the edge of the retaining wall than three-fourths of the retained height, increase the design wall pressure by 0.5q over the area of the retaining wall. In this expression, q is the surface surcharge load in psf. This is a conservative procedure and lower design pressures may be applicable upon evaluation of individual surface loads and setback distances.

5.5.6.1.4 Buoyancy Resistance

Based on nearby borings we estimate a groundwater depth of approximately 20 feet, as discussed in Section 5.4.2. In undrained conditions, structures below a depth of approximately 20 feet, may be subjected to an uplift load (buoyancy). The uplift force will be resisted by the weight of the structure and the weight of the backfill overlying foundation extensions (if any).

If Jacobs designs foundation extensions to resist buoyancy forces, calculate the resistance against uplift due to the weight of the soil. Use a backfill total unit weight of 130 pcf above groundwater and 67 pcf below groundwater, with a soil wedge extending vertically up from foundation extensions

5.5.6.1.5 Lateral Resistance

Lateral resistance for retaining structures can be achieved through friction and passive earth pressures acting on the foundation. For design, use a coefficient of friction of 0.40 (below or above groundwater) at the base of the concrete footing and a passive earth pressure of 150 psf per foot of embedment depth. Limit passive earth pressures to a maximum of 3,000 psf (additional passive pressure can be evaluated for specific locations if necessary). Do not include the upper 1-foot of soil in passive resistance calculations. Where passive pressure or friction alone is used against sliding, use a minimum factor of safety of 1.5 for lateral stability (1.1 if seismic loading is included). Where both passive pressure and friction are used to resist sliding, use a minimum factor of safety of 2.0.

5.5.6.2 Minor Structures

Provided that the recommendations in this report are followed, we anticipate minor structures (such as valve vaults, etc.) may be founded on concrete mat or strip footings, or a compacted granular base (minimum of 6 inches of Class 2 baserock) if appropriate.

- Embed the foundations a minimum of 18 inches below the lowest adjacent prepared subgrade into firm native soil or compacted fill/backfill.
- Footings must be a minimum of 12 inches wide and sized not to exceed an allowable bearing capacity of 2,000 psf. The allowable bearing capacity may be increased by one-third if seismic and/or wind loads are included.
- If additional bearing capacity is required for specific minor structures, we can review and provide recommendations on a case-by-case basis.
- To resist lateral movement, use a coefficient of friction of 0.40 at the base of the foundation and an ultimate passive earth pressure of 150 psf (undrained condition) per foot of embedment depth up to a maximum of 2,000 psf. Ignore the upper one-foot of footing depth (below the lowest adjacent soil grade) in determination of the passive pressure. Both frictional resistance and passive earth pressure can be combined for lateral resistance; when combined, increase the safety factor against sliding from a minimum of 1.5 to 2.0.

5.5.7 Soil Corrosivity

Our sulfate and chloride content tests on pipeline samples indicate that Type II or V Portland cement can be used for concrete mix design. Our resistivity tests generally indicate that the onsite soils may exhibit corrosive to extremely corrosive conditions for metal pipes. We are not corrosion consultants and cannot evaluate the potential corrosion impacts to metallic elements embedded in or in contact with the ground. A corrosion consultant should provide specific corrosion protection recommendations for buried metallic elements used at the site.

6 WWTP IMPROVEMENTS

6.1 Site Location and Description

The proposed WWTP expansion will be constructed at the existing WWTP on Mary Ave in Olivehurst. The proposed secondary clarifier location is generally level and covered in gravel. The site for the proposed equalization basin is generally flat but depressed approximately 3 to 4 feet below the WWTP ground surface and is covered in seasonal grass and weeds. Photos 9 and 10 represent site conditions at the time of our October 19, 2020 site visit.

Photo 13: Secondary Clarifier

Looking northwest at proposed secondary clarifier location. Existing secondary clarifier can be seen on the left in the background.

Photo 14: Equalization Basin

Looking south across the proposed equalization basin. Existing slope along east side of basin can be seen in background.

6.2 Project Description

The proposed WWTP improvements consist of an additional secondary clarifier, a 30.7 Acre-ft concrete-lined equalization basin, a 4.37 Acre-ft Stormwater Detention Basin, and a 16-inch-diameter force main.

6.3 Previous Studies

Geotechnical conclusions and recommendations for the proposed secondary clarifier presented in this report are primarily based on the CH2M HILL WWTP Expansion and Upgrade Project Schematic Design – Preliminary Geotechnical Exploration Report, February 2004 (CH2M Report).

6.4 Geology

We reviewed geology maps and the United States Department of Agriculture's (USDA) Web Soil Survey (https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm) to infer likely subsurface conditions at the site. The "Geologic Map of the Late Cenozoic Deposits of the Sacramento Valley and Northern Sierra Foothills, California" (Helley and Harwood, 1985) generally maps Upper Member, Riverbank Formation under the site. Refer to Section 2.1 for a description of the Riverbank Formation.

The web soil survey indicates that the site is underlain by San Joaquin loam (214). The survey states this unit has the following relevant properties from 0 to 25 inches deep: Silt (ML), Silty Clay (CL-ML) and Clay (CL) with fines content ranging from 50 to 70 percent.

6.5 Field Work and Laboratory Testing

6.5.1 Exploratory Test Pits

Blackburn excavated, logged, and sampled 5 test pits to characterize the site subsurface conditions at the equalization basin site. Our subcontractor, Burke Construction, excavated the test pits to a depth of 8 feet below existing site grades. Appendix D1 shows the proposed site improvements and approximate test pit locations. The test pit logs are included in Appendix D2. Burke Construction excavated the test pits using a CAT 420 backhoe equipped with a 2-foot wide bucket. Blackburn's project engineer, Luke Morrell, logged the test pits, collected samples from various depths and retained samples for laboratory testing.

Blackburn drilled an exploratory boring for the clarifier but lab has not been completed at this time, so no recommendations in this report are based on conditions in Blackburn's boring.

6.5.2 Laboratory Testing

We have not completed laboratory tests on the samples collected from the equalization basin site.

6.6 Subsurface Findings

6.6.1 General Subsurface Soil Conditions

We generally encountered hard lean clay to sandy lean clay in the test pits, excavated October 19, 2020. In the southeast portion of the equalization basin (TP-5), we encountered dense clayey sand below a depth of approximately 2.5 feet.

The CH2M Report (2004) indicates that the subsurface soils in boring B8 near the proposed secondary clarifier location consist of:

- Approximately 3 feet of sandy clay over a lean clay with sand hardpan layer to approximately 8 feet below ground surface.
- Sandy clays and clayey sands from depths of about 8 to 23 feet,
- Sandy gravel from depths of 23 to 30 feet.
- Sandy clay and clayey sand to the maximum depth explored (41.5 ft).

6.6.2 Groundwater

We did not encounter groundwater in our test pits excavated October 19, 2020.

According to the CH2M Report (2004) and associated boring logs, perched groundwater was encountered in the sandy clay above the hardpan layer and groundwater was measured 20.7 feet below the ground surface near the proposed secondary clarifier location. The logs indicate that the groundwater elevation ranges from 29.8 to 33.3 feet across the WWTP site (CH2M Report does not specify datum used).

We reviewed groundwater level data for nearby wells available at the California Department of Water Resources website (http://www.water.ca.gov/waterdatalibrary/) and using the Sustainable Groundwater Management Act (SGMA) data viewer

(https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#gwlevels). Based on this information, the groundwater elevation at the site typically ranges from 25 to 40 feet above mean sea level (NAVD88). Relatively shallow perched water may occur within the near-surface soils during the winter and spring months, and adjacent to the existing canals and streams.

Groundwater and perched water levels can fluctuate due to changes in precipitation, canal levels, irrigation, pumping of wells, and other factors.

6.7 Preliminary Design Considerations – WWTP Improvements

At the time of this report, basin design was not finalized. Blackburn will provide updated recommendations in the design-level geotechnical report based on final basin design.

6.7.1 Facility Ground Suitability

The soil conditions at the site are suitable for the planned facilities when constructed in accordance with the project plans, industry standards, and our geotechnical recommendations. Some of the more significant site limitations include the presence of clay soils that will not be suitable for structure backfill, and relatively shallow groundwater that may require dewatering for some structure installations.

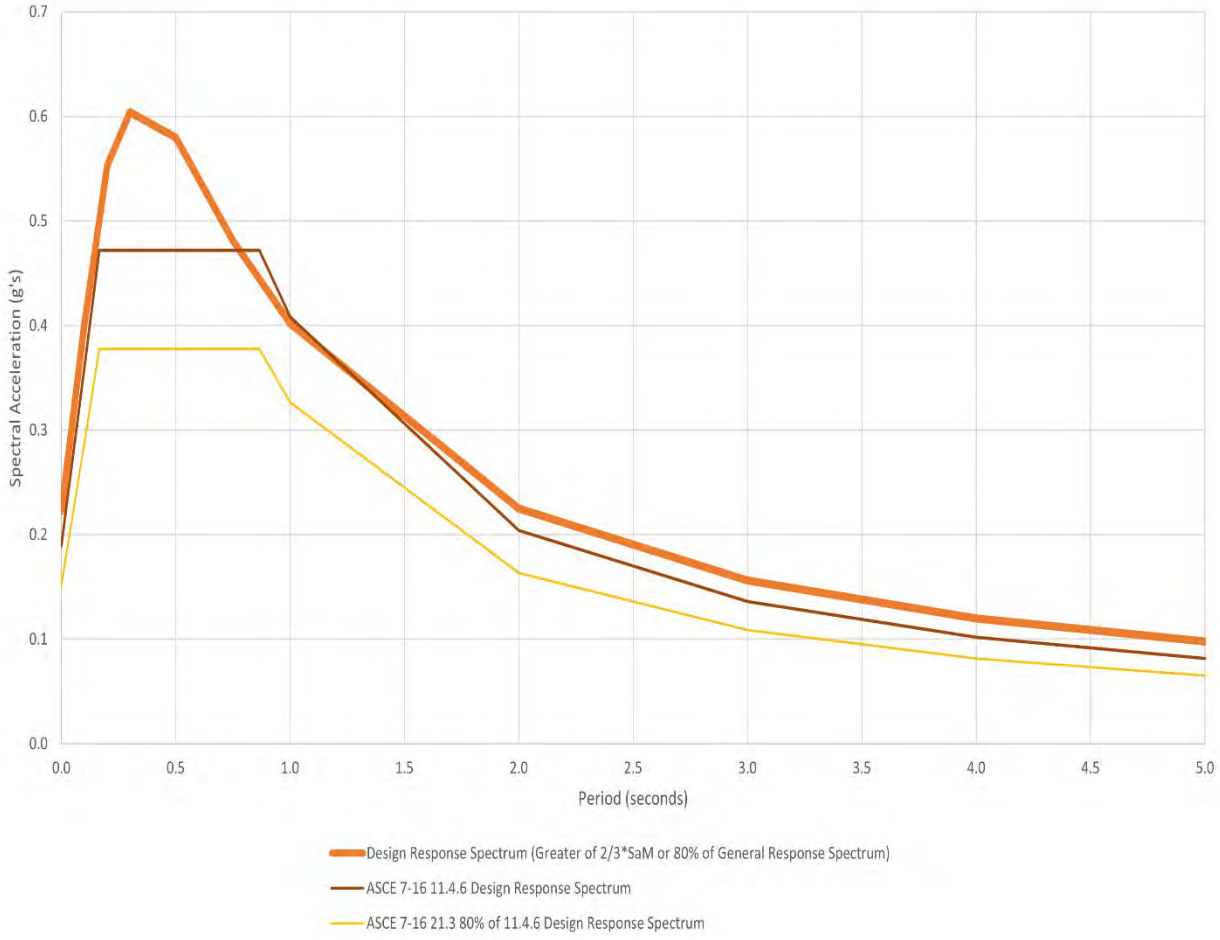
6.7.2 Geologic Hazards

- Faulting—The potential for surface rupture or creep due to faulting at the site is very low. The Fault Activity Map of California[9] and the Geologic Map of the Sacramento Quadrangle[10] does not identify Historic or Holocene age faults (displacement within the last 11,700 years) within or immediately adjacent to the site. The site does not lie within or adjacent to an Alquist–Priolo Earthquake Fault Zone[11].
- Ground Shaking— For the Maximum Considered Earthquake, a peak horizontal ground acceleration (PGA) of approximately 0.22g could be expected.
- Liquefaction—Our investigation shows a soil profile that consists of stiff to hard clays and medium dense to dense silty and clayey sands that are not liquefiable. Therefore, the potential for damaging liquefaction at the site is very low.
- Landslides and Slope Stability—Due to the relatively low topographic relief we do not expect landslides or natural slope failure.
- Seismically Induced Settlement—During a seismic event, ground shaking can cause densification of granular soil that can result in settlement of the ground surface. Considering the cohesive soils and medium dense soils observed in the borings, we consider the potential for significant seismically induced settlement to be very low.

[9] Jennings, Charles W., and Bryant, William A., 2010 Fault Activity Map of California: California Geological Survey, Geologic Data Map No. 6.
[10] Saucedo, G.J. and Wagner, D.L., et al, 1992, Geologic map of the Chico quadrangle, California, 1: 250,000: California Division of Mines and Geology, Regional Geologic Map 7A, scale 1: 250,000
[11] Bryant, W.A., and Hart, E.W., 2007 (Interim Revision), Fault-Rupture Hazard Zones in California: California Department of Conservation, Division of Mines and Geology, Special Publication 42.

6.7.3 Seismic Design

We assumed, based in part on our boring data, an average shear wave velocity, V_{S30}, of 850 ft/sec that corresponds to a site class "D" (Section 2.3). Per ASCE 7-16 a site-specific analysis is required for a site class "D" site unless one of the exceptions noted in ASCE7-16, Section 11.4.8, is used. We understand that for this project the exception will not be used. Therefore, we performed a site-specific analysis per ASCE 7-16, Chapter 21. We analyzed probabilistic and minimum code values to develop a site-specific spectra for 5% damping. A deterministic analysis is not required because the largest spectral response acceleration of the probabilistic ground motion response calculated in accordance with ASCE 7-16 21.2.1 is less than 1.2 F_a. The recommended spectra are presented in Graph 2 and digitized spectral values in Table 2. Appendix D4 presents details of our site specific response analysis.



Graph : Site-Specific Design Spectra

Use the S_{MS}, S_{M1}, S_{DS}, and S_{D1} values in Table 3. We calculated the values in accordance with ASCE 7-16, Section 21.4 and 21.5.

Table C-3: Comparison of Recommended and ASCE 7-16 Section 11.4.6 Spectra			
Period	**Recommended Design Response Spectrum**	**ASCE 7-16 11.4.6 Response Spectrum**	**80% of ASCE 7-16 11.4.6 Response Spectrum**
0	0.223	0.189	0.151
0.1	0.400	0.359	0.288
0.166	0.507	0.472	0.378
0.2	0.553	0.472	0.378
0.3	0.604	0.472	0.378
0.5	0.580	0.472	0.378
0.75	0.481	0.472	0.378
0.865	0.440	0.472	0.378
1.0	0.402	0.408	0.327
2.0	0.225	0.204	0.163
3.0	0.156	0.136	0.109
4.0	0.120	0.102	0.082
5.0	0.098	0.082	0.065

Table C-4: Design Spectral Acceleration Values and Peak Ground Acceleration	
Parameter	**Acceleration Value (g's)**
S_{MS}	0.815[1]
S_{M1}	0.735[2]
S_{DS}	0.544[3]
S_{D1}	0.490[4]
PGA_M	0.317[5]

[1]S_{MS} 1.5 times the S_{DS} value in Table C-4
[2]S_{M1} 1.5 times the S_{D1} value in Table C-4
[3]S_{DS} 90% of the maximum spectral acceleration from the site-specific spectrum (0.399)
[4]S_{D1} Maximum value of the product of TS_a (time multiplied by spectral acceleration value) for periods of 1 to 2 seconds for sites with V_{S30} of greater than 1,200 ft/s)
[5]The site-specific MCE_G peak ground acceleration (PGA_M) is the lesser of the probabilistic or deterministic mean peak ground acceleration.

6.7.4 General Grading Recommendations

6.7.4.1 Excavation Conditions

Based on the soil conditions and drilling performance, excavation is possible with conventional equipment (common earthmoving equipment and large backhoe/excavator). The fine-grained and hard soil conditions can create slow excavation conditions and is not suitable for structure backfill.

6.7.4.2 Site Clearing

Prior to trenching or making any cuts and fills, remove existing underground utilities, foundations, vegetation (root balls and roots), debris, and other underground features in accordance with this Geotechnical Report. Remove loose and disturbed soil caused by the removal(s) and widen the excavation/depression so it is accessible to compaction equipment. Remove strippings from the site or use as landscape soil in designated areas.

6.7.4.3 Original Ground and Subgrade Preparation

Process and compact the exposed soil in at-grade, cut, and fill areas as follows:

- Scarify the exposed soil to a depth of approximately 8 inches.
- Moisture condition subgrade to within 3% of the optimum moisture content.
- Compact the subgrade soil to a minimum 90% relative compaction based on ASTM D1557.

Where fill will be placed on or against slopes with a gradient of 5(H):1(V) or steeper, fill must be benched into the slope. Benching must remove loose surficial soils and result in stepped benches, generally one to two feet in height and depth into the existing slope. Where benching will interfere with existing structures, utilities, or vegetation, Blackburn can review modifications on a case-by-case basis.

For fills that are 5 feet or higher and placed on or against a slope with a gradient of 5:1 or steeper, provide a key at the toe of the fill slope. The key must be a minimum of 10 feet wide, one foot deep, sloped a minimum of 2% into the slope, and extend 2 feet beyond the fill toe. Where restricted access will not allow for a toe-bench 10 feet wide, the bench can be reduced to a minimum width of 6 feet provided the fill slope is less than 10 feet in height and the contractor can show that compaction equipment can achieve the specified compaction for the full width of the bench.

6.7.4.4 General Fill Placement and Compaction

General fill (**not trench or structure backfill**) may consist of on-site soil provided it contains no rocks larger than 4 inches in maximum dimension. Fill should be free of debris and concentrations of vegetation.

If import for general fill is required, it must be free of debris and meet the following requirements:

Table 6.4: General Backfill Import Requirements

Gradation		**Test Procedures**	
Sieve Size	**Percent Passing**	**ASTM**	**Caltrans**
1 inch	100	D6913	202
No. 4	75-100	D6913	202
No. 200	12-100	D6913	202
Plasticity Index			
Less than 20		D4318	

- Approved by Blackburn prior to site delivery.

Place and compact fill as follows:

- Place fill in maximum 8-inch-thick loose lifts,
- Moisture condition the soil within 3% of optimum
- Compact the soil to a minimum 90% relative compaction based on ASTM D1557.

Test all fill at vertical increments of not more than 1 foot and at final grade or pavement subgrade. For horizontal testing frequency, use the following minimums:

- One test for every 100 square feet around structures
- One test for every 500 square feet for structure pads

Complete at least one compaction curve (Proctor) for each material type, source location (for import), and as changes in native materials occur. Material changes include a change in material designation based on the Unified Soil Classification System.

6.7.4.5 Fill Slopes

Construct fill slopes no steeper than 2(H):1(V). To achieve adequate compaction on the face of fill slopes, over-build the slopes and then cut back to the design grade. Track-walking is not an adequate method to compact the face of slopes.

6.7.5 Dewatering

Dewatering may be required for installations greater than approximately 15 feet deep (see Section 6.6.2). Significant groundwater inflow should be anticipated at the deeper excavations for the clarifier.

Dewatering can consist of:

- Deep sumps within the excavation. Considering the presence of fine-grained soils and relatively flat lying bedding, sumps within the excavation are not likely to provide good drawdown.
- Well points. Well points will likely work better to cut off flow into the excavation and drawdown the water level over a larger area.

To facilitate work at the base of the excavation, groundwater should be drawn down at least 3 feet below the planned bottom of excavation. The need for dewatering can be reduced by planning excavations during the lowest anticipated seasonal water levels (expected during the late summer and fall months).

6.7.6 Temporary Excavations

Temporary excavations will require sloping and/or shoring in accordance with Cal OSHA requirements. Based on previous subsurface explorations by CH2M Hill, preliminary excavation and shoring design may be based on Type A soil to planned excavation depth. For Type A soil conditions, temporary excavations may be sloped at ¾(H):1(V).

Where groundwater is present or cohesionless/uncemented granular soils are encountered, Type C soil conditions will apply and a 1.5(H):1(V) slope gradient is required.

The Contractor must retain an engineer to evaluate the impact of existing structures, traffic vibrations, actual soil conditions exposed in the open trenches, and other factors that may promote trench wall instability and adjust trench sloping/shoring accordingly. Surcharge loads such as trench spoils, equipment, etc. should not be placed adjacent to an open excavation (within a distance of ½ the height of the trench). ***The above is guideline information only.*** The contractor is responsible for the safety of all excavations and should provide appropriate excavation sloping and shoring in accordance with current Cal OSHA requirements and observe conditions observed during construction for necessary modification and safety.

6.7.7 Foundations

6.7.7.1 At-Grade Shallow Foundations

If the designers and contractors follow our grading and construction recommendations below, foundations for at grade structures can be supported on shallow strip footings and isolated spread footings. We expect footings for at-grade structures to be founded on compacted fill and/or firm native soils.

- Embed continuous strip and isolated footings a minimum of 18 inches into the lowest adjacent prepared subgrade.
- Both strip and isolated footings must be a minimum of 18 inches wide. Size strip and isolated footings not to exceed an allowable bearing capacity of 2,000 pounds per square foot (dead load plus live load). The allowable bearing capacity may be increased by one-third if seismic and/or wind loads are included.
- Total settlement is expected to be less than ¾-inch and differential settlement less than ½-inch over a length of 50 feet.
- To resist lateral movement, use a coefficient of friction of 0.40 psf at the base of the foundation and a passive earth pressure of 200 psf per foot of embedment depth up to a maximum of 2,000 psf. Ignore the upper one-foot of footing depth (below the lowest adjacent soil grade) in determination of the passive pressure. Both frictional resistance and passive earth pressure can be combined for lateral resistance; when combined, increase the safety factor against sliding from a minimum of 1.5 to 2.0.
- Concrete slabs with crushed rock underlayment may be designed using a Modulus of Subgrade Reaction, k_s, of 25 pounds per cubic inch (pci) in cut or fill locations where engineered fill is placed as recommended in this report.
- Clean footing excavations of debris and loose soil prior to placing concrete.
- Blackburn must observe all footing excavations prior to reinforcement placement to verify competent bearing materials.
- Slope the ground surface away from foundations at a minimum of 2 percent for a distance of at least 5 feet.

6.7.7.2 Below-Grade Foundations

6.7.7.2.1 Bearing Capacity

The planned clarifier is a below-grade structure and the net pressure exerted upon the subsurface will be similar to or less than the existing soil pressure at the bottom of the clarifier. Excavation for below-

grade structures reduces the net pressure by removing soil that acts as a "preload" to the underlying soils, thus "unloading" the bearing materials before "loading" by placement of the structure.

Below grade structures will use mat type foundations for support. For structures at depths greater than 20 feet:

- Use a maximum net contact pressure of 3,000 psf.
- Use a Modulus of Subgrade Reaction, k_s, equal to 25 pci.
- We expect settlement of mat foundations is expected to be less than 1 inch with differential settlement less than ½-inch over a distance of approximately 100 feet.
- Clean footing excavations of debris and loose soil prior to placing concrete.
- Blackburn must observe all footing excavations prior to reinforcement placement to verify competent bearing materials.
- For ground preparation and subgrade uniformity, Class 2 aggregate baserock can be used as underlayment (this is not geotechnically necessary provided a firm uniform subgrade is obtained). If an aggregate underlayment is used, place a minimum thickness of 6-inches and compact to a minimum of 95% relative compaction (per ASTM D 1557 test method).
- Crushed rock underlayment may also be used (and can benefit excavation dewatering). Envelope the crushed rock with a geotextile filter fabric (ie. Mirafi 140N) and compact the rock with a static roller.

Blackburn can provide additional recommendations when the planned design and approximate loading is available if isolated spread footings or piers are required for column support.

6.7.7.2.2 Structure Backfill

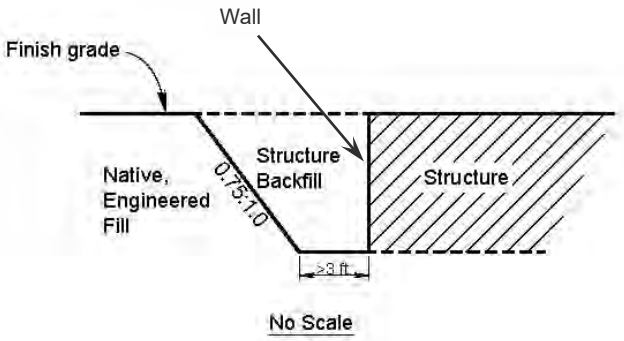
Native soils in approximately the upper 23± feet consist of lean clay which will not be suitable for structure backfill.

Blackburn must approve import structure backfill prior to delivery. Use the specifications in Table 6.5 for import structure backfill for all below-grade structures:

Table 5.5: Import Structure Backfill Requirements

Gradation		Test Procedures	
Sieve Size	**Percent Passing**	**ASTM**	**Caltrans**
1 inch	100	D6913	202
¾ inch	70-100	D6913	202
No. 4	50-100	D6913	202
No. 200	12-40	D6913	202
Plasticity			
Plasticity Index	<12	D4318	204

As shown below, the zone of placement for structure backfill should extend up from the base of the wall at a slope of 0.75(H):1(V) and at least 3 feet behind the wall. Native, engineered fill may be placed beyond the structure backfill zone.



- Moisture condition backfill to within 2% of optimum and place in maximum 8-inch thick, horizontal, loose lifts.
- Compact backfill to a minimum 92% relative compaction based on the ASTM D 1557 test method.

To minimize the residual lateral earth pressures on structure walls, compaction equipment used behind the walls must be restricted (by load and distance from wall) so that wall design values are not exceeded. We recommend compaction within a horizontal distance equal to one-half of the wall height (to a maximum distance of 5 feet), be completed with hand-operated equipment (i.e., jumping jack). To minimize the potential for significant settlement around deep walls, controlled low strength material (CLSM) can be used to backfill to the surface or to a manageable depth (e.g., 10 feet below grade).

6.7.7.2.3 Lateral Earth Pressures

The below grade structure will act as retaining structure. Walls will retain compacted select imported soils meeting the requirement for structure backfill. For evaluation of lateral earth pressures, use the backfill equivalent fluid weights (EFW) for level ground conditions shown below in Table 5.6.

Table 6.6: LATERAL EARTH PRESSURES

Condition	Equivalent Fluid Weight (pcf)	Seismic Equivalent Fluid Weight (pcf)
At-Rest	85	6
Passive	150	140*

*Total passive EFW for passive condition

The above pressures assume structure backfill placed against the structure wall in accordance with our recommendations, a saturated (total) unit weight of approximately 135 pounds per cubic foot (pcf) and a minimum internal angle of friction of 32 degrees. Notify Blackburn if these assumptions are not valid so that we may assess the situation and provide additional recommendations, if necessary. Backfill with CLSM is an acceptable alternative.

For seismic loading, add the Seismic EFW to the at-rest or active EFW and apply the total force as a uniform load on the wall with a resultant located at 0.5H where H is the backfill height. We estimated the EFWs for seismic loading using the Mononobe-Okabe equation and a horizontal seismic acceleration coefficient, k_h, of approximately ½ the expected PGA. This k_h value assumes that the walls displace at least 1-inch during the design seismic event.

Surface loads (footings, storage, vehicle traffic) applied near the wall will increase the lateral pressure on the wall. A uniform surface load of 200 psf to 300 psf is often used to approximate construction traffic loading on walls. In general, if surface loads are closer to the edge of the retaining wall than three-fourths of the retained height, increase the design wall pressure by 0.5q over the area of the retaining wall. In this expression, q is the surface surcharge load in psf. This is a conservative procedure and lower design pressures may be applicable upon evaluation of individual surface loads and setback distances.

For drained conditions, provide adequate drainage to avoid build-up of hydrostatic pressures. Positive drainage for retaining walls should consist of a vertical layer of permeable material, such as a graded sand and gravel (graded to meet Caltrans Standard Specifications for Class 1, Type A Permeable Material), pea gravel, or crushed rock, at least 6 inches thick, positioned between the retaining wall and the backfill.
If pea gravel or crushed rock is used, place a nonwoven filter fabric between it and the backfill to prevent the drain from becoming clogged. A synthetic drainage fabric, such as Enkadrain (Colbond Geosynthetics Co.), Miradrain (TC Mirafi) or an equivalent, may be substituted for the permeable layer. Use care during installation to assure that the filter part of the material faces the backfill. Remove collected water by installing weep holes along the bottom of the wall or by a perforated drainage pipe along the bottom of the permeable material or drainage fabric continuously sloped towards suitable drainage facilities (i.e., gravity drain or sump pump).

6.7.7.2.4 Buoyancy Resistance

As discussed in Section 6.6.2, groundwater may occur at depths as shallow as 15 feet bgs. In undrained conditions, below grade structures may be subjected to an uplift load (buoyancy). The uplift force will be resisted by the weight of the structure and the weight of the backfill overlying foundation extensions (if any).

If foundation extensions are used to resist buoyant forces, calculate the resistance against uplift due to the weight of the soil. Use a backfill unit weight of 130 pcf above groundwater and 73 pcf below groundwater, with a soil wedge extending vertically up from foundation extensions.

6.7.7.2.5 Lateral Resistance

Lateral resistance for retaining structures can be achieved through friction and passive earth pressures acting on the foundation. For design, use a coefficient of friction of 0.40 (below or above groundwater) at the base of the concrete footing and an ultimate passive earth pressure of 200 psf per foot of embedment depth. Limit passive earth pressures to a maximum of 2,000 psf (additional passive pressure can be evaluated for specific locations if necessary). Decrease the passive pressure to 75 psf per foot of depth when below design groundwater levels. Do not include the upper 1-foot of soil in passive resistance calculations. Where passive pressure or friction alone is used against sliding, use a minimum factor of safety of 1.5 for lateral stability (1.1 if seismic loading is included). Where both passive pressure and friction are used to resist sliding, use a minimum factor of safety of 2.0.

6.7.7.3 Minor Structures

Provided that the recommendations in this report are followed, minor structures (such as valve or blow-off vaults, access ways, etc.) may be founded on concrete mat or strip footings, or a compacted granular base (minimum of 6 inches of Class 2 baserock) if appropriate.

- Embed the foundations a minimum of 18 inches below the lowest adjacent prepared subgrade into firm native soil or compacted fill/backfill.
- Footings must be a minimum of 12 inches wide and sized not to exceed an allowable bearing capacity of 2,000 psf. The allowable bearing capacity may be increased by one-third if seismic and/or wind loads are included.
- Concrete slabs with crushed rock underlayment may be designed using a Modulus of Subgrade Reaction, k_s, of 25 pci on structural fill placed as recommended in this report.
- If additional bearing capacity is required for specific minor structures, we can review and provide recommendations on a case-by-case basis.
- To resist lateral movement, use a coefficient of friction of 0.40 at the base of the foundation and a passive earth pressure of 200 psf per foot of embedment depth up to a maximum of 2,000 psf. Ignore the upper one-foot of footing depth (below the lowest adjacent soil grade) in determination of the passive pressure. Both frictional resistance and passive earth pressure can be combined for lateral resistance; when combined, increase the safety factor against sliding from a minimum of 1.5 to 2.0.

If necessary for evaluation of lateral loading on shallow vaults, use an At-Rest equivalent fluid weight of 65 pcf for the drained condition and 95 pcf for undrained. The drained condition assumes groundwater does not accumulate; the undrained condition would be applied below an assumed groundwater level.

We based these values on foundations bearing on native soil and native soil backfill compacted against vault walls.

6.7.8 Soil Corrosivity

We have not completed our subsurface explorations or laboratory testing for the proposed structures. Based on data from pipeline borings for similar materials (lean clays) we expect clay soils to be corrosive to extremely corrosive conditions to metal pipes. We are not corrosion consultants and cannot evaluate the potential corrosion impacts to metallic elements embedded in or in contact with the ground. A corrosion consultant should provide specific corrosion protection recommendations for buried metallic elements used at the site.

6.7.9 Concrete Slabs on Grade

6.7.9.1 Slab Underlayment

For minor structures, concrete slabs-on-grade may be used provided the contractor(s) prepares the structure pads in accordance with our grading recommendations and any addenda by Blackburn. Use a minimum slab thickness of 4 inches. Underlay the concrete slabs with a minimum of 4 inches of washed, crushed, and compacted rock to provide uniform support. Concrete reinforcement, doweling, curing, joint spacing, and mix design should conform to ACI guidelines. The above recommendations are not for

slabs subject to equipment or forklift loads. Moderately expansive clay potentially underlay the site. To mitigate potential expansive soil, consider a slab thickness of 6-inches with 8-inches of crushed rock.

6.7.10 Trench Backfill and Compaction

6.7.10.1 Pipe Bedding and Pipe Zone Material

Support pipe on a minimum of 4 inches of granular bedding and in accordance with the pipe manufacturer's recommendations. Although we do not anticipate soft, unsuitable pipe subgrade at any particular location, it can occur with shallow groundwater conditions and sandy soils. Notify the project engineer and Blackburn for review and mitigation recommendations if encountered. To achieve a stable and non-yielding subgrade suitable for pipe placement and backfilling, typical mitigation may include:

- Replacement of unsuitable subgrade with ¾-inch minus crushed rock (minimum of 6 inches)
- Enclose rock in geotextile filtration fabric such as Mirafi 140N (or equivalent).

A granular pipe zone material may be used. Native soils will contain a significant amount of fines (passing #200 sieve) and will **not** be suitable for bedding or pipe zone backfill. For pipe bedding and initial backfill material (which extends to 1 foot above the top of pipe) use material that meet the specification in Table 6.7.

Table 6.7: Pipe Bedding and Initial Backfill Requirements

Gradation		Test Procedures	
Sieve Size	**Percent Passing**	**ASTM**	**Caltrans**
1 inch	100	D6913	202
¾ inch	90-100	D6913	202
No. 4	35-60	D6913	202
No. 30	10-30	D6913	202
No. 200	2-5	D6913	202
Sand Equivalent			
Minimum 25		D2974	

Blackburn considers the following materials to be suitable as alternative pipe zone (bedding) backfill material:

- Controlled Low Strength Material (CLSM)
- Controlled Density Fill (CDF)

6.7.10.2 Trench Backfill

Trench backfill above the Pipe Zone material may consist of excavated soils. Fill should be free of debris and concentrations of vegetation or clay soils and meet the specifications in Table 6.8.

Table 6.8: Intermediate Trench Backfill Requirements			
Gradation		**Test Procedures**	
Sieve Size	**Percent Passing**	**ASTM**	**Caltrans**
3 inch	100	D6913	202
No. 200	20-70	D6913	202
Organic Content			
Less than 3%		D2974	
Expansion Index			
Less than 20		D4829	

If import fill is required for trench backfill, it should be graded and have material properties as follows:

- 100% passing the 1-inch sieve
- 75% to 100% passing the #4 sieve
- Minimum 12% passing the #200 sieve
- Plasticity Index not greater than 20
- Free of debris and concentrations of vegetation.

Use ¾-inch Class 2 AB in the upper 12-inches of the trench within roadways.

6.7.10.3 Trench Backfill Compaction

Follow the pipe manufacturer's requirements for initial backfill to avoid damage to the pipe. To facilitate compaction in the pipe zone area (top of bedding up to 12 inches above pipe), use a trench width that provides a minimum clearance of 12 inches between the pipe and trench wall.

- Moisture condition trench backfill to within 2% of optimum moisture content and compact to a minimum 92% relative compaction (based on ASTM 1557) below 10 feet and 90% relative compaction (based on ASTM 1557) above 10 feet.
- Use a maximum compacted lift thickness of 8 inches unless field performance testing can demonstrate adequate compaction of thicker lifts.
- Jetting is not acceptable for compaction.

Test all trench backfill (bedding, pipe zone backfill, trench zone, etc.):

- At vertical increments of not more than 1 foot and at final grade or pavement subgrade.
- At horizontal testing frequencies of at least one test for every 200 linear feet of pipe (both sides of pipe in pipe zone).
- Complete at least one compaction curve (Proctor) for each material type, source location (for import), and as changes in native materials occur. Material changes include a change in material designation based on the Unified Soil Classification System.
- Testing frequency can be adjusted based on contractor performance, ease of compaction, and material variability.

Soil excavated during pipe installation can have moisture contents well over optimum, especially during the winter and spring months or if perched water is encountered. In this case, it will be necessary to dry back the soil to within 2% of optimum moisture content prior to use as backfill.

It is important to achieve compaction of pipe zone materials at the pipe haunches and spring line; compaction below the pipe spring line will be a difficult task for the contractor. We recommend a compaction demonstration section to test placement and compaction means and methods for each material type that will be used.

6.7.11 Equalization Basin Concrete Lining

Concrete pavement is proposed to line the Equalization Basin. Prepare the subgrade as discussed in Section 6.7.4.2 and 6.7.4.3. We understand the pavement will not be subject to regular wheel loads.

Design concrete pavement in accordance with American Concrete Institute (ACI) Guide for the Design and Construction of Concrete Parking Lots (ACI 330R-08).

- Use a modulus of subgrade reaction of 100 pci.
- Use a minimum of 6 -inches of concrete over 8 inches of Class 2 AB.
- Concrete reinforcement, doweling, curing, joint spacing, and mix design should conform to ACI guidelines.

Aggregate base (AB) should conform to Caltrans Class 2 requirements. Moisture condition and compact AB to a minimum 95% relative compaction based on ASTM D1557. Prior to placing concrete, the aggregate base should be stable under the weight of a loaded water truck. Mitigate unstable areas as recommended by Blackburn.

Concrete pavement must meet the following requirements:

- Minimum 28-day compressive strength of 3,500 psi.
- Joint spacing will be determined by the structural engineer in accordance with ACI 350-06.

The Civil Engineer should design the final joint types/spacing and appropriate concrete mix design.

7 WATER TANK AND BOOSTER STATION

7.1 Site Location and Description

The OPUD South Yuba Sewer Infrastructure Project includes a 1 MG steel storage tank, water well, booster station, and on-site piping. Appendix E1 shows the proposed improvement location.

The proposed water tank and booster station will be constructed in a vacant lot northeast of the existing Casino water tank. Based on aerial photographs the lot appears to be free of vegetation and graded level.

7.2 Previous Studies

To prepare this section of the report, Blackburn reviewed Geocon Consultants, Inc.'s "Geotechnical Investigation – Enterprise Rancheria Casino, October 2014" (Geocon Investigation) and limited explorations from our pipeline exploration for the OPUD project. We will perform site-specific subsurface explorations, laboratory testing, and analysis to provide final design recommendations for the water tank and booster station.

7.3 Geology

We reviewed geology maps and the United States Department of Agriculture's (USDA) Web Soil Survey (https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm). The "Geologic Map of the Late Cenozoic Deposits of the Sacramento Valley and Northern Sierra Foothills, California" (Helley and Harwood, 1985) shows the site underlain by the Upper Member, Riverbank Formation that consists of unconsolidated, but compact, dark brown to red, alluvium composed of gravel, sand, silt, and clay.

The web soil survey indicates that the site is underlain by San Joaquin loam (214). The survey states this unit has the following relevant properties from 0 to 25 inches deep: Silt (ML), Silty Clay (CL-ML) and Clay (CL) with fines content ranging from 50 to 70 percent.

7.4 Subsurface Findings

7.4.1 General Subsurface Soil Conditions

In Blackburn boring TC-12A, drilled on September 9, 2020 approximately 2,000 feet from the proposed tank site, we generally encountered stiff to very stiff lean clay and silt with sand within the upper 15 feet underlain by approximately 15 feet of medium dense clayey sand and sand with silt. Hard silt from 30 feet to 40 feet underlain by very dense sand with silt to maximum depth explored (51.5 feet).

The Geocon Investigation (2014) indicates that the subsurface soils across the Casino site consist of:

- Approximately 2.5 to 4 feet of moderately to highly expansive clay (the upper 1 to 1.5 feet of which is loose due to disturbance by agricultural operations), underlain by
- Very stiff to hard clays and silts with varying sand contents and sands with varying fines contents to the maximum depth explored (41.5 feet).
- Some zones of cementation encountered throughout the subsurface soil profile.

7.4.2 Groundwater

In our borings TC-12A and TC-12B, drilled September 9, 2020, we measured groundwater at depths of 24 and 17 feet (respectively) below ground surface.

Geocon's Investigation for the casino drilled only one boring deeper than 27 feet. That boring log (Boring B1) indicates groundwater at 29 ft below ground surface.

We reviewed groundwater level data for nearby wells available at the California Department of Water Resources website (http://www.water.ca.gov/waterdatalibrary/) and using the Sustainable Groundwater Management Act (SGMA) data viewer

(https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#gwlevels). Based on this information, the depth to groundwater at the site typically ranges from 20 to 30 feet, although it occasionally is measured above 20 feet. Relatively shallow perched water may occur within the near-surface soils during the winter and spring months, and adjacent to the existing canals and streams.

Groundwater and perched water levels can fluctuate due to changes in precipitation, canal and creek levels, irrigation, pumping of wells, and other factors.

7.5 Preliminary Design Considerations – Water Tank and Booster Station

7.5.1 Facility Ground Suitability

The site will be suitable for the planned facilities when constructed in accordance with the project plans, industry standards, and our geotechnical recommendations.

7.5.2 Geologic Hazards

- Faulting—The potential for surface rupture or creep due to faulting at the site is very low. The Fault Activity Map of California[12] and the Geologic Map of the Sacramento Quadrangle[13] does not identify Historic or Holocene age faults (displacement within the last 11,700 years) within or immediately adjacent to the site. The site does not lie within or adjacent to an Alquist–Priolo Earthquake Fault Zone[14].
- Ground Shaking— For the Maximum Considered Earthquake, a peak horizontal ground acceleration (PGA) of approximately 0.21g could be expected.
- Liquefaction—Our investigation shows a soil profile that consists of stiff to hard clays and medium dense to dense sands ad silty and clayey sands that are not liquefiable. Therefore, the potential for damaging liquefaction at the site is very low.
- Landslides and Slope Stability—Due to the relatively low topographic relief we do not expect landslides or natural slope failure.
- Seismically Induced Settlement—During a seismic event, ground shaking can cause densification of granular soil that can result in settlement of the ground surface. Considering the cohesive soils and medium dense to dense soils observed in the borings, we consider the potential for significant seismically induced settlement to be very low.

7.5.3 Seismic Design

Based on the mapped geology and nearby boring data, use a Site Class “D” (stiff soil). Table 7.1 presents the 2019 *California Building Code* (Chapter 16) and ASCE 7-16 seismic design parameters for the site.

[12] Jennings, Charles W., and Bryant, William A., 2010 Fault Activity Map of California: California Geological Survey, Geologic Data Map No. 6.
[13] Saucedo, G.J. and Wagner, D.L., et al, 1992, Geologic map of the Chico quadrangle, California, 1: 250,000: California Division of Mines and Geology, Regional Geologic Map 7A, scale 1: 250,000
[14] Bryant, W.A., and Hart, E.W., 2007 (Interim Revision), Fault-Rupture Hazard Zones in California: California Department of Conservation, Division of Mines and Geology, Special Publication 42.

Table 7.1: 2019 CBC Seismic Design Parameters (Site Class D)	
S_s – MCE_R ground motion (0.2 second period)	0.495 g
S_1 – MCE_R ground motion (1.0 second period)	0.24 g
F_a – Site Coefficient	1.404
F_v – Site Coefficient	2.11[1]
S_{MS} – Adjusted MCE* Spectral Response Acceleration Parameter	0.695 g
S_{M1} – Adjusted MCE* Spectral Response Acceleration Parameter	0.509 g[1]
S_{DS} – Design Spectral Acceleration Parameter	0.464 g
S_{D1} – Design Spectral Acceleration Parameter	0.339 g[1]
Seismic Design Category	C[1]
**T_L – Long Period Transition Period	12 sec
PGA	0.213

* Maximum Considered Earthquake
** Figure 22-14, ASCE 7-16
1 – We assume that the seismic response coefficient, Cs, is determined by ASCE 7-16 Eq. (12.8-2) for values of T ≤ 1.5Ts and taken as equal to 1.5 times the value computed in accordance with either ASCE 7-16 Eq. (12.8-3) for TL ≥T > 1.5Ts or Eq. (12.8-4) for T > TL. Contact Blackburn to re-evaluate the above parameters if this assumption is not valid.

If the proposed design does not meet the exception noted above (note 1) a site-specific response analysis will be required for final design.

