

Draft Initial Study and Negative Declaration for the City of Davis Recycled Water Program

SCH #TBD

Lead Agency:

Davis CALIFORNIA

City of Davis
1717 5th Street
Davis, California 95616

June 2023

ECORP Consulting, Inc.
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Initial Study and Negative Declaration

City of Davis Recycled Water Program

Davis, California

Lead Agency:

City of Davis
1717 5th Street
Davis, California 95616
Contact: Josie Tellers

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June 2023

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City of Davis, December 5, 2022

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ECORP Consulting, Inc. 2023

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ECORP Consulting, Inc. March 2023

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ECORP Consulting, Inc. April 21, 2023

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ECORP Consulting, Inc. April 2023

LIST OF ACRONYMS AND ABBREVIATIONS

Term	Definition
CAAP	Climate Action Adaptation Plan
CalEEMod	California Emissions Estimator Model
CAISO	California Independent System Operator
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
CPUC	California Public Utilities Commission
EIR	Environmental Impact Report
EMFAC	EMission FACtor model
EO	Executive Order
GGS	Giant Garter Snake
GHG	Greenhouse Gas
IEPR	Integrated Energy Policy Report
IS	Initial Study
LOS	Level of Service
MAF	Million Acre Feet
MGD	Million Gallons per Day
MND	Mitigated Negative Declaration
MUTCD	Manual on Uniform Traffic Control Devices
ND	Negative Declaration
NPDES	National Pollutant Discharge Elimination System
OFA	Overland Flow Area
$PM_{2.5}$	Particulate matter with a diameter of 2.5 microns or less

Term	Definition
PM_{10}	Particulate matter with a diameter of 10 microns or less
PRC	Public Resources Code
PWUO	Public Works Utilities and Operations
ROG	Reactive Organic Gases
RPS	Renewables Portfolio Standard
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SIP	State Implementation Plan
SVAB	Sacramento Valley Air Basin
SWRCB	State Water Resources Control Board
TCRs	Tribal Cultural Resources
UAIC	United Auburn Indian Community
VCE	Valley Clean Energy
VMT	Vehicle Miles Traveled
WWTP	Wastewater Treatment Plan
YCCL	Yuba County Central Landfill
YDWN	Yocha Dehe Wintun Nation
YSAQMD	Yolo-Solano Air Quality Management District

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1.0 BACKGROUND

1.1 Summary

Project Title:	City of Davis Recycled Water Program
Lead Agency Name and Address:	City of Davis Public Works Utilities and Operations (PWUO) 1717 5th Street, Davis, California 95616
Contact Person and Phone Number:	Stan Gryczko, PWUO Director (530) 757-5686 SGryczko@cityofdavis.org
Project Location:	City of Davis Wastewater Treatment Plant 45400 County Road 28H Davis, California 95616
General Plan Designation:	Yolo County General Plan Designation – Public and Quasi Public
Zoning:	Yolo County Zoning Designation – Public/Quasi-Public

1.2 Introduction

The City of Davis is the Lead Agency for this California Environmental Quality Act (CEQA) Initial Study. This Initial Study has been prepared to identify and assess the anticipated environmental impacts of the proposed City of Davis Recycled Water Program (Proposed Project) to satisfy CEQA (Public Resources Code [PRC], Section 21000 et seq.) and State CEQA Guidelines (Title 14, California Code of Regulations 15000 et seq.). CEQA requires that all State and local government agencies consider the environmental consequences before approving those projects. The City of Davis will use this CEQA Initial Study to determine which CEQA document is appropriate for the Proposed Project: Negative Declaration (ND), Mitigated Negative Declaration (MND), or Environmental Impact Report (EIR).

In accordance with CEQA, this Initial Study/Negative Declaration (IS/ND) will be circulated for a 30-day public review and comment period. Written comments on the Draft IS/ND should be submitted to:

Josie Tellers, Water Quality Compliance Specialist
City of Davis
1717 5th Street
Davis, California 95616
JTellers@cityofdavis.org

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2.0 PROJECT DESCRIPTION

2.1 Project Location

The City of Davis Recycled Water Program (Proposed Project) is primarily located approximately 1.5 miles northeast of the City of Davis in eastern Yolo County, north of I-80 and west of the Yolo Bypass, at the City of Davis Wastewater Treatment Plant (WWTP) and the immediately adjacent Yolo County Central Landfill (YCCL) (**Figure 2-1**). The land uses surrounding these facilities primarily include existing agricultural operations, associated rural residences, and the Vic Fazio Wildlife Area. The Project Area is mostly flat and does not include significant topographic features, except for levees, roadways, and railway embankments.

As shown in **Figure 2-2** Project Location and Existing Facilities, the Proposed Project involves the following existing facilities: the WWTP, the adjacent Overland Flow Area (OFA) (east of the WWTP), the Davis Restoration Wetlands, and the Yolo County Central Landfill (YCCL). The Proposed Project location also includes City-owned properties and City easements located within City limits where Recycled Water would be used for tree irrigation, as well as the City Corporation Yard on 5th Street in the City of Davis, where recycled water for tree irrigation would be temporarily stored in an above ground tank.

2.2 Background and Proposed Project

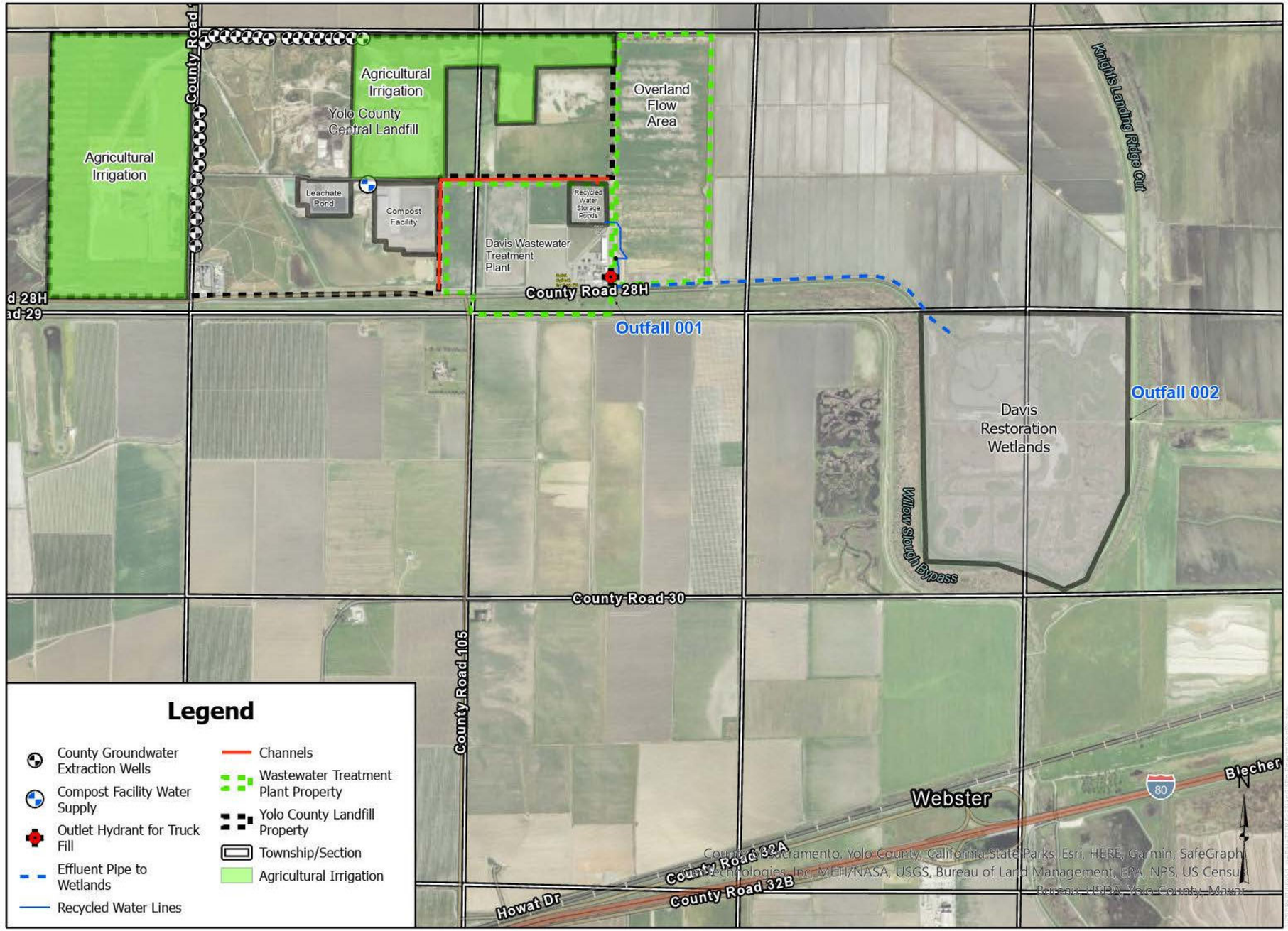
The City of Davis ("City" or "Davis") recently implemented the Davis Wastewater Treatment Plant Secondary and Tertiary Improvements Project. This project upgraded the treatment processes at the Davis WWTP to replace a pond and overland flow treatment system with a conventional activated sludge process and advanced tertiary treatment system. The City adopted the Davis Wastewater Treatment Plant Secondary and Tertiary Improvements Project Initial Study/Mitigated Negative Declaration (IS/MND) to comply with CEQA (City of Davis. 2013.). With the secondary and tertiary treatment system upgrades now complete, a significant portion of treated wastewater that was historically lost to evaporation through the use of the overland flow system and aerated and oxidation ponds has now been reclaimed through the plant upgrades and cessation of the former treatment process. As discussed in the Near-Term Recycled Water Master Plan (West Yost Associates. October 2018.), the amount of this salvaged water, or water saved from loss by evaporation, is approximately 1.8 Million Gallons per Day (MGD) as an annual average, or 2,016 acre-feet (af) per year (afy). This additional water supply, hereafter referred to as "Saved Water," is an important asset for the City. The City proposes to put the Saved Water to beneficial use through approval of enrollment under the Statewide General Order Water Reclamation Requirements for Recycled Water Use (Order WQ 2016-0068-DWQ).



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Figure 2-1. Project Vicinity Map

2023-002 City of Davis WWTP Recycled Water Program



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Figure 2-2. Project Location and Existing Facilities

2023-002 City of Davis Recycled Water Program

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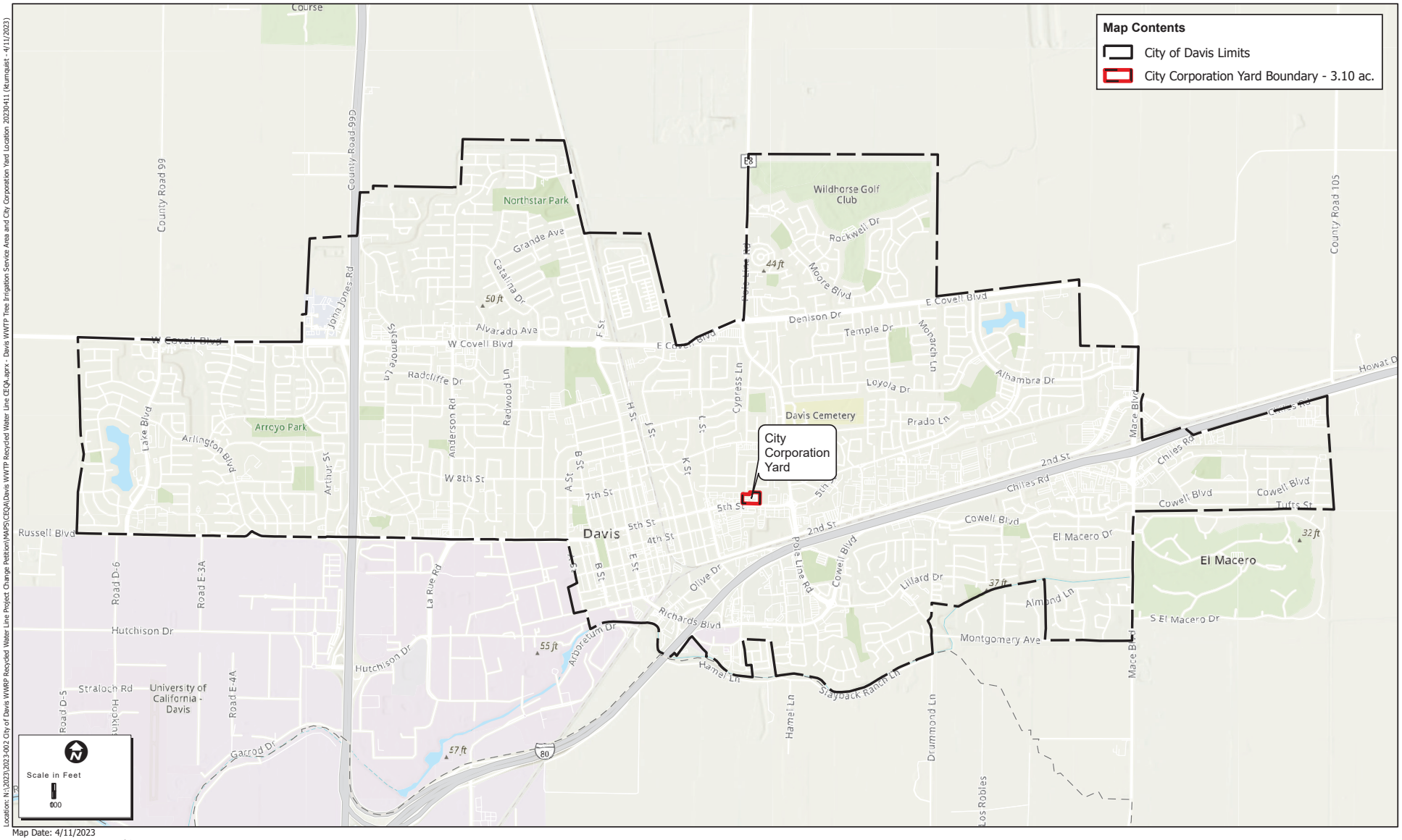
The City would be the recycled water producer, distributor, and Recycled Water Program Administrator that supplies Saved Water at the WWTP, the 160-acre OFA located east of the WWTP, the YCCL (including the Napa Recycling Compost Facility and agricultural irrigation), the Davis Restoration Wetlands, and for tree watering on City property within the City limits. (See **Figure 2-3**).

The City has operated the WWTP since the 1970s with the above-described upgrades completed in 2017. The City currently discharges its treated wastewater pursuant to Waste Discharge Requirements and a National Pollutant Discharge Elimination System (NPDES) Permit issued by the Central Valley Regional Water Quality Control Board (RWQCB) in Order R5-2018-0086, NPDES No. CA0079049 (Permit). The Permit was originally issued on December 7, 2018, with an effective date of February 1, 2019. The Permit authorizes the City to discharge at two discharge locations: Discharge Point 001 (Willow Slough Bypass) and Discharge Point 002 (Conaway Ranch Toe Drain) (see Figure 2-2). Both discharge points lead to the Yolo Bypass. The Proposed Project consists of the removal of Saved Water from Willow Slough Bypass and use of this water at the above locations. It should be noted that Saved Water has only been released at Discharge Point 001 and 002 since late 2017, when the new WWTP advanced treatment system began operating. Prior to the WWTP upgrade, treated effluent was diverted to the Davis Restoration Wetlands for habitat and vegetation management, as well as additional treatment prior to discharging to Conaway Ranch Toe Drain. The Recycled Water Specification and Monitoring Requirements would be incorporated in the Permit through the RWQCB NPDES Permit amendment process.

2.3 Project Purpose and Objectives

The Proposed Project purpose is for the City of Davis to put Saved Water previously lost to evaporation and percolation at the WWTP to beneficial use while helping advance California's goal of increasing recycled water use by 800,000 acre-feet by 2030. The primary Proposed Project objective is to obtain regulatory approval of a Wastewater Change Petition for the proposed recycled water uses.

The City is committed to putting natural resources, including water resources, toward their highest and best uses. The Proposed Project is consistent with this commitment because it would put Saved Water to beneficial use at the WWTP, the adjacent OFA (east of the WWTP), the Davis Restoration Wetlands, the YCCL (including the Napa Recycling Compost Facility and agricultural irrigation areas), and to irrigate City trees. Additionally, the City would continue to convey treated tertiary effluent to the Davis Restoration Wetlands during dry periods for habitat and vegetation management purposes. Without the Proposed Project, the City would continue to discharge the Saved Water at one of the City's two discharge locations and send it downstream.



Location: N:\2023\2023-002 City of Davis WWRP Recycled Water Line Project Change Petition\MAPS\CEQA\Davis WWTP Recycled Water Line CEQA.aprx - Davis WWTP Tree Irrigation Service Area and City Corporation Yard Location 20230411 (ktumquist - 4/11/2023)

Map Date: 4/11/2023
Sources: UC Davis, County of Sacramento, Esri

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Figure 2-3. Tree Irrigation Service Area and City Corporation Yard Location

2023-002 City of Davis WWTP Recycled Water Program

2.4 Project Components

The components required for Proposed Project implementation are described below and shown in Figures 2-2 and 2-3**.**

Davis Wastewater Treatment Plant (WWTP)

The City owns and operates a conjunctive potable water system, a mixture of surface water from the Sacramento River and groundwater supplied by the City's deep aquifer wells from the Yolo Subbasin of the Sacramento Valley Basin. Municipal wastewater generated and collected from within the City's wastewater service area is treated at the City WWTP. The WWTP includes a secondary and tertiary treatment system, consisting of a headworks with a mechanical bar screen, aerated grit removal, primary sedimentation, aeration basins including nitrification and denitrification, secondary clarification, tertiary filtration, chlorine disinfection with sodium hypochlorite, dechlorination with sodium bisulfite, and reaeration. Treated effluent is then generally discharged to Willow Slough Bypass via discharge point 001 (Figure 2-2**)**. During dry periods, the tertiary treated effluent is diverted to the Davis Restoration Wetlands (described below) to maintain water levels for habitat and vegetation management as permissible in the City's NPDES permit.

Within and adjacent to the WWTP footprint is an existing pipeline and pump station that would be used to convey Saved Water to the YCCL[1]. In addition, an existing outlet hydrant located in the southwest corner of the WWTP would be used to fill 4,000-gallon tank trucks with Saved Water for transport to the City Public Works Corporation Yard on 5th Street in Davis.

Overland Flow Area (OFA)

Prior to the WWTP upgrade, effluent from the oxidation pump was pumped to the OFA irrigation system. The OFA consisted of 160 acres divided into 15 cells. Wastewater was sprayed onto vegetation in the OFA, which was sloped toward a common return channel and routed to the chlorine contact tank. Wastewater collected in the return channel flowed through a mesh screen prior to entering the chlorine contact tank.

[1]The pipeline entails 382 linear feet of 24"-high-density polyethylene (HDPE) run from the Chlorine Contact tank (CCT) to feed the pump station located to the north of the tertiary filters with recycled water as well as convey recycled water from the pump station to the existing 24" piping that penetrates the levee. The City has also run 997 linear feet of 20" HDPE pipe to convey recycled water from the connection at the existing 24" pipe that penetrates the levee (connection is outside the levee from the plant) and runs adjacent to the flood control levee until it terminates at recycled water storage pond #1 (Eastern Pond). The pipeline runs along or adjacent to the east side of the CCT and filters and the land outside the WWTP and to the east of the flood control levee including a crossing at the county ditch and the recycled water conveyance channel.

With the WWTP upgrade which included a new levee built around the WWTP facilities, the previous pipeline from the oxidation ponds to the irrigation pipeline of the OFA was severed. The design of the new recycled water pump station and pipeline includes piping to deliver recycled water to the portion of the OFA that remains outside the levee. With the new connection, the existing OFA can be returned to service to deliver recycled water to northern cells 5 through 15. Existing sprinkler and/or flood irrigation systems would be used to irrigate grass and other native vegetation within the 160-acre OFA site with Saved Water.

Davis Restoration Wetlands

The City operates a 400-acre site known as the Davis Restoration Wetlands, located southeast of the WWTP and east of the Willow Slough Bypass (Figure 2-2). Since 1996, the City's WWTP has used the Davis Restoration Wetlands during winter months to provide additional settling of solids to meet permitted effluent limitations prior to discharge at Discharge Point 002. The Davis Restoration Wetlands include a wastewater tract, a stormwater tract, and seven other numbered tracts.

Completion of the above-described improvements to the WWTP in 2018 eliminated the City's need to use the Davis Restoration Wetlands for wastewater treatment. While no longer used for treatment, an existing pipeline allows treated effluent and/or Saved Water to be diverted to the Davis Restoration Wetlands for either habitat management purposes, or for discharge at Discharge Point 002. Tertiary treated effluent is only discharged to the Davis Restoration wetlands to maintain water levels during the dry periods and effluent is only discharged at Discharge Point 002 for storm water management. (Figure 2-2).

Willow Slough Bypass

The Willow Slough Bypass is an effluent-dominated waterbody, primarily containing the City's WWTP discharges. Additional Willow Slough Bypass inflows originate from upstream agricultural drains during irrigation season and storm water conveyance from the City in the winter. The City's most recent maximum Average Dry Weather Flow of 4.1 MGD occurred in 2017. Prior to upgrades to the WWTP, and as discussed in the City of Davis Near-Term Recycled Water Master Plan (page 2-1) (West Yost Associates October 2018), discharge averaged approximately 860 million gallons per year, which is equivalent to about 2.3 MGD. The difference between these pre- and post-upgrade flows is 1.8 MGD, which constitutes the City's Saved Water.

The hydrology and habitat in the vicinity of Willow Slough Bypass is influenced by natural processes including beaver activity, sedimentation, agricultural runoff, and rainfall. The rate of flow and flooding of wetland areas in the Willow Slough Bypass vicinity is due to beaver activity (i.e., beaver dams) that intermittently cause flows to back up and flood the adjacent floodplain, creating

emergent freshwater wetland habitat. This cycling creates a dynamic environment and supports habitat for other wildlife, such as warm-water fish, invertebrates, and giant garter snakes.

Yolo County Central Landfill (YCCL)

The YCCL is located immediately west of the WWTP. The YCCL currently uses pumped groundwater, controlled leachate, and stored stormwater for onsite activities including dust control, soil compaction, phytoremediation, agricultural irrigation, in-vessel waste digestion, and truck washout activities. The YCCL would use Saved Water for similar purposes. The composting facility is also located on the YCCL property. The composting operation would use Saved Water for increasing the moisture content of new feed stock entering the compost system, maintaining the moisture content of active compost piles, adding water to curing piles, and dust control. These land and water uses are consistent with existing uses on the YCCL property. Conveyance infrastructure to transport potable water, recycled water, wastewater, and leachate between the WWTP and the YCCL currently exists.

City Corporation Yard Recycled Water Storage Tank and Tree Irrigation Areas

The City of Davis is located south-west of the WWTP and other Proposed Project facilities. Throughout the City, trees are located on City-owned property and property where the City holds easements, including parks, open space, medians, golf courses, and landscaping at City offices. The City currently irrigates trees located on these properties as needed with potable water. Under the Proposed Project, these areas would be served by recycled water using a 4,000-gallon tanker truck to transport Saved Water from the WWTP Outlet Hydrant to a proposed 6,500-gallon recycled water tank. The water tank would be purchased and placed on existing pavement in the existing City Corporation Yard on 5th Street. To irrigate trees, City employees would use the 6,500-gallon water tank to fill 275-gallon tanks (totes) positioned in the beds of pickup trucks, which would transport the water to City tree locations for watering. The tree irrigation service area and location of the proposed corporation yard storage tank are shown on **Figures 2-3** and **2-4**.

2.5 Existing Water Transmission and Storage Infrastructure Available to the Project

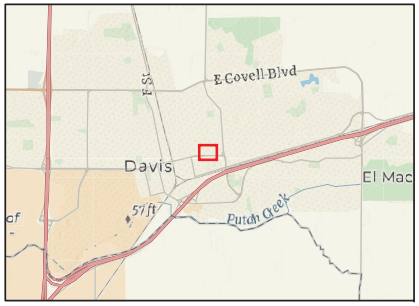
As discussed under Project Operation below, in addition to using trucks to transport Saved Water, the following pumps, pipelines, and channels are existing and would be available to the Proposed Project for the transmission of Saved Water to proposed use areas.



Map Contents

- Project Boundary - 3.10 ac.
- Proposed Tank Location

Sources: Esri Imagery, City of Davis (3/18/2022)



Map Date: 4/11/2023

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Scale in Feet
0 100

Figure 2-4. Proposed Corporate Yard Recycled Water Tank Location

2023-002 City of Davis Recycled Water Program

Location: N:\2023\2023-002 City of Davis WWRP Recycled Water Line Project Change Petition\MAPS\CEQA\Davis WWTP Recycled Water Line CEQA.aprx - Davis WWTP Proposed Tank Location 20230411 (ktumquist - 4/11/2023)

To deliver recycled water to the OFA located outside the existing WWTP levee system, the Proposed Project would utilize a recently constructed recycled water pump station and pipeline. This would allow the OFA to be returned to service to deliver recycled water to northern cells 5 through 15. Existing sprinkler and/or flood irrigation systems would be utilized to water grass and other native vegetation within the 160-acre OFA site.

Two existing facilities at the WWTP would be used to deliver Saved Water to the YCCL use areas. First, an existing pump station and recycled water pipeline would deliver Saved Water north from the WWTP chlorine contact basin to the recycled water storage ponds. From the recycled water storage ponds, Saved Water would be conveyed west and south to the YCCL via an above ground pipeline over existing channels (see Figure 2-2).

The existing effluent pipe would be used to deliver Saved Water to the Davis Restoration Wetlands. Delivery of Saved Water (tertiary treated effluent) to the Davis Restoration Wetlands is permissible in the City's current NPDES Permit (Permit Section 1.2).

To deliver water to the City tree irrigation areas, the following infrastructure and vehicles would be used: a 4,000-gallon tanker truck, pickup trucks with 275-gallon totes, and a proposed 6,500-gallon storage tank to be placed on existing pavement at the City's Public Works Corporation Yard on 5th Street in Davis.

2.6 Project Construction

As discussed above, with exception of the 6,500-gallon storage tank to be purchased and placed at the City Corporation Yard, the above-described existing facilities (the WWTP, trucks, pipelines, tanks, channels and pump stations) would be used to operate the Proposed Project and no new construction or ground disturbance is necessary or proposed.

2.7 Project Operation

Proposed Project operation would involve use of the Project components and related transmission and storage infrastructure described above. These facilities are designed to produce, transmit and store Saved Water that would be put to beneficial use under the Proposed Project. As discussed above, the Proposed Project would reduce discharge of treated water into the Willow Slough Bypass by up to 1.8 MGD, or 2,016 afy. This Saved Water would be used at the YCCL, the adjacent composting facility (Napa Recycling Compost Facility), the WWTP and associated OFA, the Davis Restoration Wetlands, and for tree irrigation on City-owned property and within City easements (see Figures 2-2 and 2-3 for the location of planned use areas).

Table 2-1 shows the estimated amount of Saved Water proposed for use at each facility. As shown, Saved Water would be used onsite at the YCCL to augment the use of pumped

groundwater, controlled leachate, and stored stormwater. The anticipated use at the YCCL includes approximately 491-613 afy per year for dust control, soil compaction, phytoremediation, in-vessel waste digestion, truck washout activities, and agriculture. Additionally, approximately 45,000 to 100,000 gpd (50-112 afy) would be used by the Napa Recycling composting facility. The City would discharge 1,074 afy of Saved Water at the Davis Restoration Wetlands to maintain water levels during dry periods. Finally, the City would use Saved Water to irrigate trees on City-owned property and/or within City easements. City tree irrigation has an estimated demand of 80,000-100,000 gallons per year (0.25-0.30 afy), with most irrigation occurring during the summer months (May to October).

As shown in Table 2-1, the above described uses result in a Saved Water total demand of up to approximately 1,800 afy, which is less than the 2,016 afy of Saved Water currently available to the Proposed Project. The balance of Saved Water (approximately 216 afy) would be available for other uses (such as within the OFA) or discharged to Willow Slough until such time as other uses are identified.

Table 2-1. Recycled Water Uses

Facility	Quantity (acre-feet/year)
Yolo County Central Landfill (YCCL)	491-613
Napa Recycling Composting Facility	50-112
Davis Restoration Wetlands	1,074
City Trees	0.25-0.30
Total:	**1,615.25 – 1,799.3**

The City has already completed the WWTP upgrades that generate Saved Water and currently discharges it to the Willow Slough Bypass. The Proposed Project would not result in any changes to these facilities, though it would result in decreased flows to the Willow Slough Bypass. As discussed above, a pipeline and pump station are available to convey the Saved Water from the WWTP to the YCCL and existing facilities are capable of conveying water from the WWTP to the Davis Restoration Wetlands.

Table 2-2 summarizes the estimated number of required trips and vehicle miles traveled to deliver 100,000 gallons of Saved Water for City tree irrigation. As shown, tree irrigation would involve the trucking and transfer of Saved Water using a 4,000-gallon tender truck from the WWTP outlet hydrant to a 6,500-gallon storage tank to be placed at the City's Public Works Corporation Yard on 5th Street in Davis. City parks employees would use water from the proposed storage tank to fill 275-gallon totes contained in pickup trucks to transport the water to City tree irrigation

locations. Trees would be irrigated by opening a drain valve on the truck tote and filling the tree wells with recycled water. All truck trips associated with City tree irrigation operations would occur during off peak hours (between 9 a.m. and 11:30 a.m. and between 1:30 p.m. and 3 p.m.) to minimize traffic impacts.

Table 2-2. City Tree Irrigation Truck Trips and Vehicle Miles Traveled

Fill Corporation Yard 6,500-Gallon Storage Tank	Water City Trees With 100,000-Gallons Per Year
• Average 1-2 trips/week to fill the Corp Yard Tank using 4,000-gallon tender truck. • 15 miles roundtrip from WWTP to Corp Yard. • Total trips required to supply 100,000 gallons = 25 trips • Total miles travelled = (25 trips) * (15 miles) = 375 miles	• Average 8 miles roundtrip from Corp Yard Tank to deliver water to various parks/trees. • Total trips required to supply 100,000 gallons to city parks/trees during irrigation season = 364 round trips using 275-gallon totes contained in pickup trucks • Total miles travelled = (364 trips) * (8 miles) = 2,912 miles
Total Vehicle Miles Traveled: 375	Total Vehicle Miles Traveled: 2,912
Grand Total Vehicle Miles Traveled: 3,287	

2.8 Project Schedule

Adoption of the IS/ND by the Davis City Council is targeted for August 2023. SWRCB approval of the Wastewater Change Petition is currently expected by the third quarter of 2023 and approval to deliver recycled water or Saved Water to YCCL is expected by the fourth quarter of 2023.

2.9 Regulatory Requirements, Permits, and Approvals

The City of Davis is the CEQA Lead Agency for the Proposed Project. To approve the Proposed Project, the City Council must first comply with CEQA by adopting the IS/ND. The City Council could then consider the information contained in the IS/ND in making its decision to approve or deny the Proposed Project and file a Notice of Determination with the State Clearinghouse.

The Proposed Project does not include federal funding, is not subject to the National Environmental Policy Act, and would not entail a discharge to waters of the U.S. or State or impact any threatened or endangered plant or wildlife species. Thus, the Proposed Project would not require regulatory agency permits.

The Proposed Project would result in a reduction in wastewater discharges and use of recycled water, activities regulated by the State Water Resource Control Board (SWRCB). In December 2022, the City filed a Wastewater Change Petition with the SWRCB (December 5, 2022, City of Davis, see

Appendix A). Thus, the SWRCB is a Responsible Agency under CEQA and would rely on this IS/ND for CEQA compliance relating to their discretionary permit action.

No other State or federal agency approvals are required to implement the Proposed Project.

2.10 Consultation With California Native American Tribe(s)

The City of Davis has notified the following California Native American tribes traditionally and culturally affiliated with the geographic area of the Proposed Project: Cortina Band of Indians, Ione Band of Miwok Indians, United Auburn Indian Community (UAIC), Yocha Dehe Wintun Nation (YDWN), and the Wintun Environmental Protection Agency. Only the YDWN requested consultation pursuant to PRC Section 21080.3.1. **Section 4.18** of this IS/ND provides a summary of the consultation process.

3.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED AND DETERMINATION

3.1 Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by the Proposed Project, involving at least one impact that is a *Potentially Significant Impact,* as indicated by the checklist on the following pages.

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

Determination

On the basis of this initial evaluation:

I find that the Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.	☒
I find that although the Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the Project have been made by or agreed to by the Project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.	☐
I find that the Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.	☐
I find that the 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 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 Project, nothing further is required.	☐

Josie Tellers
Water Quality Compliance Specialist

6/21/2023
Date

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4.0 ENVIRONMENTAL CHECKLIST AND DISCUSSION

4.1 Aesthetics

Except as provided in Public Resources Code Section 21099, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the Project is in an urbanized area, would the Project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☒
d) Would the Project create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

Discussion:

a-d) No Impact. A scenic vista is an area that is designated, signed, and accessible to the public for the express purposes of viewing and sightseeing. This includes any such areas designated by a federal, State, or local agency. Federal and State agencies have not designated any such locations within the City of Davis for viewing and sightseeing. Similarly, the City of Davis, according to the City of Davis General Plan Program EIR (City of Davis 2000.), has determined that the Planning Area of the General Plan has no officially designated scenic highways, corridors, vistas, or viewing areas.

The Proposed Project would allow the City to use treated wastewater which is currently discharged to the Willow Slough Bypass at existing facilities including the YCCL, WWTP and adjacent OFA, the Davis Restoration Wetlands, and for tree irrigation at City parks,

open spaces and within City easements. With the exception of a proposed 6,500-gallon recycled water storage tank proposed for placement on existing pavement at the City Corporation Yard on 5th Street, the Proposed Project does not propose or require any new construction or equipment for operation. Figure 2-4 shows the proposed recycled water storage tank location in the southeast quadrant of the City Corporation Yard. The tank location is in an area currently utilized for material storage and is screened from public view by existing fencing and landscape trees.

Thus, Proposed Project implementation would not negatively affect any scenic vista, damage scenic resources, or degrade the existing visual character or quality of the Proposed Project Area or its surroundings, nor would it create a new light source or conflict with applicable zoning and other regulations governing scenic quality and there would be no impact. By providing an additional water source to irrigate trees on City-owned property, the Proposed Project could help maintain the scenic benefits associated with healthy trees.

4.1.1 Mitigation Measures

No significant impacts were identified and no mitigation measures are required.

4.2 Agriculture and Forestry Resources

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
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?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Discussion:

a-c) **No Impact.** The Proposed Project does not propose any new construction and would not result in changes to any existing farm or forest land use. The YCCL, WWTP, OFA, Davis Restoration Wetlands, and City parks and open spaces would continue in the same land uses with the addition of the Saved Water from the Proposed Project. The use of water under the Proposed Project would not conflict with zoning for any agricultural use or a Williamson Act contract, or involve changes in the existing environment that would result in conversion of farmland to non-agricultural use. There would be no impact.

d-e) **No Impact.** The Proposed Project does not propose any new construction, would not result in conversion of any existing land use, including farmland uses, and there are no designated forest lands within the City. Thus, the Proposed Project would not result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use and there would be no Impact.

4.2.1 Mitigation Measures

No significant impacts were identified and no mitigation measures are required.

4.3 Air Quality

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which	☐	☐	☒	☐

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
the Project region is non-attainment under an applicable federal or state ambient air quality standard?				
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

This section is based in part on the results of the City of Davis Recycled Water Project – Emissions Memorandum prepared by ECORP Consulting, Inc. (2023a, **Appendix B**). The Emissions Memorandum was prepared using methodologies and assumptions recommended in the rules and regulations of the Yolo-Solano Air Quality Management District (YSAQMD) and the Sacramento Metropolitan Air Quality Management District (SCAQMD). The Emissions Memorandum (Appendix B) provides the air quality environmental and regulatory setting, as well as pertinent emissions standards and regulations. Technical memorandum results are summarized below.

4.3.1 Background

4.3.1.1 Yolo Solano Air Quality Management District

The impact analysis provided below considers the California Environmental Quality Act (CEQA) Guidelines Appendix G thresholds of significance. The significance criteria established by the applicable air quality management or air pollution control district (YSAQMD) may be relied upon to make impact determinations. According to the YSAQMD, an air quality impact is considered significant if the Proposed Project would violate any ambient air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations. The YSAQMD has established thresholds of significance for air quality for construction and operational activities of land use development projects, as shown in **Table 4.3-1**.

Table 4.3-1. YSAQMD Significance Thresholds	
Air Pollutant	**Construction/Operational Activities**
Reactive Organic Gas	10 tons/year
Nitrogen Oxide	10 tons/year
Carbon Monoxide	**
Sulfur Oxide	--
Coarse Particulate Matter	80 pounds/year
Fine Particulate Matter	--

Source: YSAQMD 2007
Notes: ** Violation of State ambient air quality standard

4.3.2 Methodology

Air quality impacts were assessed in accordance with methodologies recommended by the YSAQMD. Project operation emissions were modeled using the California Air Resource Board (CARB) 2021 version of the EMission FACtor model (EMFAC 2021). The EMFAC model can estimate criteria pollutant emissions from heavy-duty trucks, vehicle truck trips, and other vehicle commutes based on Yolo County averages. The EMFAC model is used, in accordance with length of trips necessary to deliver the recycled water, to calculate the emissions associated with the operations of the Proposed Project (See Appendix B for model output results). It is noted that because Proposed Project operation does not require the construction of new facilities, there is no construction phase.

Discussion:

a) **Less than significant Impact.** As part of its enforcement responsibilities, the U.S. Environmental Protection Agency requires each state with nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the federal standards. The SIP must integrate federal, State, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs. Similarly, under State law, the California Clean Air Act requires an air quality attainment plan to be prepared for areas designated as nonattainment with respect to the National and California Ambient Air Quality Standards. Air quality attainment plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date.

As discussed in the Emissions Memorandum (Appendix A), the various locations of the Proposed Project are located within the Yolo County portion of the Sacramento Valley Air

Basin (SVAB), which is under the jurisdiction of the YSAQMD. The YSAQMD is required, pursuant to the Clean Air Act, to reduce emissions of criteria pollutants for which the SVAB is in nonattainment. The YSAQMD is required to submit air quality plans and rate-of-progress milestone evaluations in accordance with the federal Clean Air Act. In accordance with other Air Quality Management Districts, the YSAQMD has developed several air quality attainment plans and reports, including the Reasonable Available Control Technology SIP Analysis for the 2015 Federal Ozone Standard (2020), 2017 Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (2018), the PM10 Implementation/Maintenance Plan and Re-Designation Request (2010), and PM2.5 Implementation/Maintenance Plan and Re-designation Request for Sacramento PM2.5 Nonattainment Area (2013), present comprehensive strategies to reduce the O3 precursor pollutants (Reactive Organic Gases [ROG] and NOx) as well as Particulate Matter (PM) emissions from stationary, area, mobile, and indirect sources. These air quality plans and their associated emission-reducing control measures are based on information derived from projected growth in regions surrounding and encompassing the Proposed Project site in order to project future emissions and determine strategies and regulatory controls for the reduction of emissions. Growth projections are based on general plans developed by Yolo County and incorporated cities within the county, including the City of Davis. As such, projects that propose development consistent with the growth anticipated by the respective general plan of the jurisdiction in which the proposed development is located would be consistent with YSAQMD air quality planning. In the event that a project proposes development that is less dense than that associated with the applicable general plan, the Proposed project would likewise be consistent with the YSAQMD air quality plans. However, if a project proposes a development that is denser than that assumed in the applicable general plan, it may be in conflict with YSAQMD air quality planning efforts and could therefore result in a significant impact on air quality.

Growth projections for Yolo County in the Proposed Project Area are based on the City of Davis General Plan (General Plan). As such, projects in the City that propose development consistent with growth anticipated by the General Plan would be consistent with YSAQMD's air quality planning efforts. The Proposed Project does not include development of new housing or employment centers and would not induce population or employment growth. Rather, the Proposed Project proposes delivery of recycled water to various locations throughout the City of Davis and lands directly adjacent. The Proposed Project would therefore not affect local plans for population growth and the Proposed Project would be considered consistent with the population, housing, and employment growth projections utilized in the preparation of YSAQMD air quality planning efforts. Furthermore, as described in detail below, the Proposed Project would not exceed the YSAQMD significance thresholds and in turn would not violate any air quality standards,

and thus would not result in a cumulatively considerable net increase of any criteria pollutant for which the Proposed Project region is designated as a nonattainment area. The City's General Plan recommends that all Projects take measures to meet YSAQMD air quality standards and goals for improved air quality. As seen in **Table 4.3-2** below, the Proposed Project does not exceed the YSAQMD's significance thresholds for air pollutants and therefore fulfills the goals of the YSAQMD and the City of Davis.

Additionally, the Proposed Project does not conflict with any land use assumptions in the General Plan. Specifically, the Proposed Project does not propose to amend the General Plan, does not include development of new housing or employment centers, and would not induce population or employment growth. Therefore, the Proposed Project would not affect local plans for population growth, and the Proposed Project would be considered consistent with the population, housing, and employment growth projections utilized in the preparation of YSAQMD air quality planning efforts.

For these reasons, the Proposed Project would be consistent with the emission-reduction goals of the YSAQMD and the City of Davis. Thus, the Proposed Project would not conflict with or obstruct implementation of the applicable air quality plan and related impacts are considered less than significant.

b) Less than significant Impact.

Project Construction Emissions

Construction emissions are short-term air emissions generated as a result of construction activities required to implement the Proposed Project, or other Proposed Project implementing actions that result in a substantial increase in emissions. The Proposed Project includes the one-time placement of a 6,500-gallon storage tank on an existing pad at the City's Public Works Corporation Yard on 5th Street in Davis. All other facilities that would utilize recycled water would require no alterations or construction, as no new ground disturbance is required to implement the Proposed Project. The placement of the 6,500-gallon storage tank would result in negligible emissions. Any emissions associated with the one-time delivery of the 6,500-gallon storage tank would be less than the Proposed Project's estimated operational emissions, which are under the YSAQMD significance thresholds (as shown **Table 4.3-2**). Thus, construction emissions are less than significant.

Project Operational Emissions

Implementation of the Proposed Project would result in long-term operational emissions of criteria air pollutants such as PM10, PM2.5, Carbon Monoxide (CO), and SO2 as well as O3 precursors such as ROG and nitrogen oxide. The emissions associated with operations

for the Proposed Project are summarized in **Table 4.3-2** and compared to the YSAQMD's significance thresholds.

Table 4.3-2. Operational-Related Air Quality Emissions (tons/year)1

Emission Source	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Tanker Trucks	0.000013	0.000741	0.000074	0.000007	0.007	0.000003
Pick-up Trucks	0.000047	0.000284	0.003430	0.000012	0.10	0.000004
Total	**0.00006**	**0.001025**	**0.003504**	**0.000019**	**0.107**	**0.000007**
YSAQMD Significance Threshold	*10 tons/year*	*10 tons/year*	**	--	*80 pounds/day*	--
Exceed YSAQMD Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: EMFAC 2021 version. Refer to Appendix A for Model Data Outputs.
Notes: 1PM10 emissions are reported in pounds per day consistent with YSAQMD thresholds.
** Violation of State ambient air quality standard.

As shown by **Table 4.3-2**, the criteria air pollutant emissions from Proposed Project operations do not exceed the significance thresholds set forth by the YSAQMD. Thus, operational emissions would be less than significant.

c) **Less than significant Impact.** Sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. The Proposed Project includes delivering recycled water to several locations throughout Davis for tree irrigation, which is primarily made up of sensitive residential receptors. All other aspects of the Proposed project do not require construction activities or operational conditions that would impact sensitive receptors.

Construction Generated Air Contaminants

As previously mentioned, the Proposed Project would not have a construction phase involving building construction or ground disturbing activities. The Proposed Project includes the one-time placement of a 6,500-gallon storage tank on an existing pavement pad at the City's Public Works Corporation Yard on 5th Street in Davis. Therefore, Proposed Project construction would not result in a potentially significant contribution to regional concentrations of nonattainment pollutants and would not result in a significant

contribution to the adverse health impacts associated with those pollutants. Related impacts are considered less than significant.

Operational Air Contaminants

Operation of the Proposed Project would not result in the development of any substantial sources of air toxics. There are no stationary sources associated with the operations of the Proposed Project; nor would the Proposed Project attract mobile sources that spend long periods queuing and idling at the site. Operational emissions are expected to come from the tanker that would shuttle water from the WWTP to the Corporation Yard and the pickup trucks that would then deliver recycled water to various sites around the City. However, as shown in **Table 4.3-2** above, operational emissions of the Proposed Project would not result in emissions of criteria pollutants over YSAQMD thresholds. Therefore, there would not be significant concentrations of pollutants at nearby sensitive receptors. The Proposed Project would not be a source of toxic air contaminants and would not result in a high carcinogenic or non-carcinogenic risk during operation and related impacts are less than significant.

Carbon Monoxide Hot Spots

Concentrations of CO are a direct function of the number of vehicles, length of delay, and traffic flow conditions. Under certain meteorological conditions, CO concentrations close to congested intersections that experience high levels of traffic and elevated background concentrations may reach unhealthy levels, affecting nearby sensitive receptors. Given the high traffic volume potential, areas of high CO concentrations, or "hot spots," are typically associated with intersections that are projected to operate at unacceptable levels of service during the peak commute hours. It has long been recognized that carbon monoxide (CO) hotspots are caused by vehicular emissions, primarily when vehicles idle at congested intersections. However, transport of this criteria pollutant is extremely limited, and CO disperses rapidly with distance from the source under normal meteorological conditions. Furthermore, vehicle emissions standards have become increasingly stringent in the last 20 years. Currently, the allowable CO emissions standard in California is a maximum of 3.4 grams/mile for passenger cars, though the State imposes more stringent requirements for other types of vehicles. With the turnover of older vehicles, introduction of cleaner fuels, and implementation of increasingly sophisticated and efficient emissions control technologies, CO concentration in the SVAB is designated as in attainment. Detailed modeling of Proposed Project-specific CO "hot spots" is not necessary and thus this potential impact is addressed qualitatively.

A CO "hot spot" would occur if an exceedance of the State one-hour standard of 20 parts per million (ppm) or the eight-hour standard of 9 ppm were to occur. The analysis

prepared for CO attainment in the South Coast Air Quality Management District's (SCAQMD's) 1992 Federal Attainment Plan for Carbon Monoxide in Los Angeles County and a Modeling and Attainment Demonstration prepared by the SCAQMD as part of the 2003 Air Quality Management Plan can be used to demonstrate the potential for CO exceedances of these standards. The SCAQMD is the Air Pollution Control Officer for a large portion of southern California. The SCAQMD conducted a CO hot spot analysis as part of the 1992 CO Federal Attainment Plan at four high-traffic intersections in Los Angeles County during the peak morning and afternoon time periods. The intersections evaluated included Long Beach Boulevard and Imperial Highway (Lynwood), Wilshire Boulevard and Veteran Avenue (Westwood), Sunset Boulevard and Highland Avenue (Hollywood), and La Cienega Boulevard and Century Boulevard (Inglewood). Wilshire Boulevard and Veteran Avenue had the highest traffic volume of the intersections evaluated, measuring approximately 100,000 vehicles per day. Despite its high volume, the CO analysis concluded that there was no violation of CO standards (SCAQMD 1992). In order to establish a more accurate record of baseline CO concentrations affecting the Los Angeles, a CO "hot spot" analysis was conducted in 2003 at the same four busy intersections in Los Angeles at the peak morning and afternoon time periods. This "hot spot" analysis did not predict any violation of CO standards. The highest one-hour concentration was measured at 4.6 ppm at Wilshire Boulevard and Veteran Avenue and the highest eight-hour concentration was measured at 8.4 ppm at Long Beach Boulevard and Imperial Highway. Thus, there was no violation of CO standards.

Similar considerations are employed by other Air Quality Management Districts when evaluating potential CO concentration impacts. The Bay Area Air Quality Management District, Air Pollution Control Officer for the San Francisco Bay Area, concludes that under existing and future vehicle emission rates, a given project would generate a significant CO impact if it increases traffic volumes at a single intersection by more than 44,000 vehicles per hour or 24,000 vehicles per hour where vertical and/or horizontal air does not mix.

The Proposed Project is anticipated to result in approximately 3 to 4 daily traffic trips. Thus, the Proposed Project would not generate traffic volumes at any intersection of more than 100,000 vehicles per day (or 44,000 vehicles per day). It is not foreseeable that Proposed Project traffic would exceed CO values; related impacts are therefore less than significant.

d) **Less than significant Impact.** Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

The ability to detect odors varies considerably among the population and overall is subjective. Some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. An odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another. An unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one due to a phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

During placement of the 6,500-gallon tank, the Proposed Project presents the potential for generation of objectionable odors in the form of diesel exhaust within the immediate vicinity of the site. However, these emissions are short-term in nature and would rapidly dissipate and be diluted by the atmosphere downwind of the emission sources. Additionally, odors would be localized and generally confined to the Corporation Yard. Therefore, Proposed Project implementation would not adversely expose a substantial number of people to odor emissions.

Land uses commonly considered to be potential sources of obnoxious odorous emissions include agriculture (farming and livestock), wastewater treatment plants, food processing plants, chemical plants, composting facilities, refineries, landfills, dairies, and fiberglass molding. The Proposed Project includes replacing existing water sources with recycled water at the following facilities: The YCCL and composting facility (Napa Recycling Compost Facility), and the WWTP. While the Proposed Project includes transition to recycled water at these facilities, it would not alter existing operations with potential for new odorous emissions. Thus, the Proposed Project's delivery and use of recycled water at the above facilities would not result in the creation of new objectionable odors. All existing YCCL and WWTP odor controls would continue to be implemented and related impacts would be less than significant.

4.3.3 Mitigation Measures

No significant impacts were identified and no mitigation measures are required.

4.4 Biological Resources

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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 U.S. Fish and Wildlife Service?	☐	☐	☒	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
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?	☐	☐	☒	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?	☐	☐	☐	☒

This section is based in part on information contained in the City of Davis Wastewater Change Petition Submittal (City of Davis 2022a) and the following technical memorandum prepared by John McNerney, Wildlife Resource Specialist, City of Davis: *Habitat Impact Assessment Associated with the Temporal Decrease in Effluent Discharge from the Davis Wastewater Treatment Plant to the Willow Slough Bypass*. (City of Davis 2022b, **Appendix C**). Results are summarized below.

Discussion:

a-d) Less than significant Impact. The discharge of Saved Water to the Willow Slough Bypass has resulted in an increase in effluent discharge of approximately 2 million gallons per day (mgd). The Willow Slough Bypass is a flood water bypass that receives overflow from Willow Slough and backflow flood waters from the Yolo Bypass during winter flooding events. Earthen levees contain the wide flood plain with an unlined low flow channel along the foot of the southern levee. The low flow channel drains the Willow Slough Bypass flood plain and conveys non-flood flows which include City discharges and upstream agricultural drains during summer months.

Willow Slough Bypass supports a wide variety of wildlife species, including the federally threatened Giant Garter Snake (GGS). This is because the Willow Slough Bypass contains wetland habitat. Additionally, the Willow Slough Bypass and surrounding area is home to communities of beavers, who are largely responsible for regulating the wetland habitat along the slough through their dam-building activities. The GGS and other species then may utilize this wetland habitat. Historically, water would primarily travel down the Willow Slough Bypass via the southern low flow channel. Beaver activity (i.e. dams) in the channel intermittently causes flows to back up and flood adjacent floodplain area within the Willow Slough Bypass creating emergent freshwater wetlands habitat. When these dams break, water is released and the wetlands habitat changes back to ephemeral floodplain riparian.