7.5.4 General Grading Recommendations

7.5.4.1 Excavation Conditions

Based on the soil conditions and drilling performance, excavation is possible with conventional equipment (common earthmoving equipment and large backhoe/excavator). The fine-grained and hard soil conditions can create slow excavation conditions and is not suitable for structure backfill.

7.5.4.2 Site Clearing

Prior to making any cuts and fills, remove existing underground utilities, foundations, vegetation (root balls and roots), debris, and other underground features in accordance with this Geotechnical Report. Remove loose and disturbed soil caused by the removal(s) and widen the excavation/depression so it is accessible to compaction equipment. Remove strippings from the site or use as landscape soil in designated areas.

7.5.4.3 Original Ground and Subgrade Preparation

The site has historically been covered by agricultural fields. To avoid loose disturbed soils and adverse settlement, overexcavate the tank footprint and 5 feet beyond to a depth of 3 feet below existing grade. After overexcavation, compact the exposed soil at the bottom of the excavation as follows:

- Scarify the exposed soil to a depth of approximately 8 inches.

- Moisture condition subgrade to within 3% of the optimum moisture content.
- Compact the subgrade soil to a minimum 90% relative compaction based on ASTM D1557.
- Backfill the excavation with General Fill as recommended below.

7.5.4.4 General Fill Placement and Compaction

General fill (**not trench or structure backfill**) may consist of on-site soil provided it contains no rocks larger than 3 inches in maximum dimension. Fill should be free of debris and concentrations of vegetation.

If import for general fill is required, it must be free of debris and meet the following requirements:

Table 7.2: General Backfill Import Requirements

Gradation		Test Procedures	
Sieve Size	**Percent Passing**	**ASTM**	**Caltrans**
1 inch	100	D6913	202
No. 4	75-100	D6913	202
No. 200	12-100	D6913	202
Plasticity Index			
Less than 20		D4318	

- Approved by Blackburn prior to site delivery.

Place and compact general fill as follows:

- Place fill in maximum 8-inch-thick loose lifts,
- Moisture condition the soil within 3% of optimum
- Compact the soil to a minimum 90% relative compaction based on ASTM D1557.

Test all fill at vertical increments of not more than 1 foot and at final grade or pavement subgrade. For horizontal testing frequency, use the following minimums:

- One test for every 100 square feet around structures
- One test for every 500 square feet for structure pads

Complete at least one compaction curve (Proctor) for each material type, source location (for import), and as changes in native materials occur. Material changes include a change in material designation based on the Unified Soil Classification System.

7.5.5 Dewatering

We do not expect deep excavations for the water tank construction. Dewatering may be required for installations greater than approximately 15 feet deep (see Section 7.4.2).
Dewatering can consist of:

- Deep sumps within the excavation. Considering the presence of fine-grained soils and relatively flat lying bedding, sumps within the excavation are not likely to provide good drawdown.
- Well points. Well points will likely work better to cut off flow into the excavation and drawdown the water level over a larger area.

To facilitate work at the base of the excavation, groundwater should be drawn down at least 3 feet below the planned bottom of excavation. The need for dewatering can be reduced by planning excavations during the lowest anticipated seasonal water levels (expected during the late summer and fall months).

7.5.6 Temporary Excavations

Temporary excavations will require sloping and/or shoring in accordance with Cal OSHA requirements. Based on our subsurface explorations for other portions of the Project, preliminary excavation and shoring design may be based on Type A soil to planned excavation depth. For Type A soil conditions, temporary excavations may be sloped at ¾(H):1(V).

Where groundwater is present or cohesionless/uncemented granular soils are encountered, Type C soil conditions will apply and a 1.5(H):1(V) slope gradient is required.

The Contractor must retain an engineer to evaluate the impact of existing structures, traffic vibrations, actual soil conditions exposed in the open trenches, and other factors that may promote trench wall instability and adjust trench sloping/shoring accordingly. Surcharge loads such as trench spoils, equipment, etc. should not be placed adjacent to an open excavation (within a distance of ½ the height of the trench). ***The above is guideline information only.*** The contractor is responsible for the safety of all excavations and should provide appropriate excavation sloping and shoring in accordance with current Cal OSHA requirements and observe conditions observed during construction for necessary modification and safety.

7.5.7 Foundations

7.5.7.1 Shallow Foundations

We expect the tank foundation to consist of a perimeter (ring) footing, with a compacted baserock interior.

- Embed the footing a minimum of 18 inches into the lowest adjacent prepared subgrade.
- Footings must be a minimum of 18 inches wide.
- Size footings not to exceed an allowable bearing capacity of 3,000 pounds per square foot (dead load plus live load). The allowable bearing capacity may be increased by one-third if seismic and/or wind loads are included.
- Clean footing excavations of debris and loose soil prior to placing concrete.
- Blackburn must observe all footing excavations prior to reinforcement placement to verify competent bearing materials.
- Slope the ground surface away from foundations at a minimum of 2 percent for a distance of at least 5 feet.

- To resist lateral movement, use a coefficient of friction of 0.35 psf at the base of the foundation and a passive earth pressure of 200 psf per foot of embedment depth up to a maximum of 3,000 psf. Ignore the upper one-foot of footing depth (below the lowest adjacent soil grade) in determination of the passive pressure. Both frictional resistance and passive earth pressure can be combined for lateral resistance; when combined, increase the safety factor against sliding from a minimum of 1.5 to 2.0.
- Based on typical Riverbank soils we anticipate total settlement to be less than 1-2 inches and differential settlement less than ½-inch over a length of 50 feet. We anticipate approximately half of the total settlement will occur during loading of the foundations and half will occur when the tank is filled.

7.5.7.2 Minor Structures

Provided that the recommendations in this report are followed, minor structures may be founded on concrete mat or strip footings, or a compacted granular base (minimum of 6 inches of Class 2 baserock) if appropriate.

- Embed the foundations a minimum of 18 inches below the lowest adjacent prepared subgrade into firm native soil or compacted fill/backfill.
- Footings must be a minimum of 12 inches wide and sized not to exceed an allowable bearing capacity of 2,000 psf. The allowable bearing capacity may be increased by one-third if seismic and/or wind loads are included.
- Concrete slabs with crushed rock underlayment may be designed using a Modulus of Subgrade Reaction, k_s, of 25 pounds per cubic inch (pci) in cut or fill locations where engineered fill is placed as recommended in this report.
- If additional bearing capacity is required for specific minor structures, we can review and provide recommendations on a case-by-case basis.
- To resist lateral movement, use a coefficient of friction of 0.40 at the base of the foundation and a passive earth pressure of 200 psf per foot of embedment depth up to a maximum of 2,000 psf. Ignore the upper one-foot of footing depth (below the lowest adjacent soil grade) in determination of the passive pressure. Both frictional resistance and passive earth pressure can be combined for lateral resistance; when combined, increase the safety factor against sliding from a minimum of 1.5 to 2.0.

If necessary for evaluation of lateral loading on shallow vaults, use an At-Rest equivalent fluid weight of 65 pcf for the drained condition and 95 pcf for undrained. The drained condition assumes groundwater does not accumulate; the undrained condition would be applied below an assumed groundwater level.

We based these values on foundations bearing on native soil and native soil backfill compacted against vault walls.

7.5.8 Soil Corrosivity

We have not completed our subsurface explorations or laboratory testing for the proposed structures. Based on data from pipeline borings for similar materials (lean clays) we expect clay soils to be corrosive to extremely corrosive conditions to metal pipes. We are not corrosion consultants and cannot evaluate

the potential corrosion impacts to metallic elements embedded in or in contact with the ground. A corrosion consultant should provide specific corrosion protection recommendations for buried metallic elements used at the site.

7.5.9 Concrete Slabs on Grade

7.5.9.1 Slab Underlayment

For minor structures, concrete slabs-on-grade may be used provided the contractor(s) prepares the structure pads in accordance with our grading recommendations and any addenda by Blackburn. Use a minimum slab thickness of 4 inches. Underlay the concrete slabs with a minimum of 4 inches of washed, crushed, and compacted rock to provide uniform support. Concrete reinforcement, doweling, curing, joint spacing, and mix design should conform to ACI guidelines. The above recommendations are not for slabs subject to equipment or forklift loads. Moderately expansive clay potentially underlay the site. To mitigate potential expansive soil, consider a slab thickness of 6 -inches with 8-inches of crushed rock.

7.5.10 Trench Backfill and Compaction

7.5.10.1 Pipe Bedding and Pipe Zone Material

Support pipe on a minimum of 4 inches of granular bedding and in accordance with the pipe manufacturer's recommendations. Although we do not anticipate soft, unsuitable pipe subgrade at any particular location, it can occur with shallow groundwater conditions and sandy soils. Notify the project engineer and Blackburn for review and mitigation recommendations if encountered. To achieve a stable and non-yielding subgrade suitable for pipe placement and backfilling, typical mitigation may include:

- Replacement of unsuitable subgrade with ¾-inch minus crushed rock (minimum of 6 inches)
- Enclose rock in geotextile filtration fabric such as Mirafi 140N (or equivalent).

A granular pipe zone material may be used. Native soils will contain a significant amount of fines (passing #200 sieve) and will **not** be suitable for bedding or pipe zone backfill. For pipe bedding and initial backfill material (which extends to 1 foot above the top of pipe) use material that meet the specification in Table 7.3.

Table 7.3: Pipe Bedding and Initial Backfill Requirements

Gradation		Test Procedures	
Sieve Size	**Percent Passing**	**ASTM**	**Caltrans**
1 inch	100	D6913	202
¾ inch	90-100	D6913	202
No. 4	35-60	D6913	202
No. 30	10-30	D6913	202
No. 200	2-5	D6913	202
Sand Equivalent			
Minimum 25		D2974	

Blackburn considers the following materials to be suitable as alternative pipe zone (bedding) backfill material:

- Controlled Low Strength Material (CLSM)
- Controlled Density Fill (CDF)

7.5.10.2 Trench Backfill

Trench backfill about the Pipe Zone material may consist of excavated soils. Fill should be free of debris and concentrations of vegetation or clay soils and meet the specifications in Table 7.4.

Table 7.4: Intermediate Trench Backfill Requirements

Gradation		Test Procedures	
Sieve Size	**Percent Passing**	**ASTM**	**Caltrans**
3 inch	100	D6913	202
No. 200	20-70	D6913	202
Organic Content			
Less than 3%		D2974	
Expansion Index			
Less than 20		D4829	

If import fill is required for trench backfill, it should be graded and have material properties as follows:

- 100% passing the 1-inch sieve
- 75% to 100% passing the #4 sieve
- Minimum 12% passing the #200 sieve
- Plasticity Index not greater than 20
- Free of debris and concentrations of vegetation.

Use ¾-inch Class 2 AB in the upper 12-inches of the trench within roadways.

7.5.10.3 Trench Backfill Compaction

Follow the pipe manufacturer's requirements for initial backfill to avoid damage to the pipe. To facilitate compaction in the pipe zone area (top of bedding up to 12 inches above pipe), use a trench width that provides a minimum clearance of 12 inches between the pipe and trench wall.

- Moisture condition trench backfill to within 2% of optimum moisture content and compact to a minimum 92% relative compaction (based on ASTM 1557) below 10 feet and 90% relative compaction (based on ASTM 1557) above 10 feet.
- Use a maximum compacted lift thickness of 8 inches unless field performance testing can demonstrate adequate compaction of thicker lifts.
- Jetting is not acceptable for compaction.

Test all trench backfill (bedding, pipe zone backfill, trench zone, etc.):

- At vertical increments of not more than 1 foot and at final grade or pavement subgrade.

- At horizontal testing frequencies of at least one test for every 200 linear feet of pipe (both sides of pipe in pipe zone).
- Complete at least one compaction curve (Proctor) for each material type, source location (for import), and as changes in native materials occur. Material changes include a change in material designation based on the Unified Soil Classification System.
- Testing frequency can be adjusted based on contractor performance, ease of compaction, and material variability.

Soil excavated during pipe installation can have moisture contents well over optimum, especially during the winter and spring months or if perched water is encountered. In this case, it will be necessary to dry back the soil to within 2% of optimum moisture content prior to use as backfill.

It is important to achieve compaction of pipe zone materials at the pipe haunches and spring line; compaction below the pipe spring line will be a difficult task for the contractor. We recommend a compaction demonstration section to test placement and compaction means and methods for each material type that will be used.

8 RISK MANAGEMENT

This report provides preliminary design considerations only. Blackburn has not completed the field work, lab testing, and analysis necessary to provide final design recommendations. Blackburn could not complete the necessary work because alignments were not finalized and rights of entry to properties were not obtained in time for Blackburn to plan, coordinate, and execute field investigations at the locations of proposed improvements.

Blackburn will submit a final report after all field work, lab testing, and analysis has been completed.

Our experience and that of our profession clearly indicates that the risks of costly design, construction, and maintenance problems can be significantly lowered by retaining the geotechnical engineer of record to provide additional services during design and construction. For this project, retain Blackburn to:

- Review and provide comments on the civil plans and specifications prior to construction.
- Attend a preconstruction meeting with the owner, general contractor, earthwork contractor, underground contractor and other parties associated with the management, oversite and process of demolition and earthwork prior to site clearing, grubbing and demolition of existing structures to review geotechnical recommendations, testing requirements and project schedule.
- Observe removal of underground utilities, foundations, vegetation (root balls and roots) and other underground features in accordance with the project plans, specifications and this Geotechnical Report including loose soil generated from the removal.
- Monitor construction to check and document our report assumptions. At a minimum, Blackburn should monitor grading, overexcavation and recompaction of building pad areas, trench backfill, pavement subgrade and aggregate base compaction, and footing excavations.
- Update this report as design changes occur, 2 years or more lapse between this report and construction, and/or site conditions have changed.

If we are not retained to perform the above applicable services, we are not responsible for any other party's interpretation of our report, and subsequent addendums, letters, and discussions.

9 LIMITATIONS

Blackburn performed services in accordance with generally accepted geotechnical engineering principles and practices currently used in this area. This report is for preliminary design only and shall not be used for final design. Where referenced, we used ASTM or Caltrans standards as a general (not strict) *guideline* only. We do not warranty our services.

Blackburn based this report on the current site conditions. We assumed the soil and ground water conditions encountered in our borings are representative of the subsurface conditions across the site. Actual conditions between these locations could be different.

Blackburn completed a Phase 1 Initial Site Assessment for the project. Refer to Blackburn's report dated October 15, 2020 for our evaluation of on-site hazardous material.

Appendices A2, B2, and D2 present our exploratory boring logs and test pit logs. The lines designating the interface between soil types are approximate. The transition between soil types may be abrupt or gradual. Our recommendations are based on the final logs, which represent our interpretation of the field logs, laboratory test results and general knowledge of the site and geological conditions.

Refer to Appendix G (Important Information about This Geotechnical Engineering Report, Geoprofessional Business Association, 2019) for additional limitations regarding this report.

Modern design and construction is complex, with many regulatory sources/restrictions, involved parties, construction alternatives, etc. It is common to experience changes and delays. The owner should set aside a reasonable contingency fund based on complexities and cost estimates to cover changes and delays.

UPDATED DRAFT PRELIMINARY GEOTECHNICAL BASIS OF DESIGN REPORT

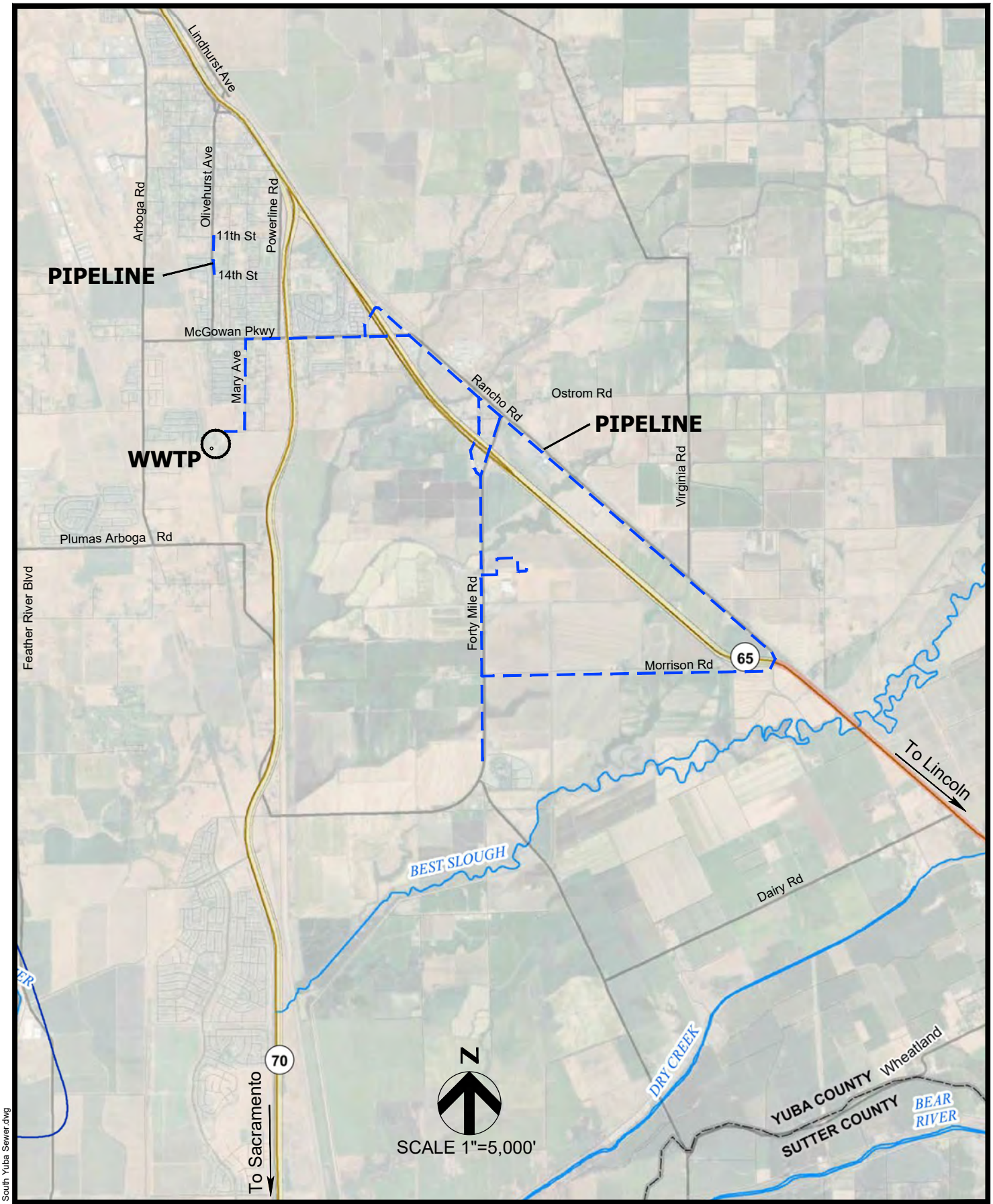
Olivehurst Public Utilities District

South Yuba Sewer and Water Infrastructure Project

Olivehurst, CA

FIGURES

Vicinity Map
Overall Project Map
Regional Geologic Map
USDA Soil Map
Regional Fault Map



4/30/2021 3842.x Fig1 OPUD South Yuba Sewer.dwg

BLACKBURN CONSULTING

VICINITY MAP

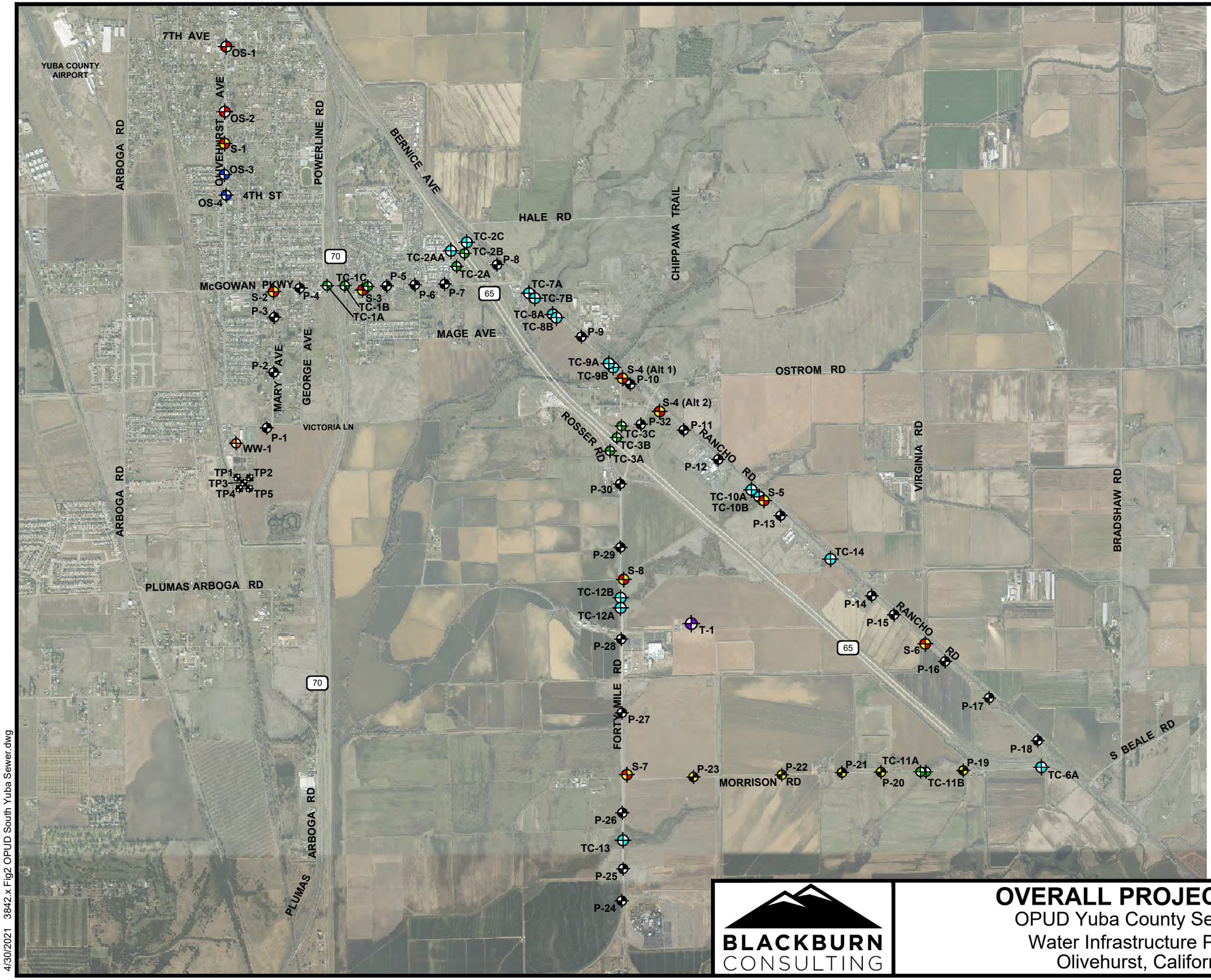
OPUD Yuba County Sewer and Water Infrastructure Project

Olivehurst, California

File No. 3842.x

April 2021

Figure 1



N

SCALE 1" = 2,500'

LEGEND

- Approximate Pipeline Water Only
- Approximate Pipeline Sewer Only
- Approximate Pipeline Sewer and Water
- OS-X — Oliverhurst Sewer Boring Location
- P-X — Pipeline Boring Location
- TC-X — Trenchless Crossing Boring Location
- LS-X — Planned Pump/Lift Station Boring Location
- TP-X — Planned Waste Water Treatment Plant Test Pit Location
- T-X — Planned Tank Boring Location
- OS-X — Planned Olivehurst Sewer Boring Location
- TC-X — Planned Trenchless Crossing Boring Location
- WW-X — Planned WWTP Boring Location
- P-X — Planned Pipeline Boring Location

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OVERALL PROJECT MAP

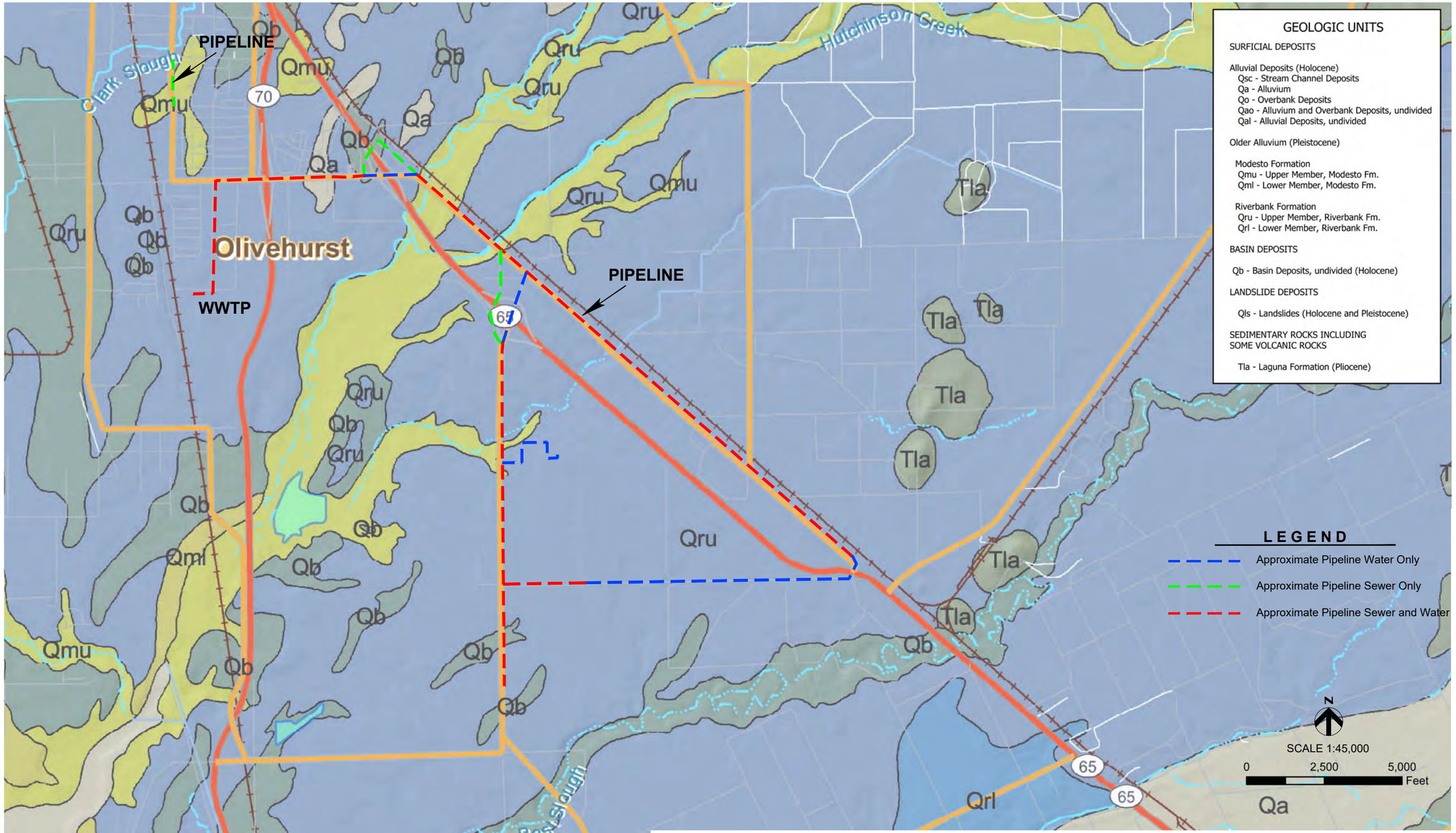
OPUD Yuba County Sewer and Water Infrastructure Project
Olivehurst, California

File No. 3842.x

April 2021

Figure 2

4/30/2021 3842.x Fig2 OPUD South Yuba Sewer.dwg



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REGIONAL GEOLOGIC MAP

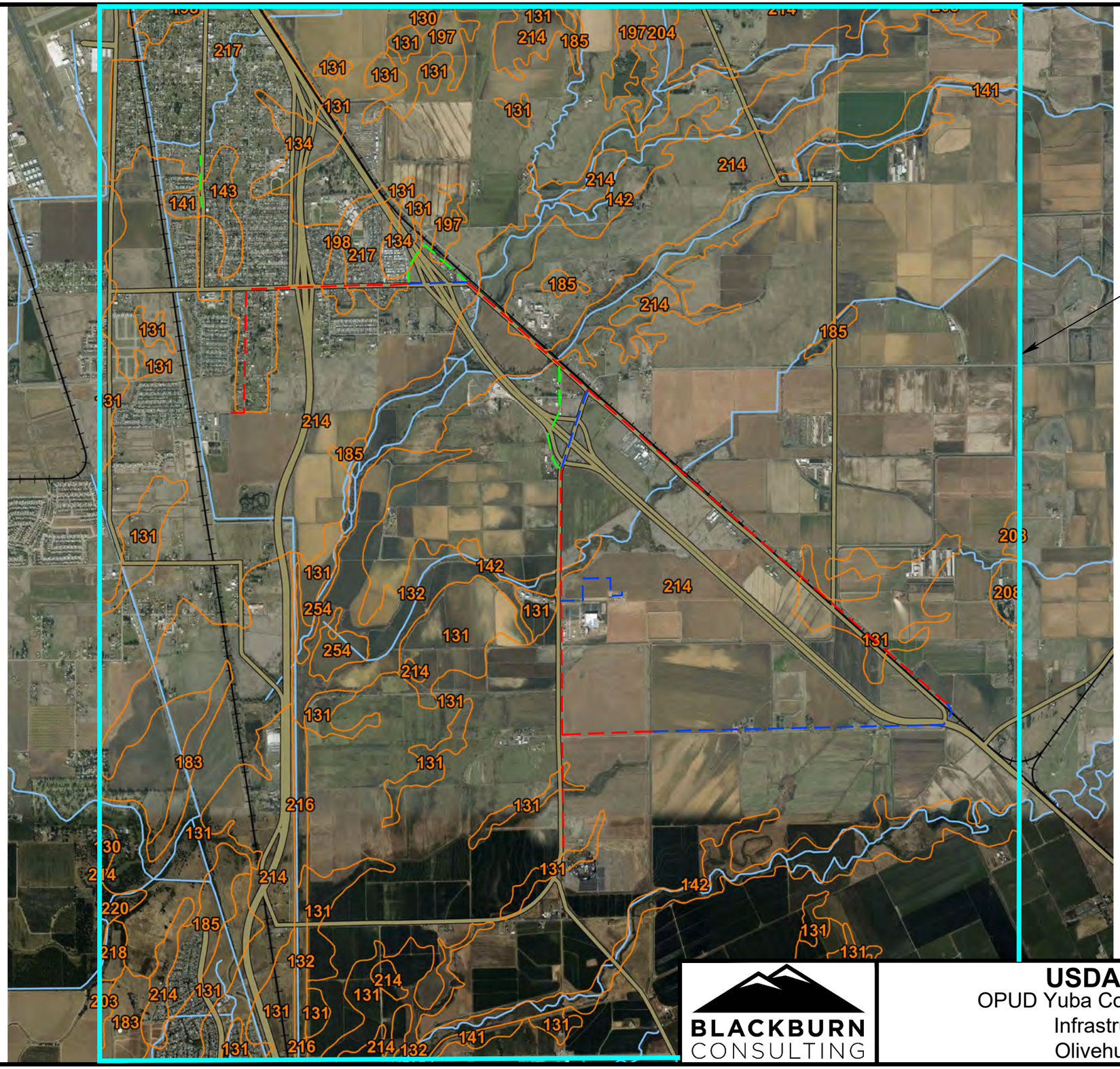
OPUD Yuba County Sewer and Water Infrastructure Project
Olivehurst, California

File No. 3842.x

April 2021

Figure 3

4/30/2021 3842.x Fig3 OPUD South Yuba Sewer.dwg



N

SCALE 1" = 3,000'

LEGEND

- Approximate Pipeline Water Only
- Approximate Pipeline Sewer Only
- Approximate Pipeline Sewer and Water

Map Unit Symbol	Unit Name
131	Hollenbeck Silty Clay Loam
134	Hollenbeck-Urban Land Complex
141	Conejo Loam
142	Conejo Loam
143	Conejo-Urban Land Complex
185	Kimball Loam
197	Oakdale Sandy Loam
198	Oakdale - Urban Land Complex
208	Redding Gravelly Loam
214	San Joaquin Loam
217	San Joaquin - Urban Land Complex
254	Water

Source: USDA Web Soil Map - Yuba County, California, 1:45,000, printed 10/27/2020.

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USDA SOIL MAP

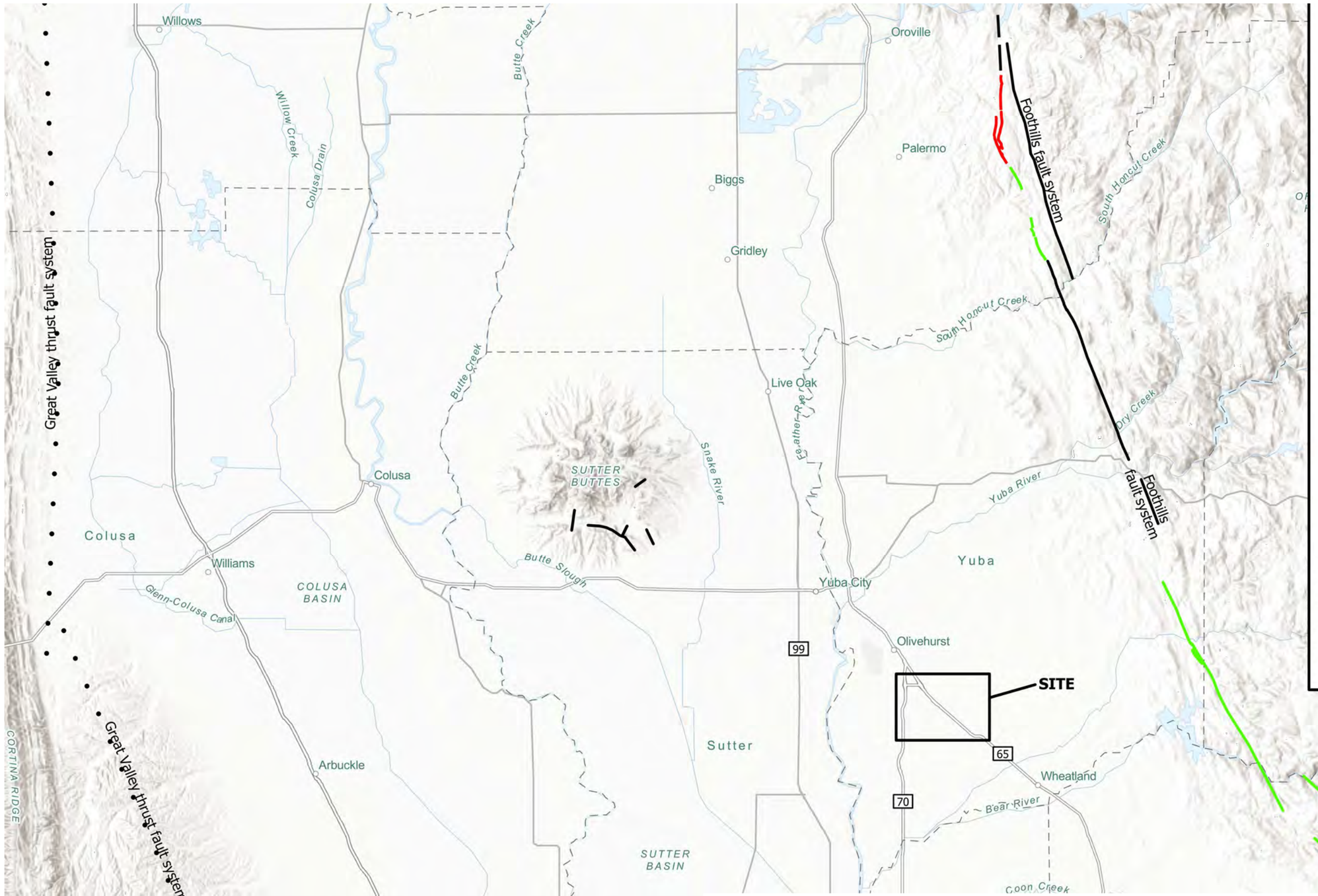
OPUD Yuba County Sewer and Water Infrastructure Project
Olivehurst, California

File No. 3842.x

April 2021

Figure 4

4/30/2021 3842.x Fig4 OPUD South Yuba Sewer.dwg



LEGEND

USGS Quaternary Faults

Quaternary Faults Database

- Historic (< 150 years), well constrained location
- Historic (< 150 years), moderately constrained location
- Historic (< 150 years), inferred location
- Latest Quaternary (<15,000 years), well constrained location
- Latest Quaternary (<15,000 years), moderately constrained location
- Latest Quaternary (<15,000 years), inferred location
- Late Quaternary (< 130,000 years), well constrained location
- Late Quaternary (< 130,000 years), moderately contrained location
- Late Quaternary (< 130,000 years), inferred location
- Middle and late Quaternary (< 750,000 years), well constrained location
- Middle and late Quaternary (< 750,000 years), moderately constrained location
- Middle and late Quaternary (< 750,000 years), inferred location
- Undifferentiated Quaternary (< 1.6 million years), well constrained location
- Undifferentiated Quaternary (< 1.6 million years), moderately constrained location
- Undifferentiated Quaternary (< 1.6 million years), inferred location
- Unspecified age, well constrained location
- Unspecified age, moderately constrained location
- Unspecified age, inferred location
- Class B (various age), well constrained location
- Class B (various age), moderately constrained location
- Class B (various age), inferred location

Class B Faults -
Geologic evidence demonstrates the existence of a fault or suggests Quaternary deformation, but either (1) the fault might not extend deeply enough to be a potential source of significant earthquakes, or (2) the currently available geologic evidence is too strong to confidently assign the feature to Class C but not strong enough to assign it to Class A.

Source: U.S. Geological Survey and California Geological Survey, Quaternary fault and fold database for the United States, accessed July 5, 2020, at: https://www.usgs.gov/natural-hazards/earthquake-hazards/faults

N

Scale: 1:384,000

0 1 2 4 Miles

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REGIONAL FAULT MAP

OPUD Yuba County Sewer and Water Infrastructure Project
Olivehurst, California

File No. 3842.x

April 2021

Figure 5

4/30/2021 3842.x Fig5 OPUD South Yuba Sewer.dwg

PHASE 1 INITIAL SITE ASSESSMENT

OPUD Yuba County Sewer and Water Infrastructure Project

Olivehurst, CA

June 2021

Prepared for:

Jacobs

2485 Natomas Park Drive, Ste. 600
Sacramento, CA 95833

Prepared by:

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File No. 3842.x
June 28, 2021

Mr. Steve DeCou
Vice President and Principal Program Manager
Jacobs Engineering Group
2485 Natomas Park Drive, Ste. 600
Sacramento, CA 95833

Subject: **PHASE 1 INITIAL SITE ASSESSMENT**
OPUD Yuba County Sewer and Water Infrastructure Project
Olivehurst, California

Mr. DeCou,

Blackburn Consulting (Blackburn) prepared this Phase 1 Initial Site Assessment (ISA) for the OPUD Sewer and Water Infrastructure Project located in Yuba County, California. The purpose of the ISA is to identify hazardous and potentially hazardous materials issues that may significantly impact the Project. Blackburn prepared this ISA in accordance with our May 14, 2020 proposal.

As always, Blackburn appreciates the opportunity to be part of your team. Please call if you have questions or require additional information.

Sincerely,

BLACKBURN CONSULTING

Laura Long
On behalf of

Matthew Kinney
Project Geologist II

Laura Long

Laura Long
Environmental Project Manager

TABLE OF CONTENTS

TABLE OF CONTENTS (cont.)

EXECUTIVE SUMMARY

Blackburn Consulting (Blackburn) prepared this Initial Site Assessment (ISA) for Jacobs Engineering Group (Jacobs) for the Olivehurst Public Utilities District (OPUD) Yuba County Sewer and Water Infrastructure Project (Project) in Olivehurst and unincorporated areas of Yuba County, California. Figure 1 presents the Vicinity Map. Jacobs, in cooperation with OPUD and Yuba County, proposes to construct new water and sewer utility infrastructure. All work is planned within existing right-of-way, except for the pump and lift station locations which have not been determined.

The purpose of this ISA is to identify Recognized Environmental Conditions[1] (RECs), Historical Recognized Environmental Conditions (HRECs), and potential RECs, collectively referred to herein as RECs, that may be present within or adjacent to the Project limits. We prepared this ISA in general conformance with the American Society of Testing and Materials (ASTM) Standard E1527-13, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process".

The following section summarizes the RECS identified within and adjacent to the Project limits. Blackburn further discusses these conditions in the body of this ISA.

RECs Located Within the Project Limits

APN 014-270-002: OPUD Wastewater Treatment Facility - Public Utilities District 3908 Mary Avenue

A 2,500-gallon diesel above ground tank (AST) is located at this facility. There are no indications of a release of diesel to soil or groundwater.

Recommendation: No additional assessment.

RECs Located Adjacent to the Project Limits

Four sites located immediately adjacent to the project alignment were identified with high risk RECs. These sites are listed in Section 3.2.2 and are identified on Figures 2a-c. Documented impacts to soil or groundwater are present on or have been remediated at these adjacent parcels. There is a potential that impacts from these parcels extend into the right-of-way (ROW) adjacent to the parcel. There is a potential to encounter residual contamination during excavation.

Recommendation: If excavation is planned within the right-of-way (ROW) adjacent to these parcels, conduct a Phase II screening of the soil within the area of excavation to assess the presence of potential hazardous materials.

[1] Blackburn uses the term Recognized Environmental Condition (REC) in general compliance with ASTM E1527-13, which defines the meaning as *"The presence or likely presence of any hazardous substances or petroleum products in, on, or at a property (1) due to any release to the environment, (2) under conditions indicative of a release to the environment or (3) under conditions that pose a material threat of a future release to the environment. The term is not intended to include de minimus conditions that generally do not present a threat to human health or the environment and generally would not be the subject of an enforcement action if brought to the attention of the appropriate regulatory agencies. Conditions determined to be de minimus are not recognized environmental conditions*."

- **APN 014-143-026: Tower Mart #60/Cheaper #60**, 1976 McGowan Parkway

  Two single-walled 10,000-gallon gasoline underground storage tanks (USTs) tanks were removed in 1986. One 8,000-gallon diesel and three 12,000-gallon gasoline tanks were installed in 2004. A release of gasoline and diesel to soil and groundwater occurred sometime before 2003. Groundwater monitoring in April 2005, did not identify detectable amounts of constituents. The regulatory case was closed in 2008. Potential contaminants of concern (COC) include total petroleum hydrocarbons (TPH) as diesel (TPH-d), gas (TPH-g) and motor oil (TPH-mo), metals, and benzene/toluene/ethylbenzene/xylene (BTEX).

- **APN 014-510-033: Marysville Forest Products/Erickson Group Limited**, 4083 Rancho Road

  Two USTs were reportedly removed after a leak was detected. A reported release of diesel to soil was recorded in 1992. Documentation was not found to verify impacted soil was excavated. The regulatory case was closed on July 14, 1993. The site was formerly occupied by a wood treating facility. Pentachlorophenol (PCP) was used as an anti-fungal wood treatment. PCP was released to soil during site operations. Site soil is also impacted with volatile organic compounds (VOCs) from the maintenance shop and dioxins at the ash disposal and burn areas. The horizontal and vertical extent of impacts is unknow. The Regional Water Quality Control Board (RWQCB) regulatory case is currently open. Potential COCs include TPH-d, TPH-g, TPH-mo, metals, BTEX, VOCs, dioxins, and PCP.

- **APN 014-280-065: PG&E North Valley Materials**, 3736 Rancho Road

  One 10,000-gallon AST of unknown contents, one 8,000-gallon gasoline UST, and one 12,000-gallon diesel UST are located at this facility. This facility operates as a staging area for PG&E operations throughout the area. A release of diesel to soil from a UST was reported on November 3, 1992. Contaminated soil was removed from the facility, and a No Further Action Letter was issued on March 1, 1993. Potential COCs include TPH-d, TPH-g, TPH-mo, metals, and BTEX

- **APN 014-270-079: Flying U Ranch**, 3718 Forty Mile Road

  A 13,500-gallon AST of unknown fuel type is identified at the site. The location of the AST was not identified during site reconnaissance. Potential COCs include TPH-d, TPH-g, TPH-mo, metals, and BTEX.

Five sites located immediately adjacent to the project alignment were identified with medium risk RECs. These sites are listed in Section 3.2.2 and are identified on Figures 2a-c. Fuel storage tanks are present on these adjacent parcels. There is no evidence in the records review to suggest releases have occurred from the tanks or hazardous material issues from these sites will impact the Project, however, there is a potential to encounter residual contamination at these sites. If plans for acquisition change to include one or more of these sites, a Phase II Environmental Site Assessment to further investigate potential hazardous materials within the acquisition areas will be necessary.

- **APN 014-280-046: Alfaro Farms/Jean Pierre Alfaro**, 3374 Forty Mile Road

  This farm is listed in the searched databases as having a 15,000-gallon AST of unknown contents. Violations were reported for failure to properly label hazardous waste containers, and failure to properly store and label used batteries.

- **APN 014-360-014: Frank Hofman Ranch**, 3002 Forty Mile Road

  This business is listed as a hazardous waste generator. A UST of unknown contents and volume was located at the site. The Yuba UST database lists the UST status as closed. No spills or leaks were reported at this facility.

- **APN 014-510-018: Livingston Concrete**, 2571 Rosser Road

  This facility is listed in the searched databases as operating an AST. Violations are reported and include failure to provide training to oil-handling personnel.

- **APN 014-510-021: Roger L. Murray**, 3938 Shimer Road

  This facility is listed as having a 5,000-gallon AST storing an unknown fuel type. The AST is located at the southeast corner of the parcel, adjacent to the project. The AST had secondary containment, but the AST is within twenty feet of the project limits.

- **APN 015-060-075: Tollcrest Dairy,** 3355 Virginia Road, Wheatland

  A 10,200-gallon AST is located at this facility. The AST is not located on the west side of the parcel near the project alignment. No additional information is provided in the records search.

Three sites located north of the project alignment on Olivehurst Avenue were identified with high risk RECs. The project limits do not currently extend to these sites. These sites are listed in Section 3.2.2 and are identified on Figures 2a-c. Documented impacts to soil or groundwater are present on or have been remediated at these parcels. There is a potential that impacts from these parcels extend into the right-of-way (ROW) adjacent to the parcel. There is a potential to encounter residual contamination during excavation.

Recommendation: If the project limits are extended to include excavation within the ROW adjacent to these parcels, conduct a Phase II screening of the soil within the area of excavation to assess the presence of potential hazardous materials. Potential COCs include TPH-d, TPH-g, TPH-mo, metals, and BTEX.

- **APN 013-072-011: Gee Property**, 4880 Olivehurst Avenue

  The site is currently vacant but was formerly occupied by a fueling station. Two gasoline underground storage tanks (USTs) were removed in 1988 and one UST removed in 2019. Soil samples from the UST excavation indicated a release had occurred. Low levels of total petroleum hydrocarbons (TPHs) were detected in groundwater. The regulatory case was closed on January 10, 2020.

- **APN 013-081-015: AGV Corner Market**, 4881 Olivehurst Avenue

  The site is an active gas station. Currently a 20,000-gallon compartmentalized gasoline and diesel tank is in the same excavation area as the former UST. A release of gasoline to soil and groundwater occurred at this facility sometime prior to 2001. The most recent groundwater monitoring event conducted at the facility occurred in May 2011 and demonstrated that groundwater beneath the facility has residual impacts from gasoline related constituents. The regulatory case was closed on June 25, 2012.

- **APN 013-130-060: Former E-Z Serve**, 4867 Olivehurst Avenue

  Three USTs were removed in 1989 and a release of gasoline was discovered. Soil and groundwater were impacted. Groundwater monitoring was conducted from sometime before 2004 until 2017.

A No further Action letter was issued by the CVRWQCB and the regulatory case was closed on November 22, 2019.

General Contamination Issues

The following general contamination issues were identified within the Project limits.

Yellow traffic stripes

Yellow traffic stripes are known to contain heavy metals, such as lead and chromium, at concentrations in excess of the hazardous waste thresholds established by the *California Code of Regulations* and may produce toxic fumes when heated.

Recommendation: If the Project includes removal of yellow traffic striping, remove and dispose of in accordance with Caltrans Standard Special Provisions for Hazardous Waste.

Aerially Deposited Lead (ADL)

ADL has been found to occur in soils adjacent to highways and high use roadways. The lead is presumably from the historical use of leaded gasoline and subsequent exhaust emissions. There is potential for encountering ADL during construction and grading activities within the proposed Project limits along its entirety. Some of these roadways have been present in various alignments since at or before 1910 and, therefore, have the potential to be impacted with ADL.

Recommendation: A soil screening to evaluate the potential presence of ADL within the Project limits should be performed. An appropriate soil management plan will need to be developed for soil containing significant concentrations of ADL.

Southern Pacific Railroad

An active railroad is adjacent to the east side of Rancho Road. Soils located adjacent to railroad tracks may be impacted by on-going railroad operations. Potential contaminants at these locations commonly include petroleum hydrocarbons, semi-volatile organic compounds (SVOCs), heavy metals, and pesticides.

Recommendation: Conduct a limited subsurface soil screening for potential contaminants in the upper 1.5 feet where soil will be disturbed adjacent to the railroad.

Asbestos Containing Material (ACM) and Lead in Buildings Materials

Structures constructed pre-1989 have the potential to contain ACM/Lead materials. Aerial photographs identify structures along the project alignment as developed prior to 1989.

Recommendation: If parcels are acquired as part of the Project any structures on those parcels should be evaluated for the presence of lead and asbestos containing materials. Any structure to be modified or demolished as part of the Project must be surveyed for the presence of ACM and Lead by a certified Asbestos Inspector prior to building demolition/modification.

Transformers

Our scope did not include an inventory of past and present transformers. We observed pole-mounted transformers and power lines within the existing right-of-way.

Recommendation: If the relocation of power facilities or high voltage power lines is required, existing transformers should be checked for the presence of PCBs or other hazardous materials by the utility owner, and if present, properly remediated and disposed. Identification and remediation of old transformers is the responsibility of the utility owner.

Organochlorine Pesticides (OCPs)

Historical topographic maps from 1947 and 1949 depict an orchard in the southeastern ½-mile alignment of Rancho Road and the eastern 1/3-mile alignment of Morrison Road.

Recommendation: Conduct a shallow soil screening to evaluate the potential presence of OCPs within the footprint of the former orchard in the Project limits.

1 INTRODUCTION

Blackburn completed this Phase 1 Initial Site Assessment (ISA) for the OPUD Sewer and Water Infrastructure Project (Project) located in Yuba County California. The purpose of the ISA is to identify Recognized Environmental Conditions[2] (RECs), Historical Recognized Environmental Conditions (HRECs), and potential RECs, collectively referred to herein as RECs, that may be present within and/or adjacent to the Project limits.

To conduct this ISA, Blackburn:

- Reviewed historical aerial photographic coverage and topographic map coverage for the Project area and surrounding properties for indications of potential sources of contamination.
- Performed federal, state, and county records review for indications of the use, misuse, or storage of hazardous and/or potentially hazardous materials on or near the Project area.
- Conducted a site inspection on September 9, 2020 to observe current land use and indications of potential contamination, as well as hazardous and potentially hazardous waste issues for the Project area.
- Performed state records review of the on-line regulatory databases GeoTracker and EnviroStor, to determine if known site impacts and/or previous environmental work exist for the Project area.
- Reviewed the general site geology, groundwater, and soil conditions through published maps and literature.

Blackburn prepared this report for Jacobs Engineering Group (Jacobs) and the project design team to use during design and construction. This report shall not be used or relied upon by others, or for different locations or improvements without the written consent of Blackburn.

2 PROJECT LOCATION AND DESCRIPTION

2.1 Location and Description

The Project spans approximately 12.2 miles within the town of Olivehurst and surrounding areas. The Project alignment includes the OPUD Wastewater Treatment Plant located on Mary Avenue, and portions of the following alignments:

- Olivehurst Avenue from 7th Avenue to approximately 170 feet south of 11th Avenue;
- Mary Avenue from OPUD wastewater treatment plant to McGowan Parkway;
- McGowan Parkway from Mary Avenue to Rancho Road;

[2] BCI uses the term Recognized Environmental Condition (REC) in general compliance with ASTM E1527-13, which defines the meaning as "*The presence or likely presence of any hazardous substances or petroleum products in, on, or at a property (1) due to any release to the environment, (2) under conditions indicative of a release to the environment or (3) under conditions that pose a material threat of a future release to the environment. The term is not intended to include de minimus conditions that generally do not present a threat to human health or the environment and generally would not be the subject of an enforcement action if brought to the attention of the appropriate regulatory agencies. Conditions determined to be de minimus are not recognized environmental conditions.*"

- Olive Avenue from McGowan Parkway to approximately 100 feet to the north, then east crossing under Highway 65 to the northern terminus of Rancho Road;
- Rancho Road from its northern end to Morrison Road;
- Morrison Road from Highway 65 to Forty Mile Road;
- Forty Mile road from the Toyota Amphitheater to Rancho Road;
- Slaughterhouse Road from Forty Mile Road to northwest for approximately 0.4 miles, crossing Highway 65 to the western terminus of Plute Road;
- Plute Road from its westernmost extent to Shimer Road; and
- Shimer Road from Plute Road to Rancho Road.

Pump and lift stations locations will be installed on privately owned parcels, however these locations have not been finalized.

The Project location with Project limits is shown on Figure 1, Vicinity Map. Site-specific features are shown on Figures 2a-e.

2.2 Geology and Physical Setting

The site lies within the Great Valley Geomorphic Province of California, which is a large, elongated, northwest-trending structural trough. The Province is subdivided into two major divisions designated as the Sacramento and San Joaquin Valleys. These valleys have been filled to their present elevation with thick sequences of sediment, ranging in age from Jurassic to present day, creating a nearly flat-lying alluvial plain that extends from the Tehachapi Mountains in the south to the Klamath Mountains in the north. The western and eastern boundaries of this province are formed by the California Coast Ranges and the Sierra Nevada, respectively.

The study area is located on an alluvial plain in the Sacramento Valley located approximately 2.2 miles east of the Feather River at its closest point. The underlying deposits are mapped by Saucedo, G.J. and Wagner D.L. (1981) as alluvium, natural levee and channel deposits, basin deposits, Modesto Formation, and the Riverbank Formation. This formation is composed of fine-grained soils such as clay, silts, sand and gravel.

The site topography is generally flat, except near Highway 65 and Highway 70, where the topography slopes toward the highways. The site elevations, excluding areas near the Highways, range between 55 feet above mean sea level (msl) in the western portion of the Project and 75 feet above msl in the easternmost portion of the Project.

2.3 Surface Water, Groundwater, Wells

The Site lies within the South Yuba Subbasin where groundwater flow direction is generally to the southwest toward the Feather River, though flow directions vary both locally and seasonally. The study area is east of the Feather River, south of the Yuba River, and north of the Bear River. Blackburn reviewed groundwater level data made available at California Department of Water Resources (DWR) website www.water.ca.gov/waterdatalibrary. The groundwater beneath the site rises to within approximately 40

feet of the ground surface for up to six months of the year. Depth to groundwater during the rest of the year is approximately 45 feet below ground surface. Surface/storm water is directed by sidewalk curb, gutter and drains. The general flow direction is to the south and west towards the Feather River, except in area in proximity to Hutchison Creek and Reed Creek, which transect the Project in multiple areas flowing southwest toward the Feather River.

2.4 Current Land Use

Most of the Project area consists of roadways which traverse rural areas of Yuba County, with a portion of the project limits transecting the town of Olivehurst. Land adjacent to the Project along Rancho Road is zoned as agricultural industrial and light industrial. Land along Morrison Road is designated as sports entertainment district and employment center district. Land adjacent to Forty Mile Road is designated for agricultural use and sports entertainment. Land near the OPUD Wastewater treatment Facility on Mary Road is designated for use as public utilities land as well as single-family residential.

2.5 Historic Land Use

Land use adjacent to the project limits varies throughout the project alignment. Blackburn reviewed historical aerial photography, topographic maps, and Sanborn maps to identify conditions that may indicate potential hazardous materials issues within the Project limits.

2.5.1 Aerial Photograph Review

Blackburn reviewed the following historic aerial photography to identify conditions that may indicate potential hazardous materials issues within or adjacent to the Project area. The listing includes aerial photo flight year, source, scale, and a brief description of observed conditions. Copies of aerial photographs are provided in Appendix A.

Aerial Photograph Review

The following aerial photos were reviewed:

1947 Photo by Agriculture and Soil Conservation Service, Scale 1" =2,000'
1954 Photo by Army Mapping Service, Scale 1" =2,000'
1977 Photo by USGS, Scale 1" =2,000'
1987 Photo by USGS, Scale 1" =2,000'
1998 Photo by USGS, Scale 1" =2,000'
2005 Photo by National Agriculture Information Program (NAIP), Scale 1" =2,000'
2009 Photo by NAIP, Scale 1" =2,000'
2014 Photo by NAIP, Scale 1" =2,000'
2018 Photo by NAIP, Scale 1" =2,000'

Areas of the Project limits south of Morrison Road along Forty Mile Road are not shown on Aerial Photographs. This includes the area that is now the Toyota Amphitheater.

1947: Improved roads, Rancho Road, Forty Mile Road, Morrison Road, and McGowan Road are depicted in their present-day alignments. The town of Olivehurst is visible north of the Project limits. Agricultural

use is visible along the alignment. Rural residences are visible near the project alignment. Hutchinson Creek and Reed Creek transect the project alignment in multiple locations similar to present day. A large industrial facility is adjacent to the north side of Rancho Road in the location that is currently the Marysville Forest Products/Erikson Group Limited facility.

1954: Additional development of roads and residences in the south portion of Olivehurst. Olivehurst is generally in its present-day footprint.

1977: Highway 65 transects the project limits. Highway 70 appears under construction and transects the project limits. What is now a PG&E facility is adjacent to the south of the Project limits on Rancho Road. Mary Road appears on the map, along with the OPUD wastewater treatment facility. Additional residences appear along Morrison Road. A commercial/industrial facility is at the intersection of Slaughterhouse Road and Forty Mile Road. A mobile home park is at the intersection of Olive Avenue and McGowan Parkway. Additional residences and commercial businesses appear along the Project alignment within the town of Olivehurst.

1987: The OPUD wastewater Treatment Facility appears to expand to the south.

1998: No significant changes.

2005: An additional commercial facility is adjacent to the south of Rancho Road southeast of the PG&E facility.

2009: No significant changes.

2014: No significant changes.

2018: The Project alignment and surrounding area appear as they are today.

2.5.2 Topographic Map Review

Blackburn reviewed the following topographic maps for features that may indicate an impact to the Project. This summary includes noted changes within and adjacent to the Project location as recorded on the maps. Copies of the topographic maps are provided in Appendix B.

1910 Wheatland 7.5-minute Quad, Scale 1:24,000,
1911 Ostrom 7.5-minute Quad, Scale 1:24,000,
1947 Wheatland 7.5-minute Quad, Scale 1:24000,
1949 Wheatland 7.5- and 15-minute Quad, Scale 1:24000,
1952 Olivehurst 7.5-minute and Marysville 15-minute Quads, Scale 1:24,000
1973 Olivehurst and Wheatland 7.5-minute Quads, Scale 1:24000, and
2015 Olivehurst and Wheatland 7.5-minute Quads, Scale 1:24000.

1910 and 1911: Western Pacific Railroad and the Marysville Line of the Southern Pacific Railroad are depicted on the map near the project alignment. The development of Ostrom is depicted near the present-day intersection of Highway 65 and Forty Mile Road. Structures are depicted sparsely near the

project alignment along present-day Forty Mile Road, Morrison Road, and Rancho Road. Hutchinson Creek and Reed Creek are depicted near their present-day alignments transecting the Project. Plumas Lake is depicted approximately one mile south and west of the Project limits.

1947, 1949, and 1952: The town of Olivehurst, including Olivehurst Avenue, what is now Mary Road, and McGowan Road (Parkway) are depicted, as are residences and structures along their alignments. A commercial or industrial facility is depicted to the north of what is now Rancho Road between Reed Creek and Hutchinson Creek. This facility is in the same location as the present-day Marysville Forest Products/Erikson Group Limited facility. An orchard is depicted in the southeastern portion of the project alignment encompassing the intersection of present-day Highway 65, Morrison Road, and Rancho Road.

1973: The OPUD wastewater treatment facility is depicted in its present-day location. Several additional structures are depicted at the Marysville Forest Products/Erikson Group Limited facility. Highways 65 and 70 are depicted in their present-day alignments. A mobile home park is depicted at the intersection of Olive Drive and McGowan Parkway. The orchard is no longer depicted near the southeastern corner of the Project alignment. Additional commercial/industrial facilities are depicted in the area between Rancho Road and Highway 65. Additional roads and residential structures are depicted within the town of Olivehurst in the vicinity of Olivehurst Avenue and McGowan Parkway.

2015: Structures and land uses are not depicted on this map. The town of Olivehurst is depicted as it is today.

2.5.3 Sanborn® Map Review

Environmental Risk Information Services (ERIS) searched the Sanborn Maps Library for the Site and surrounding area. The ERIS search did not return Sanborn Maps (fire insurance) covering the Site or the surrounding area. Appendix C contains ERIS's Sanborn Map Report.

3 RECORDS REVIEW

3.1 County, State and Federal Records Review

ERIS, a commercial data base search firm, performed a radius search for the study area on August 20, 2020. The search includes a review of county, state, federal and ERIS proprietary databases. The maximum search radius is 1 mile from the outline of the Project area. Sites with adequate address information are plotted on ERIS's site plan "Map: 1.0 Mile Radius". ERIS lists sites with inadequate address information in their "Unplottable Summary" and does not provide mapped locations. Blackburn reviewed the 13 "unplottable sites" identified by ERIS and determined that only the PG&E facility, which is located on Rancho Road though identified on Morrison Road in the report, is located adjacent to the Project area. The complete EDR report is included in Appendix D.

3.2 Summary of Records Search

Blackburn reviewed the databases for facilities within ½-mile of the Project alignment with a potential to impact project operations. Our review of records identified the following sites with potentially hazardous material conditions at, adjacent to, or considered close enough to the project site to potentially impact

the project. 50 facilities within a ½-mile radius of the Project are listed in the Records Search. Below, we summarize the database records.

3.2.1 RECs Within the Project Alignment

APN 014-270-002: OPUD Wastewater Treatment Facility/Olivehurst Public Utilities District/Western Water Constructors, Inc., 3908 Mary Avenue, Olivehurst, CA

Databases: Yuba CUPA, AST, FINDS, HAZNET, HIST Manifest, ICIS, YUBA UST, CERS TANK, RCRA NonGen
A 2,500-gallon diesel AST is located at this facility. No additional information is provided in the records search.

3.2.2 RECs Adjacent to the Project Alignment (Medium and High Risk)

The following sites have conditions such as above ground or underground fuel storage tanks that are considered RECs to the project. The RECs include releases of petroleum hydrocarbons or other hazardous materials that may have resulted in residual impacts within the Project alignment.

APN 013-072-011: Gee Property, 4880 Olivehurst Avenue, Olivehurst, CA
Database: GeoTracker

Formerly occupied by a fueling station. Two gasoline USTs were removed in 1988. Soil samples from the UST excavation indicated a release had occurred. An additional UST was excavated in 2019. Low levels of TPH as diesel was detected in groundwater. Low concentrations of motor oil were detected in stockpile sampling. The regulatory case was closed on January 10, 2020. The site is within the service area of OPUD.

APN 013-081-015: AGV Corner Market, 4881 Olivehurst Avenue, Olivehurst, CA
Database: GeoTracker

The site is an active gas station. Currently a 20,000 gallon compartmentalized gasoline and diesel tank is in the same excavation area as the former UST. A release of gasoline to soil and groundwater occurred at this facility sometime prior to 2001. The most recent groundwater monitoring event conducted at the facility occurred in May 2011 and demonstrated that groundwater beneath the facility has residual impacts from gasoline related constituents. The regulatory case was closed on June 25, 2012.

APN 013-130-060: Former E-Z Serve, 4867 Olivehurst Avenue, Olivehurst, CA
Databases: GeoTracker, LUST

On August 30, 1989, three USTs were removed, and a release of gasoline was discovered. Soil and groundwater were impacted. Groundwater monitoring was conducted from sometime before 2004 until 2017. A No further Action letter was issued by the CVRWQCB and the regulatory case was closed on November 22, 2019.

APN 014-143-026: Tower Mart #60/Colonial Energy CE/Fred and Liquor 60/Cheaper #60, 1976 McGowan Parkway, Olivehurst, CA
Databases: Delisted TNK, Emissions, GeoTracker, FINDS/FRS, Yuba CUPA, LUST, HHSS, HAZNET, Yuba UST, CERS TANK, UST, Emissions, HIST TANK, RCRA NonGen

In 1986, two single-walled 10,000-gallon fuel tanks were removed from the site. In 2004 four USTs were installed including one 8000-gallon diesel and three 12,000-gallon gasoline tanks. This fueling station is a hazardous waste generator. A release of gasoline and diesel to soil and groundwater occurred sometime before 2003. Groundwater monitoring in April 2005, did not identify detectable amounts of constituents. The regulatory case was closed on January 31, 2008.

APN 014-270-079: Flying U Ranch, 3718 Forty Mile Road, Olivehurst, CA
Databases: Yuba CUPA, AST, CERS TANK

A 13,500-gallon AST of unknown fuel type is identified at the site. The CERS TANK database identifies violations including failure to dispose of hazardous waste within 180 days, and failure to inspect hazardous waste storage areas weekly.

APN 014-280-046: Alfaro Farms/Jean Pierre Alfaro, 3374 Forty Mile Road, Olivehurst, CA
Databases: AST, RCRA NonGen, Yuba CUPA, CERS TANK

This farm is listed in the searched databases as having a 15,000-gallon AST of unknown contents. Violations were reported for failure to properly label hazardous waste containers, and failure to properly store and label used batteries.

APN 014-280-065: PG&E North Valley Materials, 3736 Rancho Road, Olivehurst, CA
Databases: Yuba CUPA, Delisted TNK, AST, HHSS, Yuba UST, HIST TANK, Delisted CTNK, RCRA SQG, CHMIRS, LUST

One 10,000-gallon AST of unknown contents, one 8,000-gallon gasoline UST, and one 12,000-gallon diesel UST are located at this facility. This facility operates as a staging area for PG&E operations throughout the area. A release of diesel to soil from a UST was reported on November 3, 1992. Contaminated soil was removed from the facility, and a No Further Action Letter was issued on March 1, 1993. The CHMIRS database lists this facility as having a leak of 5-10 gallons of insulating oil (no PCB content).

APN 014-360-014: Frank Hofman Ranch, 3002 Forty Mile Road, Olivehurst, CA
Databases: Yuba CUPA, HHSS, Yuba UST, HIST TANK

This business is listed as a hazardous waste generator. A UST of unknown contents and volume was located at the site. The Yuba UST database lists the UST status as closed. No spills or leaks were reported at this facility.

APN 014-510-018: Livingston Concrete, 2571 Rosser Road, Olivehurst, CA
Databases: Yuba CUPA, CERS TANK, Emissions

This facility is listed in the searched databases as operating an AST. Violations are reported and include failure to provide training to oil-handling personnel.

APN 014-510-021: Roger L. Murray, 3938 Shimer Road, Olivehurst, CA
Databases: Yuba CUPA, AST, Delisted CTNK

This facility is listed as having a 5,000-gallon AST storing an unknown fuel type. No additional information is provided in the records search.

APN 014-510-033: Marysville Forest Products/Erickson Group Limited/Sun Gro Horticulture/Berdex Forest Products, Inc., 4083 Rancho Road, Olivehurst, CA
Databases: RCRA SQG, Yuba CUPA, Cleanup Sites, LUST, EnviroStor, HHSS, Yuba UST, Delisted HAZ, Emissions, HIST TANK, RCRA NonGen

Marysville Forest Products is a hazardous waste generator that reported a release of diesel to soil on June 18, 1992. Impacted soil was excavated and the regulatory case was closed on July 14, 1993.

Erickson Group Limited is a former wood treating facility. Pentachlorophenol (PCP) was released to soil during site operations. Soil remediation occurred and groundwater monitoring indicates that groundwater was not impacted by the release. The regulatory case is currently open. As of June 18, 2020, a Phase 1 ESA was requested by a potential buyer of the property.

APN 015-060-075: Tollcrest Dairy, 3355 Virginia Road, Wheatland, CA
Databases: Yuba CUPA, AST, CERS TANK

A 10,200-gallon AST is located at this facility. The AST is not located on the west side of the parcel near the project alignment. No additional information is provided in the records search.

3.2.3 Sites identified Adjacent to the Project Alignment (Low Risk)

The following sites are listed in the searched database for storage and handling of hazardous materials and other hazardous materials conditions that are not considered RECs to the project. If these parcels are acquired as part of the project, additional assessment should be conducted.

Frankenstein Motors/McCinskey's Frankenstein Motors, 3906 Shimer Road, Olivehurst, CA
Databases: Yuba CUPA, CERS HAZ, RCRA NonGen

This facility is identified in the Yuba CUPA and CERS HAZ databases as a hazardous waste generator. This database identifies a violation on September 27, 2016 for failure to manage used oil and/or fuel filters, label portable tanks appropriately, and submit an emergency response plan for hazardous materials release.

JS West Propane-Marysville Storage, 2698 Plute Road, Olivehurst, CA
Databases: Yuba CUPA, CERS HAZ

No information regarding this facility is provided in the listed databases.

Livingston's Concrete, 2572 Rosser Road, Olivehurst, CA
Database: FINDS/FRS

This facility is identified as a ready-mix concrete business. No additional information is provided in the records search.

AT&T California, Ostrom Road and Rancho Road, Olivehurst, CA
Database: CERS HAZ

This facility is identified as a chemical storage facility. No additional information is provided in the records search.

3948 Shimer Road, Olivehurst, CA
Databases: NCDL, CDL
This facility was identified on February 1, 2006 as being an illegal drug lab where hazardous materials were stored.

C**enturylink Olivehurst**, 3365 Rancho Road, Olivehurst, CA
Databases: Yuba CUPA, CERS HAZ

This facility is identified in the CERS HAZ database as a chemical storage facility. No additional information is provided in the records search.

Verizon Wireless Olivehurst, 3359 Forty Mile Road, Olivehurst, CA
Database: Yuba CUPA

No information is listed in the searched database.

Yetter Steel Corp., 3548 Rancho Road, Olivehurst, CA
Databases: Yuba CUPA, Delisted Haz

This business is listed as a hazardous waste generator. No additional information is provided in the records search.

Sprint Nextel, 3516 Rancho Road, Olivehurst, CA
Database: Yuba CUPA

No information regarding this site is in the searched database.

United Truck Dismantlers/ Rocliff Enterprises, Inc., 2488 McGowan Parkway, Olivehurst, CA
Databases: FINDS/FRS, Yuba CUPA, HAZNET, HIST Manifest, CERS HAZ, RCRA NonGen

This facility is a hazardous waste generator that operates an oil/water separator and disposes of oil-containing waste.

Verizon Wireless McGowan Parkway, 4404 Rancho Road, Marysville, Ca
Databases: FINDS/FRS, Yuba CUPA, CERS HAZ

This facility is listed in the CERA HAZ database as being a chemical storage facility. No regulatory action, spills, or leaks are identified in the records search.

2352 McGowan Parkway/Highway 65 & McGowan Parkway, Olivehurst, CA
Database: CDL

This address is listed in the searched database as an illegal drug lab that was reported in May 2000.

Rocking S Livestock, 3380 Rancho Road, Wheatland, CA
Database: Yuba CUPA

No information is provided in the records search.

Via Grande Way, Space 19, Olivehurst, CA
Database: CDL

This listing is a residence in a mobile home park located at the intersection of Olive Avenue and McGowan Parkway that was reported to be an illegal drug lab in March 2003.

Highway 70 & McGowan Parkway, Olivehurst, CA
Database: CDL

This location is the location of a vehicle that contained illegal drug lab equipment.

NRC/UPRR, Virginia Road & Rancho Road, Wheatland, CA
Database: CHMIRS

This location is listed in the searched databases as the location of a natural gas line leak, and an auto vs. train collision that resulted in the spill of an unknown amount of an undisclosed fluid. No regulatory action was documented regarding the spill.

Dollar General #14976, 1990 McGowan Parkway, Olivehurst, CA
Databases: Yuba CUPA, HAZNET, FINDS/FRS, CERS HAZ, RCRA NonGen

This business generates hazardous waste that is transported offsite.

Burrow Garage, 1909 McGowan Parkway, Olivehurst, CA
Databases: FINDS/FRS, Yuba CUPA, HAZNET, Delisted HAZ

This business is listed in the searched records as a hazardous waste generator that disposes of liquids with halogenated organic compounds. No violations, spills, or regulatory actions are documented in the records search.

Verizon Wireless Olivehurst, 3076 Rancho Road, Wheatland, CA
Databases: CERS HAZ, Yuba CUPA

This facility is listed as a chemical storage facility. No additional information is provided in the records search.

AT&T Corp, 4242 Deaton Drive, Olivehurst, CA
Database: CERS HAZ

This business is listed in the searched database as a chemical storage facility. No regulatory violations, spills, or leaks are documented for this facility.

Kubich Lumber, 1630 Rancho Road, Marysville, CA
Database: HAZNET

This business is listed in the HAZNET database. No additional information is identified in the records search.

3.2.4 RECs at Facilities identified within ½-mile of the Project alignment

Marysville Army Airfield/Yuba County Airport/G.N. Dibble, Inc./Public Works Airport Shop, 1300 and 1364 Sky Harbor Drive, Olivehurst, CA (1/2-mile west)

This facility is listed in the GeoTracker and EnviroStor online databases.

This 972-acre facility was constructed in 1941 and served as both a staging area for aircraft that applied herbicides and insecticides to surrounding agricultural properties, as well as a military installation that facilitated firearms training, aircraft storage, and aircraft refueling. In 1999, seven USTs and 790 tons of contaminated soil were removed from this facility. In 2014 A&M, a consultant working on behalf of the Central Valley Regional Water Quality Control Board (CVRWQCB), conducted a soil and groundwater investigation at the Site. Analysis of soil and groundwater samples collected during the investigation indicated that no contamination was present from petroleum hydrocarbons or volatile organic compounds (VOCs). The regulatory case was closed on July 21, 2015.

Two open regulatory cases are ongoing at this facility in relation to pesticide and herbicide releases to soil that occurred because of past uses. This facility is approximately 1/2 -mile west and downgradient of the Project alignment and is therefore not a REC for the Project.

3.3 City Directory Review

Blackburn reviewed the historical city directory. The City Directory review did not identify any conditions that are not already identified in other sections of this ISA. The City Directory Image Report is provided in Appendix E.

3.4 Title Documents Review

Title documents were not provided for this assessment.

4 RECONNAISSANCE INFORMATION

Blackburn completed a site reconnaissance on September 9, 2020. The purpose of the visual survey is to collect information regarding potential hazardous material contamination including identification of evidence of current and/or past use, evident storage of toxic or hazardous materials, the presence of onsite ponds, landfills, drywells, waste streams or other disposal units, visible soil contamination, above ground or underground storage tanks, drums, barrels and other storage containers. Photos from the site visit are in Appendix F. Observations were made from accessible portions of the study area.

The observations generally support the descriptions and background data above. Additional observations are presented in Section 3.2.1.

5 OWNER INTERVIEWS

Per ASTM, past owners, operators, and/or occupants of the subject property who are likely to have material information regarding the potential for contamination at the subject property shall be contacted

to the extent that they can be identified and that the information likely to be obtained is not duplicative of information already obtained from other sources.

Blackburn did not conduct interviews with property owners. Lack of contact with the owners of property adjacent to the Project is a data gap but is not expected to change the conclusions of this ISA.

6 DATA GAPS

In accordance with ASTME E1527-13, this section discusses data gaps in the documents we obtained and reviewed as part of this ISA and discusses the significance. ASTM E1527-13 defines a data gap as "a lack of or inability to obtain information required by this practice despite good faith efforts by the environmental professional to gather such information." In our opinion, we did not observe a data gap significant enough to change the conclusions of this ISA.

7 FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

The scope of this ISA was directed at:

- Determining if hazardous materials exist at or near the Project area at concentrations likely to warrant mitigation pursuant to regulations;
- Identifying sites RECs and/or potential RECs within and adjacent to the proposed Project area which could affect the design, constructability, feasibility, and/or the cost of the proposed Project; and
- Identify potential site contamination issues.

The assessment identified the following environmental conditions that should be considered for present and future planning for the proposed Project.

RECs Located Within the Project Limits

APN 014-270-002: OPUD Wastewater Treatment Facility - Public Utilities District 3908 Mary Avenue

A 2,500-gallon diesel above ground tank (AST) is located at this facility. There are no indications of a release of diesel to soil or groundwater.

Recommendation: No additional assessment.

RECs Located Adjacent to the Project Limits

Four sites located immediately adjacent to the project alignment were identified with high risk RECs. These sites are listed in Section 3.2.2 and are identified on Figures 2a-c. Documented impacts to soil or groundwater are present on or have been remediated at these adjacent parcels. There is a potential that impacts from these parcels extend into the right-of-way (ROW) adjacent to the parcel. There is a potential to encounter residual contamination during excavation.

Recommendation: If excavation is planned within the right-of-way (ROW) adjacent to these parcels, conduct a Phase II screening of the soil within the area of excavation to assess the presence of potential hazardous materials.

- **APN 014-143-026: Tower Mart #60/Cheaper #60**, 1976 McGowan Parkway

  Two single-walled 10,000-gallon gasoline underground storage tanks (USTs) tanks were removed in 1986. One 8,000-gallon diesel and three 12,000-gallon gasoline tanks were installed in 2004. A release of gasoline and diesel to soil and groundwater occurred sometime before 2003. Groundwater monitoring in April 2005, did not identify detectable amounts of constituents. The regulatory case was closed in 2008. Potential contaminants of concern (COC) include total petroleum hydrocarbons (TPH) as diesel (TPH-d), gas (TPH-g) and motor oil (TPH-mo), metals, and benzene/toluene/ethylbenzene/xylene (BTEX).

- **APN 014-510-033: Marysville Forest Products/Erickson Group Limited**, 4083 Rancho Road

  Two USTs were reportedly removed after a leak was detected. A reported release of diesel to soil was recorded in 1992. Documentation was not found to verify impacted soil was excavated. The regulatory case was closed on July 14, 1993. The site was formerly occupied by a wood treating facility. Pentachlorophenol (PCP) was used as an anti-fungal wood treatment. PCP was released to soil during site operations. Site soil is also impacted with volatile organic compounds (VOCs) from the maintenance shop and dioxins at the ash disposal and burn areas. The horizontal and vertical extent of impacts is unknow. The Regional Water Quality Control Board (RWQCB) regulatory case is currently open. Potential COCs include TPH-d, TPH-g, TPH-mo, metals, BTEX, VOCs, dioxins, and PCP.

- **APN 014-280-065: PG&E North Valley Materials**, 3736 Rancho Road

  One 10,000-gallon AST of unknown contents, one 8,000-gallon gasoline UST, and one 12,000-gallon diesel UST are located at this facility. This facility operates as a staging area for PG&E operations throughout the area. A release of diesel to soil from a UST was reported on November 3, 1992. Contaminated soil was removed from the facility, and a No Further Action Letter was issued on March 1, 1993. Potential COCs include TPH-d, TPH-g, TPH-mo, metals, and BTEX

- **APN 014-270-079: Flying U Ranch**, 3718 Forty Mile Road

  A 13,500-gallon AST of unknown fuel type is identified at the site. The location of the AST was not identified during site reconnaissance. Potential COCs include TPH-d, TPH-g, TPH-mo, metals, and BTEX.

Five sites located immediately adjacent to the project alignment were identified with medium risk RECs. These sites are listed in Section 3.2.2 and are identified on Figures 2a-c. Fuel storage tanks are present on these adjacent parcels. There is no evidence in the records review to suggest releases have occurred from the tanks or hazardous material issues from these sites will impact the Project, however, there is a potential to encounter residual contamination at these sites. If plans for acquisition change to include one or more of these sites, a Phase II Environmental Site Assessment to further investigate potential hazardous materials within the acquisition areas will be necessary.

- **APN 014-280-046: Alfaro Farms/Jean Pierre Alfaro**, 3374 Forty Mile Road

  This farm is listed in the searched databases as having a 15,000-gallon AST of unknown contents.

  Violations were reported for failure to properly label hazardous waste containers, and failure to

properly store and label used batteries.

- **APN 014-360-014: Frank Hofman Ranch**, 3002 Forty Mile Road

  This business is listed as a hazardous waste generator. A UST of unknown contents and volume was located at the site. The Yuba UST database lists the UST status as closed. No spills or leaks were reported at this facility.

- **APN 014-510-018: Livingston Concrete**, 2571 Rosser Road

  This facility is listed in the searched databases as operating an AST. Violations are reported and include failure to provide training to oil-handling personnel.

- **APN 014-510-021: Roger L. Murray**, 3938 Shimer Road

  This facility is listed as having a 5,000-gallon AST storing an unknown fuel type. The AST is located at the southeast corner of the parcel, adjacent to the project. The AST had secondary containment, but the AST is within twenty feet of the project limits.

- **APN 015-060-075: Tollcrest Dairy,** 3355 Virginia Road, Wheatland

  A 10,200-gallon AST is located at this facility. The AST is not located on the west side of the parcel near the project alignment. No additional information is provided in the records search.

Three sites located north of the project alignment on Olivehurst Avenue were identified with high risk RECs. The project limits do not currently extend to these sites. These sites are listed in Section 3.2.2 and are identified on Figures 2a-c. Documented impacts to soil or groundwater are present on or have been remediated at these parcels. There is a potential that impacts from these parcels extend into the right-of-way (ROW) adjacent to the parcel. There is a potential to encounter residual contamination during excavation.

Recommendation: If the project limits are extended to include excavation within the ROW adjacent to these parcels, conduct a Phase II screening of the soil within the area of excavation to assess the presence of potential hazardous materials. Potential COCs include TPH-d, TPH-g, TPH-mo, metals, and BTEX.

- **APN 013-072-011: Gee Property**, 4880 Olivehurst Avenue

  The site is currently vacant but was formerly occupied by a fueling station. Two gasoline underground storage tanks (USTs) were removed in 1988 and one UST removed in 2019. Soil samples from the UST excavation indicated a release had occurred. Low levels of total petroleum hydrocarbons (TPHs) were detected in groundwater. The regulatory case was closed on January 10, 2020.

- **APN 013-081-015: AGV Corner Market**, 4881 Olivehurst Avenue

  The site is an active gas station. Currently a 20,000-gallon compartmentalized gasoline and diesel tank is in the same excavation area as the former UST. A release of gasoline to soil and groundwater occurred at this facility sometime prior to 2001. The most recent groundwater monitoring event conducted at the facility occurred in May 2011 and demonstrated that groundwater beneath the facility has residual impacts from gasoline related constituents. The regulatory case was closed on June 25, 2012.

- **APN 013-130-060: Former E-Z Serve**, 4867 Olivehurst Avenue

Three USTs were removed in 1989 and a release of gasoline was discovered. Soil and groundwater were impacted. Groundwater monitoring was conducted from sometime before 2004 until 2017. A No further Action letter was issued by the CVRWQCB and the regulatory case was closed on November 22, 2019.

General Contamination Issues

The following general contamination issues were identified within the Project limits.

Yellow traffic stripes

Yellow traffic stripes are known to contain heavy metals, such as lead and chromium, at concentrations in excess of the hazardous waste thresholds established by the *California Code of Regulations* and may produce toxic fumes when heated.

Recommendation: If the Project includes removal of yellow traffic striping, remove and dispose of in accordance with Caltrans Standard Special Provisions for Hazardous Waste.

Aerially Deposited Lead (ADL)

ADL has been found to occur in soils adjacent to highways and high use roadways. The lead is presumably from the historical use of leaded gasoline and subsequent exhaust emissions. There is potential for encountering ADL during construction and grading activities within the proposed Project limits along its entirety. Some of these roadways have been present in various alignments since at or before 1910 and, therefore, have the potential to be impacted with ADL.

Recommendation: A soil screening to evaluate the potential presence of ADL within the Project limits should be performed. An appropriate soil management plan will need to be developed for soil containing significant concentrations of ADL.

Southern Pacific/Union Pacific Railroad

An active railroad is adjacent to the east side of Rancho Road. Soils located adjacent to railroad tracks may be impacted by on-going railroad operations. Potential contaminants at these locations commonly include petroleum hydrocarbons, semi-volatile organic compounds (SVOCs), heavy metals, and pesticides.

Recommendation: Conduct a limited subsurface soil screening for potential contaminants in the upper 1.5 feet where soil will be disturbed adjacent to the railroad.

Asbestos Containing Material (ACM) and Lead in Buildings Materials

Structures constructed pre-1989 have the potential to contain ACM/Lead materials. Aerial photographs identify structures along the project alignment as developed prior to 1989.

Recommendation: If parcels are acquired as part of the Project any structures on those parcels should be evaluated for the presence of lead and asbestos containing materials. Any structure to be modified or demolished as part of the Project must be surveyed for the presence of ACM and Lead by a certified Asbestos Inspector prior to building demolition/modification.

Transformers

Our scope did not include an inventory of past and present transformers. We observed pole-mounted transformers and power lines within the existing right-of-way.

Recommendation: If the relocation of power facilities or high voltage power lines is required, existing transformers should be checked for the presence of PCBs or other hazardous materials by the utility owner, and if present, properly remediated and disposed. Identification and remediation of old transformers is the responsibility of the utility owner.

Organochlorine Pesticides (OCPs)
Historical topographic maps from 1947 and 1949 depict an orchard in the southeastern ½-mile alignment of Rancho Road and the eastern 1/3-mile alignment of Morrison Road.

Recommendation: Conduct a shallow soil screening to evaluate the potential presence of OCPs within the footprint of the former orchard in the Project limits.

8 QUALIFICATIONS

This ISA was prepared by Laura Long. I declare that, to the best of my professional knowledge and belief, I meet the definition of an environmental professional as defined in Section 312.10 of 40 Code of Federal Regulations (CFR) 312 and have the specific qualifications based on education, training, and experience to assess a property of its nature, history, and setting of the subject property. I have performed all appropriate inquiries in general conformance with the standards and practice set forth in 40 CFR 312.

9 LIMITATIONS

The accompanying ISA summarizes the findings and opinions of Blackburn, with regard to the potential for hazardous materials to be present on the properties at concentrations likely to warrant mitigation under current statutes and guidelines. Our findings and opinions are based on information obtained on given dates or provided by specified individuals, through records review, site review, and related activities. Conditions can change after we have made our observations. We cannot warrant or guarantee that hazardous materials do not exist at the described site. To further reduce your risk, an extensive invasive exploration may be necessary.

Blackburn prepared this ISA for the specific use of our client and applies only to the Project area. We are not responsible for interpretations by others of data presented in this ISA. This ISA does not represent a legal opinion. No warranty is expressed or implied. We base our conclusions in this ISA on judgment and experience. We performed this work in accordance with generally accepted standards of practice existing in northern California at the time of the assessment.

The governmental records portion of this ISA is derived from public records and is updated on a continual basis. For this reason, we do not advise you to use this information to base a decision after one (1) year of the issue date of this ISA. Also, conditions at the site can and will change over time. Please contact Blackburn to revise this ISA to reflect new information.