The ordinary depth of water within the low flow channel is 5.5 feet. Under the Proposed Project, the removal of approximately 2 MGD (3 cubic feet per second), would result in a decrease of about 1.3 inches in the water level in the low-flow channel of the Willow Slough Bypass. Given the naturally intermittent flooding and draining of the Willow Slough

Bypass area due to beaver activity, the relatively minor decrease in overall water level in the slough as a result of the Proposed Project would not meaningfully affect wetlands and riparian habitats in the Proposed Project Area, nor would it significantly change the quality of the water in Willow Slough Bypass.

The minor 1.3-inch decrease in the water level in the Willow Slough Bypass would represent a return to the flow regime that existed prior to WWTP upgrades and therefore would not significantly impact beaver activity within the slough, nor would it significantly change or degrade the quality of beaver-created wetland habitat used by GGS. Thus, impacts to these species would be less than significant.

The Willow Slough Bypass also provides habitat for native and non-native warm water fish and invertebrates. However, the marginal decrease in the flow rate associated with the Proposed Project would not adversely affect conditions for fish species and/or invertebrates.

Based on the above discussion, the Proposed Project would not 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 (CDFW) or U.S. Fish and Wildlife Service. Furthermore, the Proposed Project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or U.S. Fish and Wildlife Service, including State or federally protected wetlands. Finally, the Proposed Project would not substantially interfere with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. Related impacts are less than significant.

e-f) **No Impact.** As discussed above, the Proposed Project would not result in biological impacts and thus would not conflict with any local policies or ordinances protecting biological resources. In addition, there are no adopted HCPs or NCCPs that would be affected by the Proposed Project. No impact would occur.

4.4.1 Mitigation Measures

No significant impacts were identified and no mitigation measures are required.

4.5 Cultural Resources

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☒
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☐	☒

Discussion:

a-c) No Impact. Removal of the Saved Water from the Willow Slough Bypass and use within the proposed places of use would not involve any ground disturbance or land alteration, and thus would not include potential for disturbance of known or unknown cultural or archeological resources. No impact would occur.

4.5.1 Mitigation Measures

No significant impacts were identified and no mitigation measures are required.

4.6 Energy

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

This section is based in part on the results of the City of Davis Recycled Water Project – Energy Impact Memorandum prepared by ECORP Consulting, Inc. (2023b, **Appendix F**). The assessment includes an analysis of energy consumption (e.g., oil, natural gas, coal) during the Proposed

Project's construction and operational phases. The impact analysis focuses on the four sources of energy that are relevant to the Proposed Project: electricity, natural gas, the equipment-fuel necessary for Proposed Project construction, and the automotive fuel necessary for Proposed Project operations.

4.6.1 Background

Energy relates directly to environmental quality. Energy use can adversely affect air quality and other natural resources. The vast majority of California's air pollution is caused by burning fossil fuels. Consumption of fossil fuels is linked to changes in global climate and depletion of stratospheric ozone. Transportation energy use is related to the fuel efficiency of cars, trucks, and public transportation; choice of different travel modes (e.g., auto, carpool, and public transit); vehicle speeds; and miles traveled by these modes. Construction and routine operation and maintenance of transportation infrastructure also consume energy. In addition, residential, commercial, and industrial land uses consume energy, typically through the usage of natural gas and electricity.

4.6.1.1 Energy Types and Sources

California relies on a regional power system comprised of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation resources. Natural gas provides California with a majority of its electricity followed by renewables, large hydroelectric and nuclear. Valley Clean Energy (VCE, 2023) provides energy services to the City of Davis. VCE buys cleaner, renewable based electricity and contracts other energy providers to deliver it to customers. VCE invests the program profits to develop beneficial energy programs for local communities that allow cleaner and less damaging fuel to power homes in the Davis area. The company is committed to greener electricity and the transition to fully renewable energy sources, in addition to furthering their environmental justice goals.

4.6.1.2 Energy Consumption

Electricity use is measured in kilowatt-hours (kWh) while natural gas use is measured in therms. Vehicle fuel use is typically measured in gallons (e.g., of gasoline or diesel fuel), although energy use for electric vehicles is measured in kWh. The electricity consumption associated with all nonresidential uses in Yolo County from 2017 to 2021 is shown in **Table 4.6-1**. As indicated, the demand has increased since 2017.

Table 4.6-1. Nonresidential Electricity Consumption in Yolo County 2017-2021	
Year	**Electricity Consumption (kilowatt hours)**
2021	1,228,350,239
2020	1,200,933,084
2019	1,202,699,561
2018	1,201,438,595
2017	1,205,896,977

Source: California Energy Commission 2022

Automotive fuel consumption in Yolo County from 2018 to 2022 is shown in **Table 4.6-2**. Fuel consumption demand has decreased since 2018.

Table 4.6-2. Automotive Fuel Consumption in Yolo County 2018-2022	
Year	**Total On-Road Fuel Consumption**
2022	127,475,931
2021	127,834,986
2020	115,330,185
2019	129,329,268
2018	128,430,100

Source: CARB 2021

4.6.2 Regulatory Framework

4.6.2.1 State

Integrated Energy Policy Report

Senate Bill 1389 (Bowen, Chapter 568, Statutes of 2002) requires the California Energy Commission (CEC) to prepare a biennial integrated energy policy report that assesses major energy trends and issues facing California's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the State's economy; and protect public health and safety (Public Resources Code Section 25301a). The CEC prepares these assessments and associated policy recommendations every two years, with updates on alternate years, as part of the Integrated Energy Policy Report (IEPR).

The 2017 IEPR focuses on next steps for transforming transportation energy use in California. The 2017 IEPR addresses the role of transportation in meeting State climate, air quality, and energy goals; the transportation fuel supply; the Alternative and Renewable Fuel and Vehicle Technology Program; current and potential funding mechanisms to advance transportation policy; transportation energy demand forecasts; the status of statewide plug-in electric vehicle infrastructure; challenges and opportunities for electric vehicle infrastructure.

Executive Order B-55-18

In September 2018 Governor Edmund (Jerry) Brown, Jr. Signed Executive Order (EO) B-55-18, which establishes a new statewide goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." Carbon neutrality refers to achieving a net zero carbon dioxide emissions. This can be achieved by reducing or eliminating carbon emissions, balancing carbon emissions with carbon removal, or a combination of the two. This goal is in addition to existing statewide targets for greenhouse gas emission reduction. EO B-55-18 requires the CARB to "work with relevant State agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal.

Senate Bill 1368

On September 29, 2006, Governor Arnold Schwarzenegger signed into law Senate Bill (SB) 1368 (Perata, Chapter 598, Statutes of 2006). The law limits long-term investments in baseload generation by the State's utilities to those power plants that meet an emissions performance standard jointly established by the CEC and the California Public Utilities Commission (CPUC).

The CEC has designed regulations that:

- Establish a standard for baseload generation owned by, or under long-term contract to, publicly owned utilities, of 1,100 pounds carbon dioxide per megawatt hour. This would encourage the development of power plants that meet California's growing energy needs while minimizing their emissions of greenhouse gas.
- Require posting of notices of public deliberations by publicly owned utilities on long-term investments on the CEC website. This would facilitate public awareness of utility efforts to meet customer needs for energy over the long term while meeting the State's standards for environmental impact.
- Establish a public process for determining the compliance of proposed investments with the Emissions Performance Standard (Perata, Chapter 598, Statutes of 2006).

Senate Bill 1368 Renewable Energy Sources (Renewable Portfolio Standards)

Established in 2002 under SB 1078 and accelerated by SB 107 (2006) and SB 2 (2011), California's Renewables Portfolio Standard (RPS) obligates investor-owned utilities, energy service providers, and community choice aggregators to procure 33 percent of their electricity from renewable energy sources by 2020. Eligible renewable resources are defined in the 2013 RPS to include biodiesel; biomass; hydroelectric and small hydro (30 megawatts or less); Los Angeles Aqueduct hydro power plants; digester gas; fuel cells; geothermal; landfill gas; municipal solid waste; ocean thermal, ocean wave, and tidal current technologies; renewable derived biogas; multi-fuel facilities using renewable fuels; solar photovoltaic; solar thermal electric; wind; and other renewables that may be defined later. Governor Brown signed SB 350 on October 7, 2015, which expands the RPS by establishing a goal of 60 percent of the total electricity sold to retail customers in California per year by December 31, 2030. In addition, SB 350 includes the goal to double the energy efficiency savings in electricity and natural gas final end uses (such as heating, cooling, lighting, or class of energy uses upon which an energy efficiency program is focused) of retail customers through energy conservation and efficiency. The bill also requires the CPUC, in consultation with the CEC, to establish efficiency targets for electrical and gas corporations consistent with this goal. SB 350 also provides for the transformation of the California Independent System Operator (CAISO) into a regional organization to promote the development of regional electricity transmission markets in the western states and to improve the access of consumers served by the CAISO to those markets, pursuant to a specified process. In 2018, Governor Brown signed SB 100 codifying a goal of 60 percent renewable procurement by 2030 and 100 percent by 2045.

4.6.3 Methodology

Levels of operational related energy consumption estimated to be consumed by the Proposed Project include the number of kWh of electricity and gallons of gasoline. The amount of total construction-related fuel consumption was estimated using ratios provided in the Climate Registry's General Reporting Protocol for the Voluntary Reporting Program, Version 2.1. Electricity was calculated using the California Emissions Estimator Model (CalEEMod), version 2022.1, in accordance with the CEC's Recommended Revised Estimates for Embedded Energy Use (2006). CalEEMod is a Statewide land use computer model designed to quantify resources associated with both construction and operations from a variety of land use projects. Operational automotive fuel consumption has been calculated with EMFAC 2021. EMFAC 2021 is a mathematical model that was developed to calculate emission rates and rates of gasoline consumption from motor vehicles that operate on highways, freeways, and local roads in California. For the purposes of this analysis, the amount of electricity estimated to be consumed by the Proposed Project are quantified and compared to that consumed by all nonresidential land uses in Yolo County. Similarly, the amount of fuel necessary for Proposed Project operations is calculated and compared to that consumed in Yolo County.

Consistent with CEQA Guidelines Appendix G, the Proposed Project would result in a significant impact to energy if it would:

- result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation, or
- conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

Discussion:

a) Less than significant Impact. The Proposed Project involves delivery of Saved Water generated by the WWTP to onsite use areas within the WWTP boundary, to the adjacent 160-acre OFA, the YCCL, and the Davis Restoration Wetlands. In addition, the Proposed Project would deliver approximately 100,000 gallons of Saved Water per year for City tree irrigation via the pickup trucks. It is noted that the Proposed Project includes the purchase of a 6,500-gallon recycled water storage tank to be placed at the City Corporation Yard, but otherwise does not include a construction phase because it does not propose the construction of new facilities involving ground disturbance. Fuel use associated with delivery of the water storage tank would be nominal.

For the purpose of this analysis, the amount of electricity consumed by water pumping is estimated and compared to that consumed by all nonresidential land uses in Yolo County. The amount of fuel necessary for Proposed Project operations is calculated and compared to that consumed by on-road vehicles in Yolo County.

Energy consumption associated with the Proposed Project is summarized in **Table 4.6-3**.

Table 4.6-3. Proposed Project Energy and Fuel Consumption

Energy Type	Annual Energy Consumption	Percentage Increase Countywide
Pumping Energy Consumption		
Electricity Consumption[1]	269,464 kilowatt-hours	0.022
Automotive Fuel Consumption		
Trucking Trips[2]	187 gallons	0.0001

Source: [1]CalEEMod; [2]EMFAC2021 (CARB 2021)
Notes: The Proposed Project increases in electricity consumption is compared with all nonresidential uses in Yolo County in 2021, the latest data available. The Proposed Project increases in automotive fuel consumption are compared with the anticipated countywide fuel consumption in 2022, the most recent full year of data.

As indicated in Table 4.6-3, the Proposed Project's gasoline fuel consumption during operations, including all truck trips, is estimated to be 187 gallons annually. This would

increase the annual countywide gasoline fuel use in the county by approximately 0.0001 percent. As such, Proposed Project operations would have a nominal effect on local and regional energy supplies.

Additionally, operations of the Proposed Project would include electricity used to pump water to the locations identified above. As shown in Table 4.6-3, the annual electricity consumption due to Proposed Project operations would be 269,464 kwh, resulting in a minimal increase of approximately 0.022 percent in the typical annual electricity consumption attributable to all nonresidential uses in Yolo County.

In September 2018, Governor Brown signed EO B-55-18 establishing a new Statewide goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." Carbon neutrality refers to achieving net zero carbon dioxide (CO_2) emissions. This can be achieved by reducing or eliminating carbon emissions, balancing carbon emissions with carbon removal, or a combination of the two. This goal is in addition to existing Statewide targets for greenhouse gas emission reduction. Governor's Executive Order B-55-18 requires CARB to "work with relevant State agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal."

b) **Less than significant Impact.** The Proposed Project would be designed in a manner that is consistent with relevant energy conservation plans designed to encourage development that results in the efficient use of energy resources. The Proposed Project would not conflict with the City of Davis General Plan Energy Section and its goals and policies. As seen in Table 4.6-3, the Proposed Project would not result in the excessive use of energy resources in the region. Therefore, the Proposed Project would be consistent with all plans for renewable energy and energy efficiency and related impacts are less than significant.

4.6.4 Mitigation Measures

No significant impacts were identified and no mitigation measures are required.

4.7 Geology and Soils

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☐	☒

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
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 onsite or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
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?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒

Discussion:

a-f) No Impact. Proposed Project operation would be accomplished almost exclusively using existing facilities, with the exception of the purchase and placement of a prefabricated polyethylene 6,500-gallon recycled water tank. This tank would be placed on existing pavement within the City Corporation Yard on 5th Street in the City of Davis. Polyethylene tanks are ductile allowing them to absorb the forces and stresses of a seismic event. As a result, the risk of damage to a polyethylene storage tank is less than that of steel or fiberglass (PolyProcessing. 2023.). Thus, the Proposed Project does not introduce new facilities that would be subject to earthquake fault, seismic ground shaking, liquefaction, landslides, or a geologic unit or soil that is unstable, nor would it result in substantial soil erosion or the loss of topsoil. Finally, the Proposed Project does not involve the use of septic tanks or alternative wastewater disposal systems and does not require ground disturbance which could indirectly destroy a unique paleontological resource or site or unique geologic feature. There would be no impact.

4.7.1 Mitigation Measures

No significant impacts were identified and no mitigation measures are required.

4.8 Greenhouse Gas Emissions

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

This section is based on results of the City of Davis Recycled Water Project – Emissions Memorandum prepared by ECORP Consulting, Inc. (2023a, Appendix B). The Emissions Memorandum estimates Proposed Project-generated Greenhouse Gas (GHG) emissions and determines the level of impact the Proposed Project would have on the environment. See Appendix B for a discussion of the GHG environmental and regulatory setting, including applicable emissions-related standards, regulations, and assessment methodology. The Emissions Memorandum results are presented below.

Discussion:

a) **Less than significant Impact.** The Yolo-Solano Air Quality Management District (YSAQMD) has not established significance thresholds for the emissions of GHG from land use development projects. However, the Proposed Project site is located within the SVAB and therefore, thresholds of significance established by SMAQMD have been used to evaluate the Proposed Project's operation related GHG emissions. These thresholds are considered appropriate for the purposes of this analysis due to similarities between both the geomorphic and urban pattern of these two neighboring air district jurisdictions.

Construction Emissions

The Proposed Project includes the one-time placement of a 6,500-gallon storage tank on an existing paved pad at the City's Public Works Corporation Yard on 5th Street. Furthermore, the facilities that would store the recycled water would not require alterations or construction phases. No new construction or ground disturbance is required and thus no construction equipment that would produce GHG emissions would be used. Any emissions associated with the one-time delivery of the 6,500-gallon storage tank would be less than the Proposed Project's estimated operational emissions, which are under the SMAQMD's GHG significance thresholds (as shown below in **Table 4.8-1**). Thus, construction emissions would be less than significant.

Operational Emissions

Proposed Project operation would result in GHG emissions associated with pickup truck trips needed to transport water to sites throughout the City and tanker truck trips needed to refill the proposed 6,500-gallon Corporation Yard storage tank with recycled water. GHG emissions associated with the Proposed Project also include the operation of pumps to deliver water supply to the WWTP, the adjacent OFA area (east of the WWTP), the Davis Restoration Wetlands, the YCCL and related composting facility and agricultural irrigation areas, and to irrigate City trees. Long-term operational GHG emissions attributed to these Proposed Project activities are identified in **Table 4.8-1**.

Table 4.8-1. Operational-Related Greenhouse Gas Emissions	
Emissions Source	**CO2e (Metric Tons/Year)**
Truck Trips	2
Water Pumping	25
Total	**27**
Significance Threshold	*1,100*
Exceed Threshold?	No

Source: Truck trip emissions derived from EMFAC 2021 version; emissions from water pumping per the California Emissions Estimator Model (CalEEMod 2022.1). Refer to Appendix B for Model Data Outputs.

As shown in Table 4.8-1, Proposed Project operations would result in 27 metric tons/year of CO_2e, which is below the significance threshold. Thus, Proposed Project operational emissions are less than significant.

b) **No Impact.** In December of 2022, the City of Davis finalized the 2020-2040 Davis Climate Action Adaptation Plan (CAAP) that places the community on a path to achieve carbon neutrality by 2040 and reduce emissions to 40 percent below 2016 levels by 2030. This update to the previous CAAP was intended to achieve the minimum GHG reduction target based on SB 32 while simultaneously aligning the City with the most up-to-date CARB Scoping Plan. The CAAP prioritizes goals and actions that address and reduce local GHG emissions from building energy and design, transportation and land use, water conservation and waste reduction, climate adaptation, and carbon removal.

GHG emissions associated with the Proposed Project would primarily be operation-related. As seen above in Table 4.8-1, Proposed Project operations would fall under the significance threshold because it would not generate a significant amount of GHG emissions. The Proposed Project would entail delivery of recycled water for beneficial use at the WWTP, the adjacent OFA area (east of the WWTP), the Davis Restoration Wetlands, the YCCL and related composting facility, and to irrigate City trees. The Proposed Project aligns with the CAAP's water conservation and waste reduction and climate adaptation goals by utilizing recycled water to enhance the urban forest within the City. This, in turn, could save more water resources and continue to enhance the City's desire to expand cool spaces. The Proposed Project would support the climate resilience and adaptation goals outlined by the CAAP without contributing a significant amount of GHG emissions. The Proposed Project is consistent with the significance thresholds and the City of Davis 2020-2040 CAAP and would not conflict with any GHG goals or policies. For these reasons, the Proposed Project would have no impact on any applicable plan, policy or regulation related to the reduction in GHG emissions.

4.8.2 Mitigation Measures

No significant impacts were identified and no mitigation measures are required.

4.9 Hazards and Hazardous Materials

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
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?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
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?	☐	☐	☐	☒
e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard for people residing or working in the Project Area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

Discussion:

a-e) **No Impact.** The Proposed Project would not involve the transport or use of hazardous materials nor change any public exposure to hazards or hazardous materials through any reasonably foreseeable upset or accident conditions beyond what may occur within the Proposed Project Area under existing conditions. The Proposed Project does not involve ground disturbance, nor would it occur on a hazardous materials site that would create a risk to the public or environment. The YCCL, WWTP, OFA, and Davis Restoration Wetlands are located at least 7 miles northeast of the University of California, Davis Airport while the City Corporation Yard on 5th Street is located approximately 3.2 miles northeast. The Davis City limit, within which Proposed Project tree irrigation would continue to occur, is located approximately 0.7-mile northeast of this airport. The Proposed Project does not include any new habitable structures, buildings or use areas that could constitute an airport safety hazard. Furthermore, the Proposed Project would not expose people or structures to wild land fires or physically interfere with an adopted emergency response plan or emergency evacuation plan. Overall, there would be no hazards or hazardous material impacts associated with the Proposed Project.

4.9.1 Mitigation Measures

No significant impacts were identified and no mitigation measures are required.

4.10 Hydrology and Water Quality

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☐	☒	☐

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒
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 that would:				
i) result in substantial erosion or siltation onsite or offsite;	☐	☐	☐	☒
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding onsite or offsite;	☐	☐	☐	☒
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	☐	☐	☐	☒
iv) impede or redirect flood flows?	☐	☐	☐	☒
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to Project inundation?	☐	☐	☒	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

Discussion:

a) **Less than Significant Impact.** The Proposed Project would only involve removal of discharges that are permitted through the City's NPDES permit and waste discharge requirements. While recycled water applied within the proposed use areas would be subject to infiltration, this water would be generated by the City WWTP's recently upgraded advanced secondary and tertiary treatment system. This system consists of a

headworks with a mechanical bar screen, aerated grit removal, primary sedimentation, aeration basins including nitrification and denitrification, secondary clarification, tertiary filtration, chlorine disinfection with sodium hypochlorite, dechlorination with sodium bisulfite, and reaeration. The upgraded treatment system results in the generation of recycled water that meets Title 22 requirements for disinfected tertiary recycled water as specified in CCR Title 22 Section, 60301.230. Thus, the use of Project generated recycled water, would not violate water quality standards, waste discharge requirements or otherwise substantially degrade surface or groundwater quality. Related impacts are less than significant.

b) **No Impact.** The Proposed Project area is located within the Yolo Groundwater Subbasin, which encompasses about 400 square miles in the southern portion of the Sacramento Valley Groundwater Basin. The subbasin is bounded on the east by the Sacramento River, on the west by the Coast Range, on the north by Cache Creek, and on the south by Putah Creek. The subbasin is comprised of two main aquifers: an intermediate unconfined aquifer at depths of approximately 200- to 700-feet, and a deep confined aquifer at depths of approximately 700- to 2,700-feet. Groundwater, which has historically been pumped mostly from the intermediate aquifer, supplies a large portion of the water demand in Yolo County. Groundwater in Yolo County is recharged by the Sacramento River, tributaries, agricultural return flows, local precipitation, and contributions from adjacent basins. The total groundwater storage capacity for the Yolo Subbasin is approximately 6.5 Million Acre Feet (MAF). (California Department of Water Resources 2003.) The Yolo Subbasin has an estimated sustainable yield of 346,000 afy and is not projected to exceed this yield until 2070, and then only by 8,000 afy, assuming no management actions are implemented. (Yolo Subbasin 2022 GSP, p. 5-1.)

The Proposed Project would not extract groundwater supplies nor inject water into aquifers, therefore there would be no direct Project impacts resulting from substantial depletion of groundwater supplies or resulting in a net deficit in aquifer volume or lowering of local groundwater table level. The Proposed Project would, to some extent, offset groundwater use at the YCCL, which could benefit the groundwater basin. There could be a net difference in groundwater recharge when the recharge that historically occurred in the Willow Slough Bypass is compared to the recharge that would occur at the YCCL, Davis Restoration Wetlands and City-owned properties where tree irrigation would occur. As shown in Table 2-1, the Proposed Project would continue the practice of discharging 1,074 afy to the Davis Restoration Wetlands allowing for ongoing aquifer recharge at that location similar to that which currently exists in the Willow Slough Bypass. Further, the use of Saved Water at the YCCL could result in a change in groundwater recharge for that estimated volume of water used at the YCCL (i.e., 491-613 afy, see Table

2-1) as compared to discharge of that volume to the Willow Slough Bypass. Assuming only a fraction of the 491-613 afy would have recharged the basin following discharge to the Willow Slough Bypass, the loss of recharge may be on the order of two hundred afy, which in turn may be offset by replacing the historic groundwater use at the YCCL with recycled water use.

Because Proposed Project recycled water is generated from Saved Water that was historically evaporated during the WWTP's former treatment process, there would be no net reduction in water available for groundwater recharge, Therefore, the Proposed Project would not adversely impact groundwater recharge because it would not change groundwater recharge at these sites. Thus, the Proposed Project would not decrease groundwater supplies or interfere substantially with groundwater recharge such that the Proposed Project may impede sustainable groundwater management of the basin and there would be no impact.

c) **No Impact.** The Proposed Project would not substantially alter the existing drainage patterns of the Willow Slough Bypass, including the alteration of the course of a stream or river, in a manner which would result in substantial erosion, siltation on- or off-site, or increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site. Further, Saved Water would only be applied where existing water dependent operations are occurring at the WWTP and the YCCL (including the Compost Facility and agricultural irrigation areas), the Davis Restoration Wetlands, and at City parks and open spaces in reasonable amounts consistent with past practices such that there would not be an increase in the rate or amount of surface runoff. In addition, the Proposed Project does not include construction activities or ground disturbance that would result in the impedance or redirection of flood flows. Finally, the Proposed Project would only replace the water source used at existing facilities and thus would not 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. Thus, no impacts relating to water drainage patterns would occur with Proposed project implementation.

d) **Less Than Significant Impact.** The Proposed Project would not be subject to tsunami or seiche wave inundation because the Proposed project is located a considerable distance from any large water body or ocean. Furthermore, the WWTP where recycled water is generated, is protected from flood hazard by levees constructed according to standard engineering design practices to limit the potential for exposure of people or property to water-related hazards, such as flooding. Thus, the Proposed Project is not at risk of release of pollutants due to Proposed Project inundation and related impacts are less than significant.

e) **No Impact.** The Proposed Project represents a change in the source of water used at certain existing facilities from potable water, pumped groundwater, and stored stormwater to recycled Saved Water. Because Proposed Project generated recycled water would be approved for the proposed uses by the RWQCB, the Proposed Project would not obstruct implementation of a water quality control plan or sustainable groundwater management plan and there would be no impact.

4.10.1 Mitigation Measures

No significant impacts were identified and no mitigation measures are required.