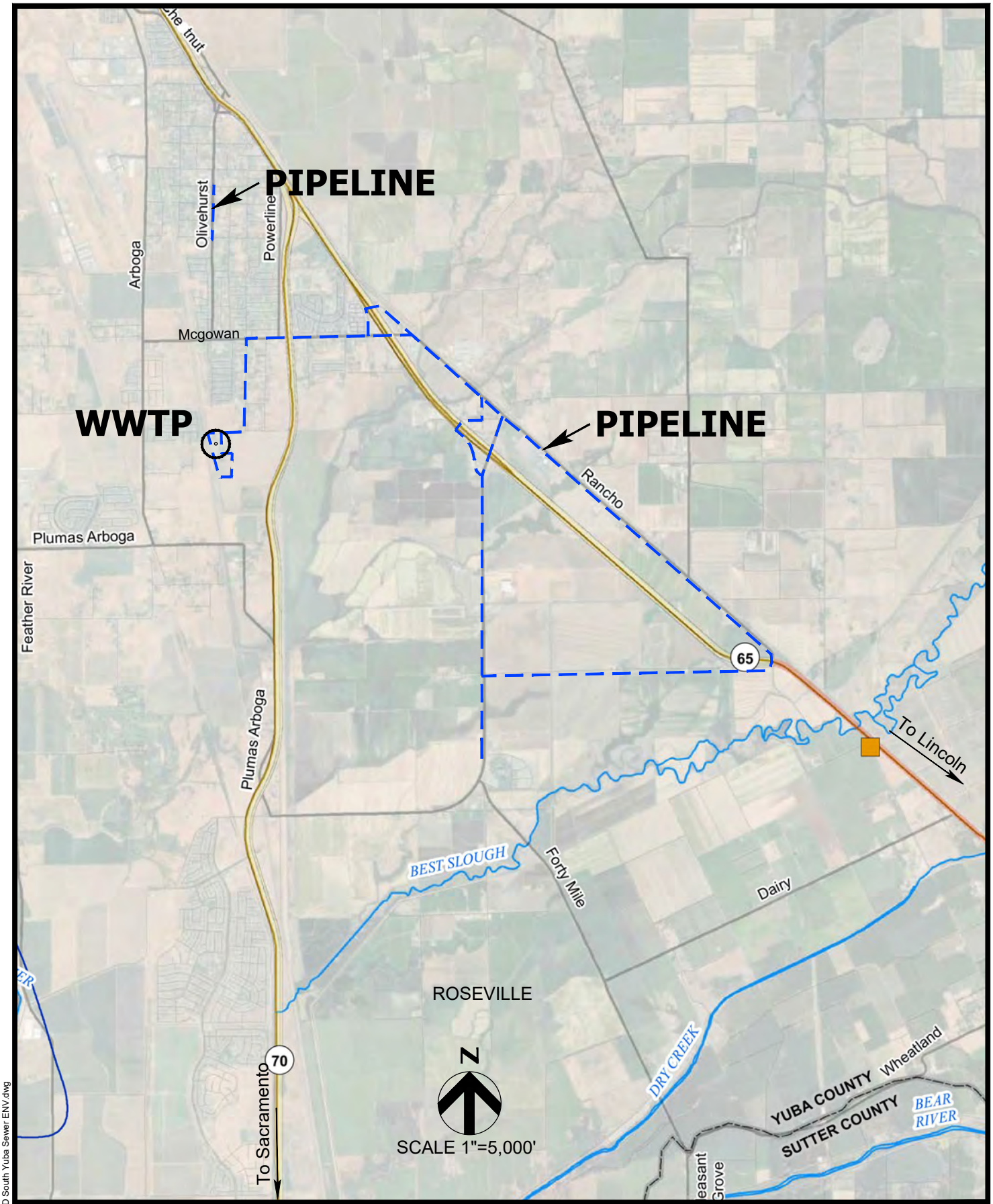
PHASE 1 INITIAL SITE ASSESSMENT

OPUD Yuba County Sewer and Water Infrastructure Project

Olivehurst, CA

FIGURES

Figure 1: Vicinity Map
Figures 2a-e: Project Site Map



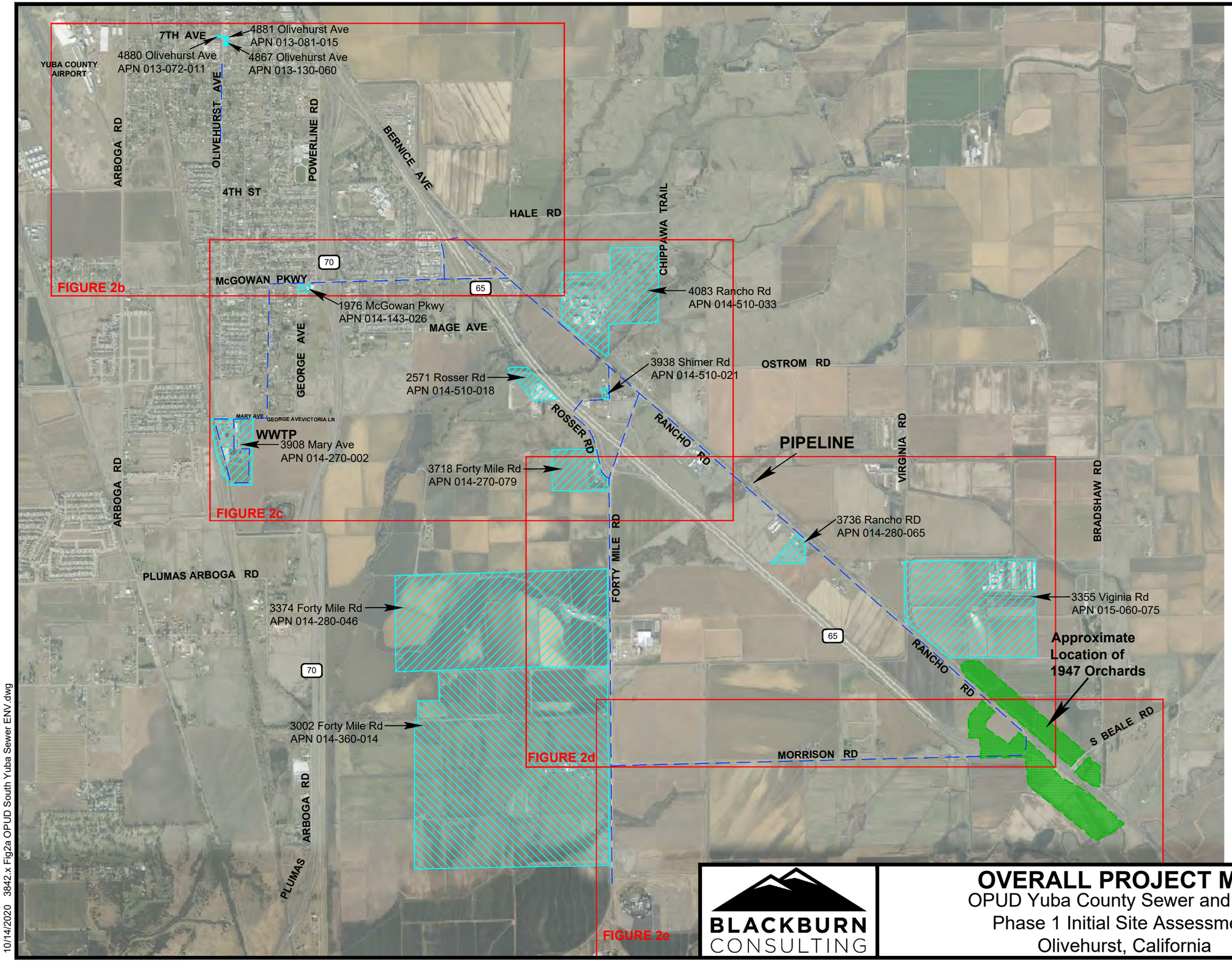
10/13/2020 3842.x Fig1 OPUD South Yuba Sewer ENV.dwg

BLACKBURN CONSULTING

VICINITY MAP

OPUD Yuba County Sewer and Water
Phase 1 Initial Site Assessment
Olivehurst, California

File No. 3842.x
June 2021
Figure 1



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BLACKBURN CONSULTING

OVERALL PROJECT MAP

OPUD Yuba County Sewer and Water
Phase 1 Initial Site Assessment
Olivehurst, California

File No. 3842.x

June 2021

Figure 2a

LEGEND

Approximate Pipeline Alignment

Approximate Parcel Limits with REC's Adjacent to Project Limits

N

SCALE 1" = 900'

BLACKBURN CONSULTING

PROJECT MAP

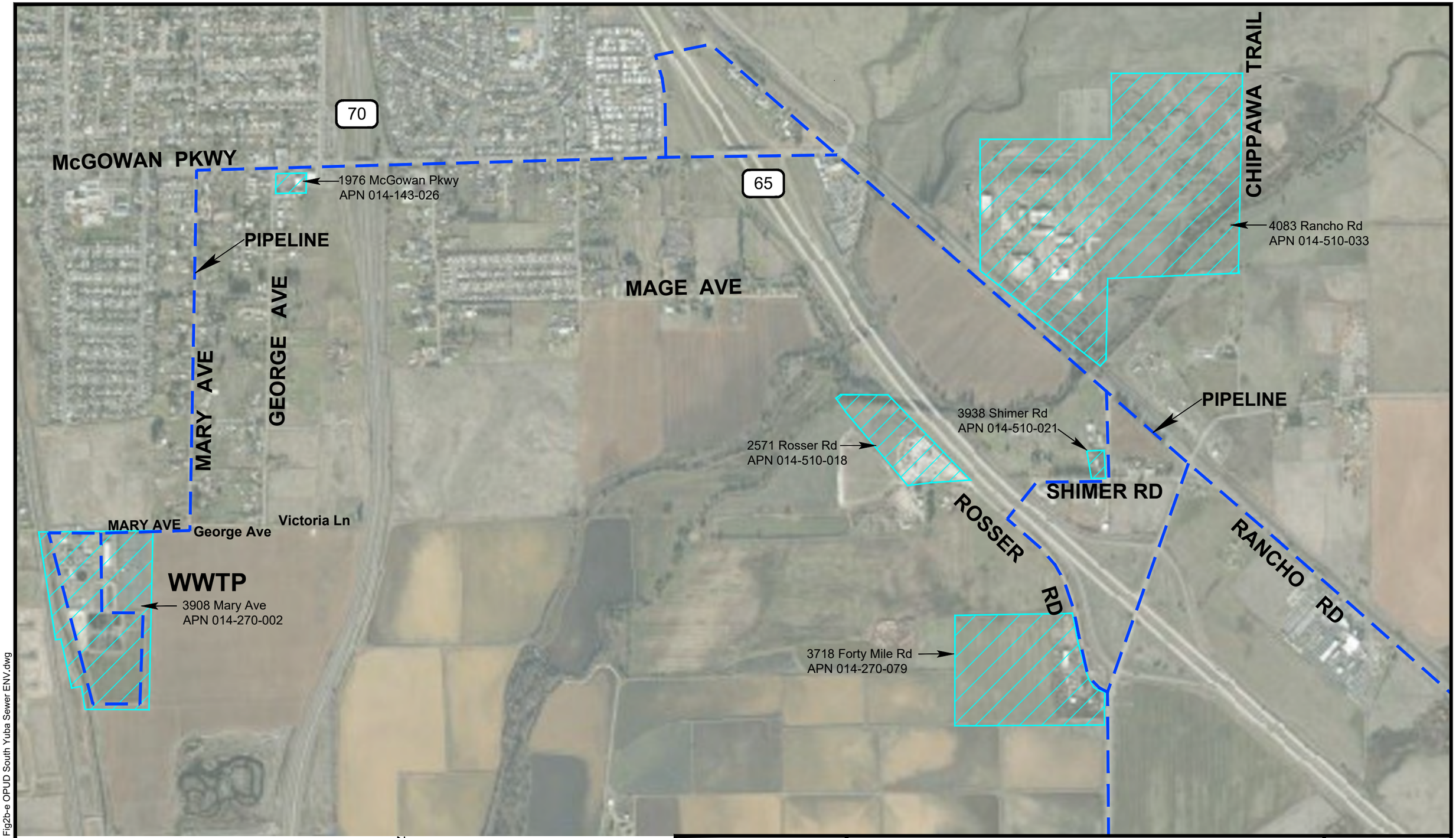
OPUD Yuba County Sewer and Water
Phase 1 Initial Site Assessment
Olivehurst, California

File No. 3842.x

June 2021

Figure 2b

10/14/2020 3842.x Fig2b-e OPUD South Yuba Sewer ENV.dwg



LEGEND

Approximate Pipeline Alignment

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N

SCALE 1" = 900'

BLACKBURN CONSULTING

PROJECT MAP

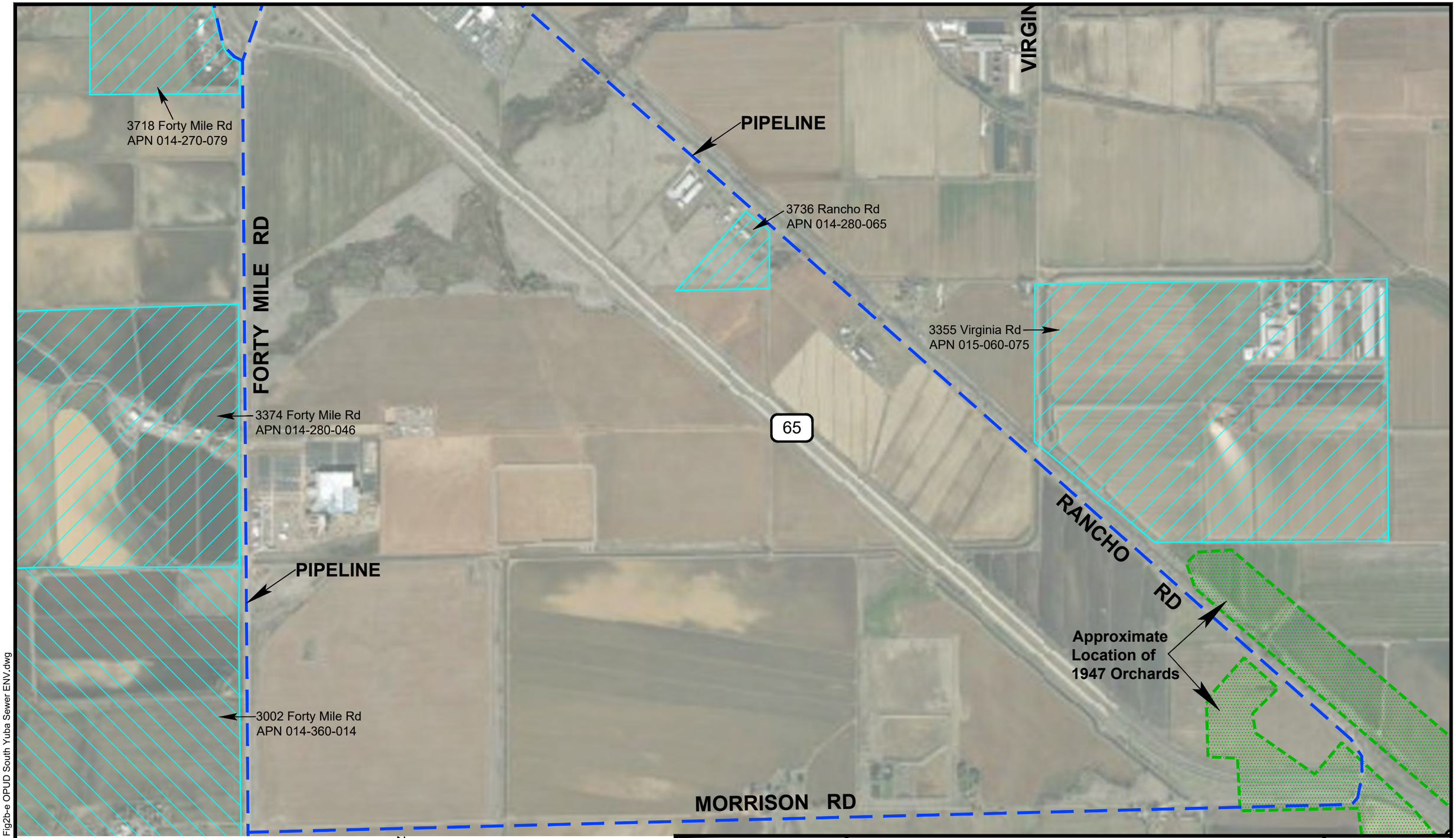
OPUD Yuba County Sewer and Water
Phase 1 Initial Site Assessment
Olivehurst, California

File No. 3842.x

June 2021

Figure 2c

10/14/2020 3842.x Fig2b-e OPUD South Yuba Sewer ENV.dwg



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N

SCALE 1" = 900'

BLACKBURN CONSULTING

PROJECT MAP

OPUD Yuba County Sewer and Water
Phase 1 Initial Site Assessment
Olivehurst, California

File No. 3842.x

June 2021

Figure 2d

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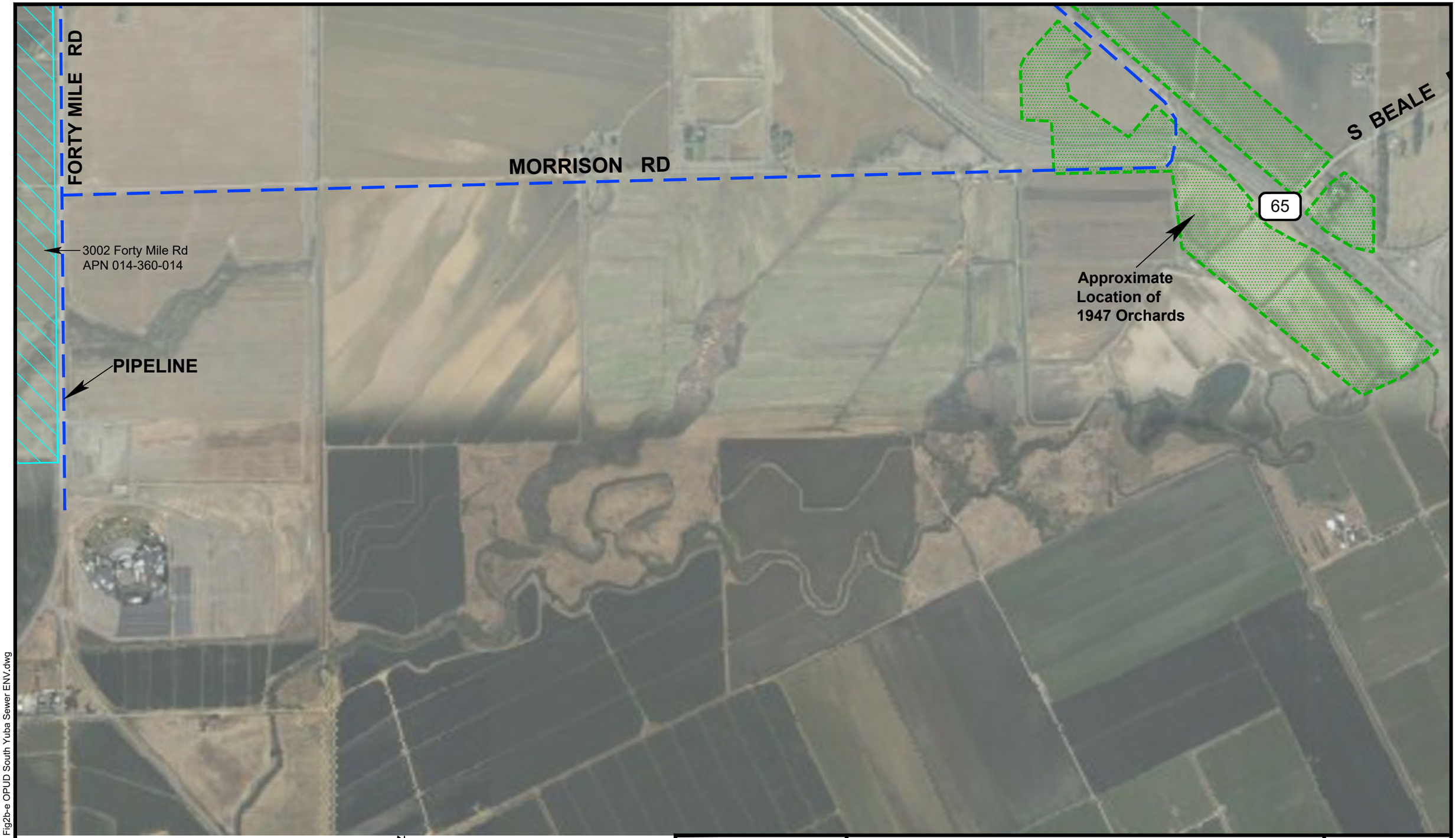

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BLACKBURN CONSULTING

PROJECT MAP

OPUD Yuba County Sewer and Water
Phase 1 Initial Site Assessment
Olivehurst, California

File No. 3842.x

June 2021

Figure 2e

10/14/2020 3842.x Fig2b-e OPUD South Yuba Sewer ENV.dwg

PHASE 1 INITIAL SITE ASSESSMENT

OPUD Yuba County Sewer and Water Infrastructure Project

Olivehurst, CA

APPENDIX A

Aerial Photographs

ENVIRONMENTAL RISK INFORMATION SERVICES

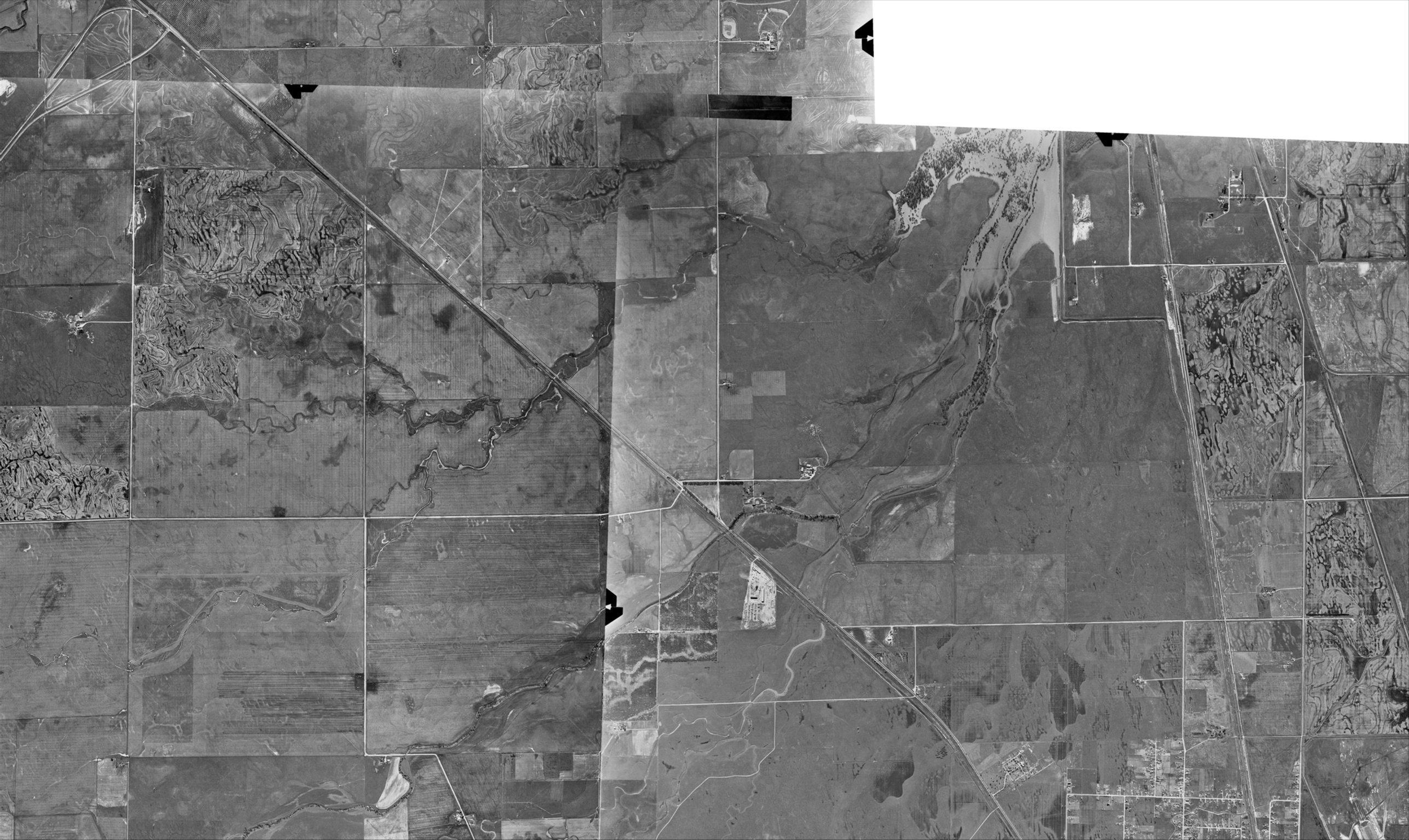
HISTORICAL AERIALS

Project Property:	OPUD Sewer and Water n/a Olivehurst CA
Requested By:	Blackburn Consulting
Order No:	20281800434
Data Completed:	August 24,2020

Environmental Risk Information Services
A division of Glacier Media Inc.
1.866.517.5204 | info@erisinfo.com | erisinfo.com

Date	Source	Source Scale	Comments
2018	National Agriculture Information Program	1" to 2000'	
2014	National Agriculture Information Program	1" to 2000'	
2009	National Agriculture Information Program	1" to 2000'	
2005	National Agriculture Information Program	1" to 2000'	
1998	US Geological Survey	1" to 2000'	
1987	US Geological Survey	1" to 2000'	Best Copy Available
1977	US Geological Survey	1" to 2000'	
1954	Army Mapping Service	1" to 2000'	
1947	Agriculture and Soil Conservation Service	1" to 2000'	


9-30-87
GS-VFLL-C
3
36
GS



APPENDIX F

South County Infrastructure Project
Phase 1 Initial Site Assessment
Phase 2 Environmental Site Assessment

APPENDIX F

South County Infrastructure Project
Phase 1 Initial Site Assessment
Phase 2 Environmental Site Assessment

PHASE 1 INITIAL SITE ASSESSMENT

OPUD Yuba County Sewer and Water Infrastructure Project

Olivehurst, CA

June 2021

Prepared for:

Jacobs

2485 Natomas Park Drive, Ste. 600
Sacramento, CA 95833

Prepared by:

BLACKBURN CONSULTING

2491 Boatman Ave
West Sacramento, CA 95691

West Sacramento Office:
2491 Boatman Ave
West Sacramento, CA 95691
(916) 375-8706

BLACKBURN
CONSULTING

Auburn (530) 887-1494
Fresno (559) 438-8411

File No. 3842.x
June 28, 2021

Mr. Steve DeCou
Vice President and Principal Program Manager
Jacobs Engineering Group
2485 Natomas Park Drive, Ste. 600
Sacramento, CA 95833

Subject: **PHASE 1 INITIAL SITE ASSESSMENT**
OPUD Yuba County Sewer and Water Infrastructure Project
Olivehurst, California

Mr. DeCou,

Blackburn Consulting (Blackburn) prepared this Phase 1 Initial Site Assessment (ISA) for the OPUD Sewer and Water Infrastructure Project located in Yuba County, California. The purpose of the ISA is to identify hazardous and potentially hazardous materials issues that may significantly impact the Project. Blackburn prepared this ISA in accordance with our May 14, 2020 proposal.

As always, Blackburn appreciates the opportunity to be part of your team. Please call if you have questions or require additional information.

Sincerely,

BLACKBURN CONSULTING

Laura Long
On behalf of

Matthew Kinney
Project Geologist II

Laura Long

Laura Long
Environmental Project Manager

TABLE OF CONTENTS

TABLE OF CONTENTS (cont.)

EXECUTIVE SUMMARY

Blackburn Consulting (Blackburn) prepared this Initial Site Assessment (ISA) for Jacobs Engineering Group (Jacobs) for the Olivehurst Public Utilities District (OPUD) Yuba County Sewer and Water Infrastructure Project (Project) in Olivehurst and unincorporated areas of Yuba County, California. Figure 1 presents the Vicinity Map. Jacobs, in cooperation with OPUD and Yuba County, proposes to construct new water and sewer utility infrastructure. All work is planned within existing right-of-way, except for the pump and lift station locations which have not been determined.

The purpose of this ISA is to identify Recognized Environmental Conditions[1] (RECs), Historical Recognized Environmental Conditions (HRECs), and potential RECs, collectively referred to herein as RECs, that may be present within or adjacent to the Project limits. We prepared this ISA in general conformance with the American Society of Testing and Materials (ASTM) Standard E1527-13, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process".

The following section summarizes the RECS identified within and adjacent to the Project limits. Blackburn further discusses these conditions in the body of this ISA.

RECs Located Within the Project Limits

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A 2,500-gallon diesel above ground tank (AST) is located at this facility. There are no indications of a release of diesel to soil or groundwater.

Recommendation: No additional assessment.

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Recommendation: If excavation is planned within the right-of-way (ROW) adjacent to these parcels, conduct a Phase II screening of the soil within the area of excavation to assess the presence of potential hazardous materials.

[1] Blackburn uses the term Recognized Environmental Condition (REC) in general compliance with ASTM E1527-13, which defines the meaning as *"The presence or likely presence of any hazardous substances or petroleum products in, on, or at a property (1) due to any release to the environment, (2) under conditions indicative of a release to the environment or (3) under conditions that pose a material threat of a future release to the environment. The term is not intended to include de minimus conditions that generally do not present a threat to human health or the environment and generally would not be the subject of an enforcement action if brought to the attention of the appropriate regulatory agencies. Conditions determined to be de minimus are not recognized environmental conditions*."

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  Two single-walled 10,000-gallon gasoline underground storage tanks (USTs) tanks were removed in 1986. One 8,000-gallon diesel and three 12,000-gallon gasoline tanks were installed in 2004. A release of gasoline and diesel to soil and groundwater occurred sometime before 2003. Groundwater monitoring in April 2005, did not identify detectable amounts of constituents. The regulatory case was closed in 2008. Potential contaminants of concern (COC) include total petroleum hydrocarbons (TPH) as diesel (TPH-d), gas (TPH-g) and motor oil (TPH-mo), metals, and benzene/toluene/ethylbenzene/xylene (BTEX).

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- **APN 015-060-075: Tollcrest Dairy,** 3355 Virginia Road, Wheatland

  A 10,200-gallon AST is located at this facility. The AST is not located on the west side of the parcel near the project alignment. No additional information is provided in the records search.

Three sites located north of the project alignment on Olivehurst Avenue were identified with high risk RECs. The project limits do not currently extend to these sites. These sites are listed in Section 3.2.2 and are identified on Figures 2a-c. Documented impacts to soil or groundwater are present on or have been remediated at these parcels. There is a potential that impacts from these parcels extend into the right-of-way (ROW) adjacent to the parcel. There is a potential to encounter residual contamination during excavation.

Recommendation: If the project limits are extended to include excavation within the ROW adjacent to these parcels, conduct a Phase II screening of the soil within the area of excavation to assess the presence of potential hazardous materials. Potential COCs include TPH-d, TPH-g, TPH-mo, metals, and BTEX.

- **APN 013-072-011: Gee Property**, 4880 Olivehurst Avenue

  The site is currently vacant but was formerly occupied by a fueling station. Two gasoline underground storage tanks (USTs) were removed in 1988 and one UST removed in 2019. Soil samples from the UST excavation indicated a release had occurred. Low levels of total petroleum hydrocarbons (TPHs) were detected in groundwater. The regulatory case was closed on January 10, 2020.

- **APN 013-081-015: AGV Corner Market**, 4881 Olivehurst Avenue

  The site is an active gas station. Currently a 20,000-gallon compartmentalized gasoline and diesel tank is in the same excavation area as the former UST. A release of gasoline to soil and groundwater occurred at this facility sometime prior to 2001. The most recent groundwater monitoring event conducted at the facility occurred in May 2011 and demonstrated that groundwater beneath the facility has residual impacts from gasoline related constituents. The regulatory case was closed on June 25, 2012.

- **APN 013-130-060: Former E-Z Serve**, 4867 Olivehurst Avenue

  Three USTs were removed in 1989 and a release of gasoline was discovered. Soil and groundwater were impacted. Groundwater monitoring was conducted from sometime before 2004 until 2017.

A No further Action letter was issued by the CVRWQCB and the regulatory case was closed on November 22, 2019.

General Contamination Issues

The following general contamination issues were identified within the Project limits.

Yellow traffic stripes

Yellow traffic stripes are known to contain heavy metals, such as lead and chromium, at concentrations in excess of the hazardous waste thresholds established by the *California Code of Regulations* and may produce toxic fumes when heated.

Recommendation: If the Project includes removal of yellow traffic striping, remove and dispose of in accordance with Caltrans Standard Special Provisions for Hazardous Waste.

Aerially Deposited Lead (ADL)

ADL has been found to occur in soils adjacent to highways and high use roadways. The lead is presumably from the historical use of leaded gasoline and subsequent exhaust emissions. There is potential for encountering ADL during construction and grading activities within the proposed Project limits along its entirety. Some of these roadways have been present in various alignments since at or before 1910 and, therefore, have the potential to be impacted with ADL.

Recommendation: A soil screening to evaluate the potential presence of ADL within the Project limits should be performed. An appropriate soil management plan will need to be developed for soil containing significant concentrations of ADL.

Southern Pacific Railroad

An active railroad is adjacent to the east side of Rancho Road. Soils located adjacent to railroad tracks may be impacted by on-going railroad operations. Potential contaminants at these locations commonly include petroleum hydrocarbons, semi-volatile organic compounds (SVOCs), heavy metals, and pesticides.

Recommendation: Conduct a limited subsurface soil screening for potential contaminants in the upper 1.5 feet where soil will be disturbed adjacent to the railroad.

Asbestos Containing Material (ACM) and Lead in Buildings Materials

Structures constructed pre-1989 have the potential to contain ACM/Lead materials. Aerial photographs identify structures along the project alignment as developed prior to 1989.

Recommendation: If parcels are acquired as part of the Project any structures on those parcels should be evaluated for the presence of lead and asbestos containing materials. Any structure to be modified or demolished as part of the Project must be surveyed for the presence of ACM and Lead by a certified Asbestos Inspector prior to building demolition/modification.

Transformers

Our scope did not include an inventory of past and present transformers. We observed pole-mounted transformers and power lines within the existing right-of-way.

Recommendation: If the relocation of power facilities or high voltage power lines is required, existing transformers should be checked for the presence of PCBs or other hazardous materials by the utility owner, and if present, properly remediated and disposed. Identification and remediation of old transformers is the responsibility of the utility owner.

Organochlorine Pesticides (OCPs)

Historical topographic maps from 1947 and 1949 depict an orchard in the southeastern ½-mile alignment of Rancho Road and the eastern 1/3-mile alignment of Morrison Road.

Recommendation: Conduct a shallow soil screening to evaluate the potential presence of OCPs within the footprint of the former orchard in the Project limits.

1 INTRODUCTION

Blackburn completed this Phase 1 Initial Site Assessment (ISA) for the OPUD Sewer and Water Infrastructure Project (Project) located in Yuba County California. The purpose of the ISA is to identify Recognized Environmental Conditions[2] (RECs), Historical Recognized Environmental Conditions (HRECs), and potential RECs, collectively referred to herein as RECs, that may be present within and/or adjacent to the Project limits.

To conduct this ISA, Blackburn:

- Reviewed historical aerial photographic coverage and topographic map coverage for the Project area and surrounding properties for indications of potential sources of contamination.
- Performed federal, state, and county records review for indications of the use, misuse, or storage of hazardous and/or potentially hazardous materials on or near the Project area.
- Conducted a site inspection on September 9, 2020 to observe current land use and indications of potential contamination, as well as hazardous and potentially hazardous waste issues for the Project area.
- Performed state records review of the on-line regulatory databases GeoTracker and EnviroStor, to determine if known site impacts and/or previous environmental work exist for the Project area.
- Reviewed the general site geology, groundwater, and soil conditions through published maps and literature.

Blackburn prepared this report for Jacobs Engineering Group (Jacobs) and the project design team to use during design and construction. This report shall not be used or relied upon by others, or for different locations or improvements without the written consent of Blackburn.

2 PROJECT LOCATION AND DESCRIPTION

2.1 Location and Description

The Project spans approximately 12.2 miles within the town of Olivehurst and surrounding areas. The Project alignment includes the OPUD Wastewater Treatment Plant located on Mary Avenue, and portions of the following alignments:

- Olivehurst Avenue from 7th Avenue to approximately 170 feet south of 11th Avenue;
- Mary Avenue from OPUD wastewater treatment plant to McGowan Parkway;
- McGowan Parkway from Mary Avenue to Rancho Road;

[2] BCI uses the term Recognized Environmental Condition (REC) in general compliance with ASTM E1527-13, which defines the meaning as "*The presence or likely presence of any hazardous substances or petroleum products in, on, or at a property (1) due to any release to the environment, (2) under conditions indicative of a release to the environment or (3) under conditions that pose a material threat of a future release to the environment. The term is not intended to include de minimus conditions that generally do not present a threat to human health or the environment and generally would not be the subject of an enforcement action if brought to the attention of the appropriate regulatory agencies. Conditions determined to be de minimus are not recognized environmental conditions.*"

- Olive Avenue from McGowan Parkway to approximately 100 feet to the north, then east crossing under Highway 65 to the northern terminus of Rancho Road;
- Rancho Road from its northern end to Morrison Road;
- Morrison Road from Highway 65 to Forty Mile Road;
- Forty Mile road from the Toyota Amphitheater to Rancho Road;
- Slaughterhouse Road from Forty Mile Road to northwest for approximately 0.4 miles, crossing Highway 65 to the western terminus of Plute Road;
- Plute Road from its westernmost extent to Shimer Road; and
- Shimer Road from Plute Road to Rancho Road.

Pump and lift stations locations will be installed on privately owned parcels, however these locations have not been finalized.

The Project location with Project limits is shown on Figure 1, Vicinity Map. Site-specific features are shown on Figures 2a-e.

2.2 Geology and Physical Setting

The site lies within the Great Valley Geomorphic Province of California, which is a large, elongated, northwest-trending structural trough. The Province is subdivided into two major divisions designated as the Sacramento and San Joaquin Valleys. These valleys have been filled to their present elevation with thick sequences of sediment, ranging in age from Jurassic to present day, creating a nearly flat-lying alluvial plain that extends from the Tehachapi Mountains in the south to the Klamath Mountains in the north. The western and eastern boundaries of this province are formed by the California Coast Ranges and the Sierra Nevada, respectively.

The study area is located on an alluvial plain in the Sacramento Valley located approximately 2.2 miles east of the Feather River at its closest point. The underlying deposits are mapped by Saucedo, G.J. and Wagner D.L. (1981) as alluvium, natural levee and channel deposits, basin deposits, Modesto Formation, and the Riverbank Formation. This formation is composed of fine-grained soils such as clay, silts, sand and gravel.

The site topography is generally flat, except near Highway 65 and Highway 70, where the topography slopes toward the highways. The site elevations, excluding areas near the Highways, range between 55 feet above mean sea level (msl) in the western portion of the Project and 75 feet above msl in the easternmost portion of the Project.

2.3 Surface Water, Groundwater, Wells

The Site lies within the South Yuba Subbasin where groundwater flow direction is generally to the southwest toward the Feather River, though flow directions vary both locally and seasonally. The study area is east of the Feather River, south of the Yuba River, and north of the Bear River. Blackburn reviewed groundwater level data made available at California Department of Water Resources (DWR) website www.water.ca.gov/waterdatalibrary. The groundwater beneath the site rises to within approximately 40

feet of the ground surface for up to six months of the year. Depth to groundwater during the rest of the year is approximately 45 feet below ground surface. Surface/storm water is directed by sidewalk curb, gutter and drains. The general flow direction is to the south and west towards the Feather River, except in area in proximity to Hutchison Creek and Reed Creek, which transect the Project in multiple areas flowing southwest toward the Feather River.

2.4 Current Land Use

Most of the Project area consists of roadways which traverse rural areas of Yuba County, with a portion of the project limits transecting the town of Olivehurst. Land adjacent to the Project along Rancho Road is zoned as agricultural industrial and light industrial. Land along Morrison Road is designated as sports entertainment district and employment center district. Land adjacent to Forty Mile Road is designated for agricultural use and sports entertainment. Land near the OPUD Wastewater treatment Facility on Mary Road is designated for use as public utilities land as well as single-family residential.

2.5 Historic Land Use

Land use adjacent to the project limits varies throughout the project alignment. Blackburn reviewed historical aerial photography, topographic maps, and Sanborn maps to identify conditions that may indicate potential hazardous materials issues within the Project limits.

2.5.1 Aerial Photograph Review

Blackburn reviewed the following historic aerial photography to identify conditions that may indicate potential hazardous materials issues within or adjacent to the Project area. The listing includes aerial photo flight year, source, scale, and a brief description of observed conditions. Copies of aerial photographs are provided in Appendix A.

Aerial Photograph Review

The following aerial photos were reviewed:

1947 Photo by Agriculture and Soil Conservation Service, Scale 1" =2,000'
1954 Photo by Army Mapping Service, Scale 1" =2,000'
1977 Photo by USGS, Scale 1" =2,000'
1987 Photo by USGS, Scale 1" =2,000'
1998 Photo by USGS, Scale 1" =2,000'
2005 Photo by National Agriculture Information Program (NAIP), Scale 1" =2,000'
2009 Photo by NAIP, Scale 1" =2,000'
2014 Photo by NAIP, Scale 1" =2,000'
2018 Photo by NAIP, Scale 1" =2,000'

Areas of the Project limits south of Morrison Road along Forty Mile Road are not shown on Aerial Photographs. This includes the area that is now the Toyota Amphitheater.

1947: Improved roads, Rancho Road, Forty Mile Road, Morrison Road, and McGowan Road are depicted in their present-day alignments. The town of Olivehurst is visible north of the Project limits. Agricultural

use is visible along the alignment. Rural residences are visible near the project alignment. Hutchinson Creek and Reed Creek transect the project alignment in multiple locations similar to present day. A large industrial facility is adjacent to the north side of Rancho Road in the location that is currently the Marysville Forest Products/Erikson Group Limited facility.

1954: Additional development of roads and residences in the south portion of Olivehurst. Olivehurst is generally in its present-day footprint.

1977: Highway 65 transects the project limits. Highway 70 appears under construction and transects the project limits. What is now a PG&E facility is adjacent to the south of the Project limits on Rancho Road. Mary Road appears on the map, along with the OPUD wastewater treatment facility. Additional residences appear along Morrison Road. A commercial/industrial facility is at the intersection of Slaughterhouse Road and Forty Mile Road. A mobile home park is at the intersection of Olive Avenue and McGowan Parkway. Additional residences and commercial businesses appear along the Project alignment within the town of Olivehurst.

1987: The OPUD wastewater Treatment Facility appears to expand to the south.

1998: No significant changes.

2005: An additional commercial facility is adjacent to the south of Rancho Road southeast of the PG&E facility.

2009: No significant changes.

2014: No significant changes.

2018: The Project alignment and surrounding area appear as they are today.

2.5.2 Topographic Map Review

Blackburn reviewed the following topographic maps for features that may indicate an impact to the Project. This summary includes noted changes within and adjacent to the Project location as recorded on the maps. Copies of the topographic maps are provided in Appendix B.

1910 Wheatland 7.5-minute Quad, Scale 1:24,000,
1911 Ostrom 7.5-minute Quad, Scale 1:24,000,
1947 Wheatland 7.5-minute Quad, Scale 1:24000,
1949 Wheatland 7.5- and 15-minute Quad, Scale 1:24000,
1952 Olivehurst 7.5-minute and Marysville 15-minute Quads, Scale 1:24,000
1973 Olivehurst and Wheatland 7.5-minute Quads, Scale 1:24000, and
2015 Olivehurst and Wheatland 7.5-minute Quads, Scale 1:24000.

1910 and 1911: Western Pacific Railroad and the Marysville Line of the Southern Pacific Railroad are depicted on the map near the project alignment. The development of Ostrom is depicted near the present-day intersection of Highway 65 and Forty Mile Road. Structures are depicted sparsely near the

project alignment along present-day Forty Mile Road, Morrison Road, and Rancho Road. Hutchinson Creek and Reed Creek are depicted near their present-day alignments transecting the Project. Plumas Lake is depicted approximately one mile south and west of the Project limits.

1947, 1949, and 1952: The town of Olivehurst, including Olivehurst Avenue, what is now Mary Road, and McGowan Road (Parkway) are depicted, as are residences and structures along their alignments. A commercial or industrial facility is depicted to the north of what is now Rancho Road between Reed Creek and Hutchinson Creek. This facility is in the same location as the present-day Marysville Forest Products/Erikson Group Limited facility. An orchard is depicted in the southeastern portion of the project alignment encompassing the intersection of present-day Highway 65, Morrison Road, and Rancho Road.

1973: The OPUD wastewater treatment facility is depicted in its present-day location. Several additional structures are depicted at the Marysville Forest Products/Erikson Group Limited facility. Highways 65 and 70 are depicted in their present-day alignments. A mobile home park is depicted at the intersection of Olive Drive and McGowan Parkway. The orchard is no longer depicted near the southeastern corner of the Project alignment. Additional commercial/industrial facilities are depicted in the area between Rancho Road and Highway 65. Additional roads and residential structures are depicted within the town of Olivehurst in the vicinity of Olivehurst Avenue and McGowan Parkway.

2015: Structures and land uses are not depicted on this map. The town of Olivehurst is depicted as it is today.

2.5.3 Sanborn® Map Review

Environmental Risk Information Services (ERIS) searched the Sanborn Maps Library for the Site and surrounding area. The ERIS search did not return Sanborn Maps (fire insurance) covering the Site or the surrounding area. Appendix C contains ERIS's Sanborn Map Report.

3 RECORDS REVIEW

3.1 County, State and Federal Records Review

ERIS, a commercial data base search firm, performed a radius search for the study area on August 20, 2020. The search includes a review of county, state, federal and ERIS proprietary databases. The maximum search radius is 1 mile from the outline of the Project area. Sites with adequate address information are plotted on ERIS's site plan "Map: 1.0 Mile Radius". ERIS lists sites with inadequate address information in their "Unplottable Summary" and does not provide mapped locations. Blackburn reviewed the 13 "unplottable sites" identified by ERIS and determined that only the PG&E facility, which is located on Rancho Road though identified on Morrison Road in the report, is located adjacent to the Project area. The complete EDR report is included in Appendix D.