4.11 Land Use and Planning

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Discussion:

a) **No Impact.** The Proposed Project involves obtaining the necessary permits to implement a recycled water program using primarily existing facilities. Construction of new facilities with potential to divide an established community would not occur. The only required new facility is 6,500-gallon recycled water storage Tank that would be purchased and placed on an existing pad at the City Corporation Yard. Thus, the Proposed Project would not physically divide an established community and there would be no impact.

b) **No Impact.** The Proposed Project is proposed consistent with local land use plans including the City of Davis General Plan and related EIR and no zoning or land use changes are required for Proposed Project implementation. Furthermore, the City's 2018 Near-Term Recycled Water Master Plan contemplates and recommends wetland, landfill and municipal uses as a means of putting city generated recycled water to productive use. Thus, the Proposed Project is consistent with applicable plans developed for the purpose of avoiding or mitigating an environmental effect and there would be no impact.

4.11.1 Mitigation Measures

No significant impacts were identified and no mitigation measures are required.

4.12 Mineral Resources

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) 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?	☐	☐	☐	☒

Discussion:

a-b) No Impact. The Proposed Project does not include new construction and thus does not have the potential to displace any existing locally-important mineral resource recovery sites. Furthermore, according to the City's General Plan, there are no significant aggregate mineral resources in the City. No impacts to mineral resources would occur with the diversion of Saved Water under the Proposed Project because only existing facilities would be used to divert such water. No impacts to mineral resources would occur with the Proposed Project.

4.12.1 Mitigation Measures

No significant impacts were identified and no mitigation measures are required.

4.13 Noise

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in 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?	☐	☐	☒	☐

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Result in generation of excessive ground-borne vibration or ground-borne noise levels?	☐	☐	☐	☒
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?	☐	☐	☒	☐

This section is based in part on the results of the City of Davis Recycled Water Project – Noise Impact Memorandum prepared by ECORP Consulting, Inc. (2023c, **Appendix D**). The Noise Impact Memorandum provides background on the fundamentals of sound and environmental noise and provides a related environmental and regulatory setting, as well as pertinent standards of significance. Results of the noise impact memorandum are summarized below.

Discussion:

a) **Less Than Significant Impact.** 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, and some passive recreation areas would each be considered noise sensitive and may warrant unique measures for protection from intruding noise. The Proposed Project site spans various locations throughout Davis and Yolo County, which is primarily made up of sensitive residential receptors. Potential noise impacts resulting from the Proposed Project are presented below.

Construction Noise Impacts

The Project would facilitate existing municipal operations and does not propose new construction or include new uses that would generate substantial noise. Thus, the Proposed Project does not include a construction phase that would involve onsite construction equipment or offsite construction traffic (e.g. worker commutes and material hauling). The Proposed Project proposes the one-time placement of a 6,500-gallon storage tank on an existing pad at the City's Public Works Corporation Yard on 5th Street in Davis. Furthermore, the facilities that would store, transmit and transfer recycled water are existing operational facilities that require no construction or alterations. Placement of

the proposed Corporation Yard recycled water storage tank would require a single delivery trip that would not result in an increase in ambient noise levels within the City. Thus, there would be no construction noise impacts.

Operational Noise Impacts

Proposed Project operations would result in additional traffic on area roadways during trucked delivery of Saved Water (i.e., to fill the proposed Corporation Yard storage tank and to deliver Saved Water to City tree irrigation sites). The maximum number of operational trips traveling to and from the Corporation Yard site would not exceed 3 to 4 daily trips. According to the California Department of Transportation Technical Noise Supplement to the Traffic Noise Analysis Protocol (2013), a doubling of traffic on a roadway is required to result in an increase of 3 dB (outside of the laboratory, a 3-dBA change is considered a just-perceivable difference). The Proposed Project trips required for water delivery would not result in a doubling of traffic on the local transportation network, therefore its contribution to existing traffic noise would not be perceptible. Another aspect of the Proposed Project that would produce noise is the pumping of water within existing pipelines. However, water pumping at the WWTP is already occurring and the Proposed Project would not increase ambient pump noise levels to any unacceptable levels. Furthermore, the sites where water is proposed to be pumped are within existing municipal facilities (the WWTP and YCCL) with no sensitive receptors in close proximity. Operational noise impacts would be less than significant.

b) **No Impact.** The Proposed Project would not result in vibrational impacts during the one-time delivery of the water storage tank or the continual tree watering. The water storage tank would be located at the City's Public Works Corporation Yard on 5th Street in Davis, which may have equipment or normal business operations that would result in groundborne vibrations. However, the Proposed Project would not introduce any new use of any stationary equipment that would result in excessive groundborne vibration levels. Additionally, no vibrational impacts from the pipeline or pumps would occur. Therefore, the Proposed Project would result in no groundborne vibration impacts.

c) **Less Than Significant Impact.** The City's Public Works Corporation Yard on 5th Street is located approximately 3.2 miles northeast of University of California, Davis Airport. The various water delivery locations for tree watering throughout the City may be closer to the University Airport than the City's Public Works Corporation Yard, however, the Proposed Project would not expose workers to any additional airport noise levels beyond existing levels. Related impacts are less than significant.

4.13.2 Mitigation Measures

No significant impacts were identified and no mitigation measures are required.

4.14 Population and Housing

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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)?	☐	☐	☐	☒
b) Displace substantial numbers of people or existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion:

a) **No Impact.** The Proposed Project would not induce population growth because it would only remove Saved Water from Willow Slough Bypass for non-growth inducing uses on existing wetland, industrial, and institutional sites. The Saved Water would partially replace water used on City-owned properties and at the YCCL. Moreover, use of Saved Water at the Davis Restoration Wetlands would not affect population growth because the wetlands do not support a human population. The Proposed Project does not involve expansion of the City's WWTP or its discharge facilities. The Proposed Project would not induce or deter economic development or population growth because it would not modify the water supply assumptions set forth in the 2013 IS/MND or approved land-use planning documents, such as the Near-Term Recycled Water Master Plan. In sum, the Proposed Project would not induce growth in the region because the Proposed Project would not include new or expanded infrastructure. Thus, the Proposed Project would not result in any new significant effects from growth.

b) **No Impact.** The diversion of the Saved Water from the Willow Slough Bypass and use of water at the identified places of use pursuant to the Proposed Project would not displace any housing or people and there would be no impact.

4.14.1 Mitigation Measures

No significant impacts were identified and no mitigation measures are required.

4.15 Public Services

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	☐	☐	☐	☒
Fire Protection?	☐	☐	☐	☒
Police Protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other Public Facilities?	☐	☐	☐	☒

Discussion:

a) **No Impact.** The Proposed Project would not create new demand for public services or alterations to existing public facilities because it does not involve construction of new housing or otherwise induce population growth. Demand for city fire and police services, schools and parks would remain unchanged under the Proposed Project and related service ratios would continue to be maintained with existing facilities. Thus, the Proposed Project would have no impact to public services or other public facilities.

4.15.1 Mitigation Measures

No significant impacts were identified and no mitigation measures are required.

4.16 Recreation

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Discussion:

a) **No Impact.** The Proposed Project would not create new demand for use of existing neighborhood and regional parks or other recreational facilities because it does not involve construction of new housing or otherwise induce population growth. Thus, the Proposed Project would not accelerate or otherwise contribute to the physical deterioration of existing recreational facilities and there would be no impact.

b) **No Impact.** The Proposed Project does not include new recreational facilities or require the construction or expansion of existing recreational facilities which might have an adverse physical effect on the environment. There would be no impact.

4.16.1 Mitigation Measures

No significant impacts were identified and no mitigation measures are required.

4.17 Transportation

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?	☐	☐	☒	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d) Result in inadequate emergency access?	☐	☐	☐	☒

This section is based on results of the City of Davis Recycled Water Project – Transportation Impact Memorandum prepared by ECORP Consulting, Inc. (2023d, **Appendix E**). The Transportation Impact Memorandum evaluates potential Level of Service (LOS) and Vehicle Miles Traveled (VMT) Proposed Project impacts. Memorandum results are presented below.

Discussion:

a) **Less than Significant Impact.** According to the City's Transportation System Level of Service (LOS) Policy, impacts at intersections within the City are defined/analyzed when the addition of a proposed project's traffic causes any of the following:

a) For signalized intersections outside the Core Area, causes overall intersection operations to deteriorate from an acceptable level (LOS E or better in the AM or PM peak hour) to an unacceptable level (LOS F in the AM or PM peak hour);

b) For signalized intersections outside the Core Area, exacerbate unacceptable (LOS F) operations by increasing an intersection's average delay by five seconds or more;

c) For unsignalized intersections outside the Core Area, causes the worst-case movement (or average of all movements for all-way stop-controlled intersections) to deteriorate from an acceptable level (LOS E or better in the AM or PM peak hour) to an unacceptable level (LOS F in the AM or PM peak hour) and meet the California Manual on Uniform Traffic Control Devices (MUTCD) peak hour signal warrant;

d) For unsignalized intersections outside the Core Area that operate unacceptably (LOS F in the AM or PM peak hour) and meet MUTCD's peak hour signal warrant without the project, exacerbate operations by increasing the overall intersection's volume by more than one percent; or

e) For unsignalized intersections that operate unacceptably, but do not meet MUTCD's peak hour signal warrant without the project, add sufficient volume to meet the MUTCD peak hour signal warrant.

The Proposed Project would facilitate existing municipal operations and does not propose new construction or include new uses that would generate or attract substantial vehicle trips. Furthermore, the Proposed Project does not include changes to the existing road network, nor would it influence existing transit, bicycle and/or pedestrian facilities. The Proposed Project is limited to delivering Saved Water for existing operations at the following facilities: the YCCL, WWTP, and the Davis Restoration Wetlands. Saved Water would be delivered to these facilities using existing pumpstations, pipelines and overland conveyance systems.

The only aspect of the Proposed Project that requires vehicle trips is the transport and delivery of Saved Water for the existing City Tree Irrigation Program. Under the City's program, trees are irrigated using 275-gallon tanks (totes) contained in the back of pickup trucks. Under the Proposed Project, this practice would continue with one modification. Instead of filling pickup truck totes with potable water at the City Nursery located at 1818 5th Street, filling would occur directly across the street from a proposed prefabricated 6,500-gallon recycled water tank that would be placed in the City Corporation Yard on 5th Street as part of the Proposed Project (see Figure 2-4) . From there, pickup trucks with totes would travel to locations where City tree irrigation is required consistent with existing practices. Thus, trips associated with tree irrigation currently exist on the City's road network and consequently would not trigger intersection analysis based on the above LOS criteria.

The only new trips generated by the Proposed Project are trips required to fill the proposed Corporation Yard storage tank with Saved Water. As discussed in the Project Description, this would be accomplished using a 4,000-gallon tanker truck to transport Saved Water from the WWTP Outlet Hydrant to the proposed Corporation Yard storage tank. According to the Davis Recycled Water Project – Energy Impact Memorandum **(**Appendix F), storage tank filling would require approximately 25 tanker truck trips per year, or just over two trips per month. A trip rate of two trips per month between the WWTP and City Corporation Yard is insignificant in comparison to existing traffic volumes and thus would not trigger the above criteria for intersection LOS analysis.

Based in the above discussion, the Proposed Project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities. Related impacts are less than significant.

b) **Less than Significant Impact.** CEQA Guidelines Section 15064.3 subdivision (b) addresses the criteria for analyzing transportation impacts and establishes the VMT metric as the most appropriate measure of transportation impacts in a CEQA document. VMT refers to the amount and distance of vehicle travel attributable to a project. VMT generally represents the number of vehicle trips generated by a project multiplied by the average trip length for those trips. For CEQA transportation impact assessment, VMT shall be calculated using the origin-destination VMT method, which accounts for the full distance of vehicle trips with one end from the project.

Because the City of Davis has not yet adopted guidelines for addressing VMT impacts for land development projects in compliance with CEQA Guidelines Section 15064.3, guidance provided in the Governor's Office of Planning and Research technical directive on CEQA has been employed to analyze impacts. The directive addresses several aspects of VMT impact analysis, and is organized as follows:

- Screening Criteria: Screening criteria are intended to quickly identify when a project should be expected to cause a less-than-significant VMT impact without conducting a detailed study.
- Significance Thresholds: Significance thresholds define what constitutes an acceptable level of VMT and what is considered a significant level of VMT requiring mitigation.
- Analysis Methodology: These are the procedures and tools for producing VMT forecasts to use in the VMT impact assessment.
- Mitigation: Projects that are found to have a significant VMT impacts are required to implement mitigation measures to reduce impacts to a less than significant level (or to the extent feasible).

Screening criteria can be used to identify whether sufficient evidence exists to presume a project would have a less than significant VMT impact without conducting a detailed study. Projects meeting at least one of the applicable criteria can be presumed to have a less than significant VMT impact, absent substantial evidence that the project would lead to a significant impact. The available screening criteria were reviewed, and it was determined the "Small Projects" criteria applies to the Proposed Project. Under the Small Projects criteria, a project that generates 110 or fewer average daily vehicle trips or less than 880 VMT on a typical day is presumed to have a less than significant VMT impact. As discussed above, the Proposed Project would only generate vehicle trips for the transport of Saved Water related to the City's existing tree irrigation program, and only tanker truck trips associated with filling the proposed Corporation Yard storage tank would be considered

new trips. The task of filling the Corporation Yard tank would generate an estimated 25 tanker truck trips per year or slightly over two trips per month which equates to 0.5 trips per day which is well below the 110 daily trip threshold. Thus, the Small Project exemption applies to the Proposed Project and a detailed VMT analysis is not required. It should be noted that even if pickup truck tote trips associated with tree irrigation were assumed to also be new trips, the Proposed Project would only average approximately 1.5 trips per day and would still remain well below the 110 trip per day threshold. Related impacts are less than significant.

c-d) No Impact. The Proposed Project does it involve new road construction, nor would it modify any existing transportation facilities. The Proposed Project would rely on existing facilities for operation and would not introduce incompatible uses or interfere with emergency access requirements. There would be no impact.

4.17.1 Mitigation Measures

No significant impacts were identified and no mitigation measures are required.

4.18 Tribal Cultural Resources

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) 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:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or	☐	☐	☐	☒

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
ii) 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.	☐	☐	☐	☒

This section summarizes results of AB52 Tribal Cultural Resources (TCRs) consultation conducted by the City of Davis for the Proposed Project.

Assembly Bill 52

Effective July 1, 2015, AB 52 amended CEQA to require that: 1) a lead agency provide notice to those California Native American tribes that requested notice of projects proposed by the lead agency; and 2) the Lead Agency must consult with any tribe that submits a request for consultation within 30 days of receipt of the notice. Topics that may be addressed during consultation include TCRs, the potential significance of Proposed Project impacts, the type of environmental document that should be prepared, and possible mitigation measures and project alternatives.

Pursuant to AB 52, Section 21073 of the PRC defines California Native American tribes as "a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of the Statutes of 2004." This includes both federally and non-federally recognized tribes.

Section 21074(a) of the PRC defines TCRs for the purpose of CEQA as:

1) 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 any 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.

Because criteria (a.) and (b.) also meet the definition of a Historical Resource under CEQA, a TCR may also require additional consideration as an Historical Resource. TCRs may or may not exhibit archaeological, cultural, or physical indicators.

Recognizing that California tribes are experts in their tribal cultural resources and heritage, AB 52 requires that CEQA lead agencies provide tribes that requested notification an opportunity to consult at the commencement of the CEQA process to identify TCRs. Furthermore, because a significant effect on a TCR is considered a significant impact on the environment under CEQA, consultation is used to develop appropriate avoidance, impact minimization, and mitigation measures.

Summary of Tribal Consultation

At the time the City of Davis was ready to initiate CEQA review for the Proposed Project, it had received written requests to receive project notices from five California Native American Tribes, who identified themselves as being traditionally and culturally affiliated with the lands subject to City of Davis jurisdiction. These included: Cortina Band of Indians, Ione Band of Miwok Indians, United Auburn Indian Community (UAIC), Yocha Dehe Wintun Nation (YDWN), and the Wintun Environmental Protection Agency. The consultation process is summarized below.

April 10, 2023: City mailed via certified mail the initial 14-day notices to Cortina Band of Indians, Ione Band of Miwok Indians, United Auburn Indian Community (UAIC), Yocha Dehe Wintun Nation (YDWN), and the Wintun Environmental Protection Agency. In addition to the mailed hard copy, the letter was also uploaded to UAICs website via their portal system.

April 27, 2023: The City received an email from Victoria Delgado, Yocha Dehe Wintun Nation, containing a letter dated April 20, 2023, signed by TPHO Yvonne Perkins indicating that the project is within the YDWN Aboriginal Territory and expressing their desire to comment as well as engage in formal consultation. The email indicated that the YDWN would also provide a hard-copy response.

May 2, 2023: The City responded to YDWN initiating consultation with the tribe. The City acknowledged the tribe's request for a copy of the cultural study and indicated that a study had not been conducted because the Project does not entail any new construction or ground disturbance. The City provided the detailed Project description again with the initiation letter.

May 8, 2023: The City received a "Return to Sender, Unable to Forward" for the 14-day initial notice that was mailed to the Wintun Environmental Protection Agency. In addition, the city received the hard copy response letter from YDWN referred to in Victoria Delgado's April 27, 2023 email response. The hard copy letter was dated May 9, 2023, and signed by TPHO Yvonne Perkins.

May 10, 2023: The 30-day response window closed. YDWN was the only responding tribe. Additionally, the city emailed Victoria Delgado with YDWN regarding available dates to meet and further discuss the Project. The same day, Ms. Delgado responded with the tribes' availability and a consultation meeting was subsequently set for June 12, 2023.

June 12, 2023: A formal tribal cultural resource consultation meeting between the City of Davis and the YDWN was held via Teams on June 12, 2023 and was attended by the following:

> City of Davis: Josie Tellers, Water Quality Compliance Specialist; John Alexander, Wastewater Division Manager; John McNerney, Wildlife Resource Specialist; Richard Tsai, Environmental Resources Division Manager; Mark Morse, Senior Environmental Planner/Project Manager, ECORP Consulting; Brian Marks, Senior Archaeologist, ECORP Consulting.
>
> Yocha Dehe Wintun Nation: Eric Hernandez, Site Protection Manager; Socorro Reyes-Gutierrez, Site Protection Supervisor.

City staff provided an overview of the proposed recycled water project and clarified that project implementation does not propose or require ground disturbance. City staff explained that because the Project does not require ground disturbance, no project level cultural resource investigation was conducted. Staff further explained that unless there are tribal cultural resource concerns that require mitigation, an Initial Study/Negative Declaration is proposed for Project CEQA compliance. Finally, City staff overviewed the project schedule which targets CEQA document adoption by the Davis City Council in August 2023, followed by State Water Resources Control Board approval of the Wastewater Change Petition and Recycled Water Program by the end of 2023.

Following the City presentation, Eric Hernandez with YDWN asked a few clarifying questions and then concluded that given the Project does not require ground disturbance, it does not include the potential to impact tribal cultural resources. As such there was agreement to conclude formal consultation and no tribal cultural resource mitigation is required.

Discussion:

a) Use of the Saved Water within the proposed places of use, rather than the Willow Slough Bypass, would not involve any ground disturbance or land alteration, nor would it require demolition or alteration of any existing structures. As discussed with the YDWN during

AB52 formal consultation, for these reasons, the Proposed Project does not include the potential to impact historic resources as defined in Public Resources Code Section 5020.1(k), or tribal cultural resources pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. There would be no impact to tribal resource issues.

4.18.2 Mitigation Measures

No potential tribal cultural resource impacts were identified, and no mitigation is required.

4.19 Utilities and Service Systems

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?	☐	☐	☐	☒
b) Have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

Discussion:

a-e) **No Impact**. The Proposed Project would neither place additional demands on nor affect public utilities, including wastewater treatment facilities, water facilities, and storm drain systems. As analyzed in the Initial Study/Mitigated Negative Declaration prepared for the City of Davis Wastewater Treatment Plant Secondary and Tertiary Improvements Project (City of Davis. 2013.), the WWTP was recently upgraded to conform to more stringent wastewater treatment requirements. Thus, no new wastewater treatment facilities or expanded water entitlements are necessary for Proposed Project implementation. Furthermore, the Proposed Project would not generate solid waste and no new solid waste or other waste-disposal facilities are required for Proposed Project operation. Therefore, no impacts to existing utilities and conveyance systems would occur with implementation of the Proposed Project and there would be no impact.

4.19.1 Mitigation Measures

No significant impacts were identified and no mitigation measures are required.

4.20 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 evacuation plan?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?	☐	☐	☐	☒

Discussion:

a-d) No Impact. As shown on CalFire's Fire Hazards Sensitivity Zone map, the City of Davis is located in a Local Responsibility Area. Additionally, the nearest mapped moderate and/or high fire hazard zones are located approximately 7.5 miles east of Davis near the City of Winters. Thus, the above Wildfire checklist questions do not apply to the Proposed Project because it is not located in or near a State Responsibility Area nor within or near lands classified as very high fire hazard severity zone. There would be no impact.

4.21 Mandatory Findings of Significance

Does the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) 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?	☐	☐	☒	☐
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐

Does the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

Discussion:

a) **Less Than Significant Impact.** As discussed in the above checklist responses, the Proposed Project would not result in any potentially significant impacts or require mitigation. Thus, the Proposed Project does not 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. Related impacts are less than significant.

b) **Less Than Significant Impact**. As discussed in the above checklist responses, the Proposed Project is limited to replacing existing water supplies with Proposed Project-delivered Saved Water for existing operations at the following facilities: the YCCL, WWTP, OFA, Davis Restoration Wetlands and for tree irrigation within City-owned property and within City easements. As discussed above, the Proposed Project results in either no impact or less than significant impact for all issue areas examined. Furthermore, the incremental effects of the Proposed Project are not considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects, and related cumulative impacts are less than significant.

c) **No Impact.** As discussed in the above checklist responses, the Proposed Project has no direct or indirect impact to human beings. There would be no impact.

5.0 LIST OF PREPARERS

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_____. 2023c. Davis Recycled Water Project – Noise Impact Memorandum. March.

_____. 2023d. Davis Recycled Water Project – Transportation Impact Memorandum. April 21.

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LIST OF APPENDICES

Appendix A – Change Petition Submittal
City of Davis, December 5, 2022

Appendix B -Emissions Memorandum
ECORP Consulting, Inc. 2023.

Appendix C – Habitat Impact Assessment Associated with the Temporal Decrease in Effluent Discharge from the Davis Wastewater Treatment Plan to the Willow Slough Bypass Technical Memorandum – City of Davis, June 20, 2022.

Appendix D - Noise Impact Memorandum.
ECORP Consulting, Inc. March 2023.

Appendix E –Transportation Impact Memorandum
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APPENDIX A

City of Davis Change Petition Submittal

City of Davis, December 5, 2022

December 5, 2022

Patricia D. Fernandez, P.E.
Senior Water Resource Engineer
Division of Water Rights
State Water Resources Control Board
P.O. Box 2000
Sacramento, CA 95812-2000
patricia.fernandez@waterboards.ca.gov

Subject: City of Davis Wastewater Change Petition Submittal

Ms. Fernandez:

The City of Davis is seeking to receive an approval from your office for a reduction in wastewater discharges and use of recycled water at identified places of use outlined in this petition packet.

This submittal includes the following documents in support of this Wastewater Change Petition:

- **Attachment 1** contains the City's Petition for Change and Environmental Information Form.
- **Attachment 2** explains why approval of the requested changes will not injure downstream water users or unreasonably harm fish and wildlife, and is in the public interest.
- The City electronically transferred $11,048.00 to the State Water Resources Control Board as payment for processing the wastewater change petition. (**Attachment 3**.) This payment assumes that the City will reduce its discharges of wastewater by 1.8 million gallons per day (i.e., 2,016 acre-feet/year). Enclosed with this transmittal is a check for $850.00 to California Department of Fish and Wildlife, as required by Public Resources Code section 10005.

The City is currently completing environmental review of the Project pursuant to the California Environmental Quality Act and will transmit relevant documentation to you once it is available.

Attorney Aaron Ferguson from Somach Simmons & Dunn is assisting the City in this submittal and submitting this application on the City's behalf.

Please contact Aaron Ferguson in regard to this submittal at (916) 469-3837 or at aferguson@somachlaw.com. Additionally, please copy Josie Tellers, Water Quality Compliance Specialist for the City at jtellers@cityofdavis.org, on all email correspondence.

Sincerely,

Stan Gryczko
Director, Public Works Utilities and Operations (PWUO)
City of Davis
(530) 747-8292
sgryczko@cityofdavis.org

Included: Attachments 1-3

cc: Michelle Snapp
Michelle.snapp@waterboards.ca.gov

Tiffanee Hutton
Tiffanee.hutton@wildlife.ca.gov

Briana Seapy
Briana.seapy@wildlife.ca.gov

Josie Tellers
jtellers@cityofdavis.org

Attachment 1

Please indicate County where your project is located here:

Yolo

MAIL FORM AND ATTACHMENTS TO:
State Water Resources Control Board
DIVISION OF WATER RIGHTS
P.O. Box 2000, Sacramento, CA 95812-2000
Tel: (916) 341-5300 Fax: (916) 341-5400
http://www.waterboards.ca.gov/waterrights

PETITION FOR CHANGE

Separate petitions are required for each water right. Mark all areas that apply to your proposed change(s). Incomplete forms may not be accepted. Location and area information must be provided on maps in accordance with established requirements. (Cal. Code Regs., tit. 23, § 715 et seq.) Provide attachments if necessary.

☐ **Point of Diversion** Wat. Code, § 1701
☐ **Point of Rediversion** Cal. Code Regs., tit. 23, § 791(e)
☒ **Place of Use** Wat. Code, § 1701
☒ **Purpose of Use** Wat. Code, § 1701

☐ **Distribution of Storage** Cal. Code Regs., tit. 23, § 791(e)
☐ **Temporary Urgency** Wat. Code, § 1435
☐ **Instream Flow Dedication** Wat. Code, § 1707
☒ **Waste Water** Wat. Code, § 1211

☐ **Split** Cal. Code Regs., tit. 23, § 836
☐ **Terms or Conditions** Cal. Code Regs., tit. 23, § 791(e)
☐ **Other**

Application Permit License Statement

I (we) hereby petition for change(s) noted above and described as follows:

Point of Diversion or Rediversion – Provide source name and identify points using both Public Land Survey System descriptions to ¼-¼ level and California Coordinate System (NAD 83).
Present: N/A

Proposed: N/A

Place of Use – Identify area using Public Land Survey System descriptions to ¼-¼ level; for irrigation, list number of acres irrigated.
Present: No current places of use

Proposed: See Attachment to this Petition - Places of Use

Purpose of Use
Present: No current purposes of use

Proposed: Irrigation, Industrial, Municipal

Split
Provide the names, addresses, and phone numbers for all proposed water right holders.

In addition, provide a separate sheet with a table describing how the water right will be split between the water right holders: for each party list amount by direct diversion and/or storage, season of diversion, maximum annual amount, maximum diversion to offstream storage, point(s) of diversion, place(s) of use, and purpose(s) of use. Maps showing the point(s) of diversion and place of use for each party should be provided.

Distribution of Storage
Present:

Proposed:

Temporary Urgency
This temporary urgency change will be effective from to

Include an attachment that describes the urgent need that is the basis of the temporary urgency change and whether the change will result in injury to any lawful user of water or have unreasonable effects on fish, wildlife or instream uses.

Instream Flow Dedication – Provide source name and identify points using both Public Land Survey System descriptions to ¼-¼ level and California Coordinate System (NAD 83).
Upstream Location:

Downstream Location:

List the quantities dedicated to instream flow in either: ☐ cubic feet per second or ☐ gallons per day:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Will the dedicated flow be diverted for consumptive use at a downstream location? ☐ Yes ☐ No
If yes, provide the source name, location coordinates, and the quantities of flow that will be diverted from the stream.

Waste Water
If applicable, provide the reduction in amount of treated waste water discharged in cubic feet per second. 2.80

Will this change involve water provided by a water service contract which prohibits your exclusive right to this treated waste water? ☐ Yes ☒ No

Will any legal user of the treated waste water discharged be affected? ☐ Yes ☒ No

General Information – For all Petitions, provide the following information, if applicable to your proposed change(s).

Will any current Point of Diversion, Point of Storage, or Place of Use be abandoned? ☐ Yes ☒ No

I (we) have access to the proposed point of diversion or control the proposed place of use by virtue of:
☒ ownership ☐ lease ☐ verbal agreement ☐ written agreement

If by lease or agreement, state name and address of person(s) from whom access has been obtained.

See Attachment to this Petition- Access to Places of Use.

Give name and address of any person(s) taking water from the stream between the present point of diversion or rediversion and the proposed point of diversion or rediversion, as well as any other person(s) known to you who may be affected by the proposed change.

See Attachment to this Petition - Downstrem Water Users. Also, see Attachment 2 to the City's submittal explaining why this Project will not injure downstream water right holders.

All Right Holders Must Sign This Form: I (we) declare under penalty of perjury that this change does not involve an increase in the amount of the appropriation or the season of diversion, and that the above is true and correct to the best of my (our) knowledge and belief. Dated 12/5/22 at 8:26

Right Holder or Authorized Agent Signature

Right Holder or Authorized Agent Signature

NOTE: All petitions must be accompanied by:
(1) the form Environmental Information for Petitions, including required attachments, available at: http://www.waterboards.ca.gov/waterrights/publications_forms/forms/docs/pet_info.pdf
(2) Division of Water Rights fee, per the Water Rights Fee Schedule, available at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/fees/
(3) Department of Fish and Wildlife fee of $850 (Pub. Resources Code, § 10005)

Petition Attachment – City of Davis Wastewater Change Petition

Places of Use

Treated wastewater will be used in the following locations:

Yolo County Central Landfill: Township 09N, E ½ of Section 25, NW ¼ of Section 29, Section 30; See Figure 1

Restoration Wetlands: Township 09N, E ½ of Section 33 and West ½ of Section 34; See Figure 1

City-Irrigated Trees: Water Service Area of City of Davis; See Figure 2

Access to Places of Use

Water used at the Yolo County Central Landfill (YCCL) will be by agreement with Yolo County because Yolo County owns the YCCL property. The City owns the Restoration Wetlands and parks and open spaces where it will irrigate trees.

Downstream Water Users

The table below lists all water rights downstream of the City of Davis discharge point on Willow Slough Bypass to the Toe Drain and to the southern tip of Liberty Island.

Appropriative Rights				
Application ID	**Location**	**Season**	**Diversion Rate**	**Max. Annual Diversion Volume**
A028453	Tule Canal; Toe Drain	May 1 – Oct. 1	45 cubic feet per second (cfs)	12,600 acre-feet (af)
A009806	Tule Canal	Apr. 1 – Oct. 1	25.4 cfs (*No more than 15.7 cfs when combined with diversions under A020376*)	270.1 af
A020376	Tule Canal	May 1 – June 30; Sept. 1 – 30	15.7 cfs (*See above*)	2,833.8 af
A013650	RD 999 West Levee Borrow Pit	May 1 – Sept. 1	10.2 cfs	2,508.7 af
A013651A	Borrow Pit West Levee RD No. 999	Apr. 15 – Oct. 15	7.7 cfs (*No more than 7.7 cfs when combined with diversions under A013651B*)	2,810.2 af (*No more than 2,810.2 af when combined with diversions under A013651B*)

Appropriative Rights				
Application ID	**Location**	**Season**	**Diversion Rate**	**Max. Annual Diversion Volume**
A013651B	Borrow Pit West Levee RD No. 999	Apr. 15 – Oct. 15	7.7 cfs (*see above*)	2,810.2 af (*see above*)
A020388	West Cut	Apr. 1 – June 30; Sept. 1 – Dec. 31	5.5 cfs	1,043 af
A018594	Yolo Canal	Nov. 1 – Jan. 15	0.35 cfs	52.8 af
A014174	Yolo Canal	Mar. 1 – Nov. 1	6.5 cfs	3,171.6 af
A013088	Yolo Canal	Apr. 1 – Nov. 1	2.4 cfs	1,023.5 af
A022903	Yolo Canal	Nov. 1 – Mar. 31	1.2 cfs	60 af
A001150	Toe Drain	Apr. 1 – Oct. 31	23 cfs	9,762.8 af
A004124	Toe Drain	Jan. 1 – Dec. 31	7.12 cfs	5,154.7 af
A004123	Toe Drain	Nov. 1 – Mar. 31	11.64 cfs	3,486.3 af

Riparian Rights	
Application ID	**Location**
S015328	Willow Slough Bypass
S017692	Willow Slough Bypass
S019397	Tule Canal
S021242	Toe Drain
S017686	Toe Drain
S022022	Toe Drain
S020968	Toe Drain
S024401	Toe Drain
S016333	Toe Drain
S016334	Toe Drain
S006543	Toe Drain
S014729	Toe Drain
S022325	Toe Drain
S021075	Yolo Canal

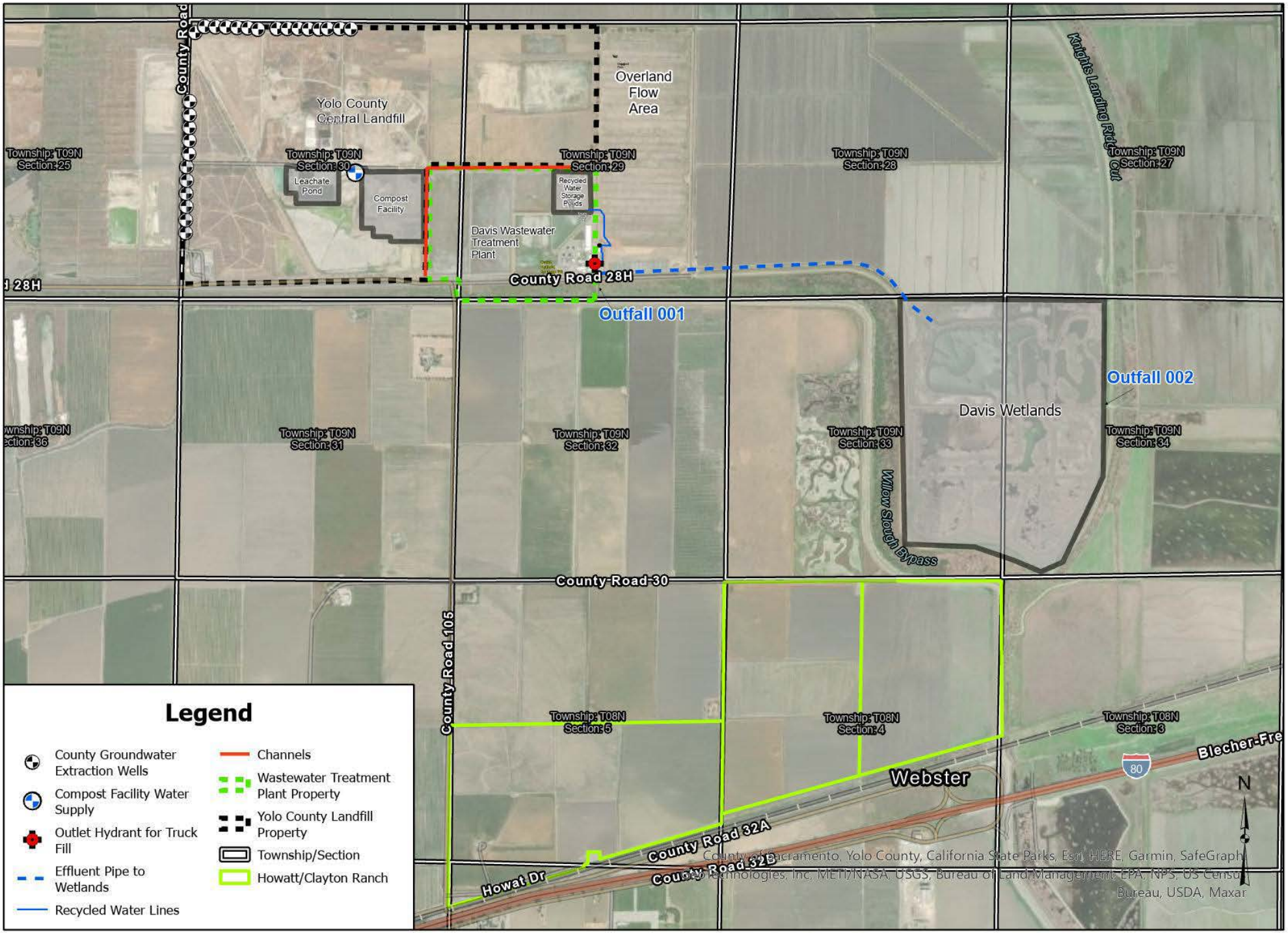


Figure 1: Recycled Water Use Area at the Wastewater Treatment Plant and Yolo County Landfill

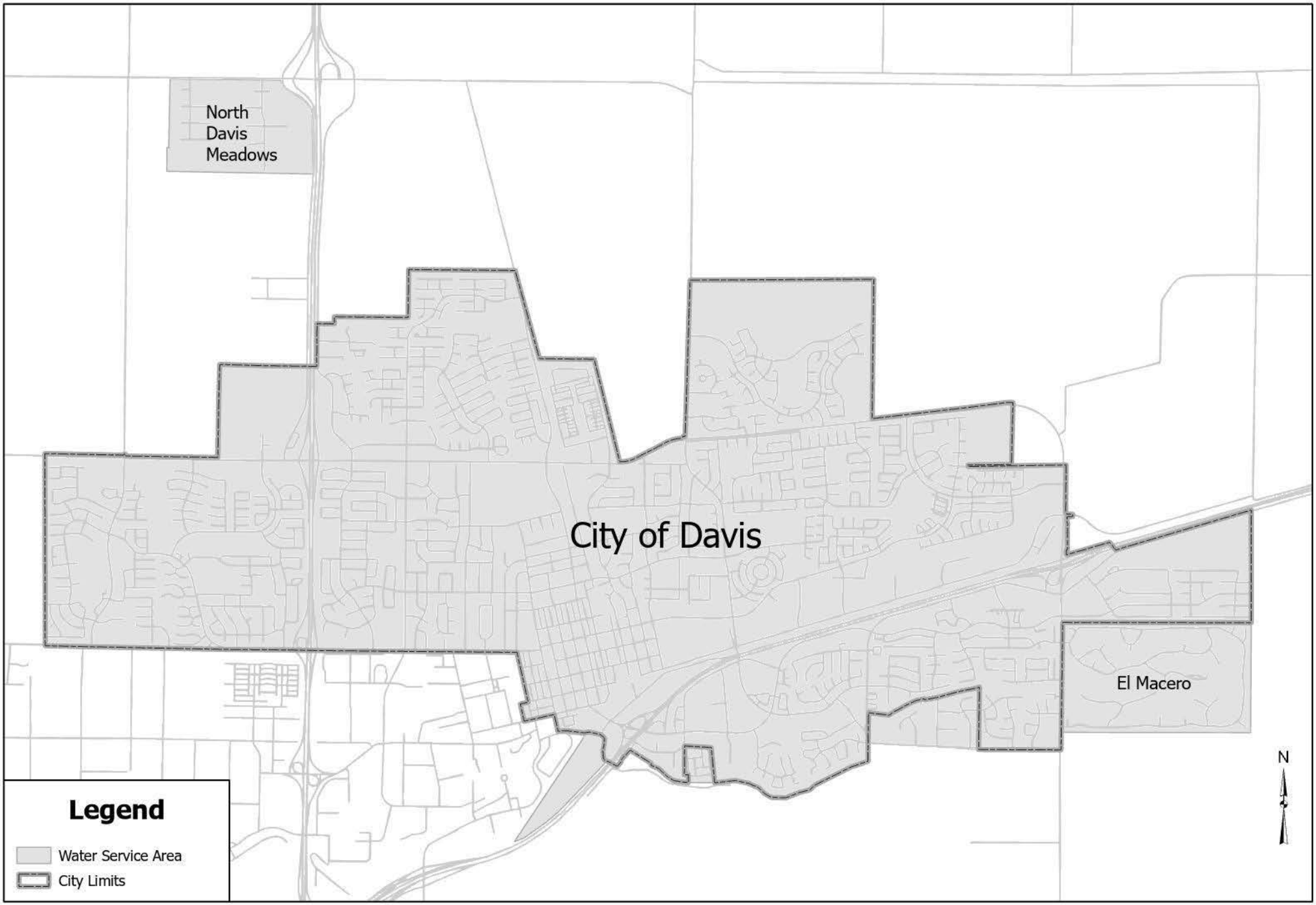


Figure 2: City Limit and Water Service Area

State of California
State Water Resources Control Board
DIVISION OF WATER RIGHTS
P.O. Box 2000, Sacramento, CA 95812-2000
Tel: (916) 341-5300 Fax: (916) 341-5400
http://www.waterboards.ca.gov/waterrights

ENVIRONMENTAL INFORMATION FOR PETITIONS

This form is required for all petitions.

Before the State Water Resources Control Board (State Water Board) can approve a petition, the State Water Board must consider the information contained in an environmental document prepared in compliance with the California Environmental Quality Act (CEQA). This form is not a CEQA document. If a CEQA document has not yet been prepared, a determination must be made of who is responsible for its preparation. As the petitioner, you are responsible for all costs associated with the environmental evaluation and preparation of the required CEQA documents. Please answer the following questions to the best of your ability and submit any studies that have been conducted regarding the environmental evaluation of your project. If you need more space to completely answer the questions, please number and attach additional sheets.

DESCRIPTION OF PROPOSED CHANGES OR WORK REMAINING TO BE COMPLETED

For a petition for change, provide a description of the proposed changes to your project including, but not limited to, type of construction activity, structures existing or to be built, area to be graded or excavated, increase in water diversion and use (up to the amount authorized by the permit), changes in land use, and project operational changes, including changes in how the water will be used. For a petition for extension of time, provide a description of what work has been completed and what remains to be done. Include in your description any of the above elements that will occur during the requested extension period.

The City of Davis (City) proposes to remove treated wastewater from the Willow Slough Bypass by reducing its discharge by up to 1.8 million gallons per day (2.8 cubic feet per second), as an annual average. The total annual volume the City proposes to remove is approximately 2,016 acre-feet per year (af/yr).

The City proposes to use the treated wastewater at the Yolo County Central Landfill (YCCL) to augment the use of pumped groundwater, controlled leachate, and stored stormwater for onsite uses at the YCCL. This anticipated use at the YCCL includes approximately 491-613 af/yr for dust control, soil compaction, phytoremediation, and agriculture. Additionally, approximately 45,000 to 100,000 gpd (50-112 af/yr) will be used for Napa Recycle's planned composting facility located at the YCCL.

The City will also use treated wastewater at its Restoration Wetlands, which has an estimated water demand of 350 million gallons per year (1,074 af/yr).

Finally, the City will use treated wastewater to irrigate trees on City-owned property, including parks and open spaces. The City trees have an estimated demand of 80,000-100,000 gallons per year (0.25-0.30 af/yr).

The City's proposed changes will not result in any unreasonable impacts on fish and wildlife, as further explained in Attachment 2 to the City's submittal.

Insert the attachment number here, if applicable:

Coordination with Regional Water Quality Control Board

For change petitions only, you must request consultation with the Regional Water Quality Control Board regarding the potential effects of your proposed change on water quality and other instream beneficial uses. (Cal. Code Regs., tit. 23, § 794.) In order to determine the appropriate office for consultation, see: http://www.waterboards.ca.gov/waterboards_map.shtml. Provide the date you submitted your request for consultation here, then provide the following information.

Date of Request

(Date sent to State Board)

Will your project, during construction or operation, (1) generate waste or wastewater containing such things as sewage, industrial chemicals, metals, or agricultural chemicals, or (2) cause erosion, turbidity or sedimentation? ☐ Yes ☒ No

Will a waste discharge permit be required for the project? ☐ Yes ☒ No

If necessary, provide additional information below:

Michelle Snapp, michelle.snapp@waterboards.ca.gov, received a copy of this Petition on December 8, 2022

Insert the attachment number here, if applicable:

Local Permits

For temporary transfers only, you must contact the board of supervisors for the county(ies) both for where you currently store or use water and where you propose to transfer the water. (Wat. Code § 1726.) Provide the date you submitted your request for consultation here.

Date of Contact

For change petitions only, you should contact your local planning or public works department and provide the information below.

Person Contacted: Stephanie Cormier, Principal Planner Date of Contact: 09/13/2022

Department: Yolo County Dept. of Community Services Phone Number: (530) 666-8041

County Zoning Designation: N/A

Are any county permits required for your project? If yes, indicate type below. ☐ Yes ☒ No

Grading Permit Use Permit Watercourse Obstruction Permit

Change of Zoning General Plan Change Other (explain below)

If applicable, have you obtained any of the permits listed above? If yes, provide copies. ☐ Yes ☐ No

If necessary, provide additional information below:

Insert the attachment number here, if applicable:

Federal and State Permits

Check any additional agencies that may require permits or other approvals for your project:

☒ Regional Water Quality Control Board ☐ Department of Fish and Game

☐ Dept of Water Resources, Division of Safety of Dams ☐ California Coastal Commission

☐ State Reclamation Board ☐ U.S. Army Corps of Engineers ☐ U.S. Forest Service

☐ Bureau of Land Management ☐ Federal Energy Regulatory Commission

☐ Natural Resources Conservation Service

Have you obtained any of the permits listed above? If yes, provide copies. ☐ Yes ☐ No

For each agency from which a permit is required, provide the following information:

Agency	Permit Type	Person(s) Contacted	Contact Date	Phone Number
State Water Board, DDW	Recycled Water			
Central Valley RWQCB	Recycled Water			

If necessary, provide additional information below:

The City of Davis is in the process of obtaining a Recycled Water Permit.

Insert the attachment number here, if applicable:

Construction or Grading Activity

Does the project involve any construction or grading-related activity that has significantly altered or would significantly alter the bed, bank or riparian habitat of any stream or lake? ☐ Yes ☒ No

If necessary, provide additional information below:

Insert the attachment number here, if applicable:

Archeology

Has an archeological report been prepared for this project? If yes, provide a copy.	☐ Yes	☒ No
Will another public agency be preparing an archeological report?	☐ Yes	☒ No
Do you know of any archeological or historic sites in the area? If yes, explain below.	☐ Yes	☒ No

If necessary, provide additional information below:

Insert the attachment number here, if applicable:

Photographs

For all petitions other than time extensions, attach complete sets of color photographs, clearly dated and labeled, showing the vegetation that exists at the following three locations:

- ☒ Along the stream channel immediately downstream from each point of diversion
- ☒ Along the stream channel immediately upstream from each point of diversion
- ☒ At the place where water subject to this water right will be used

Maps

For all petitions other than time extensions, attach maps labeled in accordance with the regulations showing all applicable features, both present and proposed, including but not limited to: point of diversion, point of rediversion, distribution of storage reservoirs, point of discharge of treated wastewater, place of use, and location of instream flow dedication reach. (Cal. Code Regs., tit. 23, §§ 715 et seq., 794.)

Pursuant to California Code of Regulations, title 23, section 794, petitions for change submitted without maps may not be accepted.

All Water Right Holders Must Sign This Form:
I (we) hereby certify that the statements I (we) have furnished above and in the attachments are complete to the best of my (our) ability and that the facts, statements, and information presented are true and correct to the best of my (our) knowledge. Dated 12/5/22 at 8:27

Water Right Holder or Authorized Agent Signature

Water Right Holder or Authorized Agent Signature

NOTE:
- **Petitions for Change may not be accepted unless you include proof that a copy of the petition was served on the Department of Fish and Game. (Cal. Code Regs., tit. 23, § 794.)**
- **Petitions for Temporary Transfer may not be accepted unless you include proof that a copy of the petition was served on the Department of Fish and Game and the board of supervisors for the county(ies) where you currently store or use water and the county(ies) where you propose to transfer the water. (Wat. Code § 1726.)**



Figure 1: Active disposal area and access roads. Recycled water will be used for dust suppression 10/3/2022



Figure 2: Water truck will be used for recycled water application 10/3/22



Figure 3: Phytoremediation farm fields. Recycled water will be used for supplemental irrigation. 10/3/22



Figure 4: Compost facility. Recycled water will be used for moisture addition to aid in composting process 10/3/22



Figure 5: Water truck or fixed sprinklers will be used for recycled water addition. 10/3/22



Figure 6: Downstream of Discharge 001 10/3/22



Figure 7: Upstream of Discharge 001 10/3/22

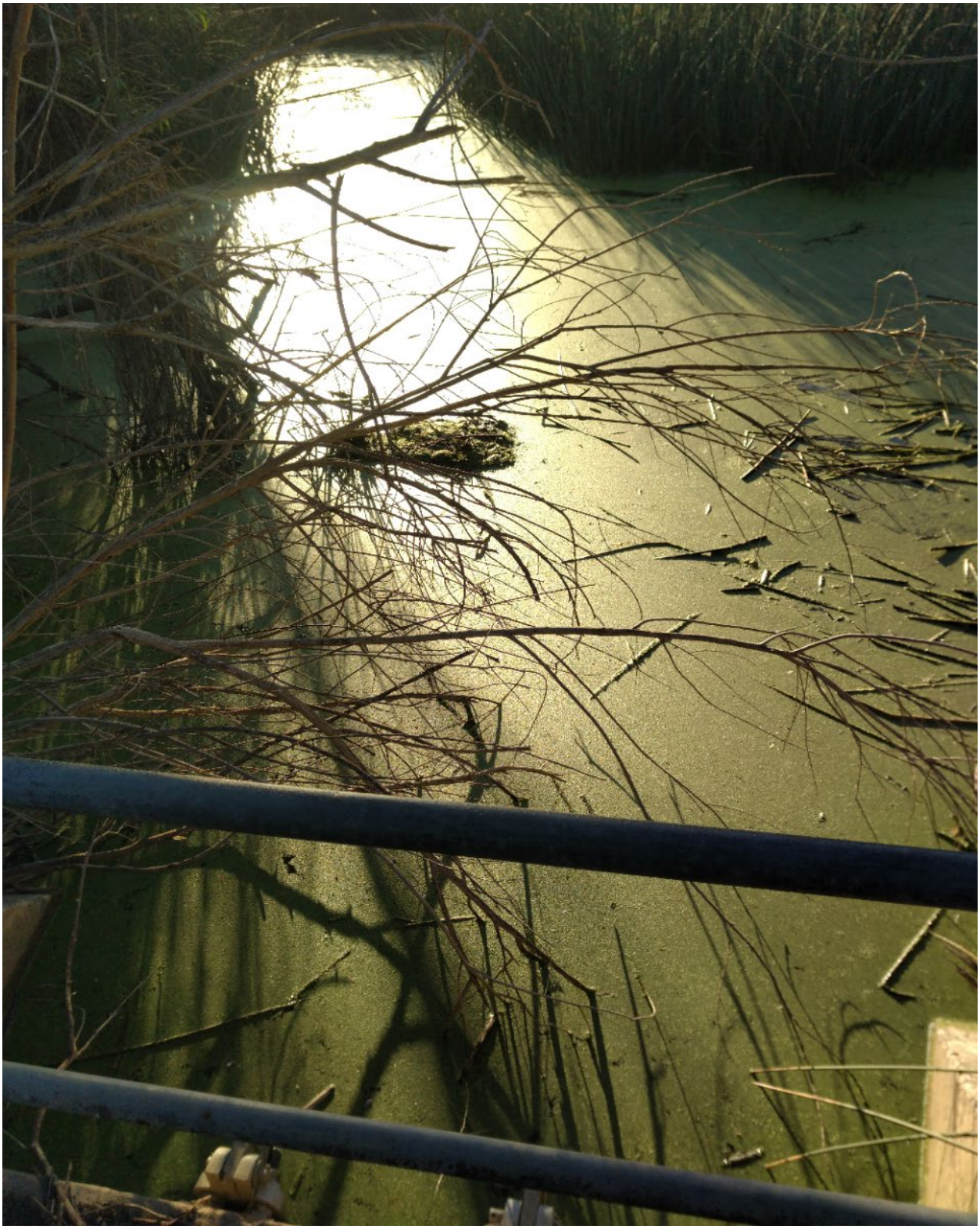


Figure 8: Downstream of Discharge 002 10/3/22



Figure 9: Upstream of Discharge 002 10/3/22



Figure 10: Wetlands Wastewater Tract Inlet 10/3/22



Figure 11: Wetlands Wastewater Track 10/5/22



Figure 12: Wetlands Wastewater Track 10/5/22



Figure 13: City Owned Trees for RW Irrigation in the greenbelt 10/5/22

828 Braddock Rd.



Figure 14: City Owned Trees for RW Irrigation in the greenbelt 10/5/22

1721 Sapphire Court



Figure 15: City Owned Trees for RW Irrigation on Private Property with City Easement 10/5/22

4935 Cowell Blvd.



Figure 16: City Owned Trees for RW Irrigation on Private Property with City Easement 10/5/22 4828 Cowell Blvd.