3.2 Summary of Records Search

Blackburn reviewed the databases for facilities within ½-mile of the Project alignment with a potential to impact project operations. Our review of records identified the following sites with potentially hazardous material conditions at, adjacent to, or considered close enough to the project site to potentially impact

the project. 50 facilities within a ½-mile radius of the Project are listed in the Records Search. Below, we summarize the database records.

3.2.1 RECs Within the Project Alignment

APN 014-270-002: OPUD Wastewater Treatment Facility/Olivehurst Public Utilities District/Western Water Constructors, Inc., 3908 Mary Avenue, Olivehurst, CA

Databases: Yuba CUPA, AST, FINDS, HAZNET, HIST Manifest, ICIS, YUBA UST, CERS TANK, RCRA NonGen
A 2,500-gallon diesel AST is located at this facility. No additional information is provided in the records search.

3.2.2 RECs Adjacent to the Project Alignment (Medium and High Risk)

The following sites have conditions such as above ground or underground fuel storage tanks that are considered RECs to the project. The RECs include releases of petroleum hydrocarbons or other hazardous materials that may have resulted in residual impacts within the Project alignment.

APN 013-072-011: Gee Property, 4880 Olivehurst Avenue, Olivehurst, CA
Database: GeoTracker

Formerly occupied by a fueling station. Two gasoline USTs were removed in 1988. Soil samples from the UST excavation indicated a release had occurred. An additional UST was excavated in 2019. Low levels of TPH as diesel was detected in groundwater. Low concentrations of motor oil were detected in stockpile sampling. The regulatory case was closed on January 10, 2020. The site is within the service area of OPUD.

APN 013-081-015: AGV Corner Market, 4881 Olivehurst Avenue, Olivehurst, CA
Database: GeoTracker

The site is an active gas station. Currently a 20,000 gallon compartmentalized gasoline and diesel tank is in the same excavation area as the former UST. A release of gasoline to soil and groundwater occurred at this facility sometime prior to 2001. The most recent groundwater monitoring event conducted at the facility occurred in May 2011 and demonstrated that groundwater beneath the facility has residual impacts from gasoline related constituents. The regulatory case was closed on June 25, 2012.

APN 013-130-060: Former E-Z Serve, 4867 Olivehurst Avenue, Olivehurst, CA
Databases: GeoTracker, LUST

On August 30, 1989, three USTs were removed, and a release of gasoline was discovered. Soil and groundwater were impacted. Groundwater monitoring was conducted from sometime before 2004 until 2017. A No further Action letter was issued by the CVRWQCB and the regulatory case was closed on November 22, 2019.

APN 014-143-026: Tower Mart #60/Colonial Energy CE/Fred and Liquor 60/Cheaper #60, 1976 McGowan Parkway, Olivehurst, CA
Databases: Delisted TNK, Emissions, GeoTracker, FINDS/FRS, Yuba CUPA, LUST, HHSS, HAZNET, Yuba UST, CERS TANK, UST, Emissions, HIST TANK, RCRA NonGen

In 1986, two single-walled 10,000-gallon fuel tanks were removed from the site. In 2004 four USTs were installed including one 8000-gallon diesel and three 12,000-gallon gasoline tanks. This fueling station is a hazardous waste generator. A release of gasoline and diesel to soil and groundwater occurred sometime before 2003. Groundwater monitoring in April 2005, did not identify detectable amounts of constituents. The regulatory case was closed on January 31, 2008.

APN 014-270-079: Flying U Ranch, 3718 Forty Mile Road, Olivehurst, CA
Databases: Yuba CUPA, AST, CERS TANK

A 13,500-gallon AST of unknown fuel type is identified at the site. The CERS TANK database identifies violations including failure to dispose of hazardous waste within 180 days, and failure to inspect hazardous waste storage areas weekly.

APN 014-280-046: Alfaro Farms/Jean Pierre Alfaro, 3374 Forty Mile Road, Olivehurst, CA
Databases: AST, RCRA NonGen, Yuba CUPA, CERS TANK

This farm is listed in the searched databases as having a 15,000-gallon AST of unknown contents. Violations were reported for failure to properly label hazardous waste containers, and failure to properly store and label used batteries.

APN 014-280-065: PG&E North Valley Materials, 3736 Rancho Road, Olivehurst, CA
Databases: Yuba CUPA, Delisted TNK, AST, HHSS, Yuba UST, HIST TANK, Delisted CTNK, RCRA SQG, CHMIRS, LUST

One 10,000-gallon AST of unknown contents, one 8,000-gallon gasoline UST, and one 12,000-gallon diesel UST are located at this facility. This facility operates as a staging area for PG&E operations throughout the area. A release of diesel to soil from a UST was reported on November 3, 1992. Contaminated soil was removed from the facility, and a No Further Action Letter was issued on March 1, 1993. The CHMIRS database lists this facility as having a leak of 5-10 gallons of insulating oil (no PCB content).

APN 014-360-014: Frank Hofman Ranch, 3002 Forty Mile Road, Olivehurst, CA
Databases: Yuba CUPA, HHSS, Yuba UST, HIST TANK

This business is listed as a hazardous waste generator. A UST of unknown contents and volume was located at the site. The Yuba UST database lists the UST status as closed. No spills or leaks were reported at this facility.

APN 014-510-018: Livingston Concrete, 2571 Rosser Road, Olivehurst, CA
Databases: Yuba CUPA, CERS TANK, Emissions

This facility is listed in the searched databases as operating an AST. Violations are reported and include failure to provide training to oil-handling personnel.

APN 014-510-021: Roger L. Murray, 3938 Shimer Road, Olivehurst, CA
Databases: Yuba CUPA, AST, Delisted CTNK

This facility is listed as having a 5,000-gallon AST storing an unknown fuel type. No additional information is provided in the records search.

APN 014-510-033: Marysville Forest Products/Erickson Group Limited/Sun Gro Horticulture/Berdex Forest Products, Inc., 4083 Rancho Road, Olivehurst, CA
Databases: RCRA SQG, Yuba CUPA, Cleanup Sites, LUST, EnviroStor, HHSS, Yuba UST, Delisted HAZ, Emissions, HIST TANK, RCRA NonGen

Marysville Forest Products is a hazardous waste generator that reported a release of diesel to soil on June 18, 1992. Impacted soil was excavated and the regulatory case was closed on July 14, 1993.

Erickson Group Limited is a former wood treating facility. Pentachlorophenol (PCP) was released to soil during site operations. Soil remediation occurred and groundwater monitoring indicates that groundwater was not impacted by the release. The regulatory case is currently open. As of June 18, 2020, a Phase 1 ESA was requested by a potential buyer of the property.

APN 015-060-075: Tollcrest Dairy, 3355 Virginia Road, Wheatland, CA
Databases: Yuba CUPA, AST, CERS TANK

A 10,200-gallon AST is located at this facility. The AST is not located on the west side of the parcel near the project alignment. No additional information is provided in the records search.

3.2.3 Sites identified Adjacent to the Project Alignment (Low Risk)

The following sites are listed in the searched database for storage and handling of hazardous materials and other hazardous materials conditions that are not considered RECs to the project. If these parcels are acquired as part of the project, additional assessment should be conducted.

Frankenstein Motors/McCinskey's Frankenstein Motors, 3906 Shimer Road, Olivehurst, CA
Databases: Yuba CUPA, CERS HAZ, RCRA NonGen

This facility is identified in the Yuba CUPA and CERS HAZ databases as a hazardous waste generator. This database identifies a violation on September 27, 2016 for failure to manage used oil and/or fuel filters, label portable tanks appropriately, and submit an emergency response plan for hazardous materials release.

JS West Propane-Marysville Storage, 2698 Plute Road, Olivehurst, CA
Databases: Yuba CUPA, CERS HAZ

No information regarding this facility is provided in the listed databases.

Livingston's Concrete, 2572 Rosser Road, Olivehurst, CA
Database: FINDS/FRS

This facility is identified as a ready-mix concrete business. No additional information is provided in the records search.

AT&T California, Ostrom Road and Rancho Road, Olivehurst, CA
Database: CERS HAZ

This facility is identified as a chemical storage facility. No additional information is provided in the records search.

3948 Shimer Road, Olivehurst, CA
Databases: NCDL, CDL
This facility was identified on February 1, 2006 as being an illegal drug lab where hazardous materials were stored.

C**enturylink Olivehurst**, 3365 Rancho Road, Olivehurst, CA
Databases: Yuba CUPA, CERS HAZ

This facility is identified in the CERS HAZ database as a chemical storage facility. No additional information is provided in the records search.

Verizon Wireless Olivehurst, 3359 Forty Mile Road, Olivehurst, CA
Database: Yuba CUPA

No information is listed in the searched database.

Yetter Steel Corp., 3548 Rancho Road, Olivehurst, CA
Databases: Yuba CUPA, Delisted Haz

This business is listed as a hazardous waste generator. No additional information is provided in the records search.

Sprint Nextel, 3516 Rancho Road, Olivehurst, CA
Database: Yuba CUPA

No information regarding this site is in the searched database.

United Truck Dismantlers/ Rocliff Enterprises, Inc., 2488 McGowan Parkway, Olivehurst, CA
Databases: FINDS/FRS, Yuba CUPA, HAZNET, HIST Manifest, CERS HAZ, RCRA NonGen

This facility is a hazardous waste generator that operates an oil/water separator and disposes of oil-containing waste.

Verizon Wireless McGowan Parkway, 4404 Rancho Road, Marysville, Ca
Databases: FINDS/FRS, Yuba CUPA, CERS HAZ

This facility is listed in the CERA HAZ database as being a chemical storage facility. No regulatory action, spills, or leaks are identified in the records search.

2352 McGowan Parkway/Highway 65 & McGowan Parkway, Olivehurst, CA
Database: CDL

This address is listed in the searched database as an illegal drug lab that was reported in May 2000.

Rocking S Livestock, 3380 Rancho Road, Wheatland, CA
Database: Yuba CUPA

No information is provided in the records search.

Via Grande Way, Space 19, Olivehurst, CA
Database: CDL

This listing is a residence in a mobile home park located at the intersection of Olive Avenue and McGowan Parkway that was reported to be an illegal drug lab in March 2003.

Highway 70 & McGowan Parkway, Olivehurst, CA
Database: CDL

This location is the location of a vehicle that contained illegal drug lab equipment.

NRC/UPRR, Virginia Road & Rancho Road, Wheatland, CA
Database: CHMIRS

This location is listed in the searched databases as the location of a natural gas line leak, and an auto vs. train collision that resulted in the spill of an unknown amount of an undisclosed fluid. No regulatory action was documented regarding the spill.

Dollar General #14976, 1990 McGowan Parkway, Olivehurst, CA
Databases: Yuba CUPA, HAZNET, FINDS/FRS, CERS HAZ, RCRA NonGen

This business generates hazardous waste that is transported offsite.

Burrow Garage, 1909 McGowan Parkway, Olivehurst, CA
Databases: FINDS/FRS, Yuba CUPA, HAZNET, Delisted HAZ

This business is listed in the searched records as a hazardous waste generator that disposes of liquids with halogenated organic compounds. No violations, spills, or regulatory actions are documented in the records search.

Verizon Wireless Olivehurst, 3076 Rancho Road, Wheatland, CA
Databases: CERS HAZ, Yuba CUPA

This facility is listed as a chemical storage facility. No additional information is provided in the records search.

AT&T Corp, 4242 Deaton Drive, Olivehurst, CA
Database: CERS HAZ

This business is listed in the searched database as a chemical storage facility. No regulatory violations, spills, or leaks are documented for this facility.

Kubich Lumber, 1630 Rancho Road, Marysville, CA
Database: HAZNET

This business is listed in the HAZNET database. No additional information is identified in the records search.

3.2.4 RECs at Facilities identified within ½-mile of the Project alignment

Marysville Army Airfield/Yuba County Airport/G.N. Dibble, Inc./Public Works Airport Shop, 1300 and 1364 Sky Harbor Drive, Olivehurst, CA (1/2-mile west)

This facility is listed in the GeoTracker and EnviroStor online databases.

This 972-acre facility was constructed in 1941 and served as both a staging area for aircraft that applied herbicides and insecticides to surrounding agricultural properties, as well as a military installation that facilitated firearms training, aircraft storage, and aircraft refueling. In 1999, seven USTs and 790 tons of contaminated soil were removed from this facility. In 2014 A&M, a consultant working on behalf of the Central Valley Regional Water Quality Control Board (CVRWQCB), conducted a soil and groundwater investigation at the Site. Analysis of soil and groundwater samples collected during the investigation indicated that no contamination was present from petroleum hydrocarbons or volatile organic compounds (VOCs). The regulatory case was closed on July 21, 2015.

Two open regulatory cases are ongoing at this facility in relation to pesticide and herbicide releases to soil that occurred because of past uses. This facility is approximately 1/2 -mile west and downgradient of the Project alignment and is therefore not a REC for the Project.

3.3 City Directory Review

Blackburn reviewed the historical city directory. The City Directory review did not identify any conditions that are not already identified in other sections of this ISA. The City Directory Image Report is provided in Appendix E.

3.4 Title Documents Review

Title documents were not provided for this assessment.

4 RECONNAISSANCE INFORMATION

Blackburn completed a site reconnaissance on September 9, 2020. The purpose of the visual survey is to collect information regarding potential hazardous material contamination including identification of evidence of current and/or past use, evident storage of toxic or hazardous materials, the presence of onsite ponds, landfills, drywells, waste streams or other disposal units, visible soil contamination, above ground or underground storage tanks, drums, barrels and other storage containers. Photos from the site visit are in Appendix F. Observations were made from accessible portions of the study area.

The observations generally support the descriptions and background data above. Additional observations are presented in Section 3.2.1.

5 OWNER INTERVIEWS

Per ASTM, past owners, operators, and/or occupants of the subject property who are likely to have material information regarding the potential for contamination at the subject property shall be contacted

to the extent that they can be identified and that the information likely to be obtained is not duplicative of information already obtained from other sources.

Blackburn did not conduct interviews with property owners. Lack of contact with the owners of property adjacent to the Project is a data gap but is not expected to change the conclusions of this ISA.

6 DATA GAPS

In accordance with ASTME E1527-13, this section discusses data gaps in the documents we obtained and reviewed as part of this ISA and discusses the significance. ASTM E1527-13 defines a data gap as "a lack of or inability to obtain information required by this practice despite good faith efforts by the environmental professional to gather such information." In our opinion, we did not observe a data gap significant enough to change the conclusions of this ISA.

7 FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

The scope of this ISA was directed at:

- Determining if hazardous materials exist at or near the Project area at concentrations likely to warrant mitigation pursuant to regulations;
- Identifying sites RECs and/or potential RECs within and adjacent to the proposed Project area which could affect the design, constructability, feasibility, and/or the cost of the proposed Project; and
- Identify potential site contamination issues.

The assessment identified the following environmental conditions that should be considered for present and future planning for the proposed Project.

RECs Located Within the Project Limits

APN 014-270-002: OPUD Wastewater Treatment Facility - Public Utilities District 3908 Mary Avenue

A 2,500-gallon diesel above ground tank (AST) is located at this facility. There are no indications of a release of diesel to soil or groundwater.

Recommendation: No additional assessment.

RECs Located Adjacent to the Project Limits

Four sites located immediately adjacent to the project alignment were identified with high risk RECs. These sites are listed in Section 3.2.2 and are identified on Figures 2a-c. Documented impacts to soil or groundwater are present on or have been remediated at these adjacent parcels. There is a potential that impacts from these parcels extend into the right-of-way (ROW) adjacent to the parcel. There is a potential to encounter residual contamination during excavation.

Recommendation: If excavation is planned within the right-of-way (ROW) adjacent to these parcels, conduct a Phase II screening of the soil within the area of excavation to assess the presence of potential hazardous materials.

- **APN 014-143-026: Tower Mart #60/Cheaper #60**, 1976 McGowan Parkway

  Two single-walled 10,000-gallon gasoline underground storage tanks (USTs) tanks were removed in 1986. One 8,000-gallon diesel and three 12,000-gallon gasoline tanks were installed in 2004. A release of gasoline and diesel to soil and groundwater occurred sometime before 2003. Groundwater monitoring in April 2005, did not identify detectable amounts of constituents. The regulatory case was closed in 2008. Potential contaminants of concern (COC) include total petroleum hydrocarbons (TPH) as diesel (TPH-d), gas (TPH-g) and motor oil (TPH-mo), metals, and benzene/toluene/ethylbenzene/xylene (BTEX).

- **APN 014-510-033: Marysville Forest Products/Erickson Group Limited**, 4083 Rancho Road

  Two USTs were reportedly removed after a leak was detected. A reported release of diesel to soil was recorded in 1992. Documentation was not found to verify impacted soil was excavated. The regulatory case was closed on July 14, 1993. The site was formerly occupied by a wood treating facility. Pentachlorophenol (PCP) was used as an anti-fungal wood treatment. PCP was released to soil during site operations. Site soil is also impacted with volatile organic compounds (VOCs) from the maintenance shop and dioxins at the ash disposal and burn areas. The horizontal and vertical extent of impacts is unknow. The Regional Water Quality Control Board (RWQCB) regulatory case is currently open. Potential COCs include TPH-d, TPH-g, TPH-mo, metals, BTEX, VOCs, dioxins, and PCP.

- **APN 014-280-065: PG&E North Valley Materials**, 3736 Rancho Road

  One 10,000-gallon AST of unknown contents, one 8,000-gallon gasoline UST, and one 12,000-gallon diesel UST are located at this facility. This facility operates as a staging area for PG&E operations throughout the area. A release of diesel to soil from a UST was reported on November 3, 1992. Contaminated soil was removed from the facility, and a No Further Action Letter was issued on March 1, 1993. Potential COCs include TPH-d, TPH-g, TPH-mo, metals, and BTEX

- **APN 014-270-079: Flying U Ranch**, 3718 Forty Mile Road

  A 13,500-gallon AST of unknown fuel type is identified at the site. The location of the AST was not identified during site reconnaissance. Potential COCs include TPH-d, TPH-g, TPH-mo, metals, and BTEX.

Five sites located immediately adjacent to the project alignment were identified with medium risk RECs. These sites are listed in Section 3.2.2 and are identified on Figures 2a-c. Fuel storage tanks are present on these adjacent parcels. There is no evidence in the records review to suggest releases have occurred from the tanks or hazardous material issues from these sites will impact the Project, however, there is a potential to encounter residual contamination at these sites. If plans for acquisition change to include one or more of these sites, a Phase II Environmental Site Assessment to further investigate potential hazardous materials within the acquisition areas will be necessary.

- **APN 014-280-046: Alfaro Farms/Jean Pierre Alfaro**, 3374 Forty Mile Road

  This farm is listed in the searched databases as having a 15,000-gallon AST of unknown contents.

  Violations were reported for failure to properly label hazardous waste containers, and failure to

properly store and label used batteries.

- **APN 014-360-014: Frank Hofman Ranch**, 3002 Forty Mile Road

  This business is listed as a hazardous waste generator. A UST of unknown contents and volume was located at the site. The Yuba UST database lists the UST status as closed. No spills or leaks were reported at this facility.

- **APN 014-510-018: Livingston Concrete**, 2571 Rosser Road

  This facility is listed in the searched databases as operating an AST. Violations are reported and include failure to provide training to oil-handling personnel.

- **APN 014-510-021: Roger L. Murray**, 3938 Shimer Road

  This facility is listed as having a 5,000-gallon AST storing an unknown fuel type. The AST is located at the southeast corner of the parcel, adjacent to the project. The AST had secondary containment, but the AST is within twenty feet of the project limits.

- **APN 015-060-075: Tollcrest Dairy,** 3355 Virginia Road, Wheatland

  A 10,200-gallon AST is located at this facility. The AST is not located on the west side of the parcel near the project alignment. No additional information is provided in the records search.

Three sites located north of the project alignment on Olivehurst Avenue were identified with high risk RECs. The project limits do not currently extend to these sites. These sites are listed in Section 3.2.2 and are identified on Figures 2a-c. Documented impacts to soil or groundwater are present on or have been remediated at these parcels. There is a potential that impacts from these parcels extend into the right-of-way (ROW) adjacent to the parcel. There is a potential to encounter residual contamination during excavation.

Recommendation: If the project limits are extended to include excavation within the ROW adjacent to these parcels, conduct a Phase II screening of the soil within the area of excavation to assess the presence of potential hazardous materials. Potential COCs include TPH-d, TPH-g, TPH-mo, metals, and BTEX.

- **APN 013-072-011: Gee Property**, 4880 Olivehurst Avenue

  The site is currently vacant but was formerly occupied by a fueling station. Two gasoline underground storage tanks (USTs) were removed in 1988 and one UST removed in 2019. Soil samples from the UST excavation indicated a release had occurred. Low levels of total petroleum hydrocarbons (TPHs) were detected in groundwater. The regulatory case was closed on January 10, 2020.

- **APN 013-081-015: AGV Corner Market**, 4881 Olivehurst Avenue

  The site is an active gas station. Currently a 20,000-gallon compartmentalized gasoline and diesel tank is in the same excavation area as the former UST. A release of gasoline to soil and groundwater occurred at this facility sometime prior to 2001. The most recent groundwater monitoring event conducted at the facility occurred in May 2011 and demonstrated that groundwater beneath the facility has residual impacts from gasoline related constituents. The regulatory case was closed on June 25, 2012.

- **APN 013-130-060: Former E-Z Serve**, 4867 Olivehurst Avenue

Three USTs were removed in 1989 and a release of gasoline was discovered. Soil and groundwater were impacted. Groundwater monitoring was conducted from sometime before 2004 until 2017. A No further Action letter was issued by the CVRWQCB and the regulatory case was closed on November 22, 2019.

General Contamination Issues

The following general contamination issues were identified within the Project limits.

Yellow traffic stripes

Yellow traffic stripes are known to contain heavy metals, such as lead and chromium, at concentrations in excess of the hazardous waste thresholds established by the *California Code of Regulations* and may produce toxic fumes when heated.

Recommendation: If the Project includes removal of yellow traffic striping, remove and dispose of in accordance with Caltrans Standard Special Provisions for Hazardous Waste.

Aerially Deposited Lead (ADL)

ADL has been found to occur in soils adjacent to highways and high use roadways. The lead is presumably from the historical use of leaded gasoline and subsequent exhaust emissions. There is potential for encountering ADL during construction and grading activities within the proposed Project limits along its entirety. Some of these roadways have been present in various alignments since at or before 1910 and, therefore, have the potential to be impacted with ADL.

Recommendation: A soil screening to evaluate the potential presence of ADL within the Project limits should be performed. An appropriate soil management plan will need to be developed for soil containing significant concentrations of ADL.

Southern Pacific/Union Pacific Railroad

An active railroad is adjacent to the east side of Rancho Road. Soils located adjacent to railroad tracks may be impacted by on-going railroad operations. Potential contaminants at these locations commonly include petroleum hydrocarbons, semi-volatile organic compounds (SVOCs), heavy metals, and pesticides.

Recommendation: Conduct a limited subsurface soil screening for potential contaminants in the upper 1.5 feet where soil will be disturbed adjacent to the railroad.

Asbestos Containing Material (ACM) and Lead in Buildings Materials

Structures constructed pre-1989 have the potential to contain ACM/Lead materials. Aerial photographs identify structures along the project alignment as developed prior to 1989.

Recommendation: If parcels are acquired as part of the Project any structures on those parcels should be evaluated for the presence of lead and asbestos containing materials. Any structure to be modified or demolished as part of the Project must be surveyed for the presence of ACM and Lead by a certified Asbestos Inspector prior to building demolition/modification.

Transformers

Our scope did not include an inventory of past and present transformers. We observed pole-mounted transformers and power lines within the existing right-of-way.

Recommendation: If the relocation of power facilities or high voltage power lines is required, existing transformers should be checked for the presence of PCBs or other hazardous materials by the utility owner, and if present, properly remediated and disposed. Identification and remediation of old transformers is the responsibility of the utility owner.

Organochlorine Pesticides (OCPs)
Historical topographic maps from 1947 and 1949 depict an orchard in the southeastern ½-mile alignment of Rancho Road and the eastern 1/3-mile alignment of Morrison Road.

Recommendation: Conduct a shallow soil screening to evaluate the potential presence of OCPs within the footprint of the former orchard in the Project limits.

8 QUALIFICATIONS

This ISA was prepared by Laura Long. I declare that, to the best of my professional knowledge and belief, I meet the definition of an environmental professional as defined in Section 312.10 of 40 Code of Federal Regulations (CFR) 312 and have the specific qualifications based on education, training, and experience to assess a property of its nature, history, and setting of the subject property. I have performed all appropriate inquiries in general conformance with the standards and practice set forth in 40 CFR 312.

9 LIMITATIONS

The accompanying ISA summarizes the findings and opinions of Blackburn, with regard to the potential for hazardous materials to be present on the properties at concentrations likely to warrant mitigation under current statutes and guidelines. Our findings and opinions are based on information obtained on given dates or provided by specified individuals, through records review, site review, and related activities. Conditions can change after we have made our observations. We cannot warrant or guarantee that hazardous materials do not exist at the described site. To further reduce your risk, an extensive invasive exploration may be necessary.

Blackburn prepared this ISA for the specific use of our client and applies only to the Project area. We are not responsible for interpretations by others of data presented in this ISA. This ISA does not represent a legal opinion. No warranty is expressed or implied. We base our conclusions in this ISA on judgment and experience. We performed this work in accordance with generally accepted standards of practice existing in northern California at the time of the assessment.

The governmental records portion of this ISA is derived from public records and is updated on a continual basis. For this reason, we do not advise you to use this information to base a decision after one (1) year of the issue date of this ISA. Also, conditions at the site can and will change over time. Please contact Blackburn to revise this ISA to reflect new information.

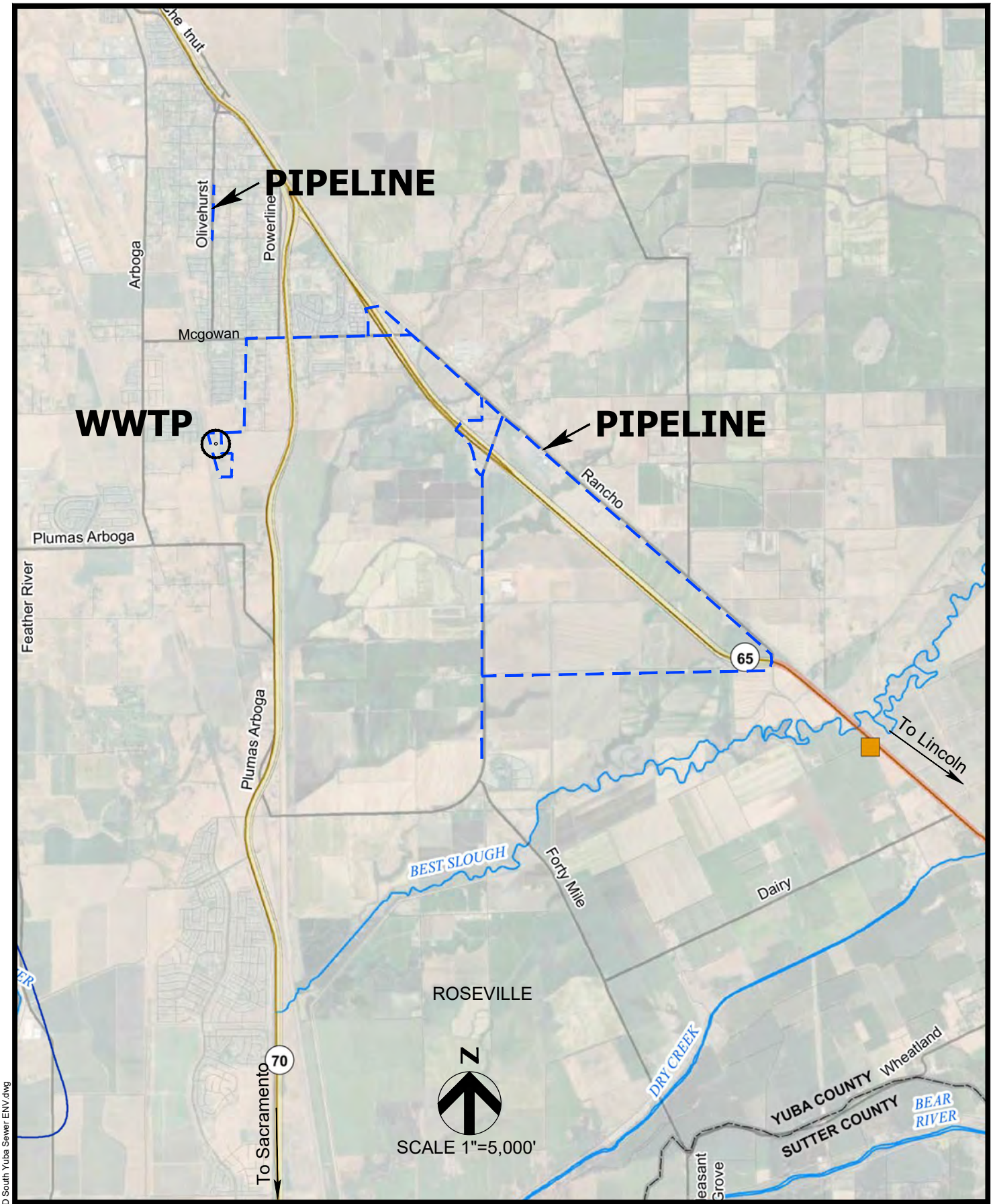
PHASE 1 INITIAL SITE ASSESSMENT

OPUD Yuba County Sewer and Water Infrastructure Project

Olivehurst, CA

FIGURES

Figure 1: Vicinity Map
Figures 2a-e: Project Site Map



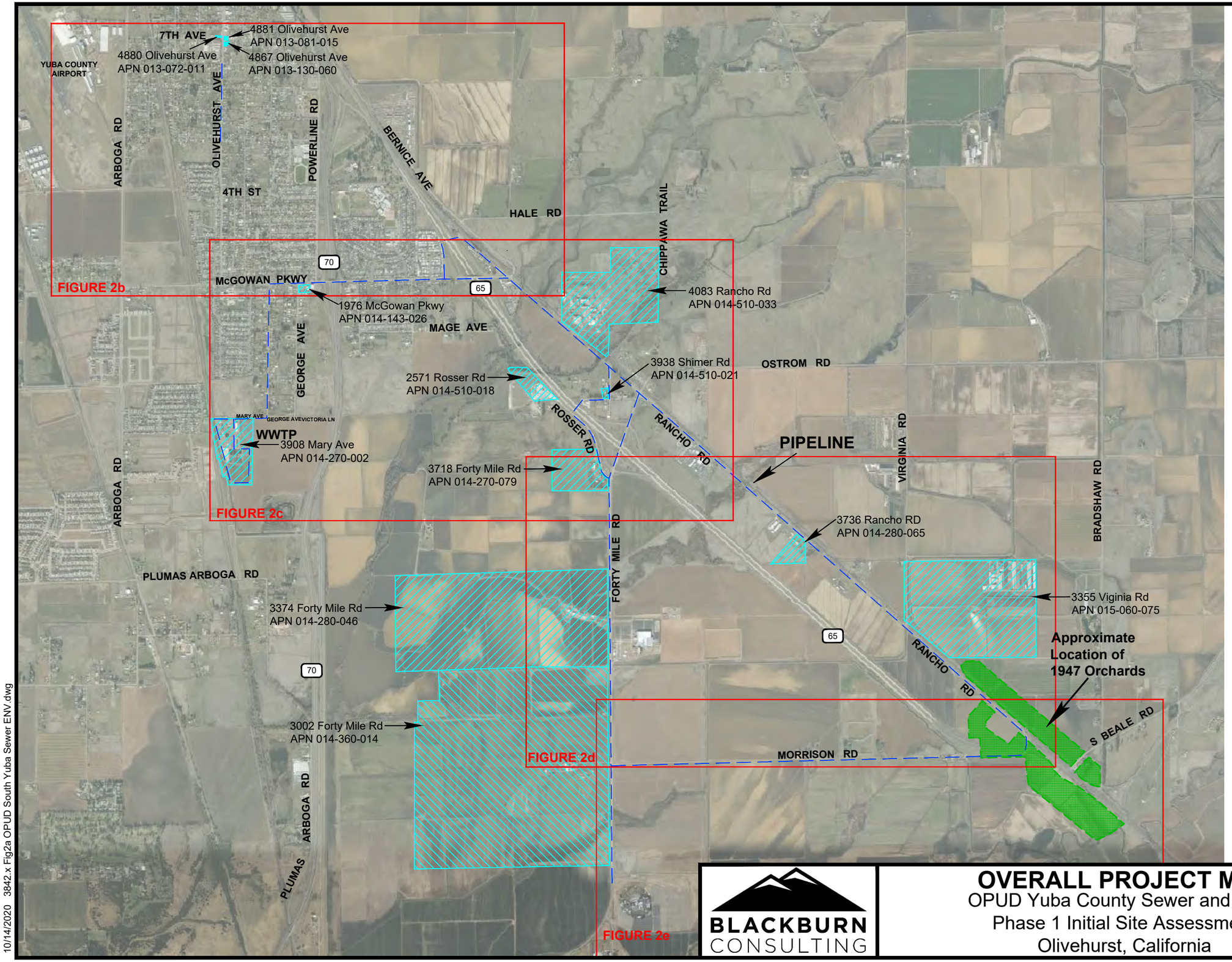
10/13/2020 3842.x Fig1 OPUD South Yuba Sewer ENV.dwg

BLACKBURN CONSULTING

VICINITY MAP

OPUD Yuba County Sewer and Water
Phase 1 Initial Site Assessment
Olivehurst, California

File No. 3842.x
June 2021
Figure 1



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OVERALL PROJECT MAP

OPUD Yuba County Sewer and Water
Phase 1 Initial Site Assessment
Olivehurst, California

File No. 3842.x

June 2021

Figure 2a

LEGEND

Approximate Pipeline Alignment

Approximate Parcel Limits with REC's Adjacent to Project Limits

N

SCALE 1" = 900'

BLACKBURN CONSULTING

PROJECT MAP

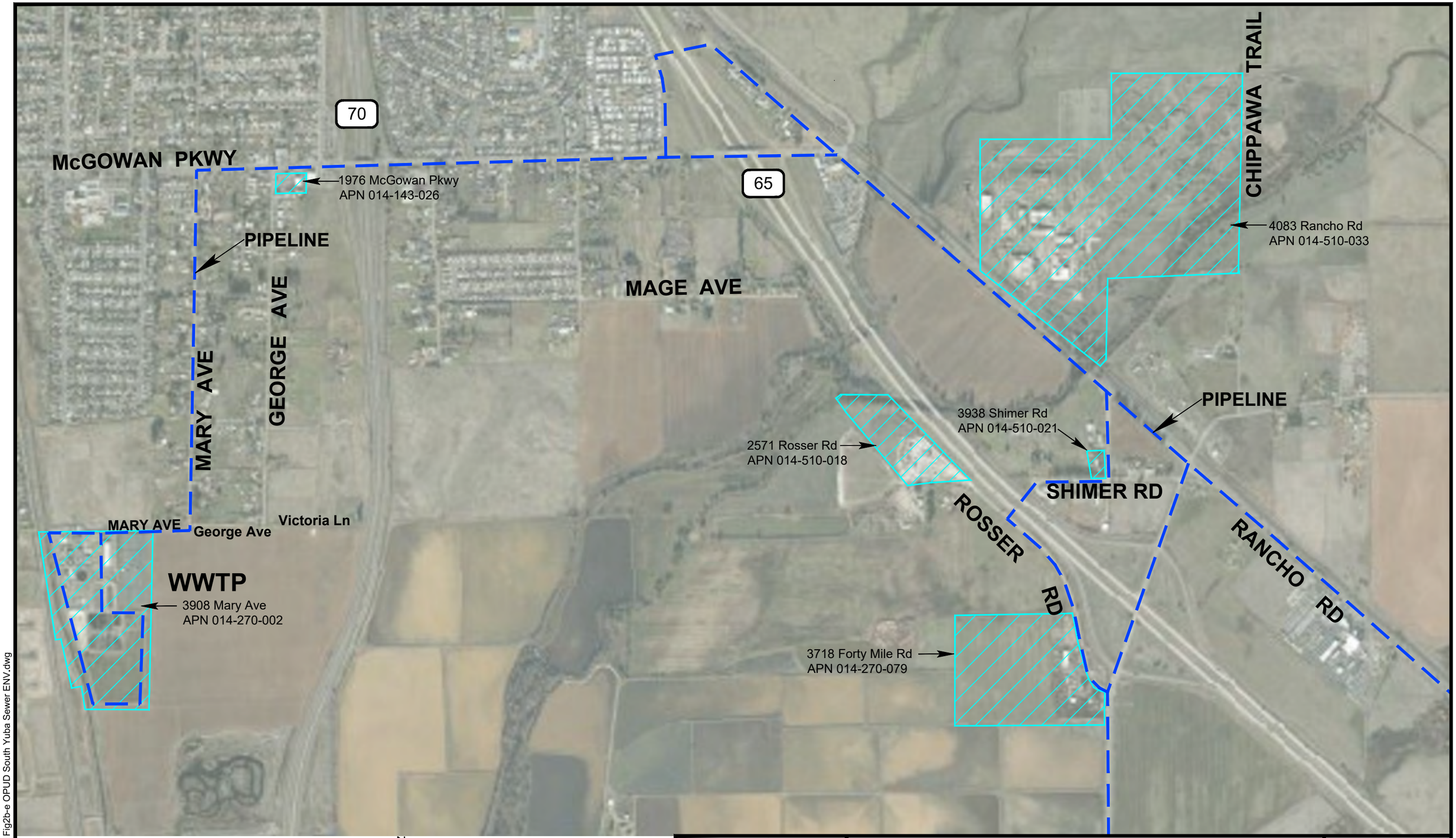
OPUD Yuba County Sewer and Water
Phase 1 Initial Site Assessment
Olivehurst, California

File No. 3842.x

June 2021

Figure 2b

10/14/2020 3842.x Fig2b-e OPUD South Yuba Sewer ENV.dwg



LEGEND

Approximate Pipeline Alignment

Approximate Parcel Limits with REC's Adjacent to Project Limits

N

SCALE 1" = 900'

BLACKBURN CONSULTING

PROJECT MAP

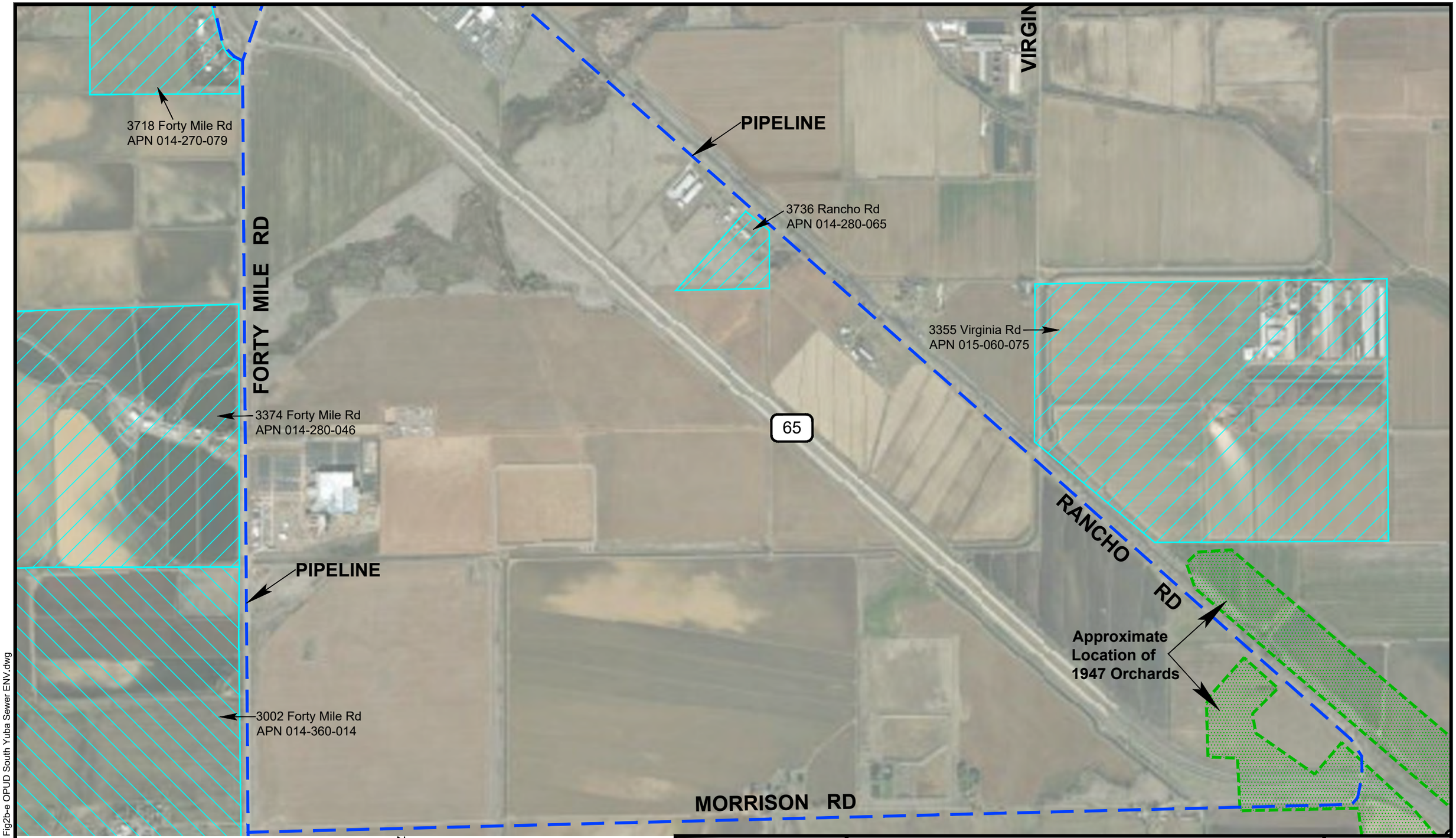
OPUD Yuba County Sewer and Water
Phase 1 Initial Site Assessment
Olivehurst, California

File No. 3842.x

June 2021

Figure 2c

10/14/2020 3842.x Fig2b-e OPUD South Yuba Sewer ENV.dwg



LEGEND

Approximate Pipeline Alignment

Approximate Parcel Limits with REC's Adjacent to Project Limits

N

SCALE 1" = 900'

BLACKBURN CONSULTING

PROJECT MAP

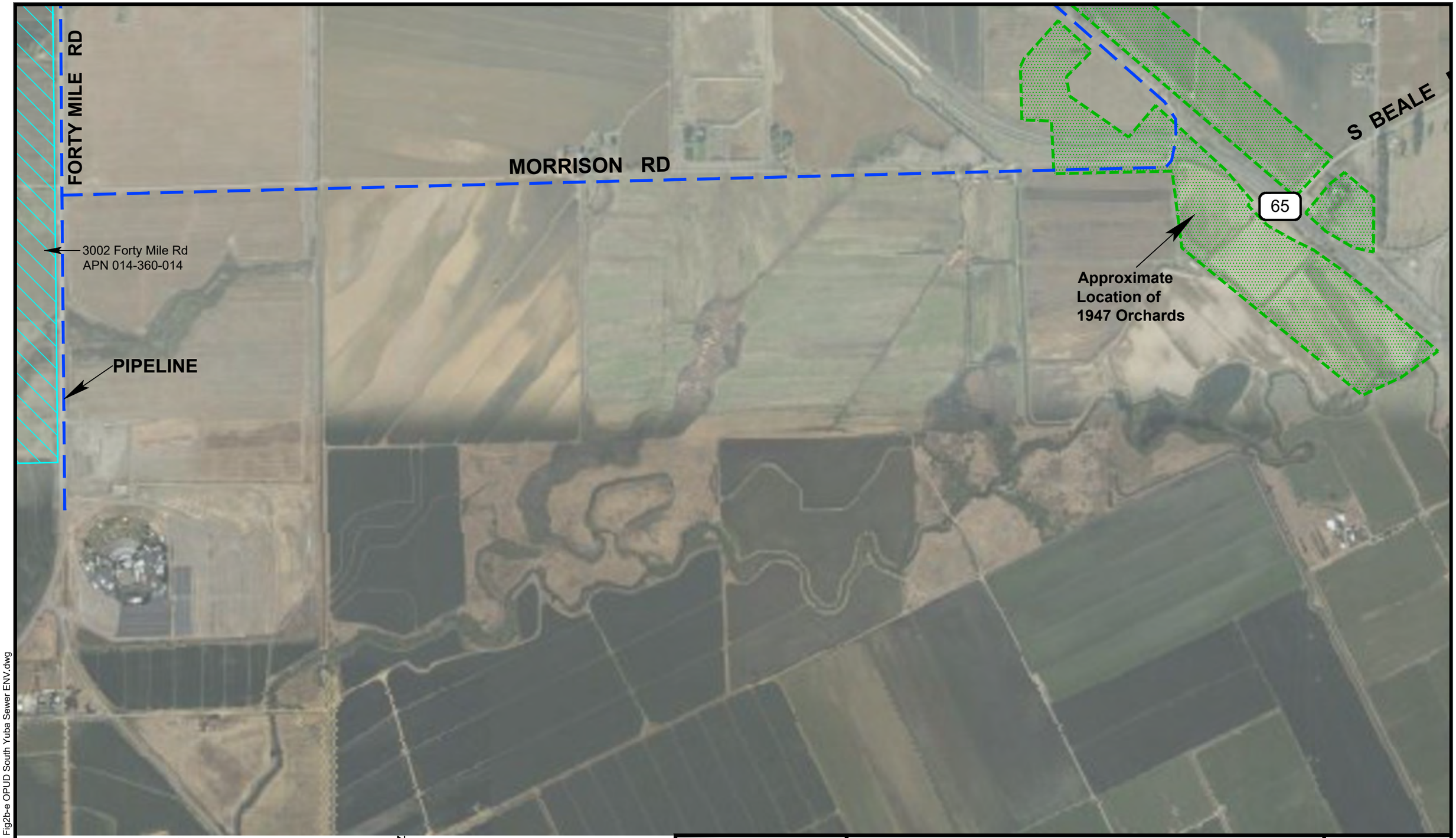
OPUD Yuba County Sewer and Water
Phase 1 Initial Site Assessment
Olivehurst, California

File No. 3842.x

June 2021

Figure 2d

10/14/2020 3842.x Fig2b-e OPUD South Yuba Sewer ENV.dwg



LEGEND

Approximate Pipeline Alignment

Approximate Parcel Limits with REC's Adjacent to Project Limits

N

SCALE 1" = 900'

BLACKBURN CONSULTING

PROJECT MAP

OPUD Yuba County Sewer and Water
Phase 1 Initial Site Assessment
Olivehurst, California

File No. 3842.x

June 2021

Figure 2e

10/14/2020 3842.x Fig2b-e OPUD South Yuba Sewer ENV.dwg

PHASE II ENVIRONMENTAL SITE ASSESSMENT

OPUD Yuba County Sewer and Water Infrastructure Project

Olivehurst, CA

August 2021

Prepared for:

Jacobs

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File No. 3842.x
August 10, 2021

Mr. Steve DeCou
Vice President and Principal Program Manager
Jacobs Engineering Group
2485 Natomas Park Drive, Ste. 600
Sacramento, CA 95833

Subject: **PHASE II ENVIRONMENTAL SITE ASSESSMENT**
OPUD Yuba County Sewer and Water Infrastructure Project
Olivehurst, California

Mr. DeCou,

Blackburn Consulting (Blackburn) prepared this Phase II Environmental Site Assessment (Phase II) for the OPUD Sewer and Water Infrastructure Project located in Yuba County, California. The purpose of this Phase II is to address potential hazardous materials soil issues that may significantly impact the Project. Blackburn prepared this Phase II in accordance with our December 3, 2020 proposal.