Attachment 2

Attachment 2

The City's Proposed Changes Will Not Injure Downstream Water Users

Prior to the City's Wastewater Treatment Plant (WWTP) improvements, 4.4 million gallons per day (MGD) of raw wastewater was received by the City and 2.3 MGD was discharged. Since construction of the improvements, the City's most recent maximum Average Dry Weather Flow was 4.1 MGD. The difference between the recent maximum flow and historic discharge prior to the WWTP upgrades, approximately 1.8 MGD (Saved Water), is salvaged water created as a result of the City's improvements. (See City of Davis, Near-Term Recycled Water Master Plan, p. 2-1.)

The City's proposed removal of Saved Water from Willow Slough Bypass, and resulting reduction in discharge, will not injure downstream legal water users. The Saved Water comprises salvaged water, which exists where a water user constructs improvements that save water that would otherwise be lost to evaporation or percolation. (*Pomona Land & Water Co. v. San Antonio Water Co.* (1908) 152 Cal. 618, 631.) The creator of salvaged water obtains the benefits of the water that would otherwise be wasted; downstream users do not have any claim to salvaged water. (*Ibid*; *City of Santa Maria v. Adam* (2012) 211 Cal.App.4th 266, 304.)

Only the City has the right to put this Saved Water to beneficial use and downstream users may not claim a right to beneficially use this water. Thus, the City's Petition does not have the ability to injure downstream users.

The City's Proposed Changes Will Not Unreasonably Affect Fish and Wildlife

The discharge of Saved Water to the Willow Slough Bypass has resulted in an increase in effluent discharge of approximately 2 MGD as an annual average for a total effluent discharge rate of approximately 4 MGD. The Willow Slough Bypass is a flood water bypass that receives overflow from Willow Slough and backflow flood waters from the Yolo Bypass during winter flooding events. Earthen levees contain the wide flood plain with an unlined low flow channel along the foot of the southern levee. The low flow channel drains the Willow Slough Bypass flood plain and conveys non-flood flows during summer months.

Willow Slough Bypass supports a wide variety of wildlife species, including the federally threatened giant garter snake (GGS). This is because the Willow Slough Bypass contains wetland habitat. Additionally, the Willow Slough Bypass and surrounding area, is home

to communities of beavers, who are largely responsible for regulating the wetland habitat along the slough through their dam-building activities. The GGS and other species then may utilize this wetland habitat. Currently, water primarily travels down the Willow Slough Bypass via the low flow channel on the south side. Beaver activity (i.e. dams) in the channel intermittently causes flows to back up and flood adjacent floodplain area within the Willow Slough Bypass creating emergent freshwater wetlands habitat. When these beaver dams break, the water is released and the wetlands habitat changes back to ephemeral floodplain riparian.

The ordinary depth of water within the low flow channel is 5.5 feet. Under the Project, with the removal of approximately 2 MGD (3 cubic feet per second), the water level in the low-flow channel of the Willow Slough Bypass will decrease by about 1.3" This will result in a new ordinary water depth of 5.6' or 5.4', respectively. Given the naturally intermittent flooding and draining of the Willow Slough Bypass area due to beaver activity, the relatively minor decrease in overall water level in the slough as a result of the Project will not meaningfully affect wetlands and riparian habitats in the project area.

The minor decrease in the water level in the Willow Slough Bypass would not significantly impact beaver activity within the slough. The removal of this small amount of water relative to base volume would not significantly change or degrade the quality of the beaver-created wetland habitat.

The Willow Slough Bypass also provides habitat for native and non-native warm water fish and invertebrates. However, the marginal decrease in the flow rate associated with the Project would not adversely affect conditions for fish species and/or invertebrates. (See Memorandum from John McNerney to Josie Tellers Re: Habitat Impact on Willow Slough (June 20, 2022), attached hereto.)

The Project would not significantly change the quality of the water in Willow Slough Bypass. Thus, the Project would not result in any significant impacts on fish or special status species.

The City's Proposed Changes Are In the Public Interest

The City's proposed changes will help advance California's goal of increasing recycled water use by 800,000 acre-feet by 2030. (California's Water Supply Strategy, August 2022, p. 3.) The changes do not require additional permitting and funding, and with the State Water Board's approval of the City's wastewater change petition, the Project could be operational well before 2030. The use of recycled water to meet existing demands at the Yolo County Central Landfill and to irrigate trees on City-owned property will offset the use of surface water and groundwater, and thereby conserve resources. The Restoration Wetlands is a managed, native California freshwater emergent wetland ecosystem that includes oak riparian woodlands and native grasslands. Adjacent to the Yolo Bypass, the restoration wetlands provide valuable habitat for countless waterfowl migrating along the Pacific Flyway. The wetlands also support an abundance of other

terrestrial, aquatic and semi-aquatic wildlife species. Irrigation of the Restoration Wetlands with recycled water will maintain and enhance these uses.

PUBLIC WORKS
UTILITIES AND OPERATIONS
DEPARTMENT
MAIN 530.757.5686
FAX 530.758.4738

Technical Memorandum

Date: June 20, 2022

To: Josie Tellers, Water Quality Coordinator

From: John McNerney, Wildlife Resource Specialist

Subject: Habitat Impact Assessment Associated with the Temporal Decrease in Effluent Discharge from the Davis Wastewater Treatment Plant to the Willow Slough Bypass.

Introduction and Background

Improvements to the Davis Wastewater Treatment Plant reduced the loss of water during the treatment process, resulting in an increase of effluent discharge by a magnitude of approx. 2 million gallons per day (MGD) as an annual average for a total effluent discharge rate of 4 MGD. The additional water has resulted in an increase of flow within the receiving stream known as Willow Slough Bypass (WSB). The WSB is a flood water bypass that receives overflow from Willow Slough and/or backflow flood waters from the Yolo Bypass during winter flooding events. Earthen levees contain the wide flood plain with an unlined low flow channel along the foot of the southern levee. The low flow channel drains the WSB flood plain and conveys non-flood-related flow during the summer months. The City of Davis is interested in reclaiming this "new saved water" for other future beneficial uses for its long-term planning purposes. The temporary decrease in discharge is not expected to result in a significant impact on habitat conditions or wildlife in the WSB.

The City estimates that the 2 MGD of additional water represents only 0.05% of the capacity of the WSB. (See Attachment 1, Estimation of Decrease in Water Levels in Willow Slough Bypass.). The ordinary depth of water within the low flow channel is 5.5 feet deep. Adding or removing 2 MGD would result in a 1.3" change in water elevation. This would result in a new ordinary water depth of 5.6' or 5.4', respectively. (See Attachment 1.)

Discussion

The WSB has two main habitat features including a low flow drainage channel and an emergent freshwater wetland floodplain – all occurring within the confines of earthen levees. Existing habitat conditions in the WSB may be considered dependent on the current/baseline flows discharged by the WWTP. However, habitat is also significantly influenced by natural biotic activity (ex. beaver dams), sedimentation, agricultural runoff, and rainfall/ flooding of the Yolo Bypass, etc. Habitat within the WSB supports protected species such as the giant garter snake

(*Thamnophis gigas*), as well a large diversity and abundance of other wildlife that utilize freshwater emergent wetlands habitat. The low flow channel of the WSB provides habitat for native and non-native warm water fish and invertebrates.

American beavers (*Castor canadensis*) are considered a "keystone" species within the WSB and are largely responsible for regulating the existing wetlands habitat within the bypass. Currently, water primarily travels down the WSB via the low flow channel on the south side. Beaver activity (i.e. dams) in the channel intermittently cause flows to back up and flood adjacent floodplain area creating emergent freshwater wetlands habitat. When these dams break, the water is released and the wetlands habitat changes back to ephemeral floodplain riparian.

The 2 MGD decrease in flow to the channel is not expected to significantly degrade the quality or area of the beaver maintained freshwater emergent wetlands habitats, nor have significant effect on low flow channel hydrology. A decrease in the volume of flow in the channel, and subsequent reduction of flow relative to baseline, is not expected to change ordinary water depth or chemistry, nor negatively impact habitat availability or quality for existing wildlife.

Conclusion

In summary, the 2 MGD of "new saved water" in the WSB is considered supplemental in support of existing habitat. Wetlands habitat conditions within WSB are largely regulated by biotic activity rather than flow dependent. A future reduction of the additional 2 MGD flow relative to baseline flow would not result in the loss of existing habitat type, availability or quality.

Attachment 1 to Technical Memorandum

Estimation of Decrease in Water Levels in Willow Slough Bypass from Removal of 2 MGD to Recycled Water Project

Davis WWTP discharge flows						Willow Slough Bypass Capacity	*WWTP % of WSB
mgd	gpd	gph	gpm	gps	cfs	cfs	flows
1.0	1000000	41667	694	12	1.5	6000	0.03%
1.5	1500000	62500	1042	17	2.3	6000	0.04%
2.0	2000000	83333	1389	23	3.1	6000	0.05%
2.5	2500000	104167	1736	29	3.9	6000	0.06%
3.0	3000000	125000	2083	35	4.6	6000	0.08%
3.5	3500000	145833	2431	41	5.4	6000	0.09%
4.0	4000000	166667	2778	46	6.2	6000	0.10%

	WSB	**Low Flow Channel				
WWTP	Area	Area	% of	Capacity	Decrease	Decrease
mgd	SF	SF	WSB	cfs	%	inches (est)
1.0	4231	130	3%	184	0.8%	0.7
1.5	4231	130	3%	184	1.3%	1
2.0	4231	130	3%	184	1.7%	1.3
2.5	4231	130	3%	184	2.1%	1.6
3.0	4231	130	3%	184	2.5%	1.9
3.5	4231	130	3%	184	2.9%	2.2
4.0	4231	130	3%	184	3.4%	2.5

*Removal of 2 MGD flows from Willow Slough Bypass has negligible decrease to full capacity of the flood channel.
**Removal of 2 MGD flows from Low Flow Channel (approximately 30 feet wide across the top and 5.5 feet deep) within the WSB, has an impact of decreasing water level by approximately 1.3 inches.

Attachment 3

FINANCE DEPARTMENT
23 Russell Blvd, Suite 3 – Davis, California 95616
Accounts Payable 530/757-5615 -- FAX: 530/758-0204 – TDD: 530/757-5666
Utilities, Citations & Business Licenses 530/757-55651
www.cityofdavis.org

Vendor Number:
0020451

Name / Address:
STATE WATER RESOURCES CONTROL BOARD
CWSRF PROGRAM
PO BOX 1888
SACRAMENTO CA 958121888

Email Address to send remittance notice to:
Receipts_Unit@waterboards.ca.gov

Payment Date:	Payment Number:	Payment Amount:
Aug 25, 2022	0010750	11,048.00

Please apply the payment of the items noted below to our account.
The total amount noted above will be processed by the bank electronically.

Invoice Information	Invoice Amount	PO Number
AUGUST 2022	11,048.00	085280

19958
19558

APPENDIX B

City of Davis Recycled Water Project – Emissions Memorandum

ECORP Consulting, Inc. 2023.

March 2023

Josie Tellers, Water Quality Compliance Specialist
City of Davis
1717 Fifth Street
Davis, California 95616

Re: City of Davis Recycled Water Project – Emissions Memorandum

PURPOSE

This memorandum documents the results of an Air Quality and Greenhouse Gas (GHG) Emissions Analysis completed for the City of Davis Recycled Water Program Project (Project). This assessment was prepared using methodologies and assumptions recommended in the rules and regulations of the Yolo-Solano Air Quality Management District (YSAQMD) and the Sacramento Metropolitan Air Quality Management District (SCAQMD). Regional and local existing conditions are presented, along with pertinent emissions standards and regulations. The purpose of this assessment is to estimate Project-generated criteria air pollutants and GHG emissions attributable to the Project and to determine the level of impact the Project would have on the environment.

PROJECT DESCRIPTION

The City of Davis (City) is proposing the delivery of reclaimed recycled water to various sites around the City. Recent upgrades to the treatment processes at the Davis Wastewater Treatment Plant (WWTP) have allowed a significant portion of treated wastewater that was historically lost to evaporation to be reclaimed. The amount of salvaged water, or water saved from loss by evaporation, is approximately 1.8 million gallons per day (MGD), as an annual average, or 2,016 acre-feet per year (afy). This additional water supply would be put to beneficial use at several locations within and around the City, including the Yolo County Central Landfill (YCCL) where it would assist with standard landfill operations, at a composting facility located within the YCCL property (Napa Recycling Compost Facility) where it would be used to assist the composting process, at a 160-acre open space site east of the WWTP where it would be used for irrigation, and on City property and within the City limits where the additional water supply would be used for tree irrigation. The water supply to the YCCL and the open space area would be transported via existing pumps and pipelines. The water supply used to water trees throughout the City would first be delivered from the WWTP via a tanker truck to a 6,500 gallon storage tank, which is proposed to be placed on existing pavement at the City's Public Works Corporation Yard on 5th Street in Davis, and then delivered to the watering sites by pickups trucks equipped with 275-gallon water totes. No construction is proposed for this Project. The operation of this Proposed Project would result in additional water being pumped via the existing pipeline system from the WWTP to the YCCL and the 160-acre open space area, and the delivery of approximately 100,000 gallons of water per year directly to City trees located throughout the City via the pickup trucks equipped with 275-gallon water totes. Proposed irrigation activities are anticipated to occur over the course of a 6-month timeframe. Additionally, all truck

trips associated with City tree irrigation operations would occur in off-peak hours to minimize traffic impacts.

AIR QUALITY ANALYSIS

Environmental Setting

Air quality in a region is determined by its topography, meteorology, and existing air pollutant sources. These factors are discussed below, along with the current regulatory structure that applies to the Sacramento Valley Air Basin (SVAB), which encompasses the Project Site, pursuant to the regulatory authority of the YSAQMD.

Ambient air quality is commonly characterized by climate conditions, the meteorological influences on air quality, and the quantity and type of pollutants released. The air basin is subject to a combination of topographical and climatic factors that reduce the potential for high levels of regional and local air pollutants. The following section describes the pertinent characteristics of the air basin and provides an overview of the physical conditions affecting pollutant dispersion in the Project Area.

Sacramento Valley Air Basin

The California Air Resources Board (CARB) divides the state into air basins that share similar meteorological and topographical features. The Project Site is located in the Yolo County portion of the SVAB, which is under the jurisdiction of the YSAQMD. The air basin is relatively flat, bordered by mountains to the east, west, and north and by the San Joaquin Valley to the south. Air flows into the SVAB through the Carquinez Strait, moving across the Sacramento Delta, and bringing pollutants from the heavily populated San Francisco Bay Area. The climate is characterized by hot, dry summers and cool, rainy winters. Characteristic of SVAB winter weather are periods of dense and persistent low-level fog, which are most prevalent between storm systems. From May to October, the region's intense heat and sunlight lead to high ozone pollutant concentrations. Summer inversions are strong and frequent but are less troublesome than those that occur in the fall. Autumn inversions, formed by warm air subsiding in a region of high pressure, have accompanying light winds that do not provide adequate dispersion of air pollutants.

Meteorological Influences on Air Quality

Regional flow patterns affect air quality patterns by directing pollutants downwind of sources. Localized meteorological conditions, such as moderate winds, disperse pollutants and reduce pollutant concentrations. However, the mountains surrounding the SVAB can create a barrier to airflow, which can trap air pollutants in the valley when meteorological conditions are right and a temperature inversion exists. The highest frequency of air stagnation occurs in the autumn and early winter when large high-pressure cells lie over the valley. The lack of surface wind during these periods and the reduced vertical air flow caused by less surface heating reduces the influx of outside air and allows air pollutants to become concentrated in a stable volume of air. The surface concentrations of pollutants are highest when these

conditions are combined with smoke from agricultural burning or when temperature inversions trap cool air, fog, and pollutants near the ground.

The ozone season (May through October) in the valley is characterized by stagnant morning air or light winds, with the delta sea breeze arriving in the afternoon out of the southwest. Usually the evening breeze transports the airborne pollutants to the north out of the valley. During about half of the days from July to September, however, a phenomenon called the Schultz Eddy prevents this from occurring. Instead of allowing the prevailing wind patterns to move north and carry the pollutants out of the valley, the Schultz Eddy causes the wind pattern to circle back south. This phenomenon exacerbates the pollution levels in the area and increases the likelihood of exceeding federal or state standards.

Criteria Air Pollutants

Both the U.S. Environmental Protection Agency (USEPA) and the CARB have established ambient air quality standards for common pollutants. These ambient air quality standards are levels of contaminants representing safe levels that avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called "criteria" pollutants because the health and other effects of each pollutant are described in criteria documents. The six criteria pollutants are O_3 (precursor emissions include nitrogen oxide (NO_x) and reactive organic gases (ROG)), carbon monoxide (CO), particulate matter (PM), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead. Areas that meet ambient air quality standards are classified as attainment areas, while areas that do not meet these standards are classified as nonattainment areas. The Yolo County (County) portion of the SVAB, which encompasses the Project Site, is designated as a nonattainment area for the federal O_3 and $PM_{2.5}$ standards, designated nonattainment area for the state standards for PM_{10}, and nonattainment-transitional for the state standards of O_3 (CARB 2022a). Nonattainment-transitional status is granted to areas that have made significant progress towards achieving the standards but have not yet met the standard. This status allows the areas to avoid certain sanctions and deadlines that would otherwise be imposed on nonattainment areas that are not making progress and provides additional time to implement and enforce their emission reduction plans.

Toxic Air Contaminants

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are another group of pollutants of concern. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For regulatory purposes, carcinogenic TACs are assumed to have no safe threshold below which health impacts would not occur, and cancer risk is expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

There are many different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Additionally, diesel engines emit a complex mixture of air pollutants composed of gaseous and solid material. The solid emissions in diesel exhaust

are known as diesel particulate matter (DPM). In 1998, California identified DPM as a TAC based on its potential to cause cancer, premature death, and other health problems (e.g., asthma attacks and other respiratory symptoms). Those most vulnerable are children (whose lungs are still developing) and the elderly (who may have other serious health problems). Overall, diesel engine emissions are responsible for the majority of California's known cancer risk from outdoor air pollutants. Public exposure to TACs can result from emissions from normal operations, as well as from accidental releases of hazardous materials during upset conditions. The health effects of TACs include cancer, birth defects, neurological damage, and death.

Sensitive Receptors

Sensitive receptors are defined as facilities or land uses that include members of the population who are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis.

The Project Site spans many different locations throughout Yolo County and the City of Davis, which is primarily made up of sensitive residential receptors. Since there is no construction, the only activity that would occur in proximity to nearby sensitive receptors would be the truck trips associated with the irrigation of City trees.

REGULATORY SETTING

Federal

Clean Air Act

The Clean Air Act (CAA) of 1970 and the CAA Amendments of 1971 required the USEPA to establish the National Ambient Air Quality Standards (NAAQS), with states retaining the option to adopt more stringent standards or to include other specific pollutants.

These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those "sensitive receptors" most susceptible to further 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. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

The USEPA has classified air basins (or portions thereof) as being in attainment, nonattainment, or unclassified for each criteria air pollutant, based on whether or not the NAAQS have been achieved. If an area is designated unclassified, it is because inadequate air quality data were available as a basis for a nonattainment or attainment designation.

State

California Clean Air Act

The California Clean Air Act (CCAA) allows the state to adopt ambient air quality standards and other regulations provided that they are at least as stringent as federal standards. CARB, a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California, including setting the California Ambient Air Quality Standards (CAAQS). CARB also conducts research, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB also has primary responsibility for the development of California's State Implementation Plan (SIP), for which it works closely with the federal government and the local air districts.

California State Implementation Plan

The federal CAA (and its subsequent amendments) requires each state to prepare an air quality control plan referred to as the SIP. The SIP is a living document that is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The CAA Amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The USEPA has the responsibility to review all SIPs to determine if they conform to the requirements of the CAA.

YSAQMD has developed the *Reasonably Available Control Technology (RACT) State Implementation Plan* (RACT SIP) for the 2008 and then 2015 ozone standards. These RACT SIPs are a regional blueprint for achieving air quality standards in the portions of the SVAB that are under YSAQMD's jurisdiction. The RACT SIPs both establish a program of rules and regulations directed at reducing air pollutant emissions and achieving state and national air quality standards. The YSAQMD, along with the other air districts within the Sacramento region, developed the *2017 Sacramento Regional 2008 8-Hour Ozone Attainment and Reasonable Further Progress Plan* (including 2018 updates), the *PM_{10} Implementation/Maintenance Plan and Re-Designation Request* (2010), and *$PM_{2.5}$ Implementation/Maintenance Plan and Re-designation Request for Sacramento $PM_{2.5}$ Nonattainment Area* (2013). These plans are relevant air quality attainment plans and reports that constitute the SIP for the portion of the SVAB encompassing the Project Site. These air quality planning documents present comprehensive strategies to reduce the O_3 precursor pollutants (ROG and NO_x) as well as PM emissions from stationary, area, mobile, and indirect sources.

Local

Yolo-Solano Air Quality Management District

The YSAQMD is the air pollution control agency for Yolo County and the northeast portion of Solano County. The agency's primary responsibility is ensuring that the NAAQS and CAAQS are attained and maintained in the Yolo and Solano Counties within the SVAB. The YSAQMD coordinates the work of government agencies, businesses, and private citizens to achieve and maintain healthy air quality. The YSAQMD develops market-based programs to reduce emissions associated with mobile sources, processes permits, ensures compliance with permit conditions and with YSAQMD rules and regulations, and conducts long-term planning related to air quality. The YSAQMD is also responsible for adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits for stationary sources of air pollutants, inspecting stationary sources of air pollutants, responding to citizen complaints, monitoring ambient air quality and meteorological conditions, awarding grants to reduce motor vehicle emissions, and conducting public education campaigns, as well as many other activities.

The following is a list of noteworthy YSAQMD rules that are applicable to the Proposed Project:

- **Rule 2.1: Control of Emissions**. The emission of material which may be the cause of air pollution shall be controlled.
- **Rule 2.5: Nuisance**. A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health, or safety of any such persons or the public or which cause to have a natural tendency to cause injury or damage to business or property.

Standards of Significance

Yolo Solano Air Quality Management District

The impact analysis provided below considers the California Environmental Quality Act (CEQA) Guidelines Appendix G thresholds of significance. The significance criteria established by the applicable air quality management or air pollution control district (YSAQMD) may be relied upon to make impact determinations. According to the YSAQMD, an air quality impact is considered significant if the Proposed Project would violate any ambient air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations. The YSAQMD has established thresholds of significance for air quality for construction and operational activities of land use development projects, as shown in Table 1.

Table 1. YSAQMD Significance Thresholds	
Air Pollutant	**Construction/Operational Activities**
Reactive Organic Gas	10 tons/year
Nitrogen Oxide	10 tons/year
Carbon Monoxide	**
Sulfur Oxide	--
Coarse Particulate Matter	80 pounds/year
Fine Particulate Matter	--

Source: YSAQMD 2007
Notes: ** Violation of state ambient air quality standard

Methodology

Air quality impacts were assessed in accordance with methodologies recommended by the YSAQMD. Project operation emissions were modeled using the CARB 2021 version of the EMission FACtor model (EMFAC2021). The EMFAC model can estimate criteria pollutant emissions from heavy-duty trucks, vehicle truck trips, and other vehicle commutes based on Yolo County averages. The EMFAC model is used, in accordance with length of trips necessary to deliver the recycled water, to calculate the emissions associated with the operations of the Proposed Project. It is noted that there would not be a construction phase of the Project.

Air Quality Impact Discussion

Would the Project Conflict with or Obstruct Implementation of the Applicable Air Quality Plan?

As part of its enforcement responsibilities, the USEPA requires each state with nonattainment areas to prepare and submit a SIP that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs. Similarly, under state law, the CCAA requires an air quality attainment plan to be prepared for areas designated as nonattainment with regard to the NAAQS and CAAQS. Air quality attainment plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date.

As previously mentioned, the various locations of the Project are located within the Yolo County portion of the SVAB, which is under the jurisdiction of the YSAQMD. The YSAQMD is required, pursuant to the CAA, to reduce emissions of criteria pollutants for which the SVAB is in nonattainment. The YSAQMD is required to submit air quality plans and rate-of-progress milestone evaluations in accordance with the federal Clean Air Act. In accordance with other air districts, the YSAQMD has developed several air quality

attainment plans and reports, which include the *Reasonable Available Control Technology (RACT) SIP Analysis for the 2015 Federal Ozone Standard* (2020), *2017 Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan* (2018), the *PM_{10} Implementation/Maintenance Plan and Re-Designation Request* (2010), and *$PM_{2.5}$ Implementation/Maintenance Plan and Re-designation Request for Sacramento $PM_{2.5}$ Nonattainment Area* (2013), present comprehensive strategies to reduce the O_3 precursor pollutants (ROG and NO_x) as well as PM emissions from stationary, area, mobile, and indirect sources. These air quality plans and their associated emission-reducing control measures are based on information derived from projected growth in regions surrounding and encompassing the Project Site in order to project future emissions and then determine strategies and regulatory controls for the reduction of emissions. Growth projections are based on the general plans developed by Yolo County and the incorporated cities in the county, including the City of Davis. As such, projects that propose development consistent with the growth anticipated by the respective general plan of the jurisdiction in which the proposed development is located would be consistent with YSAQMD air quality planning. In the event that a project would propose a development that is less dense than that associated with the general plan, the project would likewise be consistent with the YSAQMD air quality plans. If a project, however, proposes a development that is denser than that assumed in the general plan, the project may be in conflict with YSAQMD air quality planning efforts and could therefore result in a significant impact on air quality.