As always, Blackburn appreciates the opportunity to be part of your team. Please call if you have questions or require additional information.

Sincerely,

BLACKBURN CONSULTING

Nicole Hart
Project Manager

Luke Morrell
Project Engineer

Reviewed by:

Laura Long
Environmental Project Manager

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Boring Logs

APPENDIX B
Entek Consulting Group, Inc., July 2, 2021 Hazardous Materials Survey Final Report

APPENDIX C
ProUCL Statistical Analysis

1 INTRODUCTION

Blackburn Consulting (Blackburn) prepared this Phase II Environmental Site Assessment (Phase II) for Jacobs Engineering Group (Jacobs) for the Olivehurst Public Utilities District (OPUD) Yuba County Sewer and Water Infrastructure Project (Project) in Olivehurst and unincorporated areas of Yuba County, California. Figure 1 presents the Vicinity Map. Jacobs, in cooperation with OPUD and Yuba County, proposes to construct new water and sewer utility infrastructure. The Project alignment is planned within existing right-of-way. The pump and lift station final locations have not been determined and will be constructed on private parcels.

Blackburn prepared the October 2020 Draft Phase I Initial Site Assessment (ISA) report for the Project and identified the following Recognized Environmental Conditions[1] (RECs) located at adjacent sites that warrant further assessment:

- A release of petroleum to soil and groundwater occurred at Tower Mart #60 located at 1976 McGowan Parkway. Potential contaminants of concern (COCs) include total petroleum hydrocarbons (TPH) as diesel (TPH-d), gasoline (TPH-g), and motor oil (TPH-mo), metals, and benzene/toluene/ethylbenzene/xylene (BTEX).
- A release of diesel to soil occurred at the PG&E North Valley Materials facility located at 3736 Rancho Road. Possible COCs include TPH-d, TPH-g, TPH-mo, metals, and BTEX.

Blackburn also identified the following general contamination issues within the Project limits:

- Yellow Traffic Striping. Yellow traffic stripes are known to contain heavy metals, such as lead and chromium, at concentrations exceeding the hazardous waste thresholds established by the *California Code of Regulations* and may produce toxic fumes when heated.
- Aerially Deposited Lead (ADL). ADL has been found to occur in soils adjacent to highways and high-use roadways. The lead is presumably from the historical use of leaded gasoline engines and subsequent exhaust emissions. There is the potential for encountering ADL during construction and grading activities within the proposed Project limits along its entirety. Some of these roadways have been present in various alignments since at or before 1910 and therefore, have the potential to be impacted with ADL.
- Southern Pacific Railroad. The railroad is adjacent to the east shoulder of Rancho Road. Soils located adjacent to railroads may be impacted by on-going railroad operations. Potential COCs include TPHs, semi-volatile organic compounds (SVOCs), heavy metals, polycyclic aromatic hydrocarbons (PAHs), and organochlorine pesticides (OCPs).

[1] Blackburn uses the term Recognized Environmental Condition (REC) in general compliance with ASTM E1527-13, which defines the meaning as *"The presence or likely presence of any hazardous substances or petroleum products in, on, or at a property (1) due to any release to the environment, (2) under conditions indicative of a release to the environment or (3) under conditions that pose a material threat of a future release to the environment. The term is not intended to include de minimus conditions that generally do not present a threat to human health or the environment and generally would not be the subject of an enforcement action if brought to the attention of the appropriate regulatory agencies. Conditions determined to be de minimus are not recognized environmental conditions*."

- Historical Orchard. Topographic maps from 1947 and 1949 depict an orchard in the southeastern 1/2 -mile alignment of Rancho Road and the eastern 1/3 -mile alignment of Morrison Road. Soils in areas developed as orchards before the mid-1970s may be impacted by OCPs.

Blackburn no longer recommends a Phase II assessment of the Marysville Forest Products/Erickson Group Limited located at 4083 Rancho Road. The updated Project alignment locates the water line immediately adjacent to the northeast side of Rancho Road. It is unlikely that COCs from the Marysville Forest Product site would impact the Project due to the buffer the railroad provides and the distance from the Project.

In addition, Blackburn did not receive Right-of-Entry along Morrison Road and therefore did not perform a Phase II assessment along Morrison Road.

This Phase II scope is designed to evaluate whether impacts due to potential COCs require mitigation recommendations for construction and/or soil management. We prepared this Phase II in general conformance with the American Society of Testing and Materials (ASTM) Standard E1903-19, "Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process".

To conduct this Phase II, Blackburn:

- Reviewed the findings, conclusions and recommendations presented in the Blackburn ISA for the Project.
- Reviewed the project plans dated March 15, 2021, and provided by Jacobs, to identify sample locations.
- Confirmed Right-of-Entry restrictions with Jacobs.
- Prepared a limited Health and Safety Plan for our subsurface exploration.
- Confirmed receipt of an Encroachment Permit prior to drilling.
- Hand-augered 4 test holes to depths of 2.5-feet and collected soil samples on June 17, 2021.
- Drilled 44 test holes by Direct Push to depths ranging from 3.5- to 15-feet and collected soil samples on June 15-17, 2021.
- Submitted soil samples via chain-of-custody to Sunstar Laboratories (Sunstar) for environmental analyses.
- Summarized the soil sample test results.
- Performed statistical analysis for ADL.
- Provided conclusions and recommendations based on the soil sample test results.

Blackburn prepared this report for Jacobs Engineering Group (Jacobs) and the project design team to use during design and construction. This report shall not be used or relied upon by others, or for different locations or improvements without the written consent of Blackburn.

2 PROJECT LOCATION AND DESCRIPTION

2.1 Location and Description

The Project spans approximately 12.2 miles within the town of Olivehurst and surrounding areas. The Project alignment includes the OPUD Wastewater Treatment Plant located on Mary Avenue, and portions of the following alignments:

- Olivehurst Avenue from 7th Avenue to approximately 170 feet south of 11th Avenue;
- Mary Avenue from the OPUD wastewater treatment plant to McGowan Parkway;
- McGowan Parkway from Mary Avenue to Rancho Road;
- Olive Avenue from McGowan Parkway to approximately 100 feet to the north, then east crossing under Highway 65 to the northern terminus of Rancho Road;
- Rancho Road from its northern end to Morrison Road;
- Morrison Road from Highway 65 to Forty Mile Road (Blackburn understands access to this section is currently restricted);
- Forty Mile Road from the Toyota Amphitheater to Rancho Road;
- Slaughterhouse Road from Forty Mile Road to northwest for approximately 0.4 miles, crossing Highway 65 to the southern terminus of Shimer Road;
- Shimer Road from its southernmost extent to Rancho Road.

Pump and lift station locations will be installed on privately owned parcels; however, these locations have not been finalized.

The Project location with Project limits is shown on Figure 1, Vicinity Map. Site-specific features are shown on Figures 3a-3aa.

2.2 Geology and Physical Setting

The site lies within the Great Valley Geomorphic Province of California, which is a large, elongated, northwest-trending structural trough. The Province is subdivided into two major divisions designated as the Sacramento and San Joaquin Valleys. These valleys have been filled to their present elevation with thick sequences of sediment, ranging in age from Jurassic to present-day, creating a nearly flat-lying alluvial plain that extends from the Tehachapi Mountains in the south to the Klamath Mountains in the north. The western and eastern boundaries of this province are formed by the California Coast Ranges and the Sierra Nevada, respectively.

The study area is located on an alluvial plain in the Sacramento Valley located approximately 2.2 miles east of the Feather River at its closest point. The underlying deposits are mapped by Saucedo, G.J. and Wagner D.L. (1981) as alluvium, natural levee and channel deposits, basin deposits, Modesto Formation, and the Riverbank Formation. This formation is composed of fine-grained soils such as clay, silts, sand, and gravel.

The site topography is generally flat, except near Highway 65 and Highway 70, where the topography slopes toward the highways. The site elevations, excluding areas near the Highways, range between about 55 feet above mean sea level (msl) in the western portion of the Project and about 75 feet above msl in the easternmost portion of the Project.

2.3 Surface Water, Groundwater, Wells

The Site lies within the South Yuba Subbasin where groundwater flow direction is generally to the southwest toward the Feather River, though flow directions vary both locally and seasonally. The study area is east of the Feather River, south of the Yuba River, and north of the Bear River. Blackburn reviewed groundwater level data made available at California Department of Water Resources (DWR) website www.water.ca.gov/waterdatalibrary. Based on our review of the recent data, the groundwater beneath the site is generally between elevation 25- to 50- feet. Surface/storm water is directed by sidewalk curb, gutter and drains. The general flow direction is to the south and west towards the Feather River, except in area in proximity to Hutchison Creek and Reed Creek, which transect the Project in multiple areas flowing southwest toward the Feather River.

2.4 Current Land Use

Most of the Project area consists of roadways which traverse rural areas of Yuba County, with a portion of the project limits transecting the town of Olivehurst. Land adjacent to the Project along Rancho Road is zoned as agricultural industrial and light industrial. Land along Morrison Road is designated as sports entertainment district and employment center district. Land adjacent to Forty Mile Road is designated for agricultural use and sports entertainment. Land near the OPUD Wastewater treatment Facility on Mary Road is designated for use as public utilities land as well as single-family residential.

3 PHASE II ESA FIELD ACTIVITIES

3.1 Pre-Field Activities

Blackburn marked each boring location and contacted Underground Service Alert (USA North 811) to identify and mark underground utilities within the investigation area before subsurface exploration began. Jacobs obtained the Encroachment Permit with input from Blackburn. Blackburn prepared a limited health and safety plan (HASP) for the subsurface exploration to inform on-site personnel about potential chemical and physical hazards and outline specific emergency procedures to be employed in the event of an accident or changes in field conditions. On-site personnel acknowledged the HASP following daily tailgate meetings. The field work was completed without incident. Figure 2 presents an overview of the boring locations as the Overall Project Map obtained from the ESA. Figures 3a through 3aa presents specific sample locations.

3.2 Aerially Deposited Lead Assessment

The ISA identified the potential for ADL during construction and grading activities within the proposed Project limits along its entirety. Some of these roadways have been present in various alignments since at or before 1910 and, therefore, have the potential to be impacted with ADL. Blackburn located and drilled a total of 46 sample locations along the alignment including Rancho Road, Mary Avenue, Olivehurst Avenue, McGowan Parkway, Olive Avenue, Forty Mile Road, Slaughterhouse Road and Shimer Road.

Blackburn obtained the following ADL samples based on our review of the project plans:

- 19 sample locations along Rancho Road from its northern end to Morrison Road;
- 2 sample locations along Shimer Road;
- 1 sample location along Olive Avenue approximately 200 feet to the north of McGowan Parkway;
- 2 sample locations along Olivehurst Avenue from 13th Avenue to approximately 100 feet south of 11th Avenue;
- 4 sample locations along Mary Avenue from OPUD wastewater treatment plant to McGowan Parkway;
- 6 sample locations along McGowan Parkway from Mary Avenue to Rancho Road;
- 10 sample locations along Forty Mile Road from Plumas Arboga Road to Rancho Road;
- 2 sample locations along Slaughterhouse Road from Forty Mile Road to northwest for approximately 0.25 miles.

Blackburn generally collected the soil samples away from the roadway about 5- to 10-feet into the unpaved shoulders at three (3) depth intervals: Interval A from 0- to 0.5- feet; Interval B from 2- to 2.5- feet; and Interval C from 3- to 3.5- feet. Blackburn used a hand trowel to collect the shallow Interval A soil samples, and retained Environmental Control Associates, Inc. (ECA), our drilling subcontractor, to obtain Intervals B and C using a Geoprobe (Direct Push sampling).

Due to utility concerns at proposed sampling locations, Blackburn obtained Interval A and B samples on the eastern side of Forty Mile Road (FM1, FM7, FM9) and on the western side of Slaughterhouse Road (SH2) with a hand auger. Blackburn did not obtain Interval C samples for these sample locations.
For Interval A samples and hand auger samples, Blackburn transferred the samples into glass jars, labeled the jars with the sample time, date, location, depth and the sampler's initials. Blackburn cleaned the sampling equipment with an Alconox wash solution and a distilled water rinse before and after advancing each boring.

For Intervals B and C samples, ECA obtained the samples by pushing the Geoprobe to the desired sampling depth. The Geoprobe utilizes dual tube sampling which uses two sets of probe rods to retrieve continuous soil core samples. One set is driven into the subsurface and used as an outer casing. A second, smaller rod is placed inside the outer casing with a sample liner attached, which is then extracted to retrieve the full liner. ECA placed the tube on a table and Blackburn identified sample depths for ECA to cut. The sample tubes were capped under Teflon paper, labeled with sample time, date, location, depth, and the sampler's initials.

Blackburn packed the collected samples in a cooled ice chest and delivered the samples to SunStar Laboratories, a certified California Environmental Laboratory Accreditation Program (ELAP) analytical laboratory, under continuous chain-of-custody documentation.

Blackburn and ECA backfilled each boring with excess cuttings and discharged wash and rinse water to the ground surface at the project site.

3.3 Tower Mart #60, 1976 McGowan Parkway Assessment

The ISA identified that a release of petroleum to soil and groundwater occurred at Tower Mart #60 located at 1976 McGowan Parkway. Potential contaminants of concern (COCs) include total petroleum hydrocarbons (TPH) as diesel (TPH-d), gasoline (TPH-g), and motor oil (TPH-mo), metals, and benzene/toluene/ethylbenzene/xylene (BTEX). Blackburn therefore advanced two borings along the shoulder adjacent to the Tower Mart #60 site.

Blackburn advanced two borings and collected soil samples at 5 intervals: Interval A (0-0.5'); Interval B (1.5'-2'); Interval C (7'-7.5'); Interval D (11.5'-12'); and Interval E (14.5'-15').

Blackburn monitored volatile chemicals present in the samples, borehole, and worker breathing zones using a photoionization device (PID). The boring logs in Appendix A include the PID readings. PID readings did not reach action levels.

ECA obtained the samples by pushing the Geoprobe to the desired sampling depth and extruding the tube. ECA placed the tube on a table and split the entire tube open lengthwise for Blackburn to log and transfer the samples into glass jars. Blackburn labeled the glass jars with sample time, date, location, depth, and the sampler's initials.

Blackburn packed the collected samples in a cooled ice chest and delivered the samples to SunStar Laboratories, a certified California Environmental Laboratory Accreditation Program (ELAP) analytical laboratory, under continuous chain-of-custody documentation.

Blackburn and ECA backfilled each boring with excess cuttings and discharged wash and rinse water to the ground surface at the project site. For these borings drilled in asphalt, ECA patched the pavement with cold-mix asphalt, in accordance with the encroachment permit.

3.4 PG&E North Valley Materials Facility Assessment

The ISA identified that a release of diesel to soil occurred at the PG&E North Valley Materials Facility at 3736 Rancho Road. Potential COCs include TPH-d, TPH-g, TPH-mo, metals, and BTEX. Blackburn therefore advanced two borings along the shoulder of Rancho Road, adjacent to the PG&E facility.

Blackburn advanced two borings and collected soil samples at 4 intervals: Interval A (0-0.5'); Interval B (2.5'-3'); Interval C (6.5'-7'); and Interval D (9.5'-10').

Blackburn monitored volatile chemicals present in the samples, borehole, and worker breathing zones using a photoionization device (PID). PID readings did not reach action levels.

ECA obtained the samples by pushing the Geoprobe to the desired sampling depth and extruding the tube. ECA placed the tube on a table and split the entire tube open lengthwise for Blackburn to log and transfer the samples into glass jars. Blackburn labeled the glass jars with sample time, date, location, depth, and the sampler's initials.

Blackburn packed the collected samples in a cooled ice chest and delivered the samples to SunStar Laboratories, a certified California Environmental Laboratory Accreditation Program (ELAP) analytical laboratory, under continuous chain-of-custody documentation.

Blackburn and ECA backfilled each boring with excess cuttings and discharged wash and rinse water to the ground surface at the project site. For these borings drilled in asphalt, ECA patched the pavement with cold-mix asphalt, in accordance with the encroachment permit.

3.5 Historical Orchard Assessment

The ISA identified a historical orchard in the southeastern 1/2 -mile alignment of Rancho Road and the eastern 1/3 -mile alignment of Morrison Road. Soils in areas developed as orchards before the mid-1970s have the potential to be impacted by OCPs. Blackburn selected the two southernmost Rancho Road ADL borings for OCPs analysis. The borings are located near the historical orchards identified by historical topographic maps. Blackburn analyzed soil samples from 2 intervals: Interval A (0-0.5'); and Interval B (2'-2.5'). As discussed above, this Phase II ESA did not include Morrison Road due to access restrictions.

3.6 Southern Pacific Railroad Assessment

The Southern Pacific Railroad runs parallel to the east shoulder of Rancho Road. Potential COCs include TPHs, semi-volatile organic compounds (SVOCs), heavy metals, polycyclic aromatic hydrocarbons (PAHs) and OCPs. Blackburn selected five Rancho Road ADL borings to be additionally analyzed for railroad COCs. Blackburn analyzed soil samples at 2 intervals: Interval A (0-0.5'); and Interval B (2'-2.5') for analysis of TPHs, SVOCs including PAHs, heavy metals, and OCPs.

3.7 Traffic Control Striping Assessment

Blackburn retained Entek Consulting Group, Inc. (Entek) to assess the presence of lead and chromium in the yellow traffic striping on McGowan Parkway between Mary Avenue and Powerline Road, north of 1976 McGowan Parkway. Appendix B presents the July 2, 2021 Hazardous Materials Survey Final Report, which includes the field activities. On June 16, 2021, Entek collected one bulk sample of yellow traffic striping from the roadway surface for lead and chromium analyses.

4 PHASE II ESA LABORATORY ANALYSES

4.1 Aerially Deposited Lead Assessment

For the ADL Assessment, Blackburn initially submitted 92 samples (Intervals A and B at each location) to SunStar Laboratories for analysis of Total Lead by EPA Test Method 6010B and requested SunStar Laboratories to hold all Interval C. Nineteen samples exhibited Total Lead concentrations exceeding 50 milligrams per kilogram (mg/kg) along Rancho Road and McGowan Parkway. Blackburn therefore requested SunStar analyze all Rancho Road and McGowan Parkway Interval C samples and most McGowan Parkway Interval C samples for Total Lead. for Total Lead.

Blackburn selected all samples with Total Lead concentrations exceeding 50 mg/kg to be analyzed for Soluble Lead using the Waste Extraction Test method with Citric Acid buffer (CA-WET). The 50 mg/kg threshold is considered the minimum total lead concentration that can potentially result in a Soluble

Threshold Limit Concentration (STLC)[2] of 5 milligrams per liter (mg/l) due to a 10-fold dilution of the sample for the STLC test. Blackburn then selected all five samples with Soluble Lead concentrations reported above 5 mg/l to further analyze for Soluble Lead using the Waste Extraction Test method with Deionized Water buffer (DI-WET).

Blackburn randomly selected 4 samples for pH testing.

4.2 Tower Mart #60, 1976 McGowan Parkway Assessment

For the Tower Mart #60 assessment, Blackburn submitted 10 samples (Intervals A through E at two locations) to SunStar for analysis of total lead, TPH-d, TPH-g, TPH-mo, and BTEX.

4.3 PG&E North Valley Materials Facility Assessment

For the PG&E Assessment, Blackburn submitted 8 samples (Intervals A through D at two locations) to SunStar for analysis of total lead, TPH-d, PH-g, TPH-mo, and BTEX.

4.4 Historical Orchard Assessment

For the Historical Orchard Assessment, Blackburn submitted 4 samples (Intervals A and B at two locations) to SunStar for analysis of OCPs. Morrison Road was not included in this assessment.

4.5 Southern Pacific Railroad Assessment

For the Southern Pacific Railroad Assessment, Blackburn submitted 10 samples (Intervals A and B at five locations) to SunStar for analysis of TPHs, SVOCs including PAHs, heavy metals, and OCPs.

4.6 Traffic Control Striping Assessment

Appendix B contains Entek's report which describes the laboratory analysis. Entek transferred the bulk sample to ALS Environmental, an American Industrial Hygiene Association (AIHA) accredited lab in Salt Lake City, Utah, for lead and chromium analysis by a modified NIOSH 7300 method for bulk sampling.

5 PHASE II ESA LABORATORY ANALYTICAL RESULTS

5.1 Aerially Deposited Lead Assessment

Blackburn summarized the analytical results in Table 2. The ADL assessment test results indicate the following along each roadway.

Rancho Road (Rancho): Total lead concentrations within the 57 soil samples range from non-detect to 310 mg/kg. Sixteen (16) samples, all from sample Interval A, exhibited Total Lead concentrations exceeding 50 mg/kg. Blackburn therefore selected the sixteen (16) samples for testing by CA-WET. The results ranged from 1.7 milligram per liter (mg/l) to 7.6 mg/l. Five samples exceeded 5 mg/l and therefore, Blackburn selected these five samples for DI-WET testing. Only one sample, "Rancho 19A/Orchard 2A" was reported

[2] STLC and TTLC are regulatory limits defining hazardous waste in California.

for DI-WET with a concentration of 1.0 mg/l. All other results indicated non-detect above the laboratory reporting limits.

Shimer Road (Shimer): Total lead concentrations within the four soil samples range from non-detect to 44.9 mg/kg. No samples exhibited concentrations exceeding 50 mg/kg.

Olive Avenue (Olive): Total lead concentrations within the two soil samples range from 4.4 to 14 mg/kg. No samples exhibited concentrations exceeding 50 mg/kg.

Olivehurst Avenue (Olivehurst): Total lead concentrations within the four soil samples range from 4.1 to 18 mg/kg. No samples exhibited concentrations exceeding 50 mg/kg.

Mary Avenue (Mary): Total lead concentrations within the eight soil samples range from non-detect to 25 mg/kg. No samples exhibited concentrations exceeding 50 mg/kg.

McGowan Parkway (MP): Total lead concentrations within the 17 soil samples range from non-detect to 110 mg/kg. Three samples exhibited concentrations exceeding 50 mg/kg. Blackburn therefore selected the three exceedance samples for testing by CA-WET. The results ranged from 1.1 milligram per liter (mg/l) to 3.3 mg/l. No samples exceeded 5 mg/l.

Forty Mile Road (FM): Total lead concentrations within the 20 soil samples range from non-detect to 29 mg/kg. No samples exhibited concentrations exceeding 50 mg/kg.

Slaughterhouse Road (SH): Total lead concentrations within the four soil samples range from 3.7 to 20 mg/kg. No samples exhibited concentrations exceeding 50 mg/kg.

5.2 ADL Statistical Analysis

Blackburn performed a statistical analysis of the ADL sample data using EPA ProUCL 5.1 software to calculate the sample mean (average) as well as the 95% Upper Confidence Limit (UCL) of the sample mean. ProUCL 5.1 software determines data calculation techniques based on data size, distribution, and skewness. Appendix C presents statistical analysis calculations performed using ProUCL 5.1.

5.2.1 Total Lead

Based on laboratory analytical results, Blackburn analyzed ADL data within the project limits in groups based on sample depth. Blackburn identified Rancho Road and McGowan Parkway as potentially containing lead impacts. Blackburn conducted additional statistical analyses for these sample groups analyzed separately and together.

The following table presents the ranges of lead concentrations, mean lead concentrations, and 95% UCL for each depth interval as well as the combined interval. The combined interval (0 – 2.5 feet or 0 – 3.5 feet) provides information on the sample population as a whole, whereas the soil depth Intervals A, B and C provide information on individual sample depths.

Total Lead ProUCL Statistical Summary by Depth Interval				
Sample Location	**Soil Depth Interval (feet bgs)**	**Total Lead - Sample Range (mg/kg)**	**Total Lead Mean (mg/kg)**	**Total Lead 95% UCL (mg/kg)**
Project Limits (Excluding Rancho Road and McGowan Parkway)[1]	A (0 – 0.5 feet)	3 to 44.9	13.35	19.1
	B (2 – 2.5 feet)	3 to 6.1	3.67	4.0
	Combined (0 – 2.5 feet)	3 to 44.9	8.73	15.2
Rancho Road[2]	A (0 – 0.5 feet)	3.16 to 310*	117.3*	176.2*
	B (2 – 2.5 feet)	3 to 27.3	5.98	13.0
	C (3 – 3.5 feet)	3 to 3.9	3.12	3.22
	Combined (0 – 3.5 feet)	3 to 310*	44.8	88.3*
McGowan Parkway[3]	A (0 – 0.5 feet)	11 to 110*	58.6	93.0*
	B (2 – 2.5 feet)	3 to 9.3	5.2	7.48
	C (3 – 3.5 feet)	3 to 4.8	3.78	4.47
	Combined (0 – 3.5 feet)	3 to 110*	22.5	59.4
(Combined) Rancho Road and McGowan Parkway	A (0 – 0.5 feet)	3.16 to 310*	105.6*	149.6*
	B (2 – 2.5 feet)	3 to 27.3	5.81	11.3
	C (3 – 3.5 feet)	3 to 4.8	3.26	3.43
	Combined (0 – 3.5 feet)	3 to 310*	40.12	75.5

*value exceeds DTSC Residential Soil Screening Level for Total Lead (80 mg/kg).

[1] "Project Limits" includes samples from Shimer Road, Olive Avenue, Olivehurst Avenue, Mary Avenue, Forty Mile Road, Slaughterhouse Road, and Interval A from Tower Mart sample locations on McGowan Parkway.

[2] Rancho Road does not include PGE samples below Interval A (potential to bias skew UCL downward).

[3] McGowan Parkway does not include Tower Mart samples (potential to bias skew UCL downward).

5.2.2 CA-WET Soluble Lead

Lead solubility (CA-WET) testing was conducted on the nineteen samples that reported total lead concentrations that exceed 50 mg/kg. Based on the reported results, Blackburn performed a linear regression analysis to predict the 95% UCL for CA-WET solubility in the Project area. For the regression analysis, we considered the nineteen data points (from Interval A samples collected on Rancho Road and McGowan Parkway) and defined the intercept to occur at the origin. The calculated r-squared correlation coefficient is 0.9485 which indicates an acceptable correlation between the total and soluble lead data sets.

The CA-WET data regression equation is calculated to be $y = 0.0259(x)$

Where: y = Soluble Lead concentrations in mg/l

x = Total Lead concentrations in mg/kg

We used the 95% UCL values for Total Lead in the regression formula to calculate the predicted CA-WET solubility for the soil depth intervals shown in the following table.

Predicted Lead Solubility by Depth Interval					
Sample Location	**Soil Depth Interval (feet bgs)**	**CA-WET Soluble Lead Sample Range (mg/l)**	**CA WET-Soluble Lead Mean (mg/l)**	**95% UCL Total Lead (mg/kg)**	**Predicted 95% UCL CA-WET-Soluble Lead (mg/l)**
Project Limits (Excluding Rancho Road and McGowan Parkway)[1]	A (0 – 0.5 feet)	NA	NA	13.35	0.35
	B (2 – 2.5 feet)	NA	NA	3.67	0.10
	Combined (0 – 2.5 feet)	NA	NA	8.73	0.23
Rancho Road[2]	A (0 – 0.5 feet)	1.7 – 7.6	3.84	176.2*	4.56
	B (2 – 2.5 feet)	NA	NA	13.0	0.34
	C (3 – 3.5 feet)	NA	NA	3.22	0.08
	Combined (0 – 3.5 feet)	NA	NA	88.3*	2.29
McGowan Parkway[3]	A (0 – 0.5 feet)	1.1 – 3.3	1.97	93.0*	2.41
	B (2 – 2.5 feet)	NA	NA	7.48	0.19
	C (3 – 3.5 feet)	NA	NA	4.47	0.12
	Combined (0 – 3.5 feet)	NA	NA	59.4	1.54
(Combined) Rancho Road and McGowan Parkway	A (0 – 0.5 feet)	1.1 – 7.6	3.54	149.6*	3.87
	B (2 – 2.5 feet)	NA	NA	11.3	0.29
	C (3 – 3.5 feet)	NA	NA	3.43	0.09
	Combined (0 – 3.5 feet)	NA	NA	75.5	1.96

*value exceeds DTSC Residential Soil Screening Level for Total Lead (80mg/kg).

[1] "Project Limits" includes samples from Shimer Road, Olive Avenue, Olivehurst Avenue, Mary Avenue, Forty Mile Road, Slaughterhouse Road, and Interval A from Tower Mart sample locations on McGowan Parkway.

[2] Rancho Road does not include PGE samples below Interval A (potential to bias skew UCL downward).

[3] McGowan Parkway does not include Tower Mart samples (potential to bias skew UCL downward).

5.2.3 DI-WET Soluble Lead

Blackburn selected all 5 samples (taken along Rancho Road) that exceeded 5 mg/l for CA-WET testing to be analyzed for DI-WET Soluble Lead. Four samples were reported as non-detect and one sample was reported to have a DI-WET Soluble Lead concentration of 1.0 mg/kg. Due to limited data, Blackburn was unable to statistically analyze DI-WET results.

5.3 Tower Mart #60, 1976 McGowan Parkway Assessment

Blackburn summarized the analytical results in Tables 1, 2, and 5. The Tower Mart #60 analytical test results indicate the following:

- 9 of the 10 samples tested for hydrocarbons exhibited non-detect concentrations for TPH-g, -d and -mo. Only one sample from Interval A, TM 2A, exhibited a concentration of 91 mg/kg for TPH-mo.
- 7 of the 10 samples tested for total lead were reported with concentrations ranging from 3.1 to 6.2 mg/kg, and 3 of the samples were non-detect for total lead.
- BTEX was not detected above laboratory reporting limits for all 10 samples tested.

5.4 PG&E North Valley Materials Facility Assessment

Blackburn summarized the analytical results in Tables 1, 2, and 5. The PG&E Facility analytical test results indicate the following:

- TPH-g, -d and -mo were not detected above laboratory reporting limits in 6 of the 8 samples.
- Samples "PGE 1A/Rancho 9A" and "PGE 2A" exhibited concentrations of 21 and 74 mg/kg, respectively, for TPH-mo.
- "PGE 2A" exhibited a concentration of 11 mg/kg for TPH-d.
- 3 of the 8 samples tested for total lead were reported non-detect. Sample concentrations in the other 5 samples ranged from 3.16 to 100 mg/kg in "PGE 2A".
- All 8 samples reported non-detect for BTEX.

5.5 Historical Orchard Assessment

Blackburn summarized the analytical results in Table 3. The Historical Orchard analytical test results indicate the following:

- "Rancho 18A/Orchard 1A" exhibited a concentration of 0.089 mg/k 4,4'-DDE and 0.110 mg/kg 4,4'-DDT.
- "Rancho 19A/Orchard 2A" exhibited a concentration of 0.092 mg/k 4,4'-DDE, 0.140 mg/kg 4,4'-DDT, and 0.008 mg/kg 4,4'-DDD.
- "Rancho 18B/Orchard 1B" and "Rancho 19B/Orchard 2B" reported non-detect concentrations of OCPs.

5.6 Southern Pacific Railroad Assessment

Blackburn summarized the analytical results in Tables 1, 2, 3, and 4A-C. The Southern Pacific Railroad analytical test results indicate the following:

- All samples tested for hydrocarbons exhibited non-detect concentrations for TPH-g; 6 of the 10 samples exhibited non-detect for TPH-d, and 2 of the 10 samples exhibited non-detect for TPH-mo.
- Sample concentrations of TPH-mo ranged from 14 mg/kg (Rancho 16B/RR5B) to 1300 mg/kg (Rancho 6A/RR1A).
- Sample concentrations of TPH-d ranged from 14 mg/kg (Rancho 16B/RR5B) to 360 mg/kg (Rancho 6A/RR1A).

- All 10 samples exhibited concentrations of Barium, Chromium, Cobalt, Copper, Nickel, Vanadium, and Zinc. Rancho 6A/RR 1A also exhibited Mercury at a concentration of 0.11 mg/kg.
- None of the samples reported concentrations above laboratory detection limits for OCPs or SVOCs.

5.7 Traffic Control Striping Assessment

Appendix B contains Entek's report which describes the laboratory analytical results. Based on information contained in this report, neither lead nor chromium were detected above the laboratory detection limit.

6 PHASE II ESA CONCLUSIONS AND SOIL MANAGEMENT RECOMMENDATIONS

6.1 Screening Levels

Blackburn prepared this Phase II ESA to evaluate and screen the potential presence of contaminants of concern using data collected during our field activities. Blackburn considered the following published screening levels as site action levels for the Project to assist in providing recommendations during construction:

- United States Environmental Protection Agency Regional Screening Levels May 2020, EPA Screening Level.
- Department of Toxic Substances Control HHRA Note 2, June 2020, DTSC-recommended screening level.
- San Francisco Bay Regional Water Quality Control Board Screening Levels (RWQCB ESLs) for TPH only.
- Department of Toxic Substances, Caltrans Soil Management Agreement for Aerially Deposited Lead-Contaminated Soils (*Agreement*), June 30, 2016

Tables 1 through 6 include the available screening levels for each constituent.

6.2 Constituents of Concern

ADL

To evaluate appropriate soil management for the lead impacted soil, Blackburn considered the recommendations contained in the *Agreement* as a general guideline. Clean soil is defined in the *Agreement* as soil not containing total lead over 80 mg/kg based on a 95% UCL or soluble lead over 5 mg/l based on a 95% UCL as determined by the CA-WET and not containing other constituents at levels that would pose an unacceptable risk to human health or the environment or be unacceptable to the RWQCB with jurisdiction.

Tested total lead concentrations determined by EPA Method 6010 and based on a 95% UCL for soil depth interval A at Rancho Road (176.2 mg/kg) and McGowan Parkway (93.0 mg/kg), at the Combined Interval A-C at Rancho Road (88.3 mg/kg), and the combined Interval A for Rancho Road and McGowan Parkway (149.6 mg/kg) are above the 80 mg/kg threshold for ADL Contaminated Soil. One discrete sample along

McGowan Parkway and 13 discrete samples along Rancho Road exceed the DTSC Residential Soil Screening Level of 80 mg/kg.

Tested soluble lead concentrations determined by the CA-WET method and based on statistical modeling for all soil depth intervals are below the 5 mg/l threshold for ADL Contaminated Soil. Five discrete samples taken along Rancho Road exceeded 5 mg/l tested by the CA-WET method and only one of these samples further tested by DI WET extraction had a reported concentration of 1.0 mg/l, the other samples were not detected above laboratory reporting limits.

Based on the conclusions above, the contractor shall conduct all grading operations in accordance with the *Agreement* and with the awareness that lead impacted soils are present on McGowan Parkway and Rancho Road. Construction Project documents should include a site-specific Health and Safety Plan and special Soil Management Plan (SMP) to address elevated levels of lead along McGowan Parkway and Rancho Road. The SMP shall be in accordance with all applicable Cal/OSHA requirements and at a minimum, the SMP should include measures to control worker exposure to soil, airborne dust, and control runoff along both McGowan Parkway and Rancho Road.

Metals (Other than Total Lead)
None of the detected metals, which include Barium, Beryllium, Chromium, Cobalt, Copper, Nickel, Vanadium, Zinc and Mercury, exceeded screening levels. Special construction considerations are not required for these metals.

Total Petroleum Hydrocarbons
Neither EPA nor DTSC provide screening levels for TPH-g, -d, or -mo. However, these constituents were detected from the ground surface to 2.5 feet bgs. Blackburn therefore considered the RWQCB ESLs. Only one sample, Rancho 6A/RR 1A, exhibited a TPH-Diesel concentration of 360 mg/kg which exceeds the RWQCB ESL for Residential: Shallow Soil Exposure, Non-cancer Hazard of 260 mg/kg. The detected concentration, however, is well below the Commercial/Industrial RWQCB ESL screening level of 1,200 mg/kg and the Construction Worker Exposure RWQCB ESL screening level of 1,100 mg/kg, therefore, special construction considerations are not required for these COCs.

Organochlorine Pesticides
OCPs including 4,4'-DDE, 4,4'-DDT and 4,4'-DDD, were detected at two sample locations in the former Orchard area. The tested concentrations were below their respective screening levels. If future construction is anticipated along Morrison Road, Blackburn recommends additional Phase II sampling and analysis of OCPs near the former orchard areas at the eastern 1/3 -mile of Morrison Road.

Semi-Volatile Organic Compounds
SVOCs were not detected above laboratory reporting limits; therefore, special construction considerations are not required for these COCs.

Volatile Organic Compounds
VOCs were not detected above laboratory reporting limits; therefore, special construction considerations are not required for these COCs.

pH
pH values ranged from 6.2 to 7.3 which is close to neutral. Special construction considerations are not required.

Traffic Striping Lead and Chromium
Lead and Chromium were not detected above their respective laboratory reporting limits. Entek recommends that construction operations utilize general dust controls during paint striping removal on McGowan Parkway Road. In addition, Entek recommends consideration of dust or debris leading to or near storm drains, waterways, and other sources of water during future construction activities removal of pain striping.

7 LIMITATIONS

Blackburn prepared this Phase II for the specific use of Jacobs Engineering and applies only to the Project area described herein. We are not responsible for interpretations by others of data presented in this Phase II. This Phase II does not represent a legal opinion. No warranty is expressed or implied. We base our conclusions in this Phase II on judgement and experience. We performed this work in accordance with generally accepted standards of practice existing in Northern California at the time of the assessment.

Entek's report is presented in Appendix B, the report must be read in its entirety, and the reader must review all the detailed information provided in the body of the report prior to making any interpretations, or conclusions pertaining to the information.

The accompanying Phase II summarizes the laboratory analyses and findings and opinions of Blackburn, with regard to the potential for hazardous materials to be present on the properties at concentrations likely to warrant mitigation under current statutes and guidelines.

Blackburn based the findings presented in this report on limited soil samples obtained and laboratory analyses from within the Project area. Testing of groundwater was not within the scope of this investigation. We assume the soil conditions encountered in our explorations are representative of the subsurface conditions throughout the site. Conditions at locations other than our explorations could be different. We cannot warrant or guarantee that hazardous materials do not exist at the described site. To further reduce your risk, an extensive and invasive exploration may be necessary. Contact Blackburn for further evaluation if conditions encountered during Project construction are inconsistent with our Report.

Appendix A presents our boring logs. The lines designating the interface between soil types are approximate and are based on manual/visual classification. The transition between material types may be abrupt or gradual.
Due to site access restrictions, Morrison Road and the surrounding orchard was not included in this evaluation and must be evaluated by Blackburn if chosen as part of the Project's alignment.

Conditions at the site can and will change over time. Please contact Blackburn to revise this Phase II to reflect new information or if site conditions change.

PHASE II ENVIRONMENTAL SITE ASSESSMENT

OPUD Yuba County Sewer and Water Infrastructure Project

Olivehurst, CA

TABLES

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BLACKBURN CONSULTING

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Table 1 Extractable Petroleum Hydrocarbons (TPHs)

TABULATED SOIL SAMPLE ANALYTICAL RESULTS (mg/kg)

Sample Date	Sample ID:	TPH (Extractable Petroleum Hydrocarbons) (mg/kg) EPA Method 8015B		
		Gasoline (C6-C12)	Diesel Fuel (C13-C28)	Motor Oil (C29-C40)
June 15-17 2021	PGE 1A/Rancho 9A	ND	ND	21
	PGE 1B/Rancho 9B	ND	ND	ND
	PGE 1C/Rancho 9C	ND	ND	ND
	PGE 1D/Rancho 9D	ND	ND	ND
	PGE 2A	ND	11	74
	PGE 2B	ND	ND	ND
	PGE 2C	ND	ND	ND
	PGE 2D	ND	ND	ND
	TM 1A/MP 1A	ND	ND	ND
	TM 1B/MP 1B	ND	ND	ND
	TM 1C/MP 1C	ND	ND	ND
	TM 1D/MP 1D	ND	ND	ND
	TM 1E/MP 1E	ND	ND	ND
	TM 2A	ND	ND	91
	TM 2B	ND	ND	ND
	TM 2C	ND	ND	ND
	TM 2D	ND	ND	ND
	TM 2E	ND	ND	ND
	Rancho 6A/RR 1A	ND	360	1300
	Rancho 6B/RR 1B	ND	ND	ND
	Rancho 11A/RR 2A	ND	ND	46
	Rancho 11B/RR 2B	ND	21	21
	Rancho 12A/RR 3A	ND	ND	130
	Rancho 12B/RR 3B	ND	14	26
	Rancho 14A/RR 4A	ND	ND	440
	Rancho 14A/RR 4B	ND	ND	ND
	Rancho 16A/RR 5A	ND	ND	380
	Rancho 16B/RR 5B	ND	14	14
Reporting Limit**		10	100	100
EPA RSLs	Residential	---	---	---
DTSC SLs	Residential	---	---	---

Notes

- blank fields = not analyzed
- mg/kg = milligrams per kilogram
- EPA RSLs: US Environmental Protection Agency, Regional Screening Levels, May 2020
- DTSC SLs: Department of Toxic Substances Control, HHRA Note 3, June 2020, DTSC-recommended Screening Level
- ND: not detected at or above method reporting limit

** Reporting Limit may vary depending upon analytical results, see full analytical results report

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Table 2 Metals

TABULATED SOIL SAMPLE ANALYTICAL RESULTS

Sample Date	Sample ID:	CAM-17 Metals (mg/kg)																	
		EPA Method 6010B																	EPA Method 7471A
		Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead		Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Mercury
										6010B	STLC/DI WET (mg/l)								
	Rancho 1A									13.8									
	Rancho 1B									4.59									
	Rancho 1C									3.5									
	Rancho 2A									6.61									
	Rancho 2B									ND									
	Rancho 2C									3.0									
	Rancho 3A									**127**	5.5/ND								
	Rancho 3B									21.3									
	Rancho 3C									3.9									
	Rancho 4A									**117**	3.1								
	Rancho 4B									ND									
	Rancho 4C									3.2									
	Rancho 5A									**69.5**	2.1								
	Rancho 5B									ND									
	Rancho 5C									ND									
	Rancho 6A/RR 1A	ND	ND	70	ND	ND	72	5.2	29	**310**	7.5/ND	ND	12	ND	ND	ND	29	120	0.11
	Rancho 6B/RR 1B	ND	ND	81	ND	ND	31	8.6	29	4.5		ND	15	ND	ND	ND	82	35	ND
	Rancho 6C/RR 1C									ND									
	Rancho 7A									**309**	7.6/ND								
	Rancho 7B									5.82									
	Rancho 7C									3.1									
	Rancho 8A									46.0									
	Rancho 8B									ND									
	Rancho 8C									ND									
	PGE 1A/Rancho 9A									3.16									
	PGE 1B/Rancho 9B									ND									
	PGE 1C/Rancho 9C									ND									
	PGE 1D/Rancho 9D									4.05									
	Rancho 10A									**98.4**	2.1								
	Rancho 10B									3.26									
	Rancho 10C									ND									
	Rancho 11A/RR 2A	ND	ND	67	ND	ND	23	13	22	**75**	1.7	ND	12	ND	ND	ND	46	48	ND
	Rancho 11B/RR 2B	ND	ND	79	ND	ND	34	17	22	4.7		ND	15	ND	ND	ND	76	21	ND
	Rancho 11C/RR 2C									ND									
	Rancho 12A/RR 3A	ND	ND	66	ND	ND	19	11	24	**110**	3.9	ND	11	ND	ND	ND	38	66	ND
	Rancho 12B/RR 3B	ND	ND	62	ND	ND	18	17	14	4.6		ND	7.9	ND	ND	ND	50	16	ND
	Rancho 12C/RR 3C									3.4									

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Table 2 Metals

TABULATED SOIL SAMPLE ANALYTICAL RESULTS

Sample Date	Sample ID:	CAM-17 Metals (mg/kg)																	
		EPA Method 6010B																	EPA Method 7471A
		Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead		Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Mercury
										6010B	STLC/DI WET (mg/l)								
June 15 - 17 2021	Rancho 13A									**132**	4.3								
	Rancho 13B									ND									
	Rancho 13C									ND									
	Rancho 14A/RR 4A	ND	ND	60	ND	ND	39	8.5	26	**170**	2.7	ND	12	ND	ND	ND	40	58	ND
	Rancho 14B/RR 4B	ND	ND	91	ND	ND	16	13	16	ND		ND	13	ND	ND	ND	43	14	ND
	Rancho 14C/RR 4C									ND									
	Rancho 15A									**125**	3.0								
	Rancho 15B									3.58									
	Rancho 15C									ND									
	Rancho 16A/RR 5A	ND	ND	65	ND	ND	19	7.9	89	**71**	2.7	ND	11	ND	ND	ND	37	56	ND
	Rancho 16B/RR 5B	ND	ND	82	ND	ND	14	12	16	ND		ND	11	ND	ND	ND	42	14	ND
	Rancho 16C/RR 5C									ND									
	Rancho 17A									**84.5**	2.1								
	Rancho 17B									ND									
	Rancho 17C									ND									
	Rancho 18A/Orchard 1A									**137**	5.4/ND								
	Rancho 18B/Orchard 1B									27.3									
	Rancho 18C/Orchard 1C									ND									
	Rancho 19A/Orchard 2A									**242**	5.6/1.0								
	Rancho 19B/Orchard 2B									4.02									
	Rancho 19C/Orchard 2C									ND									
	PGE 2A									**100**	2.1								
	PGE 2B									ND									
	PGE 2C									3.27									
	PGE 2D									3.94									
	Shimer 1A									44.9									
	Shimer 1B									ND									
	Shimer 2A									39.2									
	Shimer 2B									ND									
	SH 1A									4.1									
	SH 1B									4.3									

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Table 2 Metals

TABULATED SOIL SAMPLE ANALYTICAL RESULTS

Sample Date	Sample ID:	CAM-17 Metals (mg/kg)																	
		EPA Method 6010B																	EPA Method 7471A
		Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead		Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Mercury
										6010B	STLC/DI WET (mg/l)								
	SH 2A									20									
	SH 2B									3.7									
	Olive 1A									14									
	Olive 1B									4.4									
	Mary 1A									ND									
	Mary 1B									ND									
	Mary 2A									25									
	Mary 2B									ND									
	Mary 3A									19									
	Mary 3B									4.1									
	Mary 4A									17									
	Mary 4B									3.9									
	Olivehurst 1A									18									
	Olivehurst 1B									4.1									
	Olivehurst 2A									18									
	Olivehurst 2B									5.8									
	TM 1A/MP 1A									ND									
	TM 1B/MP 1B									6.2									
	TM 1C/MP 1C									3.8									
	TM 1D/MP 1D									3.5									
	TM 1E/MP 1E									3.4									
	TM 2A									ND									
	TM 2B									ND									
	TM 2C									3.9									
	TM 2D									3.1									
	TM 2E									3.8									
	MP 2A									**110**	3.3								
	MP 2B									4.5									
	MP 2C									4.2									
	MP 3A									48									
	MP 3B									4.7									
	MP 3C									4.8									
	MP 4A									11									
	MP 4B									ND									
	MP 4C									3.3									
	MP 5A									**53**	1.1								
	MP 5B									9.3									

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Table 2 Metals

TABULATED SOIL SAMPLE ANALYTICAL RESULTS

Sample Date	Sample ID:	CAM-17 Metals (mg/kg)																	
		EPA Method 6010B																	EPA Method 7471A
		Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead		Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Mercury
										6010B	STLC/DI WET (mg/l)								
	MP 5C									ND									
	MP 6A									**71**	1.5								
	MP 6B									4.5									
	MP 6C									3.6									
	FM 1A									7.1									
	FM 1B									3.5									
	FM 2A									5.0									
	FM 2B									ND									
	FM 3A									ND									
	FM 3B									ND									
	FM 4A									6.0									
	FM 4B									ND									
	FM 5A									8.2									
	FM 5B									ND									
	FM 6A									3.7									
	FM 6B									ND									
	FM 7A									ND									
	FM 7B									ND									
	FM 8A									8.9									
	FM 8B									4.0									
	FM 9A									5.0									
	FM 9B									3.2									
	FM 10A									29									
	FM 10B									6.1									
Reporting Limit**		6.0	10.0	1.0	2.0	4.0	2.0	2.0	1.00	3.0	0.25/0.50	10.0	2.0	10.0	4.0	10.0	5.0	1.0	0.1
EPA RSLs	Residential	31	0.68	15,000	16	71	---	23	3,100	400	---	390	15,000	390	390	0.78	390	23,000	11.0
DTSC SLs	Residential	---	0.11	---	1,600	910	---	---	---	80	---	---	820	---	---	---	---	---	1.0

Notes
- blank fields = not analyzed
- mg/kg = milligrams per kilogram
- EPA RSLs: US Environmental Protection Agency, Regional Screening Levels, May 2020
- DTSC SLs: Department of Toxic Substances Control, HHRA Note 3, June 2020, DTSC-recommended Screening Level
- ND: not detected at or above method reporting limit
- STLC: Soluble Threshold Limit Concentration

** Reporting Limit may vary depending upon analytical results, see full analytical results report

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Table 3 Organochlorine Pesticides (OCPs)

TABULATED SOIL SAMPLE ANALYTICAL RESULTS

Sample Date	Sample ID:	Organochlorine Pesticides (OCPs) by EPA Method 8081A (mg/kg)																				
		4,4'-DDE	4,4'-DDT	4,4'-DDD	alpha-BHC	alpha-Chlordane	Aldrin	beta-BHC	Chlordane (Technical)	delta-BHC	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulfate	Endrin	Endrin aldehyde	Endrin Ketone	gamma-BHC (Lindane)	gamma-Chlordane	Heptachlor	Heptachlor epoxide	Methoxychlor	Toxaphene
6/15/2021 - 617/2021	Rancho 6A/RR 1A	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Rancho 6B/RR 1B	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Rancho 11A/RR 2A	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Rancho 11B/RR 2B	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Rancho 12A/RR 3A	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Rancho 12B/RR 3B	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Rancho 14A/RR 4A	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Rancho 14B/RR 4B	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Rancho 16A/RR 5A	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Rancho 16B/RR 5B	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Rancho 18A/Orchard 1A	0.089	0.110	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Rancho 18B/Orchard 1B	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Rancho 19A/Orchard 2A	0.092	0.140	0.008	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Rancho 19B/Orchard 2B	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Reporting Limit**		0.050	0.050	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.020
EPA RSLs	Residential	2.0	1.9	1.9	0.086	---	0.039	0.3	1.7	---	0.034	470	470	380	19	---	---	0.57	---	0.13	0.07	320	0.49
DTSC SLs	Residential	2.0	1.9	2.3	---	---	0.039	---	1.7	---	0.034	450	450	380	19	---	---	---	---	0.13	0.07	320	0.45

Notes

- blank fields = not analyzed
- mg/kg = milligrams per kilogram
- EPA RSLs: US Environmental Protection Agency, Regional Screening Levels, May 2020
- DTSC SLs: Department of Toxic Substances Control, HHRA Note 3, June 2020, DTSC-recommended Screening Level
- ND: not detected at or above method reporting limit

** Reporting Limit may vary depending upon analytical results, see full analytical results report

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Table 4A Semi-Volatile Organic Compounds (SVOCs)

TABULATED SOIL SAMPLE ANALYTICAL RESULTS

Sample Date	Sample ID:	Semi-Volatile Organic Compounds (SVOCs) (mg/kg)																								
		EPA Method 8270C																								
		1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	Aniline	1,3-Dichlorobenzene	1,4-Dichlorobenzene	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,4-Dinitrophenol	2,4-Dinitrotoluene	2,6-Dinitrotoluene	2-Chloronaphthalene	2-Chlorophenol	2-Methylnaphthalene	2-Methylphenol	2-Nitroaniline	2-Nitrophenol	1-Methylnaphthalene	3-Nitroaniline	4-Methylphenol	4,6-Dinitro-2-methylphenol	4-Bromophenyl phenyl ether	4-Chloro-3-methylphenol	4-Chloroaniline	4-Chlorophenyl phenyl ether
6/15/2021	Rancho 6A/RR 1A	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND		ND	ND	ND	ND	ND			ND	ND	ND	ND	ND	ND
	Rancho 6B/RR 1B	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND		ND	ND	ND	ND	ND			ND	ND	ND	ND	ND	ND
	Rancho 11A/RR 2A	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND		ND	ND	ND	ND	ND			ND	ND	ND	ND	ND	ND
	Rancho 11B/RR 2B	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND		ND	ND	ND	ND	ND			ND	ND	ND	ND	ND	ND
	Rancho 12A/RR 3A	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND		ND	ND	ND	ND	ND			ND	ND	ND	ND	ND	ND
	Rancho 12B/RR 3B	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND		ND	ND	ND	ND	ND			ND	ND	ND	ND	ND	ND
	Rancho 14A/RR 4A	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND		ND	ND	ND	ND	ND			ND	ND	ND	ND	ND	ND
	Rancho 14B/RR 4B	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND		ND	ND	ND	ND	ND			ND	ND	ND	ND	ND	ND
	Rancho 16A/RR 5A	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND		ND	ND	ND	ND	ND			ND	ND	ND	ND	ND	ND
	Rancho 16B/RR 5B	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND		ND	ND	ND	ND	ND			ND	ND	ND	ND	ND	ND
Reporting Limit**		0.3	0.3	0.3	0.3	0.3	1.0	1.0	1.0	1.0	1.0	0.3	1.0	0.3	1.0	0.3	1.0	0.3	1.0	0.3	0.3	1.0	1.0	0.3	1.0	0.3	0.3
EPA RSLs	Residential	24	1,800	95	---	2.6	6,300	49	190	1,300	130	1.7	0.36	---	390	240	3,200	630	---	18	---	6,300	5.1	---	6,300	2.7	---
DTSC SLs	Residential	7.8	---	95	---	---	6,300	8	190	1,300	130	1.7	0.36	4,100	340	190	3,200	630	---	10	---	6,300	5.1	---	6,300	2.7	---

Notes

- blank fields = not analyzed
- mg/kg = milligrams per kilogram
- EPA RSLs: US Environmental Protection Agency, Regional Screening Levels, May 2020
- DTSC SLs: Department of Toxic Substances Control, HHRA Note 3, June 2020, DTSC-recommended Screening Level
- ND: not detected at or above method reporting limit

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Table 4B Semi-Volatile Organic Compounds (SVOCs)

TABULATED SOIL SAMPLE ANALYTICAL RESULTS

Sample Date	Sample ID:	Semi-Volatile Organic Compounds (SVOCs) (mg/kg)																								
		EPA Method 8270C																								
		4-Nitroaniline	4-Nitrophenol	2,3,5,6-Tetrachlorophenol	2,3,4,6-Tetrachlorophenol	Benzyl alcohol	Bis(2-chloroethoxy)methane	Bis(2-chloroethyl) ether	Bis(2-chloroisopropyl) ether	Bis(2-ethylhexyl) phthalate	Butyl benzyl phthalate	Carbazole	Di-n-butyl phthalate	Di-n-octyl phthalate	Dibenzofuran	Diethyl phthalate	Dimethyl phthalate	Hexachlorobenzene	Hexachlorobutadiene	Hexachlorocyclopentadiene	Hexachloroethane	Isophorone	N-Nitrosodiphenylamine	N-Nitrosodimethylamine	Nitrobenzene	Pentachlorophenol	Phenol
6/15/2021	Rancho 6A/RR 1A	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Rancho 6B/RR 1B	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Rancho 11A/RR 2A	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Rancho 11B/RR 2B	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Rancho 12A/RR 3A	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Rancho 12B/RR 3B	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Rancho 14A/RR 4A	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Rancho 14B/RR 4B	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Rancho 16A/RR 5A	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Rancho 16B/RR 5B	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Reporting Limit**		0.3	1.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	1.5	0.3	1.0	0.3	0.3	0.3	0.3	1.0	1.0	1.0
EPA RSLs	**Residential**	27	---	---	1,900	6,300	190	0.23	---	39	290	---	6,300	630	78	51,000	---	0.21	1.2	1.8	1.8	570	110	0.002	5.1	1.0	19,000
DTSC SLs	**Residential**	27	---	---	1,900	6,300	190	0.10	2,000	39	290	---	6,300	630	66	51,000	---	0.19	1.2	---	---	570	110	---	---	1.0	19,000

Notes

- blank fields = not analyzed
- mg/kg = milligrams per kilogram
- EPA RSLs: US Environmental Protection Agency, Regional Screening Levels, May 2020
- DTSC SLs: Department of Toxic Substances Control, HHRA Note 3, June 2020, DTSC-recommended Screening Level
- ND: not detected at or above method reporting limit

** Reporting Limit may vary depending upon analytical results, see full analytical results report

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Table 4C Semi-Volatile Organic Compounds (SVOCs)
TABULATED SOIL SAMPLE ANALYTICAL RESULTS

Sample Date	Sample ID:	Semi-Volatile Organic Compounds (SVOCs) (mg/kg)																	
		EPA Method 8270C																	
		Pyridine	Azobenzene	Acenaphthene	Acenaphthylene	Anthracene	Benzo[a]anthracene	Benzo[a]pyrene	Benzo[b]fluoranthene	Benzo (g,h,i) perylene	Benzo[k]fluoranthene	Chrysene	Dibenz[a,h]anthracene	Fluoranthene	Fluorene	Indeno[1,2,3-cd]pyrene	Naphthalene	Phenanthrene	Pyrene
6/15/2021	Rancho 6A/RR 1A			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND
	Rancho 6B/RR 1B			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND
	Rancho 11A/RR 2A			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND
	Rancho 11B/RR 2B			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND
	Rancho 12A/RR 3A			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND
	Rancho 12B/RR 3B			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND
	Rancho 14A/RR 4A			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND
	Rancho 14B/RR 4B			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND
	Rancho 16A/RR 5A			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND
	Rancho 16B/RR 5B			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND
Reporting Limit**		0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	1.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
EPA RSLs	Residential	78	5.6	3,600	---	18,000	1.1	0.11	1.1	---	11	110	0.11	2,400	2,400	1.1	---	---	1,800
DTSC SLs	Residential	58	---	3,300	---	17,000	1.1	0.11	1.1	---	11	110	0.028	2,400	2,300	1.1	2.0	---	1,800

Notes

- blank fields = not analyzed
- mg/kg = milligrams per kilogram
- EPA RSLs: US Environmental Protection Agency, Regional Screening Levels, May 2020
- DTSC SLs: Department of Toxic Substances Control, HHRA Note 3, June 2020, DTSC-recommended Screening Level
- ND: not detected at or above method reporting limit

** Reporting Limit may vary depending upon analytical results, see full analytical results report

West Sacramento Office:
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(916) 375-8706

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Table 5 BTEX (EPA 8260B)

TABULATED SOIL SAMPLE ANALYTICAL RESULTS

Sample Date	Sample ID:	Volatile Organic Compounds (VOCs) (mg/kg)				
		EPA Method 8260B				
		Benzene	Toluene	Ethylben-zene	m,p-Xylene	0-Xylene
June 15-17,2021	PGE 1A/Rancho 9A	ND	ND	ND	ND	ND
	PGE 1B/Rancho 9B	ND	ND	ND	ND	ND
	PGE 1C/Rancho 9C	ND	ND	ND	ND	ND
	PGE 1D/Rancho 9D	ND	ND	ND	ND	ND
	PGE 2A	ND	ND	ND	ND	ND
	PGE 2B	ND	ND	ND	ND	ND
	PGE 2C	ND	ND	ND	ND	ND
	PGE 2D	ND	ND	ND	ND	ND
	TM 1A/MP 1A	ND	ND	ND	ND	ND
	TM 1B/MP 1B	ND	ND	ND	ND	ND
	TM 1C/MP 1C	ND	ND	ND	ND	ND
	TM 1D/MP 1D	ND	ND	ND	ND	ND
	TM 1E/MP 1E	ND	ND	ND	ND	ND
	TM 2A	ND	ND	ND	ND	ND
	TM 2A	ND	ND	ND	ND	ND
	TM 2C	ND	ND	ND	ND	ND
	TM 2D	ND	ND	ND	ND	ND
	TM 2E	ND	ND	ND	ND	ND
Reporting Limit**		0.0025	0.0025	0.0025	0.005	0.0025
EPA RSLs	Residential	1.2	4,900	5.8	550	650
DTSC SLs	Residential	0.33	1,100	---	---	---

Notes

- blank fields = not analyzed
- mg/kg = milligrams per kilogram
- EPA RSLs: US Environmental Protection Agency, Regional Screening Levels, May 2020
- DTSC SLs: Department of Toxic Substances Control, HHRA Note 3, June 2020, DTSC-recommended Screening Level
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Table 6 pH		
TABULATED SOIL SAMPLE ANALYTICAL RESULTS (pH Units)		
Sample Date	**Sample ID:**	**pH**
		EPA Method 9045B
June 15-17, 2021	**Rancho 3A**	6.4
	FM 2B	7.3
	MP 6B	6.4
	Mary 2A	6.2
Reporting Limit**		0.1
EPA RSLs	**Residential**	---
DTSC SLs	**Residential**	---

Notes

- blank fields = not analyzed
- EPA RSLs: US Environmental Protection Agency, Regional Screening Levels, May 2020
'- DTSC SLs: Department of Toxic Substances Control, HHRA Note 3, June 2020, DTSC-recommended Screening Level
- ND: not detected at or above method reporting limit
** Reporting Limit may vary depending upon analytical results, see full analytical results report

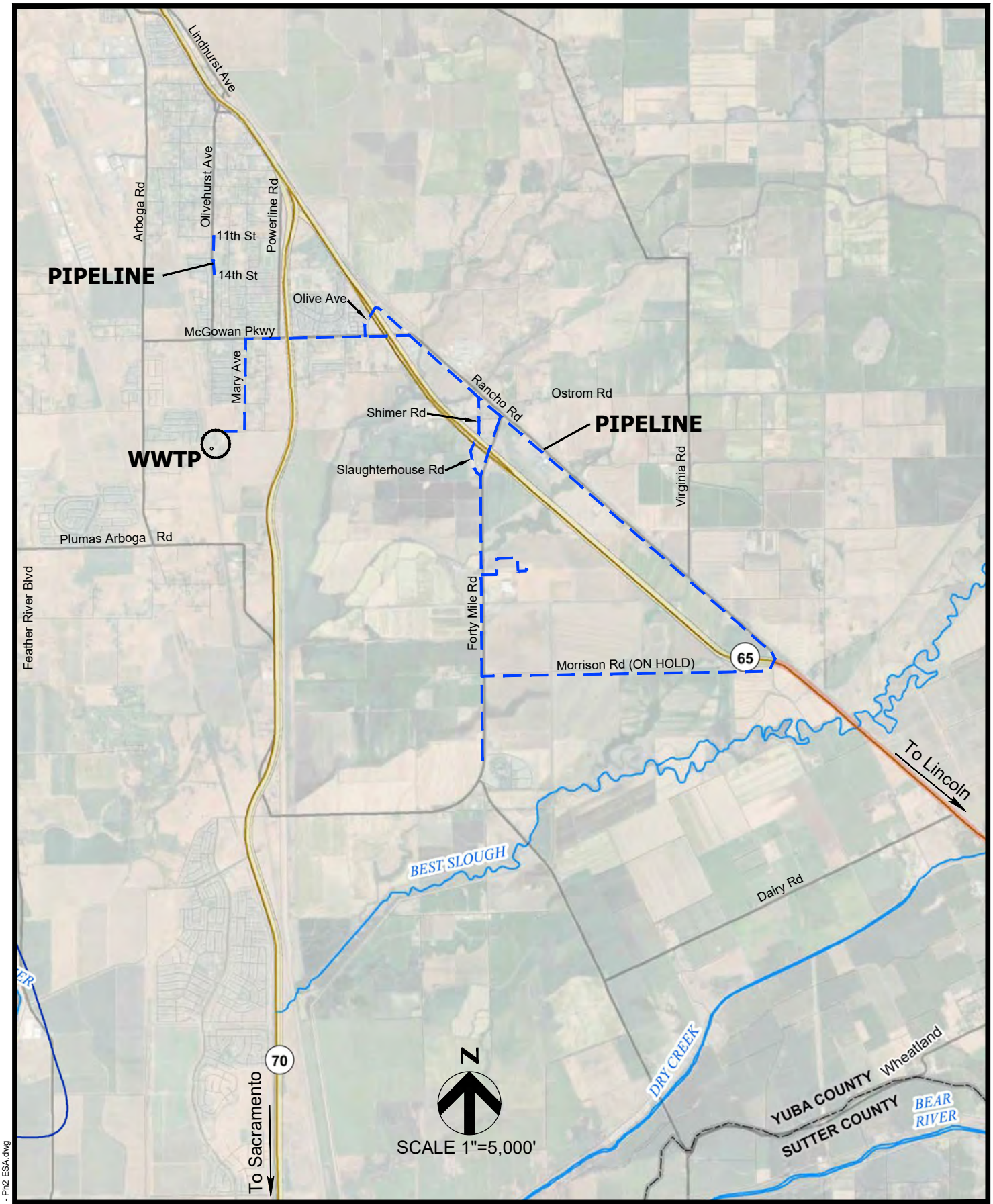
PHASE II ENVIRONMENTAL SITE ASSESSMENT

OPUD Yuba County Sewer and Water Infrastructure Project

Olivehurst, CA

FIGURES

Figure 1: Vicinity Map
Figure 2: Overall Site Map
Figures 3a-3aa: Site Plan



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VICINITY MAP

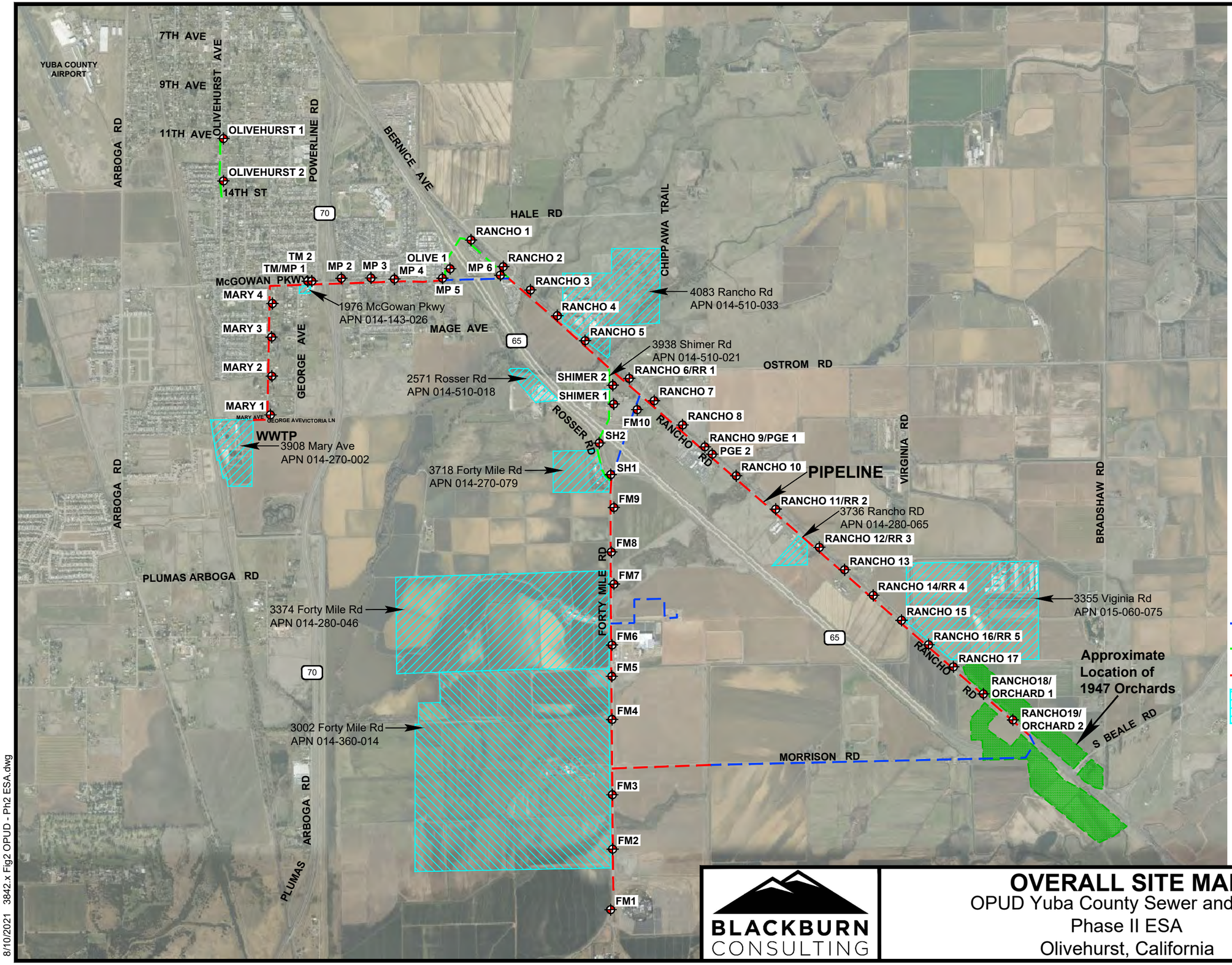
OPUD Yuba County Sewer and Water Infrastructure Project - Phase II ESA
Olivehurst, California

File No. 3842.x

August 2021

Figure 1

8/10/2021 3842.x Fig1 OPUD - Ph2 ESA.dwg



N

SCALE 1" = 2,500'

LEGEND

- Approximate Pipeline Water Only
- Approximate Pipeline Sewer Only
- Approximate Pipeline Sewer and Water
- Approximate Parcel Limits with REC's Adjacent to Project Limits
- Approximate Boring Location

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OVERALL SITE MAP

OPUD Yuba County Sewer and Water
Phase II ESA
Olivehurst, California

File No. 3842.x

August 2021

Figure 2

8/10/2021 3842.x Fig2 OPUD - Ph2 ESA.dwg

EXHIBIT "D"

MITIGATION AND MONITORING REPORTING PROGRAM

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South Yuba County Water and Wastewater Infrastructure Improvement Project

SCH # 2023030233

Mitigation and Monitoring and Reporting Program

April 2023

Prepared by: Olivehurst Public Utility District

With Assistance from: Environmental Planning Partners, Inc.

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MITIGATION MONITORING AND REPORTING PROGRAM FOR THE SOUTH YUBA COUNTY WATER AND WASTEWATER INFRASTRUCTURE IMPROVEMENT PROJECT

OLIVEHURST PUBLIC UTILITY DISTRICT
P.O. Box 670
1970 9th Street
Olivehurst, CA 95961

Prepared with the Technical Assistance of:

Environmental Planning Partners, Inc.
2934 Gold Pan Court, Suite 3
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SCH # 2023030233

APRIL 2023

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1 INTRODUCTION

1.1 PURPOSE OF THE MITIGATION MONITORING PROGRAM

Section 21081.6 of the California Public Resources Code requires that:

> A public agency shall adopt a reporting or monitoring program for the changes to the project which it has adopted or made a condition of project approval in order to mitigate or avoid significant effects on the environment. This mitigation monitoring program applies to mitigation measures adopted as part of EIRs or negative declarations.

The purpose of the Mitigation Monitoring and Reporting Program (MMRP) is to ensure that the mitigation measures included in the Initial Study/Mitigated Negative Declaration (IS/MND) for the South Yuba County Water and Wastewater Infrastructure Improvement project (State Clearinghouse # 2021020149) are implemented.

1.2 DESCRIPTION OF PROJECT

The Olivehurst Public Utility District (OPUD) is proposing to expand its wastewater collection system to provide capacity for wastewater from the City of Wheatland that will be received and treated at OPUD's Wastewater Treatment Plant (WWTP) to take advantage of unused treatment capacity at the WWTP consistent with State and local regionalization goals. Wheatland wastewater pipelines within the recently annexed South Yuba County Service Area would be oversized to accommodate planned urban development in this area. Separately, OPUD additionally proposes to extend the District's water service to the South County Service Area. The South Yuba County Water and Wastewater Infrastructure Improvement Project (South County Infrastructure Project) is intended to provide the water and sewer conveyance system improvements to meet these needs.

The proposed project would include improvements that will assist in the mitigation of sanitary sewer overflows (SSO) during significant rain events in its existing service area of historic (Old) Olivehurst. One of the new sewer pipelines for the project will be routed near areas that are subject to SSOs. Incrementally oversizing the new sewer pipelines to accommodate flow from the existing Old Olivehurst collection system was determined to be a cost-effective solution for SSO mitigation.

OPUD has identified this five-component project to meet these purposes. The five components would consist of:

- **Component 1.** Completion of SSO reduction measures to the existing wastewater collection system serving the existing community of Olivehurst;
- **Component 2.** Modification of the existing OPUD WWTP to accommodate increased wet weather flows and replace equipment within the WWTP that has reached the end of its operational life;
- **Component 3.** Expansion of OPUD's wastewater collection system to provide service to the recently annexed South County Service Area between Forty Mile Road and Rancho Road;
- **Component 4.** Construction and operation of a Water Plant and backbone treated water distribution pipelines within the General Plan growth area along Forty Mile Road and Rancho Road; and,
- **Component 5.** Construction and operation of a wastewater collection system to accept and treat City of Wheatland untreated wastewater at the existing OPUD WWTP.

In aggregate, these improvements are identified as the South County Infrastructure Project.

1.3 ORGANIZATION AND FORMAT

This program describes the requirements and procedures to be followed to ensure that all mitigation measures adopted as part of this project will be implemented as described in the IS/MND, and adopted by OPUD. This Mitigation Monitoring and Reporting Program contains the following chapters:

- **Chapter 2 - Inventory of Mitigation Measures.** This section contains a list of all mitigation measures included in the IS/MND as adopted by OPUD in numerical order.
- **Chapter 3 - Implementation Schedule and Monitoring Checklist.** This section contains a summary description of the required mitigation measures in checklist format. The timing of implementation of mitigation measures is indicated, in addition to implementation and monitoring responsibility.

1.4 IMPLEMENTATION OF THE MITIGATION MONITORING AND REPORTING PROGRAM

The OPUD General Manager shall assign staff or consultants to manage the South County Infrastructure Project MMRP under the District's responsibility.

Responsible staff shall have overall responsibility for ensuring implementation of measures under their jurisdiction and verification of such measures. Responsible staff may delegate duties to state or federal regulatory agencies, consultants, or other authorities as necessary and appropriate.

1.5 DOCUMENTATION

All mitigation measures will be included on the project construction plans as prepared by a qualified engineer and submitted to OPUD for review.

1.5.1 IMPLEMENTATION SCHEDULE AND MONITORING CHECKLIST

Chapter 3 contains a mitigation measure implementation schedule and monitoring checklist. Responsible OPUD staff may use the checklist as a summary of measures to be implemented and the entities responsible for mitigation implementation and monitoring, and check off mitigation implementation as it is completed.

1.5.2 MONITORING REPORTS

Responsible staff should prepare annual environmental monitoring reports summarizing the results of the program. The report may be based on the verification record sheets and information received from any person or agency regarding compliance. The monitoring report should include at least the following items:

1. Summary of implementation monitoring;
2. Analysis of deficiencies and actions taken to correct them, and;
3. Recommendations for future mitigation measures and other corrective actions needed.

2 INVENTORY OF MITIGATION MEASURES

This section contains all of the required mitigation measures identified in the IS/MND for the South County Infrastructure Project. The mitigation measures are listed in numerical order. The corresponding section in the IS/MND is indicated in parentheses following the issue area.

2.1 AIR QUALITY AND ODORS (IS/MND SECTION III)

Mitigation Measure AQ-1

A. Prior to construction, OPUD or its contractor shall obtain and implement a FRAQMD Dust Control Plan or Construction Notification form in compliance with Rule 3.16 Fugitive Dust.
B. OPUD or its contractor shall obtain and implement an Authority to Construct (ATC) and Permit to Operate (PTO) for the proposed emergency generators above 50 horsepower in accordance with Regulation IV: Stationary Emission Sources Permit System and Registration.
C. OPUD or its contractor additionally shall implement all applicable measures and requirements of FRAQMD Rules and Regulations as determined by the FRAQMD. Additional applicable FRAQMD Rules and Regulations may include: Rule 3.0: Visible Emissions, Rule 3:15: Architectural Coatings, and Rule 7:10: Indirect Source Fee.

Mitigation Measure AQ-2

OPUD will implement, or its construction contractors will implement, the following measures as established by the Standard Construction Mitigation Measures provided in the FRAQMD's Indirect Source Review Guidelines (2010) and FRAQMD Construction Phase Mitigation Measures (FRAQMD 2016) in order to reduce emissions during construction.

A. Develop and submit a fugitive dust control plan to minimize fugitive dust emissions during project construction to FRAQMD for approval.
B. Construction equipment exhaust emissions shall not exceed FRAQMD Regulation Ill, Rule 3.0, Visible Emissions limitations (40 percent opacity or Ringelmann 2.0).
C. The contractor shall be responsible to ensure that all construction equipment is properly tuned and maintained prior to and for the duration of on-site operation.
D. Limit idling time to five minutes
E. Utilize existing power sources (e.g., line power) or clean fuel generators rather than temporary power generators.
F. Develop a traffic plan to minimize traffic flow interference from construction activities. The plan may include advance public notice of routing, use of public transportation, and satellite parking areas with a shuttle service. Schedule operations affecting traffic for off-peak hours. Minimize obstruction of through-traffic lanes. Provide a flag person to guide traffic properly and ensure safety at construction sites.
G. Portable engines and portable engine-driven equipment units used at the project work site, with the exception of on-road and off-road motor vehicles, may require California Air Resources Board (CARB) Portable Equipment Registration with the State or a local district permit. The owner/operator shall be responsible for arranging appropriate consultations with the CARB or FRAQMD to determine registration and permitting requirements prior to equipment operation at the site.

H. All grading operations on a project should be suspended when winds exceed 20 miles per hour or when winds carry dust beyond the property line despite implementation of all feasible dust control measures.
I. Work areas shall be watered or treated with Dust Suppressants as necessary to prevent fugitive dust violations.
J. An operational water truck should be available at all times. Apply water to control dust as needed to prevent visible emissions violations and off-site dust impacts. Travel time to water sources should be considered and additional trucks used if needed.
K. On-site dirt piles or other stockpiled material should be covered, wind breaks installed, and water and/or soil stabilizers employed to reduce wind-blown dust emissions. Incorporate the use of approved non-toxic soil stabilizers according to manufacturer's specifications to all inactive construction areas.
L. All transfer processes involving a free fall of soil or other particulate matter shall be operated in such a manner as to minimize the free fall distance and fugitive dust emissions.
M. Apply approved chemical soil stabilizers according to the manufacturers' specifications, to all- inactive construction areas (previously graded areas that remain inactive for 96 hours) including unpaved roads and employee/equipment parking areas.
N. To prevent track-out, wheel washers should be installed where project vehicles and/or equipment exit onto paved streets from unpaved roads. Vehicles and/or equipment shall be washed prior to each trip. Alternatively, a gravel bed may be installed as appropriate at vehicle/equipment site exit points to effectively remove soil buildup on tires and tracks to prevent/diminish track-out.
O. Paved streets shall be swept frequently (water sweeper with reclaimed water recommended; wet broom) if soil material has been carried onto adjacent paved, public thoroughfares from the project site.
P. Provide temporary traffic control as needed during all phases of construction to improve traffic flow, as deemed appropriate by the Department of Public Works and/or Caltrans and to reduce vehicle dust emissions.
Q. Reduce traffic speeds on all unpaved surfaces to 15 miles per hour or less and reduce unnecessary vehicle traffic by restricting access. Provide appropriate training, on-site enforcement, and signage.
R. Reestablish ground cover on the construction site as soon as possible and prior to final occupancy, through seeding and watering.

Mitigation Measure AQ-3

OPUD and its construction contractors shall implement the following measures to reduce, track, and offset construction-related project emissions, consistent with established FRAQMD Construction Phase Mitigation Measures (FRAQMD 2016).

A. Prior to beginning construction activities, OPUD shall assemble a comprehensive inventory list (i.e., make, model, engine year, horsepower, emission rates) of all heavy-duty off-road (portable and mobile) equipment (50 horsepower and greater) that will be used an aggregate of 40 or more hours for the construction project.
B. OPUD and its construction contractors shall provide a plan for approval by FRAQMD demonstrating that the heavy-duty (equal to or greater than 50 horsepower) off-road equipment to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 5 percent ROG reduction, 20 percent NOx reduction and 45 percent particulate reduction compared to the most recent CARB fleet average at time of construction. A Construction Mitigation Calculator (MS Excel) may be

downloaded from the SMAQMD website to perform the fleet average evaluation http://www.airquality.org/ceqa/index.shtml. Acceptable options for reducing emissions may include use of late model engines (Tier 4), CARB Approved low-emission diesel products, alternative fuels, engine retrofit technology (Carl Moyer Guidelines), after-treatment products, voluntary off-site mitigation projects, provide funds for air district off-site mitigation projects, and/or other options as they become available. The FRAQMD should be contacted to discuss alternative measures.

The results of the Construction Mitigation Calculator shall be submitted and approved by the FRAQMD prior to beginning work. OPUD and its construction contractors shall provide a monthly summary of heavy-duty off-road equipment usage to the FRAQMD throughout the construction of the project.

C. OPUD may also contribute to the FRAQMD's Off-Site Mitigation Program to reduce project emissions to less than significant. OPUD shall compile a list of all construction emission sources and consult with the FRAQMD staff to implement this mitigation measure. The project contractors shall track emissions generated from equipment and vehicles throughout construction of the project. If determined necessary by the FRAQMD and before construction activities begin, OPUD shall pay a deposit to FRAQMD for contribution to the FRAQMD Off-site Mitigation Fund. This deposit will be held by FRAQMD and applied toward the final off-site mitigation amount to be paid after project construction is complete. Total construction emissions shall be calculated at the end of construction activities. Using these calculations, OPUD shall make a final payment to the FRAQMD Off-Site Mitigation Fund, if necessary, to further offset construction pollutant emissions that exceeded FRAQMD thresholds. (*Personal communications* with Sondra Spaethe, FRAQMD 2023)

2.2 BIOLOGICAL RESOURCES (IS/MND SECTION IV)

Mitigation Measure BIO-1

Pre-construction special-status species plant surveys shall be conducted by OPUD or its contractor in all impact areas that provide potentially suitable habitat for special-status plants prior to initiating project construction activities. All surveys shall be conducted in accordance with agency-approved survey protocols during the appropriate blooming period. If no special-status species are identified in protocol surveys, no additional mitigation is required. If surveys determine that special-status species occur within impact areas, Mitigation Measure BIO-2 shall apply.

Mitigation Measure BIO-2

If special-status plants are identified within project impact areas, one of the following measures shall apply:

A. If feasible, the project shall be adjusted to avoid impacts to special-status plants. If modifications can be made to avoid special-status species, the installation of protective fencing may be necessary to prevent accidental encroachment. If adjustment of construction areas or methods is not feasible, Mitigation Measure BIO-2B shall apply.

B. If there is no feasible alternative to avoid special-status plant species impacts, OPUD shall mitigate for impacts to special-status plants. A Mitigation Plan shall be prepared and implemented that provides for plant salvage, transplantation, seed collection and replanting,

and/or topsoil collection and replacement as appropriate for the species identified within the project impact area. Transplantation or seed placement shall be within suitable or restored habitat after completion of construction for temporary impacts, or within off-site habitat at a mitigation site for permanent impacts. The Mitigation Plan shall include monitoring requirements to ensure successful establishment of special-status plants, that established performance criteria are achieved, and that no net loss of special-status plants has occurred after the prescribed monitoring period.

Mitigation Measure BIO-3 (Both direct and indirect impacts)

Section 7 Consultation with USFWS shall be conducted to analyze the direct and indirect effects on listed wildlife species and to obtain regulatory permits and authorizations for impacts to listed species and loss of habitat. Measures and requirements outlined in agency authorizations may supersede the following measures.

Mitigation Measure BIO-4 (Indirect impacts)

Trench excavation and stockpiling for pipeline installation shall be entirely located within the paved roadway or disturbed shoulder on Rancho Road in areas where seasonally wet ditches and depressions were mapped adjacent to the roadway. Equipment staging and trench excavation in these areas will be limited to designated workspace areas in the paved roadway and shoulder. To reduce the potential for indirect impacts to seasonally inundated ditches and depressions in close proximity to construction activities, but where no direct impacts will occur, the following measures shall apply:

A. Prior to the initiation of construction, crews shall attend an environmental Awareness Training Program that will include information regarding the potential presence of listed branchiopod species and the importance of avoiding impacts to these species and their habitat.
B. All work shall be conducted during the dry season when potential habitat features on or near the proposed pipeline installation areas are dry.
C. Fencing shall be placed and maintained to delineate the approved work areas and prevent encroachment on seasonally inundated ditch and depression features. A qualified biologist shall oversee the installation of fencing. Once fencing is installed, a biologist will inspect fencing weekly to ensure its integrity and effectiveness.
D. All excavation, construction staging, and stockpiles shall be limited to paved roadways, disturbed shoulder, and approved work areas.
E. Storm water BMPs (silt fencing and straw waddles) shall be placed around construction disturbance and dirt stockpiles to reduce potential for erosion and sedimentation into potential branchiopod habitat features.
F. No application of water (e.g., dust suppression) shall occur in seasonally inundated ditch or depression features without additional measures (such as barriers and/or use of low flow water truck nozzles) in place to keep water out of potential or known VPB habitat features during the dry season.
G. Any groundwater encountered within the trench excavation shall not be discharged to areas where seasonally inundated ditch or depression features are located.