Growth projections for Yolo County in the Project Area are based on the City of Davis General Plan. As such, projects in the City that propose development consistent with the growth anticipated by the General Plan would be consistent with YSAQMD's air quality planning efforts. The Project does not include development of new housing or employment centers and would not induce population or employment growth. Rather, the Project proposes deliver recycled water to various locations throughout the City of Davis and lands directly adjacent. Therefore, the Project would not affect local plans for population growth and the Proposed Project would be considered consistent with the population, housing, and employment growth projections utilized in the preparation of YSAQMD air quality planning efforts. Furthermore, as described in detail below, the Project would not exceed the YSAQMD significance thresholds and in turn would not violate any air quality standards, and thus would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment. The City's General Plan recommends that all Project's take measures to meet the YSAQMD air quality standards and goals for improved air quality. As seen in Table 2 below, the Proposed Project does not exceed the YSAQMD's significance thresholds for air pollutants and therefore fulfills the goals of the YSAQMD and the City of Davis. Additionally, the Proposed Project does not conflict with any of the land use assumptions in the City General Plan. Specifically, the Project does not propose to amend the General Plan, does not include development of new housing or employment centers and would not induce population or employment growth. Therefore, the Project would not affect local plans for population growth, and the Proposed Project would be considered consistent with the population, housing, and employment growth projections utilized in the preparation of YSAQMD air quality planning efforts.

For these reasons, the Project would be consistent with the emission-reduction goals of the YSAQMD and the City of Davis.

Would the Project Result in a Cumulative 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?

Project Construction Emissions

Construction emissions impacts are short-term air emissions impacts that are associated with any changes in the permanent use of the Project Site by onsite stationary and offsite mobile sources that substantially increase emissions. The Project proposes the one-time placement of a 6,500-gallon storage tank on an existing pavement pad at the City's Public Works Corporation Yard on 5th Street in Davis. Furthermore, the facilities that would store the recycled water would require no alterations or construction phases. No new construction or ground disturbance is required and there is no impact on air quality. The placement of the 6,500-gallon storage tank would result in negligible emissions. Any emissions associated with the one-time delivery of the 6,500-gallon storage tank would be less than the Proposed Project's estimated operational emissions, which are under the YSAQMD significance thresholds (shown below in Table 2).

Project Operational Emissions

Implementation of the Project would result in long-term operational emissions of criteria air pollutants such as PM_{10}, $PM_{2.5}$, CO, and SO_2 as well as O_3 precursors such as ROG and NO_X. The emissions associated with operations for the Project are summarized in Table 2 and compared to the YSAQMD's significance thresholds.

Table 2. Operational-Related Air Quality Emissions (tons/year)[1]

Emission Source	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Tanker Trucks	0.000013	0.000741	0.000074	0.000007	0.007	0.000003
Pick-up Trucks	0.000047	0.000284	0.003430	0.000012	0.10	0.000004
Total:	**0.00006**	**0.001025**	**0.003504**	**0.000019**	**0.107**	**0.000007**
YSAQMD Significance Threshold	*10 tons/year*	*10 tons/year*	**	--	*80 pounds/day*	--
Exceed YSAQMD Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: EMFAC 2021 version. Refer to Appendix A for Model Data Outputs.
Notes: [1]PM_{10} emissions are reported in pounds per day consistent with YSAQMD thresholds. ** Violation of state ambient air quality standard.

As shown by Table 2, the criteria air pollutant emissions from operations of the Proposed Project do not exceed the significance thresholds set forth by the YSAQMD.

Would the Project Expose Sensitive Receptors to Substantial Pollutant Concentrations?

Sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. The Proposed Project plans to deliver the recycled water to several locations throughout Davis, which is primarily made up of sensitive residential receptors. Virtually all aspects of Project implementation would involve operational activity occurring adjacent to these land uses.

Construction Generated Air Contaminants

As previously mentioned, the Proposed Project would not have a construction phase involving building construction or ground disturbing activities. The Project proposes the one-time placement of 6,500-gallon storage tank on an existing pavement pad at the City's Public Works Corporation Yard on 5th Street in Davis. Therefore, the Project would not result in a potentially significant contribution to regional concentrations of nonattainment pollutants and would not result in a significant contribution to the adverse health impacts associated with those pollutants.

Operational Air Contaminants

Operation of the Proposed Project would not result in the development of any substantial sources of air toxics. There are no stationary sources associated with the operations of the Project; nor would the Project attract mobile sources that spend long periods queuing and idling at the site. The operational emissions are expected to come from the tanker and pickup trucks that would shuttle and deliver water from the WWTP to the Corporation Yard and then to various sites around the City. However, according to Table 2 above, operational Project emissions would not result in emissions of criteria pollutants over the YSAQMD thresholds. Therefore, there would not be significant concentrations of pollutants at nearby sensitive receptors. The Project would not be a source of TACs. The Project will not result in a high carcinogenic or non-carcinogenic risk during operation.

Carbon Monoxide Hot Spots

It has long been recognized that CO exceedances are caused by vehicular emissions, primarily when idling at intersections. Concentrations of CO are a direct function of the number of vehicles, length of delay, and traffic flow conditions. Under certain meteorological conditions, CO concentrations close to congested intersections that experience high levels of traffic and elevated background concentrations may reach unhealthy levels, affecting nearby sensitive receptors. Given the high traffic volume potential, areas of high CO concentrations, or "hot spots," are typically associated with intersections that are projected to operate at unacceptable levels of service during the peak commute hours. It has long been recognized that CO hotspots are caused by vehicular emissions, primarily when idling at congested intersections.

However, transport of this criteria pollutant is extremely limited, and CO disperses rapidly with distance from the source under normal meteorological conditions. Furthermore, vehicle emissions standards have become increasingly more stringent in the last 20 years. Currently, the allowable CO emissions standard in California is a maximum of 3.4 grams/mile for passenger cars (there are requirements for certain vehicles that are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of increasingly sophisticated and efficient emissions control technologies, CO concentration in the SVAB is designated as in attainment. Detailed modeling of Project-specific CO "hot spots" is not necessary and thus this potential impact is addressed qualitatively.

A CO "hot spot" would occur if an exceedance of the state one-hour standard of 20 parts per million (ppm) or the eight-hour standard of 9 ppm were to occur. The analysis prepared for CO attainment in the South Coast Air Quality Management District's (SCAQMD's) *1992 Federal Attainment Plan for Carbon Monoxide* in Los Angeles County and a Modeling and Attainment Demonstration prepared by the SCAQMD as part of the 2003 AQMP can be used to demonstrate the potential for CO exceedances of these standards. The SCAQMD is the air pollution control officer for much of southern California. The SCAQMD conducted a CO hot spot analysis as part of the 1992 CO Federal Attainment Plan at four busy intersections in Los Angeles County during the peak morning and afternoon time periods. The intersections evaluated included Long Beach Boulevard and Imperial Highway (Lynwood), Wilshire Boulevard and Veteran Avenue (Westwood), Sunset Boulevard and Highland Avenue (Hollywood), and La Cienega Boulevard and Century Boulevard (Inglewood). The busiest intersection evaluated was at Wilshire Boulevard and Veteran Avenue, which has a traffic volume of approximately 100,000 vehicles per day. Despite this level of traffic, the CO analysis concluded that there was no violation of CO standards (SCAQMD 1992). In order to establish a more accurate record of baseline CO concentrations affecting the Los Angeles, a CO "hot spot" analysis was conducted in 2003 at the same four busy intersections in Los Angeles at the peak morning and afternoon time periods. This "hot spot" analysis did not predict any violation of CO standards. The highest one-hour concentration was measured at 4.6 ppm at Wilshire Boulevard and Veteran Avenue and the highest eight-hour concentration was measured at 8.4 ppm at Long Beach Boulevard and Imperial Highway. Thus, there was no violation of CO standards.

Similar considerations are also employed by other Air Districts when evaluating potential CO concentration impacts. More specifically, the Bay Area Air Quality Management District (BAAQMD), the air pollution control officer for the San Francisco Bay Area, concludes that under existing and future vehicle emission rates, a given project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact.

The Proposed Project anticipated to result in approximately 3 to 4 daily traffic trips. Thus, the Proposed Project would not generate traffic volumes at any intersection of more than 100,000 vehicles per day (or 44,000 vehicles per day). There is no likelihood of the Project traffic exceeding CO values.

Would the Project Result in Other Emissions (Such as Those Leading to Odors) Adversely Affecting a Substantial Number of People?

Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another. It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

During the placement of the 6,500-gallon tank, the Proposed Project presents the potential for generation of objectionable odors in the form of diesel exhaust in the immediate vicinity of the site. However, these emissions are short-term in nature and will rapidly dissipate and be diluted by the atmosphere downwind of the emission sources. Additionally, odors would be localized and generally confined to the construction area. Therefore, Project implementation would not adversely expose a substantial number of people to odor emissions.

Land uses commonly considered to be potential sources of obnoxious odorous emissions include agriculture (farming and livestock), wastewater treatment plants, food processing plants, chemical plants, composting facilities, refineries, landfills, dairies, and fiberglass molding. The Proposed Project does not include any uses identified as being associated with odors. The delivery of recycled water to various sites around the City would not result in objectionable odors.

GREENHOUSE GAS EMISSIONS ANALYSIS

Environmental Setting

Greenhouse gas (GHG) emissions are released as byproducts of fossil fuel combustion, waste disposal, energy use, land use changes, and other human activities. This release of gases, such as carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and chlorofluorocarbons, creates a blanket around the earth that allows light to pass through but traps heat at the surface, preventing its escape into space. While this is a naturally occurring process known as the greenhouse effect, human activities have accelerated the generation of GHGs beyond natural levels. The overabundance of GHGs in the atmosphere has led to an unexpected warming of the earth and has the potential to severely impact the earth's climate system.

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. CH_4 traps over 25 times more heat per molecule than CO_2, and N_2O absorbs 298 times more heat per molecule than CO_2. Often, estimates of GHG emissions are presented in carbon dioxide equivalents (CO_2e). Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and TACs, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have long atmospheric lifetimes (one to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of any particular GHG molecule is dependent on multiple variables and cannot be pinpointed, it is understood that more CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, or other forms. Of the total annual human-caused CO_2 emissions, approximately 55 percent is sequestered through ocean and land uptakes every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO_2 emissions remains stored in the atmosphere.

The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; it is sufficient to say the quantity is enormous, and no single project alone would measurably contribute to a noticeable incremental change in the global average temperature or to global, local, or microclimates. From the standpoint of CEQA, GHG impacts to global climate change are inherently cumulative.

In 2022, CARB released the 2022 edition of the California GHG inventory covering calendar year 2020 emissions. In 2020, California emitted 369.2 million gross metric tons of CO_2e including from imported electricity. Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2020, accounting for approximately 38 percent of total GHG emissions in the state. Continuing the downward trend from previous years, transportation emissions decreased 27 million metric tons of CO_2e in 2020, though the intensity of this decrease was most likely from light duty vehicles after shelter-in-place orders were enacted in response to the COVID-19 pandemic. Emissions from the electricity sector account for 16 percent of the inventory and have remained at a similar level as in 2019 despite a 44 percent decrease in in-state hydropower generation (due to below average

precipitation levels), which was more than compensated for by a 10 percent growth in in-state solar generation and cleaner imported electricity incentivized by California's clean energy policies. California's industrial sector accounts for the second largest source of the state's GHG emissions in 2020, accounting for 23 percent (CARB 2022b).

REGULATORY SETTING

State

Executive Order S-3-05

Executive Order (EO) S-3-05, signed by Governor Arnold Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the EO established total GHG emission targets for the state. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

Assembly Bill 32 Climate Change Scoping Plan and Updates

In 2006, the California legislature passed Assembly Bill (AB) 32 (Health and Safety Code § 38500 et seq., or AB 32), also known as the Global Warming Solutions Act. AB 32 required CARB to design and implement feasible and cost-effective emission limits, regulations, and other measures, such that statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction in emissions). Pursuant to AB 32, CARB adopted a Scoping Plan in December 2008, which outlined measures to meet the 2020 GHG reduction goals. California exceeded the target of reducing GHG emissions to 1990 levels by the year 2017.

The Scoping Plan is required by AB 32 to be updated at least every five years. The latest update, the 2022 Scoping Plan Update, outlines strategies and actions to reduce greenhouse gas emissions in California. The plan focuses on achieving the state's goal of reducing greenhouse gas emissions to 40 percent below 1990 levels by 2030, and then reaching carbon neutrality by 2045 . The plan includes a range of strategies across various sectors, including transportation, industry, energy, and agriculture. Some of the key strategies include transitioning to zero-emission vehicles, expanding renewable energy sources, promoting sustainable land use practices, implementing a low-carbon fuel standard, and reducing emissions from buildings. Additionally, the plan addresses equity and environmental justice by prioritizing investments in communities most impacted by pollution and climate change. The plan also aims to promote economic growth and job creation through the transition to a low-carbon economy.

Senate Bill 32 and Assembly Bill 197 of 2016

In August 2016, Governor Brown signed SB 32 and AB 197, which serve to extend California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include § 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030.

Local

Yolo-Solano Air Quality Management District

The YSAQMD has primary responsibility for developing and implementing rules and regulations to maintain national and state air quality standards, permitting new or modified sources, developing air quality management plans, and adopting and enforcing air pollution regulations for all projects in Yolo-Solano area, which encompasses the Project Site. The Proposed Project is located within the SVAB, of which portions are also under the jurisdiction of the Sacramento Metropolitan Air Quality Management District (SMAQMD). The AB 32 Scoping Plan does not specify an explicit role for local air districts with respect to implementing statewide GHG reduction strategies, but it does state that CARB will work actively with air districts in coordinating emissions reporting, encouraging and coordinating GHG reductions, and providing technical assistance in quantifying reductions. The ability of air districts to control emissions (both criteria pollutants and GHGs) is provided primarily through permitting, but also via their role as a CEQA lead or commenting agency, the establishment of CEQA thresholds, and the development of analytical requirements for CEQA documents.

The YSAQMD has not yet established significance thresholds for the emissions of GHG from land use development projects. As such, the SMAQMD has a recommended an approach for assessing a proposed development's GHG emissions. This threshold is appropriate as it was established to assist with the analysis of GHG-related impacts from development within the SVAB, which encompasses the Proposed Project. Specifically, SMAQMD recommends a comparison of a project's annual construction GHG emissions to a significance threshold of 1,100 metric tons per year. Similarly, SMAQMD recommends a comparison of a project's annual operational GHG emissions to a significance threshold of 1,100 metric tons per year. If a threshold is exceeded, then the project may have a cumulatively considerable contribution to a significant cumulative environmental impact, and all feasible mitigation is required.

Davis Climate Action and Adaptation Plan (CAAP)

In December 2022, the City of Davis finalized the Davis 2020-2040 Climate Action and Adaptation Plan (CAAP) that places the community on a path to achieve the GHG emission reduction targets adopted by the City Council. This document serves as an update to the original CAAP established in 2010. The 2020-2040 CAAP strives for more rigorous goals, aiming to achieve carbon neutrality by 2040 and reduce emissions to 40 percent below 2016 levels by 2030. The plan includes a range of strategies across various sectors with key strategies including promoting active transportation and public transit, promoting energy efficiency and design, increasing use of renewable energy, reducing waste and water use, and promoting carbon removal techniques. The CAAP also includes an adaptation component that addresses the risks and impacts of climate change on the city's infrastructure, economy, and natural systems. The plan identifies strategies to increase resilience and adapt to the impacts of climate change and extreme weather events.

Standards of Significance

The State of California does not prescribe specific methodologies for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA. With respect to GHG emissions, the CEQA Guidelines Section 15064.4(a) states that lead agencies "shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions resulting from a project. The CEQA Guidelines note that an agency has the discretion to either quantify a project's GHG emissions or rely on a "qualitative analysis or other performance-based standards." (14 CCR 15064.4(b)). A lead agency may use a "model or methodology" to estimate GHG emissions and has the discretion to select the model or methodology it considers "most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change." (14 CCR 15064.4(c)). Section 15064.4(b) provides that the lead agency should consider the following when determining the significance of impacts from GHG emissions on the environment:

The extent a project may increase or reduce GHG emissions as compared to the existing environmental setting.

Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.

The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4(b)).

In addition, Section 15064.7(c) of the CEQA Guidelines specifies that "[w]hen adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence" (14 CCR 15064.7(c)). The CEQA Guidelines also clarify that the effects of GHG emissions are cumulative and should be analyzed in the context of CEQA's requirements for cumulative impact analysis (see CEQA Guidelines Section 15130). As a note, the CEQA Guidelines were amended in response to Senate Bill 97. In particular, the CEQA Guidelines were amended to specify that compliance with a GHG emissions reduction plan renders a cumulative impact insignificant.

Per CEQA Guidelines Section 15064(h)(3), a project's incremental contribution to a cumulative impact can be found not cumulatively considerable if the project would comply with an approved plan or mitigation program that provides specific requirements that would avoid or substantially lessen the cumulative problem within the geographic area of the project. To qualify, such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency. Examples of such programs include a "water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plans [and] plans or regulations for the reduction of greenhouse gas emissions." Put another

way, CEQA Guidelines Section 15064(h)(3) allows a lead agency to make a finding of less than significant for GHG emissions if a project complies with adopted programs, plans, policies and/or other regulatory strategies to reduce GHG emissions.

In *Center for Biological Diversity v. Department of Fish and Wildlife* (2015) 62 Cal. 4th 2014, 213, 221, 227, following its review of various potential GHG thresholds proposed in an academic study [Crockett, *Addressing the Significance of Greenhouse Gas Emissions: California's Search for Regulatory Certainty in an Uncertain World* (July 2011), 4 Golden Gate U. Envtl. L. J. 203], the California Supreme Court identified the use of numeric bright-line thresholds as a potential pathway for compliance with CEQA GHG requirements. The study found numeric bright line thresholds designed to determine when small projects were so small as to not cause a cumulatively considerable impact on global climate change was consistent with CEQA. Specifically, Public Resources Code section 21003(f) provides it is a policy of the State that "[a]ll persons and public agencies involved in the environmental review process be responsible for carrying out the process in the most efficient, expeditious manner in order to conserve the available financial, governmental, physical and social resources with the objective that those resources may be better applied toward the mitigation of actual significant effects on the environment." The Supreme Court-reviewed study noted, "[s]ubjecting the smallest projects to the full panoply of CEQA requirements, even though the public benefit would be minimal, would not be consistent with implementing the statute in the most efficient, expeditious manner. Nor would it be consistent with applying lead agencies' scarce resources toward mitigating actual significant climate change impacts." (Crockett, *Addressing the Significance of Greenhouse Gas Emissions: California's Search for Regulatory Certainty in an Uncertain World* (July 2011), 4 Golden Gate U. Envtl. L. J. 203, 221, 227.)

The significance of the Project's GHG emissions is evaluated consistent with CEQA Guidelines Section 15064.4(b)(2) by considering whether the Project complies with applicable plans, policies, regulations and requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. Specifically, the Project is compared to the SMAQMD GHG significance thresholds for construction and operations. Although the Project Site is located within the jurisdiction area of the YSAQMD, the SCAQMD thresholds are considered appropriate for the purposes of this analysis due to similarities between both the geomorphic and urban pattern of two neighboring air district jurisdictions. More specifically, both air districts are located within the SVAB. SMAQMD recommends a comparison of a project's annual construction GHG emissions to a significance threshold of 1,100 metric tons per year. Similarly, SMAQMD recommends a comparison of a project's annual operational GHG emissions to a significance threshold of 1,100 metric tons per year. Additionally, the Project will also be assessed for consistency with the Davis 2020-2040 CAAP.

Methodology

Project operational emissions emitted by water transport trucks were modeled using the California Air Resources Board 2021 version of EMFAC2021. The EMFAC model can estimate criteria pollutant and GHG emissions from heavy-duty trucks, vehicle truck trips, and other vehicle commutes based on County averages. EMFAC2021 is used, in accordance with length of trips necessary to deliver the recycled water, to calculate the emissions associated with the operations of the Proposed Project. GHG emissions from

water pumping were calculated with the California Emissions Estimator Model (CalEEMod 2022.1). There would not be a construction phase of the Project.

Greenhouse Gas Emissions Impact Discussion

Would the Project Generate Greenhouse Gas Emissions, Either Directly or Indirectly, That May Have a Significant Impact on the Environment?

As previously stated, the YSAQMD has not yet established significance thresholds for the emissions of GHG from land use development projects. However, the Project Site is located within the SVAB and therefore, thresholds of significance established by SMAQMD have been used for evaluating operation related GHG emissions associated with the Proposed Project. These thresholds are considered appropriate for the purposes of this analysis due to similarities between both the geomorphic and urban pattern of two neighboring air district jurisdictions.

Construction-Generated Greenhouse Gas Emissions

The Proposed Project proposes the one-time placement of a 6,500-gallon storage tank on an existing pavement pad at the City's Public Works Corporation Yard on 5th Street. Furthermore, the facilities that would store the recycled water would require no alterations or construction phases. No new construction or ground disturbance is required and thus no construction equipment that would produce GHG emissions would be used. Any emissions associated with the one-time delivery of the 6,500-gallon storage tank would be less than the Proposed Project's estimated operational emissions, which are under the SMAQMD's GHG significance thresholds (shown below in Table 3).

Operational-Generated Greenhouse Gas Emissions

Operation of the Project would result in an GHG emissions associated with pickup truck trips needed to transport water to sites throughout the city and the tanker truck trips needed to refill the 6,500-gallon tank with recycled water. GHG emissions associated with the Proposed Project also include the operation of pumps to deliver water supply to the YCCL and the open space area along existing pipelines. Long-term operational GHG emissions attributed to the Project are identified in Table 3.

Table 3. Operational-Related Greenhouse Gas Emissions

Emissions Source	CO_2e (Metric Tons/ Year)
Truck Trips	2
Water Pumping	25
Total	**27**
Significance Threshold	*1,100*
Exceed Threshold?	**No**

Source: Truck trip emissions derived from EMFAC 2021 version; emissions from water pumping per the California Emissions Estimator Model (CaLEEMod 2022.1). Refer to Appendix B for Model Data Outputs.

As shown in Table 3, Project operations would result in 27 metric tons/year of CO_2e, which is below the significance threshold.

Would the Project Conflict with an Applicable Plan, Policy, or Regulation Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases?

In December of 2022, the City of Davis finalized the 2020-2040 Davis CAAP that places the community on a path to achieve the aiming to achieve carbon neutrality by 2040 and reduce emissions to 40 percent below 2016 levels by 2030. This update to the previous CAAP was both a way to achieve the minimum GHG reduction target based on SB 32, as well as align with the most up to date CARB Scoping Plan. The CAAP prioritizes goals and actions that address and reduce local GHG emissions from building energy and design, transportation and land use, water conservation and waste reduction, climate adaptation, and carbon removal.

The GHG emissions associated with the Project will be operation-related. As seen above in Table 3, the Proposed Project would be under the significance threshold and would not generate a significant amount of GHG emissions from Project operations. The Proposed Project would allocate recycled water for beneficial use the local landfill, a composting facility, open space that includes freshwater wetland habitat, and for watering trees within the City. The Project aligns with the water conservation and waste reduction and climate adaptation goals of the CAAP by utilizing recycled water to enhance the urban forest within the City. This, in turn, could save more water resources and continue to enhance the City's desire to expand cool spaces. The Proposed Project would support the climate resilience and adaptation goals outlined by the CAAP without contributing a significant amount of GHG emissions. The Project is consistent with the significance thresholds and the City of Davis 2020-2040 CAAP and would not conflict with any GHG goals or policies.

For these reasons, the Project would not conflict with any applicable plan, policy or regulation related to the reduction in GHG emissions.

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APPENDIX A

Criteria Air Pollutant Emissions Modeling Outputs

Table A-1: Composite Emissions Factors for Tanker Trucks - Yolo County (Grams per Mile)

Reactive Organic Gas	Oxides of Nitrogen	Carbon Monoxide	Sulfur Dioxide	Course Particulate Matter	Fine Particulate Matter
0.0320370	1.7918590	0.1779640	0.0165790	0.0086840	0.0083090

Source: California Air Resouces Board. 2023. 2021 version of the EMission FACtor model (EMFAC2021).

Table A-2: Composite Emissions Factors for Pickup Trucks - Yolo County (Grams per Mile)

Reactive Organic Gas	Oxides of Nitrogen	Carbon Monoxide	Sulfur Dioxide	Course Particulate Matter	Fine Particulate Matter
0.0147690	0.0883300	1.0686900	0.0036620	0.0015220	0.0014000

Proposed Project Operation Conditions

Table B-1: Tanker Truck to refill 6500 gallon water tank

Time	Trip Volume	Average Distance Traveled (miles)	Total Miles	Pollutants (tons/year)				Pollutant (lbs/day)	Pollutants (tons/year)
				ROG	NOX	CO	SO2	PM10	PM2.5
Annual	25	15	375	**0.000013**	**0.000741**	**0.000074**	**0.000007**	**0.007179**	**0.000003**

Table B-2: Pick up Truck with 275 gallon tanks to deliver water around Davis

Time	Trip Volume	Average Distance Traveled (miles)	Total Miles	Pollutants (tons/year)				Pollutant (lbs/day)	Pollutants (tons/year)
				ROG	NOX	CO	SO2	PM10	PM2.5
Annual	364	8	2,912	**0.000047**	**0.000284**	**0.003430**	**0.000012**	**0.097194**	**0.000004**

APPENDIX B

Greenhouse Gas Emissions Modeling Outputs

Table A-1: Composite Emissions Factors for Tanker Trucks- Yolo County (Grams per Mile)

Carbon Dioxide	Methane	Nitrous Oxide
1750.8300000	0.0014880	0.2758440

Source: California Air Resouces Board. 2023. 2021 version of the EMission FACtor model (EMFAC2021).

Table A-2: Composite Emissions Factors for Pickup Trucks- Yolo County (Grams per Mile)

Carbon Dioxide	Methane	Nitrous Oxide
370.4345000	0.0036730	0.0070780

Source: California Air Resouces Board. 2023. 2021 version of the EMission FACtor model (EMFAC2021).

Proposed Project Conditions

Table B-1: Tanker Truck to refill 6500 gallon water tank

Time	Trip Volume	Average Distance Traveled (miles)	Total Miles	Greenhouse Gases (Metric Tons per Year)			
				CO2	CH4	N2O	CO2e
Annual	25	15	375	**0.6566**	**0.0000**	**0.0001**	**0.69**

Table B-2: Pick up Trucks with 275 gallon tanks to deliver water around Davis

Time	Trip Volume	Average Distance Traveled (miles)	Total Miles	Greenhouse Gases (Metric Tons per Year)			
				CO2	CH4	N2O	CO2e
Annual	364	8	2,912	**1.0787**	**0.0000**	**0.0000**	**1.09**

APPENDIX C

Habitat Impact Assessment Associated with the Temporal Decrease in Effluent Discharge from the Davis Wastewater Treatment Plan to the Willow Slough Bypass Technical Memorandum

City of Davis, June 20, 2022.

PUBLIC WORKS
UTILITIES AND OPERATIONS
DEPARTMENT
MAIN 530.757.5686
FAX 530.758.4738

Technical Memorandum

Date: June 20, 2022

To: Josie Tellers, Water Quality Coordinator

From: John McNerney, Wildlife Resource Specialist

Subject: Habitat Impact Assessment Associated with the Temporal Decrease in Effluent Discharge from the Davis Wastewater Treatment Plant to the Willow Slough Bypass.

Introduction and Background

Improvements to the Davis Wastewater Treatment Plant reduced the loss of water during the treatment process, resulting in an increase of effluent discharge by a magnitude of approx. 2 million gallons per day (MGD) as an annual average for a total effluent discharge rate of 4 MGD. The additional water has resulted in an increase of flow within the receiving stream known as Willow Slough Bypass (WSB). The WSB is a flood water bypass that receives overflow from Willow Slough and/or backflow flood waters from the Yolo Bypass during winter flooding events. Earthen levees contain the wide flood plain with an unlined low flow channel along the foot of the southern levee. The low flow channel drains the WSB flood plain and conveys non-flood-related flow during the summer months. The City of Davis is interested in reclaiming this "new saved water" for other future beneficial uses for its long-term planning purposes. The temporary decrease in discharge is not expected to result in a significant impact on habitat conditions or wildlife in the WSB.

The City estimates that the 2 MGD of additional water represents only 0.05% of the capacity of the WSB. (See Attachment 1, Estimation of Decrease in Water Levels in Willow Slough Bypass.). The ordinary depth of water within the low flow channel is 5.5 feet deep. Adding or removing 2 MGD would result in a 1.3" change in water elevation. This would result in a new ordinary water depth of 5.6' or 5.4', respectively. (See Attachment 1.)

Discussion

The WSB has two main habitat features including a low flow drainage channel and an emergent freshwater wetland floodplain – all occurring within the confines of earthen levees. Existing habitat conditions in the WSB may be considered dependent on the current/baseline flows discharged by the WWTP. However, habitat is also significantly influenced by natural biotic activity (ex. beaver dams), sedimentation, agricultural runoff, and rainfall/ flooding of the Yolo Bypass, etc. Habitat within the WSB supports protected species such as the giant garter snake

(*Thamnophis gigas*), as well a large diversity and abundance of other wildlife that utilize freshwater emergent wetlands habitat. The low flow channel of the WSB provides habitat for native and non-native warm water fish and invertebrates.

American beavers (*Castor canadensis*) are considered a "keystone" species within the WSB and are largely responsible for regulating the existing wetlands habitat within the bypass. Currently, water primarily travels down the WSB via the low flow channel on the south side. Beaver activity (i.e. dams) in the channel intermittently cause flows to back up and flood adjacent floodplain area creating emergent freshwater wetlands habitat. When these dams break, the water is released and the wetlands habitat changes back to ephemeral floodplain riparian.

The 2 MGD decrease in flow to the channel is not expected to significantly degrade the quality or area of the beaver maintained freshwater emergent wetlands habitats, nor have significant effect on low flow channel hydrology. A decrease in the volume of flow in the channel, and subsequent reduction of flow relative to baseline, is not expected to change ordinary water depth or chemistry, nor negatively impact habitat availability or quality for existing wildlife.

Conclusion

In summary, the 2 MGD of "new saved water" in the WSB is considered supplemental in support of existing habitat. Wetlands habitat conditions within WSB are largely regulated by biotic activity rather than flow dependent. A future reduction of the additional 2 MGD flow relative to baseline flow would not result in the loss of existing habitat type, availability or quality.

Attachment 1 to Technical Memorandum

Estimation of Decrease in Water Levels in Willow Slough Bypass from Removal of 2 MGD to Recycled Water Project

Davis WWTP discharge flows						Willow Slough Bypass Capacity	*WWTP % of WSB
mgd	gpd	gph	gpm	gps	cfs	cfs	flows
1.0	1000000	41667	694	12	1.5	6000	0.03%
1.5	1500000	62500	1042	17	2.3	6000	0.04%
2.0	2000000	83333	1389	23	3.1	6000	0.05%
2.5	2500000	104167	1736	29	3.9	6000	0.06%
3.0	3000000	125000	2083	35	4.6	6000	0.08%
3.5	3500000	145833	2431	41	5.4	6000	0.09%
4.0	4000000	166667	2778	46	6.2	6000	0.10%

	WSB	**Low Flow Channel				
WWTP	Area	Area	% of	Capacity	Decrease	Decrease
mgd	SF	SF	WSB	cfs	%	inches (est)
1.0	4231	130	3%	184	0.8%	0.7
1.5	4231	130	3%	184	1.3%	1
2.0	4231	130	3%	184	1.7%	1.3
2.5	4231	130	3%	184	2.1%	1.6
3.0	4231	130	3%	184	2.5%	1.9
3.5	4231	130	3%	184	2.9%	2.2
4.0	4231	130	3%	184	3.4%	2.5

*Removal of 2 MGD flows from Willow Slough Bypass has negligible decrease to full capacity of the flood channel.
**Removal of 2 MGD flows from Low Flow Channel (approximately 30 feet wide across the top and 5.5 feet deep) within the WSB, has an impact of decreasing water level by approximately 1.3 inches.

APPENDIX D

Davis Recycled Water Project – Noise Impact Memorandum

ECORP Consulting, Inc. March 2023.

March 2023

Josie Tellers
City of Davis Public Works Utilities and Operations Department
1717 5th Street
Davis, CA 95616

Re: Davis Recycled Water Project – Noise Impact Memorandum

PURPOSE

This memorandum documents the results of Noise Impact Assessment completed for the Davis Recycled Water Project (Project). The purpose of this memorandum is to estimate Project-generated noise and to determine the level of impact the Project would have on the environment.

PROJECT DESCRIPTION

The City of Davis (City) is proposing the delivery of reclaimed recycled water to various sites around the City. Recent upgrades to the treatment processes at the Davis Wastewater Treatment Plant (WWTP) have allowed a significant portion of treated wastewater that was historically lost to evaporation to be reclaimed. The amount of salvaged water, or water saved from loss by evaporation, is approximately 1.8 million gallons per day (MGD), as an annual average, or 2,016 acre-feet per year (afy). This additional water supply would be put to beneficial use at several locations within and around the City, including the Yolo County Central Landfill (YCCL) where it would assist with standard landfill operations, at a composting facility located within the YCCL property (Napa Recycling Compost Facility) where it would be used to assist the composting process, at a 160-acre open space site east of the WWTP where it would be used for irrigation, and on City property and within the City limits where the additional water supply would be used for tree irrigation. The water supply to the YCCL and the open space area would be transported via existing pumps and pipelines. The water supply used to water trees throughout the City would first be delivered from the WWTP via a tanker truck to a 6,500 gallon storage tank, which is proposed to be placed on existing pavement at the City's Public Works Corporation Yard on 5th Street in Davis, and then delivered to the watering sites by pickups trucks equipped with 275-gallon water totes. No construction is proposed for this Project. The operation of this Proposed Project would result in additional water being pumped via the existing pipeline system from the WWTP to the YCCL and the 160-acre open space area, and the delivery of approximately 100,000 gallons of water per year directly to City trees located throughout the City via the pickup trucks equipped with 275-gallon water totes. Proposed irrigation activities are anticipated to occur over the course of a 6-month timeframe. Additionally, all truck trips associated with City tree irrigation operations would occur in off-peak hours to minimize traffic impacts.

NOISE ANALYSIS

Fundamentals of Sound and Environmental Noise

Addition of Decibels

The decibel (dB) scale is logarithmic, not linear; therefore, sound levels cannot be added or subtracted through ordinary arithmetic. Two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted (dBA), an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70-dBA sound is half as loud as an 80-dBA sound and twice as loud as a 60-dBA sound. When two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dB higher than one source under the same conditions (Federal Transit Administration [FTA] 2018). For example, a 65-dB source of sound, such as a truck, when joined by another 65-dB source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by 3 dB). Under the dB scale, three sources of equal loudness together would produce an increase of 5 dB.

Sound Propagation and Attenuation

Noise can be generated by a number of sources, including mobile sources such as automobiles, trucks and airplanes, and stationary sources such as construction sites, machinery, and industrial operations. Sound spreads (propagates) uniformly outward in a spherical pattern, and the sound level decreases (attenuates) at a rate of approximately 6 dB (dBA) for each doubling of distance from a stationary or point source (Federal Highway Administration [FHWA] 2017). Sound from a line source, such as a highway, propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of approximately 3 dBA for each doubling of distance from a line source, such as a roadway, depending on ground surface characteristics (FHWA 2017). No excess attenuation is assumed for hard surfaces like a parking lot or a body of water. Soft surfaces, such as soft dirt or grass, can absorb sound, so an excess ground-attenuation value of 1.5 dBA per doubling of distance is normally assumed.

Noise levels may also be reduced by intervening structures; generally, a single row of detached buildings between the receptor and the noise source reduces the noise level by about 5 dBA (FHWA 2006), while a solid wall or berm generally reduces noise levels by 10 to 20 dBA (FHWA 2011). However, noise barriers or enclosures specifically designed to reduce site-specific construction noise can provide a sound reduction of 35 dBA or greater (Western Electro-Acoustic Laboratory, Inc. 2000). To achieve the most potent noise-reducing effect, a noise enclosure/barrier must physically fit in the available space, must completely break the "line of sight" between the noise source and the receptors, must be free of degrading holes or gaps, and must not be flanked by nearby reflective surfaces. Noise barriers must be sizable enough to cover the entire noise source and extend length-wise and vertically as far as feasibly possible to be most effective. The limiting factor for a noise barrier is not the component of noise transmitted through the material, but rather the amount of noise flanking around and over the barrier. In general, barriers contribute to decreasing noise levels only when the structure breaks the line of sight between the source and the receiver.

The manner in which older structures in California were constructed generally provides a reduction of exterior-to-interior noise levels of about 20 to 25 dBA with closed windows (California Department of Transportation [Caltrans] 2002). The exterior-to-interior reduction of newer structures is generally 30 dBA or more (Harris Miller, Miller & Hanson Inc. 2006).

Noise Descriptors

The decibel scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Several rating scales have been developed to analyze the adverse effect of community noise on people. Because environmental noise fluctuates over time, these scales consider that the effect of noise on people is largely dependent on the total acoustical energy content of the noise, as well as the time of day when the noise occurs. The L_{eq} is a measure of ambient noise, while the L_{dn} and CNEL (Community Noise Equivalent Level) are measures of community noise. Each is applicable to this analysis and defined as follows:

- **Equivalent Noise Level (L_{eq})** is the average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
- **Day-Night Average (L_{dn})** is a 24-hour average L_{eq} with a 10-dBA "weighting" added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the nighttime. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.4 dBA L_{dn}.
- **Community Noise Equivalent Level (CNEL)** is a 24-hour average L_{eq} with a 5-dBA weighting during the hours of 7:00 p.m. to 10:00 p.m. and a 10-dBA weighting added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime, respectively.

Human Response to Noise

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels.

Noise environments and consequences of human activities are usually well represented by median noise levels during the day or night or over a 24-hour period. Environmental noise levels are generally considered low when the CNEL is below 60 dBA, moderate in the 60- to 70-dBA range, and high above 70 dBA. Examples of low daytime levels are isolated, natural settings with noise levels as low as 20 dBA and quiet, suburban, residential streets with noise levels around 40 dBA. Noise levels above 45 dBA at night can disrupt sleep. Examples of moderate-level noise environments are urban residential or semi-

commercial areas (typically 55 to 60 dBA) and commercial locations (typically 60 dBA). People may consider louder environments adverse, but most will accept the higher levels associated with noisier urban residential or residential-commercial areas (60 to 75 dBA), or dense urban or industrial areas (65 to 80 dBA). Regarding increases in dBA noise levels, the following relationships should be noted in understanding this analysis:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived by humans.
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference.
- A change in level of at least 5 dBA is required before any noticeable change in community response would be expected.
- A 10-dBA change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

Vibration Fundamentals

Ground vibration can be measured several ways to quantify the amplitude of vibration produced. This can be through peak particle velocity or root mean square velocity. These velocity measurements measure maximum particle at one point or the average of the squared amplitude of the signal, respectively. Vibration impacts on people can be described as the level of annoyance and can vary depending on an individual's sensitivity. Generally, low-level vibrations may cause window rattling but do not pose any threats to the integrity of buildings or structures.

Existing Noise Environment

The City of Davis, which encompasses the Project Site, is impacted by roadway noise from traffic on local highways and streets, railroad noise from the Union Pacific and California Northern Railroad, airport noise, and stationary sources such as industrial and agricultural operations next to sensitive uses. It is also subject to typical neighborhood noise such as noise generated by day-to-day outdoor activities as well as noise generated from the various land uses (i.e., residential, commercial, and institutional) that generate stationary source noise.

The American National Standards Institute (ANSI) Standard 12.9-2013/Part 3 "Quantities and Procedures for Description and Measurement of Environmental Sound – Part 3: Short-Term Measurements with an Observer Present" provides a table of approximate background sound levels in L_{dn}, daytime L_{eq}, and nighttime L_{eq}, based on land use and population density. The ANSI standard estimation divides land uses into six distinct categories. Descriptions of these land use categories, along with the typical daytime and nighttime levels, are provided in Table 1. At times, one could reasonably expect the occurrence of periods that are both louder and quieter than the levels listed in the table. ANSI notes, "*95% prediction interval [confidence interval] is on the order of +/- 10 dB*." The majority of the Project Area would be considered ambient noise Category 3 or 4.

Table 1. ANSI Standard 12.9-2013/Part 3 A-weighted Sound Levels Corresponding to Land Use and Population Density

Category	Land Use	Description	People per Square Mile	Typical L_{dn}	Daytime L_{eq}	Nighttime L_{eq}
1	Noisy Commercial & Industrial Areas and Very Noisy Residential Areas	Very heavy traffic conditions, such as in busy, downtown commercial areas; at intersections for mass transportation or other vehicles, including elevated trains, heavy motor trucks, and other heavy traffic; and at street corners where many motor buses and heavy trucks accelerate.	63,840	67 dBA	66 dBA	58 dBA
2	Moderate Commercial & Industrial Areas and Noisy Residential Areas	Heavy traffic areas with conditions similar to Category 1, but with somewhat less traffic; routes of relatively heavy or fast automobile traffic, but where heavy truck traffic is not extremely dense.	20,000	62 dBA	61 dBA	54 dBA
3	Quiet Commercial, Industrial Areas and Normal Urban & Noisy Suburban Residential Areas	Light traffic conditions where no mass-transportation vehicles and relatively few automobiles and trucks pass, and where these vehicles generally travel at moderate speeds; residential areas and commercial streets, and intersections, with little traffic, compose this category.	6,384	57 dBA	55 dBA	49 dBA
4	Quiet Urban & Normal Suburban Residential Areas	These areas are similar to Category 3, but for this group, the background is either distant traffic or is unidentifiable; typically, the population density is one-third the density of Category 3.	2,000	52 dBA	50 dBA	44 dBA
5	Quiet Residential Areas	These areas are isolated, far from significant sources of sound, and may be situated in shielded areas, such as a small wooded valley.	638	47 dBA	45 dBA	39 dBA

Table 1. ANSI Standard 12.9-2013/Part 3 A-weighted Sound Levels Corresponding to Land Use and Population Density						
6	Very Quiet Sparse Suburban or rural Residential Areas	These areas are similar to Category 4 but are usually in sparse suburban or rural areas; and, for this group, there are few if any nearby sources of sound.	200	42 dBA	40 dBA	34 dBA

Source: The American National Standards Institute (ANSI) 2013

Noise-Sensitive Land Uses

Noise-sensitive land uses are generally considered to include those uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Additional land uses such as parks, historic sites, cemeteries, and recreation areas are considered sensitive to increases in exterior noise levels. Schools, churches, hotels, libraries, and other places where low interior noise levels are essential are also considered noise-sensitive land uses. The Project Site spans many different locations throughout Davis and Yolo County, which is primarily made up of sensitive residential receptors. Virtually all aspects of Project implementation would involve operational activity such as truck trips that would occur adjacent to these land uses.

Regulatory Setting

Federal

National Institute of Occupational Safety and Health

A division of the U.S. Department of Health and Human Services, the National Institute for Occupational Safety and Health (NIOSH) has established a construction-related noise level threshold as identified in the Criteria for a Recommended Standard: Occupational Noise Exposure prepared in 1998. NIOSH identifies a noise level threshold based on the duration of exposure to the source. The NIOSH construction-related noise level threshold starts at 85 dBA for more than 8 hours per day; for every 3-dBA increase, the exposure time is cut in half. This reduction results in noise level thresholds of 88 dBA for more than 4 hours per day, 92 dBA for more than 1 hour per day, 96 dBA for more than 30 minutes per day, and up to 100 dBA for more than 15 minutes per day. The intention of these thresholds is to protect people from hearing losses resulting from occupational noise exposure.

Local

City of Davis Municipal Code

The City of Davis Municipal Code Section 24.02.040 restricts the times of day during which construction, alteration, repair, and maintenance activities are permitted. The Municipal Code also requires that certain

noise limitations are not exceeded for construction, alteration, repair, or maintenance activities to be permitted. The City's Noise Ordinance was established in order to control unnecessary, excessive and annoying noise while protecting the public health, safety and welfare.

City of Davis General Plan Noise Element

The City of Davis General Plan Nosie Element aims to maintain community noise levels that meet health guidelines and protects community members, allowing for a higher quality of life. Noise Policy 1.1 requires the minimization of vehicular and stationary noise sources and noise emanating from temporary activities. More specifically, at nearby sensitive residential receptors, the normally acceptable exterior noise level is under 60 L_{dn} dBA.

Standards of Significance

For purposes of this analysis, City of Davis exterior noise standards and Municipal Code guidelines were used for evaluation of Project-related noise impacts. As previously stated, Section 24.02.040 of the City of Davis Municipal Code limits the noise exposure to construction, alteration, repair, and maintenance activities. Additionally, the City's General Plan Noise Element establishes exterior noise standards for sensitive residential receptors, with a normally acceptable limit of under 60 L_{dn} dBA. It is noted that the Proposed Project would not have a construction phase.

The 2013 Caltrans Technical Noise Supplement to the Traffic Noise Analysis Protocol are also used to evaluate the Project's noise-related impacts. According to the Caltrans protocol, a doubling of traffic on a roadway is required in order to increase noise to a perceptible level for humans.

Methodology

As previously described, the Proposed Project would not have a construction phase. Therefore, no noise or groundborne vibrational impacts from construction equipment are expected. The operational phase of the Proposed Project would consist of trucking trips and utilizing existing pipelines and pumps to deliver water. Therefore, the impact analysis was addressed in a qualitative manner.

NOISE IMPACT DISCUSSION

The impact analysis provided below is based on the following California Environmental Quality Act (CEQA) Guidelines Appendix G thresholds of significance. The significance criteria promulgated by the City's Municipal Code may be relied upon to make impact determinations.

Would the Project Result in the 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?

As previously described, 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, and some passive recreation areas would each be considered noise sensitive and may warrant unique measures for protection from intruding noise. The Project Site spans various locations

throughout Davis and Yolo County, which is primarily made up of sensitive residential receptors. As the Proposed Project does not have a construction phase, the operations of the Project involving the truck trips needed to deliver the water would occur adjacent to these land uses.

Construction Noise Impacts

The Proposed Project would not include a construction phase that would involve onsite construction equipment or offsite construction traffic (e.g. worker commutes and material hauling). The Project proposes the one-time placement of 6,500-gallon storage tank on an existing pavement pad at the City's Public Works Corporation Yard on 5th Street in Davis. Furthermore, the facilities that would store the recycled water would require no alterations or construction phases. Additionally, it is noted that this placement of the water storage tank is a one-time delivery trip. This single delivery trip would not result in an increase in ambient noise levels within the City.

Operational Noise Impacts

Project operations would result in additional traffic on adjacent roadways over the period that the delivery of water occurs. The maximum number of operational trips traveling to and from the Project Site would not be expected to exceed 3 to 4 daily trips. According to Caltrans Technical Noise Supplement to the Traffic Noise Analysis Protocol (2013), a doubling of traffic on a roadway is required to result in an increase of 3 dB (outside of the laboratory, a 3-dBA change is considered a just-perceivable difference). The Project trips required for water delivery would not result in a doubling of traffic on the local transportation network, and therefore its contribution to existing traffic noise would not be perceptible. Another aspect of the Proposed Project that produces noise is the pumping of water within existing pipelines. However, water pumping is already occurring and the Proposed Project would not increase the ambient noise levels to any unacceptable levels. Furthermore, the sites where the water is proposed to be pumped have very few sensitive receptors in close proximity.

Would the Project Result the Generation of Excessive Groundborne Vibration or Groundborne Noise Levels?

The Proposed Project would not result in vibrational impacts during the one-time delivery of the water storage tank or the continual tree watering. The water storage tank would be located at the City's Public Works Corporation Yard on 5th Street in Davis, which may have equipment or normal business operations that would result in groundborne vibrations. However, the Proposed Project would not introduce any new use of any stationary equipment that would result in excessive groundborne vibration levels. Additionally, no vibrational impacts from the pipeline or pumps would occur. Therefore, the Project would result in no groundborne vibration impacts.

Would the Project Expose People Residing or Working in the Project Area to Excessive Airport Noise Levels?

The City's Public Works Corporation Yard on 5th Street is located approximately 3.2 miles northeast of University of California, Davis Airport. The various water delivery locations for tree watering throughout

the City may be closer to the University Airport than the City's Public Works Corporation Yard, however, the Proposed Project would not expose workers any additional airport noise levels beyond existing levels.

REFERENCES

American National Standards Institute (ANSI). 2013. Standard 12.9-2013/Part 3: Quantities and Procedures for Description and Measurement of Environmental Sound – Part 3: Short-Term Measurements with an Observer Present.

California Department of Transportation (Caltrans). 2002. California Airport Land Use Planning Handbook.

City of Davis. 2007. General Plan Noise Element. https://documents.cityofdavis.org/Media/Default/Documents/PDF/CDD/Planning/Plans-Documents/GP/007-21-Noise.pdf

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APPENDIX E

Davis Recycled Water Project – Transportation Impact Memorandum

ECORP Consulting, Inc. April 21, 2023.

April 21, 2023

Josie Tellers
City of Davis Public Works Utilities and Operations Department
1717 Fifth Street
Davis, CA 95616

Subject: Davis Recycled Water Project – Transportation Impact Memorandum

PURPOSE

This memorandum documents the results of intersection Level of Service (LOS) and Vehicle Miles Traveled (VMT) Impact Assessment completed for the Davis Recycled Water Project (Project). The purpose of this memorandum is to estimate the Project-generated LOS and VMT impacts of the proposed Project to support CEQA review.

PROJECT DESCRIPTION

The City of Davis (City) is proposing the delivery of reclaimed recycled water to various sites around the City. Recent upgrades to the treatment processes at the Davis Wastewater Treatment Plant (WWTP) have allowed a significant portion of treated wastewater that was historically lost to evaporation to be reclaimed. The amount of salvaged water, or water saved from loss by evaporation, is approximately 1.8 million gallons per day (MGD), as an annual average, or 2,016 acre-feet per year (afy). This additional water supply would be put to beneficial use at several locations within and around the City, including the Yolo County Central Landfill (YCCL) where it would assist with standard landfill operations, at a composting facility located within the YCCL property (Napa Recycling Compost Facility) where it would be used to assist the composting process, at a 160-acre open space site east of the WWTP where it would be used for irrigation, and on City property and within the City limits where the additional water supply would be used for tree irrigation. The water supply to the YCCL and the open space area would be transported via existing pumps and pipelines. The water supply used to water trees throughout the City would first be delivered from the WWTP via a tanker truck to a 6,500 gallon storage tank, which is proposed to be placed on existing pavement at the City's Public Works Corporation Yard on 5th Street in Davis, and then delivered to the watering sites by pickups trucks equipped with 275-gallon water totes. No construction is proposed for this Project. The operation of this Proposed Project would result in additional water being pumped via the existing pipeline system from the WWTP to the YCCL and the 160-acre open space area, and the delivery of approximately