Mitigation Measure BIO-5 (Direct impacts)

If avoidance of habitat features as described in BIO-4 is not feasible and direct impacts (temporary or permanent) will occur to seasonally inundated ditch and depression features, compliance with one of the following mitigation measures (5A or 5B) shall be required:

A. Prior to the initiation of construction, surveys conducted in accordance with USFWS protocols shall be conducted in all potentially suitable habitat to be impacted. If protocol surveys determine that the seasonally inundated ditch and depression features are not occupied by federally listed vernal pool branchiopod species, no further mitigation is required for impact to species habitat (mitigation for jurisdictional aquatic features consistent with Mitigation Measures BIO-1 and BIO-2 may still apply). If protocol surveys detect the presence of federally listed species, then the following measures shall be implemented:

    1. Prior to the initiation of construction, construction crews shall attend an Environmental Awareness Training Program that will include information regarding the potential presence of listed vernal pool branchiopod species and the importance of avoiding impacts to these species and their habitat.
    2. All work shall be conducted during the dry season when potential habitat features on or near the proposed pipeline installation areas are dry.
    3. Fencing shall be placed and maintained around any avoided (preserved) seasonally inundated ditch and depression features to prevent encroachment. A qualified biologist shall oversee the installation of fencing. Once fencing is installed, a biologist will inspect fencing weekly to ensure its integrity and effectiveness.
    4. A USFWS approved biologist shall monitor construction activities in known or potential vernal pool branchiopod habitat that results in temporary or permanent impacts.
    5. For temporary impacts that will be restored after construction, a Site Restoration Plan outlining requirements for topsoil collection, preservation, and restoration will be prepared and approved by the USFWS. Implementation of the approved Plan shall include the following requirements at minimum. Prior to excavation in locations with potential or known vernal pool branchiopod habitat, the uppermost soil layer that may contain branchiopods eggs (cysts) shall be collected, labelled, and stored under appropriate climatic conditions until construction in temporary impact areas is complete. Once construction is complete, topsoil shall be placed back in the feature from which it was collected.
    6. For permanent impacts, loss of vernal pool branchiopod habitat shall be mitigated through the use of USFWS approved mitigation credits in accordance with mitigation ratios approved by the USFWS.

B. If OPUD or its contractor chooses not to conduct protocol-level surveys, they may assume presence of listed vernal pool branchiopod species within seasonally inundated ditch and depression features that provide potentially suitable habitat. If presence of listed species is assumed, then measures BIO-5A (1) through (6) as set forth above shall apply to mitigate impacts to a less-than-significant level.

Mitigation Measure BIO-6

A. Prior to the initiation of construction, implement Mitigation Measure BIO-3. Measures and requirements outlined in agency authorizations may supersede the following measures.

B. A 20-foot exclusion zone extending from the dripline of the shrub shall be maintained during construction in all directions away from the pavement. The exclusion zone will be reduced on the pavement side of the shrub to the edge of gravel roadway shoulder so that the fencing will not interfere with the roadway. Consistent with measures outlined by the USFWS to mitigate potential impacts to VELB, the following measures shall be implemented:

    1. Fence and flag the elderberry shrub to be avoided and provide a minimum setback of at least 20 feet from the dripline of the elderberry plant for ground disturbance activities (e.g., trenching) to ensure that activities will not damage or kill the elderberry shrub. Due to its location at the edge of pavement on Forty Mile Road, the 20-foot setback will be adjusted (reduced) consistent with the edge of the gravel road shoulder so that fencing does not interfere with the paved roadway.
    2. Prior to the initiation of any construction, environmental training shall brief the contractors and key employees of the need to avoid any impacts to elderberry plants, and to advise them of penalties associated with damage or destruction of the plants. The work crew shall be instructed regarding the status of the VELB and the need to protect its elderberry host plant, and possible penalties for non-compliance with avoidance and minimization measures.
    3. A qualified biologist shall monitor the work area at project-appropriate intervals to assure that all avoidance and minimization measures are implemented. The amount and duration of monitoring will depend on the timing of project activities, and shall be determined in coordination with the USFWS biologist.
    4. As much as feasible, all activities within 165 feet of the elderberry shrub will be conducted outside the flight season of the VELB (March-July).
    5. No insecticides, herbicides, fertilizers, or other chemicals that might harm the VELB or its host plant shall be used within 100 feet of the elderberry plant with a stem measuring 1.0 inch or greater in diameter at ground level.
    6. Mechanical vegetation removal within the dripline of the elderberry shrub shall be limited to the season when adult VELB are not active (August-February) and shall avoid damaging the elderberry.
    7. Erosion control will be implemented, and the affected construction area shall be revegetated with appropriate native plants.

Mitigation Measure BIO-7

Implement the following measures:

A. Prior to the initiation of construction, construction staff shall attend an Environmental Awareness Training Program that will include information regarding identification of giant gartersnake and its habitat, protection measures for the species, and procedures to follow if a giant gartersnake or unknown snake is observed.
B. Construction of Lift Station 23 will occur when the rice field is inactive and has been dry for a minimum of 15 days.
C. Construction of Lift Station 22, Lift Station 23, and the HDD installation of pipelines under Kimball Creek, including all activities within 200 feet of Kimball Creek and the rice field at Lift Station 23, shall be restricted to the period between May 1 and October 1. This is the active period for GGS when the potential for direct mortality is reduced because GGS can actively avoid disturbance.

D. Prior to the start of the Kimball Creek HDD, construction of Lift Station 22, or the construction of Lift Station 23, a qualified biologist shall conduct a preconstruction survey for GGS at these locations prior to the initiation of disturbance. Exclusion fencing shall be installed, as directed by the qualified biologist, to isolate the workspace within 200 feet of suitable aquatic habitat and exclude snakes from the work areas. Exclusion fencing will be buried at the base to prevent snakes from moving under the fence into the construction area. Exclusion fencing shall be maintained for the duration of work in these areas and shall be routinely inspected by the qualified biologist to ensure the fencing is intact and effective. The workspace shall be inspected prior to the start of work each day to ensure that no snakes have entered the work area.
E. If a GGS is observed, the USFWS and CDFW shall be notified immediately. Construction will be suspended in the area until the snake leaves the site of its own volition.
F. All excavations within 200 feet of suitable GGS habitat shall be covered or have escape ramps installed to prevent entrapment prior to the end of work each day. These excavations shall be inspected by the qualified biologist prior to the start of work the following day.
G. Erosion control materials shall consist of tightly woven fibers and netting to prevent entanglement of reptiles and amphibians. No monofilament materials will be allowed.
H. For permanent impacts associated with construction of Lift Station 22 and Lift Station 23, loss of suitable GGS habitat shall be mitigated through the use of USFWS and CDFW approved mitigation credits or fee title acquisition with a conservation easement to protect managed marsh habitat in accordance with mitigation ratios approved by the USFWS and CDFW.

Mitigation Measure BIO-8

Implement the following measures:

A. A preconstruction survey for western pond turtle shall be conducted no more than 48 hours prior to the start of construction within 150 feet of the drainages or other suitable wetland habitat. If no western pond turtles are observed, no further mitigation would be necessary.
B. If a western pond turtle is observed within the project area, a qualified biologist shall relocate the individual to a suitable habitat location outside of the construction area.
C. If a pond turtle nest is identified, exclusion fencing shall be placed a minimum of 25 feet around the nest and disturbance to the area will be avoided until the hatchlings have emerged. The nest will be monitored daily by the qualified biologist to ensure nestlings emerge to a suitable habitat area safely outside the construction zone.

Mitigation Measure BIO-9 (Nest disturbance)

A. If construction or vegetation removal work occurs outside of Swainson's hawk nesting season (August 31 to Feb 1), impacts to the Swainson's hawk would be avoided. Surveys would not be required for work conducted during that part of the year, and no further mitigation for nest disturbance would be required.
B. If project activities occur between February 1 to August 31, surveys shall be conducted by a qualified biologist for active Swainson's hawk nests. OPUD or its contractor shall conduct a protocol-level survey in conformance with the "Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley," Swainson's Hawk Technical Advisory Committee (https://www.wildlife.ca.gov/conservation/survey-protocols#377281284-birds) (May 31, 2000) hereby incorporated by reference. This protocol prescribes minimum standards for survey equipment, mode of survey, angle and distance to

tree, speed, visual and audible clues, distractions, notes and observations, and timing of surveys. If the surveys show that there are no active Swainson's hawk nests within 0.25-mile of construction activities, no further mitigation for nest disturbance will be required. If active Swainson's hawk nests are identified near the project area, a 0.25-mile nest protection buffer shall be identified, and the following measures shall be required:

1. Apply a nest protection buffer with a minimum distance of 0.25-mile from an active nest. Postpone project activities within the nest protection buffer until after the young have fledged and are no longer dependent on the nest tree. The minimum nest protection buffer may be reduced in coordination with CDFW if existing site conditions, habituation to disturbance, proposed disturbance levels, and nest concealment or barriers between the nest and activities indicate a reduced buffer would be effective.
2. If it is not possible to postpone project activities within the minimum nest protection buffer, construction activities may proceed with CDFW approval and monitoring of the nest by a qualified raptor biologist. If the monitoring biologist observes signs of distress, they shall have the authority to stop construction work and coordinate with CDFW to establish additional protection measures to ensure avoidance of nest abandonment prior to the re-start of project activities.

C. A written report summarizing the pre-construction survey results shall be provided to CDFW within 30 days of survey completion.

Mitigation Measure BIO-10 (Foraging habitat)

If nesting occurrences of Swainson's hawks occur within 10 miles of the permanent impact areas (e.g., pump station, lift station, and WP sites) mitigation for loss of foraging habitat shall be required. Generally, CDFW requires mitigation for loss of Swainson's hawk foraging habitat based on the presence of active nests within 10 miles of the project. If an active nest site occurs within ten miles of the project, OPUD or its contractor will be required by CDFW to provide off-site foraging habitat management lands at a specified Mitigation Ratio that is based on nest proximity to the project site, as follows:

Distance from Project Boundary	Mitigation Acreage Ratio*
Within 1 mile	1.00:1**
Between 1 and 5 miles	0.75:1
Between 5 and 10 miles	0.50:1
*Ratio means [acres of mitigation land] to [acres of foraging habitat impacted]. **This ratio shall be 0.5:1 if the acquired lands can be actively managed for prey production.	

CDFW provides options for off-site habitat management by fee title acquisition or conservation easement acquisition with a CDFW-approved management plan, and by the acquisition of comparable habitat. Mitigation credits may be obtained through a CDFW-approved mitigation bank for Swainson's hawk with a service area that covers the project site.

Mitigation Measure BIO-11

A. A pre-construction survey of areas providing suitable burrowing owl habitat within 1,640 feet (500 meters) of construction at the WWTP shall be conducted by a qualified raptor biologist within 14 days prior to ground disturbance. Surveys shall follow guidelines outlined by CDFW in the Staff Report on Burrowing Owl Mitigation (CDFW 2012). If the required

pre-construction surveys show there are no active burrowing owl nests within the 1,640 feet (500 meters) of construction activities, no further mitigation for burrowing owl nest disturbance will be required.

B. If an occupied burrow is discovered during pre-construction surveys, a protective buffer consistent with CDFW guidelines shall be established. Appropriate protective buffers depend on the type of burrowing owl occurrence (nesting or overwinter), level of project disturbance, and time of year that the disturbance occurs. Nest protective buffers consistent with CDFW guidelines are outlined below.

Location	Time of Year	Level of Disturbance		
		Low	Med	High
Nesting Site	April 1 – Aug 15	200 m	500 m	500 m
Nesting Site	Aug 16 – Oct 15	200 m	200 m	500 m
Nesting Site	Oct 16 – March 31	50 m	100 m	500 m

A reduced buffer may be implemented upon CDFW approval and based upon site specific conditions, nesting phenology, and the recommendation of the qualified biologist.

C. A written report summarizing the pre-construction survey results shall be provided to OPUD and CDFW within 30 days of survey completion.

D. If occupied burrows cannot be avoided, OPUD or its contractor shall conduct a survey during the non-nesting season (September 30 through January 31) to identify occupied burrows within the disturbance footprint, exclude burrowing owls from burrows within the disturbance footprint, and then collapse the burrows in accordance with methodology outlined by the CDFW. Burrowing owl exclusion and burrow collapse must be conducted in coordination with CDFW and with the approval of CDFW.

Mitigation Measure BIO-12

A. If construction or vegetation removal work occurs outside of nesting season (August 31 to Feb 1), impacts would be avoided. Surveys would not be required for work conducted during this part of the year, and no further mitigation for nest disturbance would be required.

B. If vegetation removal or construction activities occur between February 1 to August 31, pre-construction surveys shall be conducted by a qualified biologist of suitable habitat within 500 feet of worksites and disturbance areas for passerines, and within 0.25-mile of worksites and disturbance areas for raptors. Pre-construction surveys shall be conducted within 14 days prior to the start of construction of vegetation removal. If nests are identified, a suitable nest protection buffer shall be recommended by the qualified biologist based on the species, nest phenology, and site-specific conditions. Construction activities shall be prohibited within the established buffer zones until the young have fledged. If a lapse in project-related activities occurs for 14 days or longer during the nesting season, another focused survey shall be conducted before construction activities can be reinitiated.

C. A written report summarizing the pre-construction survey results shall be provided to OPUD and CDFW within 30 days of survey completion.

Mitigation Measure BIO-13

A. Prior to the initiation of construction, OPUD or its contractor shall conduct a preliminary aquatic resource delineation of the project site to define the limits of jurisdictional areas and

determine the extent of project impacts. The delineation will be verified by the Corps. The verified delineation will provide OPUD with the impact acreage necessary for preparing a Waters of the US/Wetland Mitigation Plan and/or permit application if impacts to jurisdictional areas cannot be avoided. If the project can fully avoid delineated aquatic resources, no further mitigation would be required. If the project cannot fully avoid delineated aquatic resources, Mitigation Measure BIO-13 B will apply.

B. If project impacts to federal and State jurisdictional areas are identified, OPUD shall obtain all necessary permits for impacts to Waters of the US and wetlands from the Corps and RWQCB and/or for potential impacts to stream features from CDFW prior to project implementation. Implementation of the project shall comply with all permit conditions. Compensatory mitigation must be consistent with the Corps' standards pertaining to mitigation type, location, and ratios, but will be accomplished with a minimum of 1:1 replacement ratio.

   If compensatory mitigation is needed, OPUD may satisfy all or a portion of Waters of the US and wetlands mitigation through the purchase of "credits" at a mitigation bank approved by the Corps, RWQCB, and/or CDFW for compensatory mitigation of impacts to hydrologically similar Waters of the US, or through other means, such as on- or off-site wetland creation, conservation easement, contribution to approved in-lieu habitat fund, etc. The Mitigation Plan must be approved by the permitting agencies, and shall be implemented by OPUD subsequent to plan approval.

Mitigation Measure BIO-14

The proposed HDD installations under regulated drainages have a small potential to "frac out" or inadvertently release drilling muds to the surface during drilling operations. Because of the potential for a frac-out to impact waters and wetlands at the drainage crossings, OPUD or its contractor shall prepare and implement an Inadvertent Returns Contingency Plan that outlines the measures that will be taken to prevent inadvertent returns, and outlines the response measures to be employed and response equipment to be maintained on site for use in the unlikely event of an inadvertent return during drilling operations.

2.3 CULTURAL RESOURCES (IS/MND SECTION V)

Mitigation Measure CUL-1

A. If buried cultural resources such as chipped or ground stone, midden deposits, historic debris, building foundations, human bone, or paleontological resources are inadvertently discovered during ground-disturbing activities, work shall stop in that area and within 100 feet of the find until a qualified archaeologist or paleontologist can assess the significance of the find and, if necessary, develop responsible treatment measures in consultation with Yuba County and other appropriate agencies.
B. If remains of Native American origin are discovered during proposed project construction, it shall be necessary to comply with state laws concerning the disposition of Native American burials, which fall within the jurisdiction of the Native American Heritage Commission (NAHC). If any human remains are discovered or recognized in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:

   - The County coroner has been informed and has determined that no investigation of the cause of death is required; and

- If the remains are of Native American origin:
  - √ The most likely descendants of the deceased Native Americans have made a recommendation to the landowner or person responsible for the excavation work for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC 5097.98; or
  - √ The NAHC has been unable to identify a descendant, or the descendant failed to make a recommendation within 24 hours after being notified.

C. According to the California Health and Safety Code, six or more human burials at one location constitute a cemetery (Section 8100), and disturbance of Native American cemeteries is a felony (Section 7052). Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the NAHC.

2.4 ENERGY (IS/MND SECTION VI)

Mitigation Measure EN-1

Implement Mitigation Measures AQ2 (b-f, and p) and AQ-3 (b and c).

2.5 GEOLOGY AND SOILS (IS/MND SECTION VII)

Mitigation Measure GEO-1

Implement Mitigation Measures HYD-1, HYD-2, and HYD-3.

Mitigation Measure GEO-2

A. In additional to civil drawing for the project, a final geotechnical engineering report for the proposed project shall be produced by a California Registered Civil Engineer or Geotechnical Engineer and submitted to Yuba County for review. The geotechnical engineering report measures shall address construction conditions, including but not limited to: excavation conditions, site clearing specifications, ground and subgrade preparation, general fill placement and compaction, dewatering, and foundations. Following approval in the geotechnical report by Yuba County, construction shall be completed in accordance with the geotechnical recommendations in the report, Yuba County Standard Specifications, and Cal OSHA requirements. Proof shall be provided for engineering inspection and certification that earthwork has been performed in conformity with recommendations contained in the report. (Preliminary geotechnical recommendations are included in Appendix E of this Initial Study).

B. The Contractor shall retain an engineer to evaluate the impact of construction traffic vibrations, actual soil conditions exposed in the open excavations, seepage and/or groundwater conditions, surcharges adjacent to excavations, proximity of excavations to existing structures, and other factors that may promote excavation wall instability or cause excavation related damage to existing facilities and improvements and adjust excavation sloping/shoring methods accordingly.

Mitigation Measure GEO-3

Consistent with Yuba County 2030 General Plan policies, if potential paleontological resources are found during construction, work shall stop and consultation is required to avoid further

impacts. If potential paleontological resources are detected during construction, work shall stop and consultation shall be required to avoid further impacts. Actions after work stoppage will be designed to avoid significant impacts to the greatest extent feasible. These measures should include construction worker education, consultation with a qualified paleontologist, coordination with experts on resource recovery and curation of specimens, and/or other measures, as appropriate.

2.6 GREENHOUSE GAS EMISSIONS (IS/MND SECTION VIII)

Mitigation Measure GHG-1

Implement Mitigation Measures AQ-1, AQ-2, and AQ-3.

2.7 HAZARDS AND HAZARDOUS MATERIALS (IS/MND SECTION IX)

Mitigation Measure HAZ-1

A. Prohibit or restrict equipment refueling, fluid leakage, equipment maintenance, and road surfacing activities near wetlands and other sensitive areas. Require placement of fuel storage and refueling sites in safe areas well away from wetlands and other sensitive habitats. Safe areas include paved or cleared roadbeds, within contained areas such as lined truck beds, or other appropriate fuel containment sites. Inspect equipment and vehicles for hydraulic and oil leaks regularly. Require the use of drip pans below equipment stored onsite. Require that vehicles and construction equipment are in good working condition, and that all necessary onsite servicing of equipment be conducted away from wetlands or other sensitive areas.

B. Require all contractors to possess, and all vehicles to carry, emergency spill containment materials. Absorbent materials should be on hand at all times to absorb any minor leaks and spills.

Mitigation Measure HAZ-2

The contractor shall conduct all grading operations in accordance with the Department of Toxic Substances, Caltrans Soil Management Agreement for Aerially Deposited Lead-Contaminated Soils (Agreement), June 30, 2016, and with the awareness that lead impacted soils are present on McGowan Parkway and Rancho Road. Construction project documents shall include a site-specific Health and Safety Plan and special Soil Management Plan (SMP) to address elevated levels of lead along McGowan Parkway and Rancho Road. The SMP shall be in accordance with all applicable Cal/OSHA requirements and, at a minimum, the SMP shall include measures to control worker exposure to soil, airborne dust, and control runoff along both McGowan Parkway and Rancho Road.

Mitigation Measure HAZ-3

The contractor shall use general dust controls during paint striping removal on McGowan Parkway Road. In addition, the contractor shall include measures to minimize dust or debris leading to or near storm drains, waterways, and other sources of water during construction activities that include removal of paint striping.

Mitigation Measure HAZ-4

Implement Mitigation Measure TRA-1.

2.8 HYDROLOGY, WATER QUALITY, AND SOIL EROSION (IS/MND SECTION X)

Mitigation Measure HYD-1

A. OPUD or its contractor shall submit Permit Registration Documents (PRD) for the Construction General Permit Order 2009-0009-DWQ to the State Water Resources Control Board, and comply with, and implement, all requirements of the permit. A Legally Responsible Person (LRP) shall electronically submit PRDs prior to commencement of construction activities in the Storm Water Multi-Application Report Tracking System. PRDs consist of the Notice of Intent, Risk Assessment, Post-Construction Calculations, a Site Map, the Storm Water Pollution Prevention Plan (SWPPP), a signed certification statement by the LRP, and the first annual fee. Following submittal of a Notice of Intent package and development of a SWPPP in accordance with the Construction General Permit, OPUD or its contractor will receive a Waste Discharge Identification Number from the SWRCB. All requirements of the site-specific SWPPP, including any revisions, shall be included in construction documents for the project. Prior to the initiation of any construction, proof of registration shall be submitted to the Yuba County Director of Public Works for review and approval and shall remain on the project site during all phases of construction.

B. For those project components within the Olivehurst urban area, OPUD or its contractor will apply for and obtain an Erosion and Sediment Control Plan in accordance with Yuba County Department of Public Works Improvement Standards and Specifications, and implement all identified erosion control measures set forth in the Plan.

Mitigation Measure HYD-2

Groundwater elevations were taken during the geotechnical exploration phase of the project design, and noted in the Geotechnical Data Report. However, groundwater elevations in the project areas will vary by season, and it is known that overall groundwater elevations in the South Yuba Basin are trending to rising slightly since surface water has been substituted for groundwater for agricultural use in the project area. OPUD or its contractor shall monitor groundwater and conduct construction operations in a manner intended to avoid pumping for groundwater control, using one or more of the following sub-measures:

A. Monitor groundwater elevations on a seasonal basis, and construct improvements (for all project components, but specifically auger bores, pump and lift station wet wells, and pipelines) during those time periods when pumping for groundwater control can be avoided.
B. If possible, given the depth of encountered groundwater, tremie concrete could be used in the bottom of pump and lift station wet wells, or
C. In the event that groundwater pumping is to be pursued by OPUD or its contractor, OPUD or the contractor shall apply for and obtain a Low Threat Discharge Permit and any other permits necessary for such pumping. Permits that may be required include NPDES permit requirements and CVRWQCB requirements, which may include the approval of a Dewatering Permit. Appropriate groundwater handling and disposal would be ensured as part of the SWPPP for the project and would include collection and treatment measures prior to discharge.

Mitigation Measure HYD-3

A. Implement Mitigation Measure HYD-1 and include the proposed water well and its settling basin within the NPDES permit.

B. In coordination with Yuba County, all construction activities shall implement stormwater pollution prevention Best Management Practices (BMP) designed to reduce potential impacts to water quality during construction of the water well, including, but not limited to:
   1. Protecting adjacent properties and waterways from the discharge of sediment or other contaminants from the well construction site,
   2. Scheduling as much project work as possible during the dry season,
   3. Using other BMPs as necessary, including applying rainy season erosion controls, managing stockpiles, disposing of well development water properly, and correctly managing and disposing of construction wastes,
   4. Maintaining all Best Management Practices, and
   5. Stabilizing the site after construction is complete, including removing sediment from the settling basin.

2.9 NOISE (IS/MND SECTION XIII)

Mitigation Measure NSE-1

To reduce the effects of construction noise on affected residents, the project contractor shall implement the following measures for all project components:

A. All work necessary to implement the project components will be performed between the hours of 7:00 a.m. and 7:00 p.m. Monday through Sunday.
B. All equipment will be equipped with appropriate muffler devices to reduce the noise impacts of the construction operations.
C. Prior to the initiation of construction, OPUD or its contractor shall consult with the Yuba County Community Development and Services Agency (CDSA) to determine whether proposed construction activities would require an exemption permit pursuant to Chapter 8.20.710 of the Yuba County Code. If it is determined that such a permit would be necessary or beneficial, OPUD or its contractor will submit a permit application to the CDSA and abide by the terms of the permit.

2.10 TRANSPORTATION (IS/MND SECTION XVII)

Mitigation Measure TR-1

Prior to the initiation of construction, OPUD or its contractor will obtain encroachment permits from Yuba County and Caltrans for work within the County and State rights of way. OPUD or its contractor will prepare a Traffic Control Plan/Plans that meets the requirements of Yuba County and Caltrans. For Yuba County, the TCP shall meet the current TCP Checklist and TCP Conditions of Acceptance requirements of Yuba County. The TCP shall include all required topics, including: traffic handling during each stage of construction, maintaining emergency service provider access by, if necessary, providing alternate routes, repositioning emergency equipment, or coordinating with nearby service providers for coverage during construction closures, and covering trenches during the evenings and weekends. A component of the TCP will involve public dissemination of construction-related information through notices to the nearby residences, press releases, and/or the use of changeable message signs. The project contractor will be required to notify all affected residents, post the construction impact schedule, and place articles and/or advertisements in appropriate local newspapers regarding construction impacts and schedules.

3 IMPLEMENTATION SCHEDULE AND CHECKLIST

This section contains an abbreviated description of each mitigation measure presented in tabular, checklist format. A complete description of each measure is contained in the preceding Chapter 2, *Inventory of Mitigation Measures*, contained within this document.

The mitigation measures to be implemented by the project applicant(s) and successors in interest are separated into the following phases:

- Prior to Construction
- During Construction
- Post Construction
- Prior to Operations
- Ongoing Operations

A summary of the checklist is presented below. Some measures have components that are to be implemented during several project phases. These measures are noted in each category. For mitigation measures that require implementation of a different mitigation measure required for the project, only the measure monitored is listed below.

Timing of Implementation of Measure	Mitigation Measure Number
Prior to Construction	AQ-1a, AQ-1b, AQ-1c, AQ-2, AQ-3, BIO-1, BIO-2, BIO-3, BIO-4, BIO5A, BIO-5B, BIO-6, BIO-7, BIO-8A, BIO-8B, BIO-8C, BIO-9B, BIO-9C, BIO-10, BIO-11A, BIO-11B, BIO-11C, BIO-11D, BIO-12A, BIO-12B, BIO-12C, BIO-12D, BIO-13A, BIO-13B, BIO-14, ENR-1, GEO-1, GEO-2, GHG-1, HAZ-2, HAZ-4, HYD-1, HYD-2, HYD-3, NSE-1, TR-1
During Construction	AQ-1a, AQ-1b, AQ-1c, AQ-2, AQ-3, BIO-2, BIO-3, BIO-4, BIO 5, BIO-6, BIO-7, BIO-8, BIO-9A, BIO-9B, BIO-9C, BIO-10, BIO-11B, BIO-11C, BIO-12A, BIO-12B, BIO-12C, BIO-12D, BIO-13B, BIO-14, CUL-1A, CUL-1B, CUL-1C, ENR-1, GEO-1, GEO-2, GEO-3, GHG-1, HAZ-1, HAZ-2, HAZ-3, HAZ-4, HYD-1, HYD-2, HYD-3, NSE-1, TR-1
Post Construction	AQ-3, BIO-2, BIO-3, BIO-5A, BIO-5B, BIO-6, BIO-10, BIO-13B, GEO-1, GEO-2, HYD-1, HYD-3,
Prior to Operations	AQ-1b, GHG-1
Ongoing Operations	AQ-1b, AQ-1c, GHG-1

OPUD South Yuba County Water and Wastewater Infrastructure Improvement Project Mitigation Measure Implementation Schedule and Monitoring Checklist				
Timing of Verification (To occur prior to or during the following actions)	**Measure Complete? (check)**	**Mitigation Measures**	**Responsibility - Implementation**	**Responsibility - Monitoring**
Prior to Construction, During Construction		Mitigation Measure AQ-1a (Construction dust): Obtain and implement a FRAQMD approved Dust Control Plan or Construction Notification in compliance with Rule 3.16, Fugitive Dust.	Construction Manager, Construction Contractor	OPUD, FRAQMD
Prior to Construction, During Construction, Prior to Operations, Ongoing Operations		Mitigation Measure AQ-1b (Emergency generators): Obtain an Authority to Construct (ATC) and Permit to Operate (PTO) for the proposed emergency generators above 50 horsepower.	Construction Manager, Construction Contractor	OPUD, FRAQMD
Prior to Construction, During Construction, Ongoing Operations		Mitigation Measure AQ-1c (Compliance with FRAQMD rules): Coordinate with FRAQMD to confirm applicable FRAQMD rules. Implement all applicable rules.	Construction Manager, Construction Contractor	OPUD, FRAQMD
Prior to Construction, During Construction		Mitigation Measure AQ-2 (Compliance with FRAQMD construction rules): Coordinate with FRAQMD to confirm applicable construction-phase rules. Implement all applicable rules during construction.	Construction Manager, Construction Contractor	OPUD, FRAQMD
Prior to Construction, During Construction, Post Construction		Mitigation Measure AQ-3 (Compliance with FRAQMD construction phase mitigation measures): Compile construction fleet information; Achieve emissions reduction targets; Complete the Construction Emissions Calculator and provide results to FRAQMD; Provide FRAQMD with a monthly summary of fleet usage; Participate in FRAQMD's Off-site Mitigation Fund.	Construction Manager, Construction Contractor	OPUD, FRAQMD
Prior to Construction		Mitigation Measure BIO-1 (Special status plants): Complete pre-construction special status plant species surveys; If surveys identify the presence of plants, implement mitigation measure BIO-2.	Construction Manager, Construction Contractor	OPUD, CDFW
Prior to Construction, During Construction, Post Construction		Mitigation Measure BIO-2 (Special status plants): Modify project elements to avoid special status plant species. If this is not possible, prepare and implement a Mitigation Plan.	Construction Manager, Construction Contractor	OPUD, CDFW

OPUD South Yuba County Water and Wastewater Infrastructure Improvement Project Mitigation Measure Implementation Schedule and Monitoring Checklist				
Timing of Verification (To occur prior to or during the following actions)	**Measure Complete? (check)**	**Mitigation Measures**	**Responsibility - Implementation**	**Responsibility - Monitoring**
Prior to Construction, During Construction, Post Construction		Mitigation Measure BIO-3 (Vernal pool invertebrates): Complete Section 7 Consultation. Implement all needed regulatory permits and authorizations.	Construction Manager, Construction Contractor	OPUD, USFWS, CDFW
Prior to Construction, During Construction		Mitigation Measure BIO-4 (Vernal pool invertebrates): Limit pipeline installation and equipment staging to paved roadways or disturbed shoulders.	Construction Manager, Construction Contractor	OPUD, USFWS,, CDFW
Prior to Construction, During Construction		Mitigation Measure BIO-4A – G (Vernal pool invertebrates): Implement worker training and measures to reduce adverse effects, including dry season construction, oversight by a biologist, fencing, stormwater BMPs, water application limitations, and the discharge of groundwater	Construction Manager, Construction Contractor	OPUD USFWS
Prior to Construction, During Construction		Mitigation Measure BIO-5A (Vernal pool invertebrates): Conduct protocol surveys to determine whether ditch and depression features are inhabited by special status vernal pool species. If no brachiopods are present, no further mitigation is required.	Construction Manager, Construction Contractor	OPUD, USFWS
Prior to Construction, During Construction, Post Construction		Mitigation Measure BIO-5A 1-6 (Vernal pool invertebrates): If surveys determine the presences of federally listed species, implement worker training and measures to reduce adverse effects, including dry season construction, oversight by a USFWS approved biologist, and fencing. Prepare and implement a Site Restoration Plan including collection of top soils. If impacts are permanent, obtain mitigation credits.	Construction Manager, Construction Contractor	OPUD, USFWS
Prior to Construction, During Construction, Post Construction		Mitigation Measure BIO-5B (Vernal pool invertebrates): Alternatively, OPUD or its contractor can assume presence of vernal pool invertebrates and implement measure BIO-5A 1-6.	Construction Manager, Construction Contractor	OPUD, USFWS
Prior to Construction, During Construction, Post Construction		Mitigation Measure BIO-6 (VELB): Implement Mitigation Measure BIO-3. Provide a 20-foot exclusion zone around the elderberry shrub. Implement working training and avoidance measures including fencing and flagging, monitoring by a biologist; limiting activities, minimizing the use of insecticides, herbicides, etc., limiting the use of removal equipment, and erosion control.	Construction Manager, Construction Contractor	OPUD, USFWS

OPUD South Yuba County Water and Wastewater Infrastructure Improvement Project Mitigation Measure Implementation Schedule and Monitoring Checklist				
Timing of Verification (To occur prior to or during the following actions)	**Measure Complete? (check)**	**Mitigation Measures**	**Responsibility - Implementation**	**Responsibility - Monitoring**
Prior to Construction, During Construction		Mitigation Measure BIO-7 (Giant gartersnake): Implement worker training and the following measures - limitations on the timing of construction for LS-22, LS-23, adjacent rice fields and HDD activities near Kimball Creek, completion of preconstruction and during-construction surveys, notification of USFWS and CDFW of the presence of giant gartersnake, installation of escape ramps, and use of proper erosion control materials.	Construction Manager, Construction Contractor	OPUD, USFWS, CDFW
Prior to Construction, During Construction		Mitigation Measure BIO-8A (Western pond turtle): complete time-limited preconstruction surveys if construction will occur near wetland habitat. If no turtles are identified, no further mitigation is necessary.	Construction Manager, Construction Contractor	OPUD, CDFW
Prior to Construction, During Construction		Mitigation Measures BIO-8B & C (Western pond turtle): If a pond turtle is revealed by surveys, relocate the turtle prior to the initiation of construction. If a pond turtle nest is identified, place exclusion fencing around the nest. A biologist shall monitor the nest on a daily basis until the young have safely relocated to an area outside of the construction zone.	Construction Manager, Construction Contractor	OPUD, CDFW
During Construction		Mitigation Measure BIO-9A (Swainson's hawk nest disturbance): For construction or removal of vegetation between August 31 and Feb. 1, no further mitigation would be required.	Construction Manager, Construction Contractor	OPUD, CDFW
Prior to Construction		Mitigation Measure BIO-9B & C (Swainson's hawk nest disturbance): Outside of the August/February period, conduct nesting surveys. If no hawks are nesting within 0.25 miles of construction activities, no additional mitigation would be necessary. Submit survey results to CDFW.	Construction Manager, Construction Contractor	OPUD, CDFW
Prior to Construction, During Construction		Mitigation Measure BIO-9B & C (Swainson's hawk nest disturbance): If hawks are nesting within 0.25 miles of construction activities, identify and implement a nest protection buffer or consult with CDFW to implement other protective measures. Submit survey results to CDFW.	Construction Manager, Construction Contractor	OPUD, CDFW
Prior to Construction, During Construction, Post Construction		Mitigation Measure BIO-10 (Swainson's hawk foraging habitat): Complete a preconstruction survey to determine if hawk nests are located within 10 miles of construction activities. If so, provide off-site foraging habitat management lands.	Construction Manager, Construction Contractor	OPUD, CDFW

OPUD South Yuba County Water and Wastewater Infrastructure Improvement Project Mitigation Measure Implementation Schedule and Monitoring Checklist				
Timing of Verification (To occur prior to or during the following actions)	**Measure Complete? (check)**	**Mitigation Measures**	**Responsibility - Implementation**	**Responsibility - Monitoring**
Prior to Construction		Mitigation Measure BIO-11A & C (Burrowing Owl Habitat): Prior to construction at the WWTP, complete preconstruction surveys. Submit survey results to CDFW. If surveys indicate that no active burrowing owl nests within 1,640 feet of construction activities, no additional mitigation is required.	Construction Manager, Construction Contractor	OPUD, CDFW
Prior to Construction, During Construction		Mitigation Measure BIO-11B & C (Burrowing Owl Habitat): If the survey identifies an occupied burrow, establish and maintain a protective buffer within which no construction will occur pursuant to CDFW guidelines.	Construction Manager, Construction Contractor	OPUD, CDFW
Prior to Construction		Mitigation Measure BIO-11D (Burrowing Owl Habitat): If occupied burrows cannot be avoided, consult with CDFW to permit an exclusion and burrow collapse program.	Construction Manager, Construction Contractor	OPUD, CDFW
Prior to Construction, During Construction		Mitigation Measure BIO-12A & C (Nesting birds): For construction or removal of vegetation between August 31 and Feb. 1, no further mitigation would be required	Construction Manager, Construction Contractor	OPUD, CDFW, USFWS
Prior to Construction, During Construction		Mitigation Measure BIO-12B & C (Nesting birds): Outside of this period, conduct nesting surveys. If passerines are nesting within 500 feet or nesting raptors are nesting within 0.25 miles of construction activities, establish protection barriers within which no construction will occur prior to fledging. Submit survey results to CDFW.	Construction Manager, Construction Contractor	OPUD, CDFW, USFWS
Prior to Construction		Mitigation Measure BIO-13A (Aquatic resources): Conduct a preliminary aquatic resources delineation for verification by ACOE. Prepare and implement a Waters of the US/Wetland Mitigation Plan and/or permit application. If construction can fully avoid delineated aquatic resources, no further mitigation would be required.	Construction Manager, Construction Contractor	OPUD, ACOE, CVRWQCB, CDFW, USFWS
Prior to Construction, During Construction, Post Construction		Mitigation Measure BIO-13B (Aquatic resources): Conduct a preliminary aquatic resources delineation for verification by ACOE. If project impacts cannot be avoided, obtain all necessary federal and State permits, and implement all permit conditions, including compensatory mitigation.	Construction Manager, Construction Contractor	OPUD, ACOE, CVRWQCB, CDFW, USFWS

OPUD South Yuba County Water and Wastewater Infrastructure Improvement Project Mitigation Measure Implementation Schedule and Monitoring Checklist				
Timing of Verification (To occur prior to or during the following actions)	**Measure Complete? (check)**	**Mitigation Measures**	**Responsibility - Implementation**	**Responsibility - Monitoring**
Prior to Construction, During Construction		Mitigation Measure BIO-14 (Frac out): Prepare and implement an Inadvertent Returns Contingency Plan for all locations where trenchless construction methods are being used.	Construction Manager, Construction Contractor	OPUD, ACOE, CVRWQCB, CDFW
During Construction		Mitigation Measure CUL-1A (Inadvertent discovery of cultural or historic resources): In the event of the discovery of buried cultural resources, stop work, and obtain a professional archaeologist or historian to evaluate the discovery and identify any needed treatment measures.	Construction Manager, Construction Contractor	OPUD
During Construction		Mitigation Measure CUL-1B & C (Inadvertent discovery of human remains): In the event of the discovery of human remains, stop work, and contact the County Coroner and the NAHC; comply with State laws for the treatment of Native American origin.	Construction Manager, Construction Contractor	OPUD, Yuba County Coroner, NAHC
Prior to Construction, During Construction		Mitigation Measure ENR-1: Implement Mitigation Measures AQ-2 (b-f, and p) and AQ-3 (b and c). See above.	Construction Manager, Construction Contractor	OPUD, FRAQMD
Prior to Construction, During Construction, Post Construction		Mitigation Measure GEO-1: Implement Mitigation Measures HYD-1, HYD-2, and HYD-3. See below.	Construction Manager, Construction Contractor	OPUD, CVRWQCB, Yuba County DPW
Prior to Construction, During Construction, Post Construction		Mitigation Measure GEO-2: Prepare a final geotechnical engineering report for all project elements. Ensure that all earthwork has been performed in conformity with recommendations contained in the report.	Construction Manager, Construction Contractor	OPUD
During Construction		Mitigation Measure GEO-3: , If potential paleontological resources are found during construction, stop work and consult with a paleontologist to avoid further impacts.	Construction Manager, Construction Contractor	OPUD

OPUD South Yuba County Water and Wastewater Infrastructure Improvement Project Mitigation Measure Implementation Schedule and Monitoring Checklist				
Timing of Verification (To occur prior to or during the following actions)	**Measure Complete? (check)**	**Mitigation Measures**	**Responsibility - Implementation**	**Responsibility - Monitoring**
Prior to Construction, During Construction, Prior to Operations, Ongoing Operations		Mitigation Measure GHG-1: Implement Mitigation Measures AQ-1, AQ-2, and AQ-3. See above	Construction Manager, Construction Contractor	OPUD, FRAQMD
During Construction		Mitigation Measure HAZ-1 (Construction fuels, fluids): Conduct equipment refueling, maintenance and similar activities in safe areas away from wetlands and other sensitive areas. Equip vehicles with emergency spill containment materials`	Construction Manager, Construction Contractor	OPUD
Prior to Construction, During Construction		Mitigation Measure HAZ-2 (Aerially deposited lead): Conduct all grading operations in accordance with Caltrans Soil Management Agreement for Aerially Deposited Lead-Contaminated Soils. Prepare and implement a Health and Safety Plan and special Soil Management Plan.	Construction Manager, Construction Contractor	OPUD, DTSC
During Construction		Mitigation Measure HAZ-3 (Paint striping removal): Implement dust controls, including measures that minimize paint striping dust from entering waterways and drainage infrastructure.	Construction Manager, Construction Contractor	OPUD, FRAQMD, DTSC
Prior to Construction, During Construction		Mitigation Measure HAZ-4 (Emergency Access): Implement Mitigation Measure TRA-1. See below.	Construction Manager, Construction Contractor	OPUD, Caltrans,, Yuba County DPW
Prior to Construction, During Construction, Post Construction		Mitigation Measure HYD-1 (Construction water runoff and quality): Obtain and implement the provisions of a General Construction Activity Storm Water Permit and/or NPDES Permit from the SWRCB. Apply for and implement the requirements of a Yuba County Erosion and Sediment Control Plan.	Construction Manager, Construction Contractor	OPUD SWRCB, Yuba County DPW
Prior to Construction, During Construction		Mitigation Measure HYD-2 (Groundwater management): Construct improvements when groundwater levels are below the work area; use tremie concrete at the bottom of wet wells; or obtain a Low Threat Discharge Permit or other necessary permits to allow the discharge of groundwater.	Construction Manager, Construction Contractor	OPUD, SWRCB, CVRWQCB, Yuba County DPW

OPUD South Yuba County Water and Wastewater Infrastructure Improvement Project Mitigation Measure Implementation Schedule and Monitoring Checklist				
Timing of Verification (To occur prior to or during the following actions)	**Measure Complete? (check)**	**Mitigation Measures**	**Responsibility - Implementation**	**Responsibility - Monitoring**
Prior to Construction, During Construction, Post Construction		Mitigation Measure HYD-3 (Well development): Implement Mitigation Measure HYD-1, and include the well in the NPDES Permit. Coordinate with Yuba County. Implement stormwater pollution prevention BMPs, including stabilizing the site and removing sediment from the settling basin.	Construction Manager, Construction Contractor	OPUD, CVRWQCB, Yuba County DPW
Prior to Construction, During Construction		Mitigation Measure NSE-1 (Construction noise): Obtain an Exemption Permit if necessary from Yuba County. Implement County construction noise requirements, including construction time limitations and equipment mufflers.	Construction Manager, Construction Contractor	OPUD, Yuba County CDSA
Prior to Construction, During Construction		Mitigation Measure TR-1 (Traffic Management during construction): Obtain encroachment permits for all activities within the public right of way. Obtain and implement a Traffic Control Plan or Plans that meet Yuba County and Caltrans standards.	Construction Manager, Construction Contractor	OPUD, Caltrans Yuba County DPW

Mitigation Monitoring Verification Record Form
and
Sample Mitigation Monitoring Verification Form

Mitigation Monitoring Verification Record

South County Infrastructure Project

Monitoring Responsibility:	
Timing of Verification:	
Implementation Responsibility:	

Issue Area: _____

Mitigation Measure _____

Text of Mitigation Measure

Verification Record
Mitigation Measure _____

Compliance: _____ Acceptable	___ Unacceptable: ___ remedial action taken ___ require work stop ___ follow-up required

Observations:

Recommendations:

Receipt by Program Manager:
Date: Time: Monitor:

Comments/Actions:

Entered into Monitoring File:
Date: By:

SAMPLE

Mitigation Monitoring Verification Record

South County Infrastructure Project

Monitoring Responsibility:	OPUD
	FRAQMD
Timing of Verification:	Prior to Construction
Implementation Responsibility:	Construction Manager
	Construction Contractor

Issue Area: Biological Resources

Mitigation Measure BIO-1

Pre-construction special-status species plant surveys shall be conducted by OPUD or its contractor in all impact areas that provide potentially suitable habitat for special-status plants prior to initiating project construction activities. All surveys shall be conducted in accordance with agency-approved survey protocols during the appropriate blooming period. If no special-status species are identified in protocol surveys, no additional mitigation is required. If surveys determine that special-status species occur within impact areas, Mitigation Measure BIO-2 shall apply.

SAMPLE Verification Record
Mitigation Measure BIO-1

Compliance: _____ Acceptable	___ Unacceptable: ___ remedial action taken ___ require work stop ___ follow-up required

Observations:

Recommendations:

Receipt by Program Manager:
Date: Time: Monitor:

Comments/Actions:

Entered into Monitoring File:
Date: By: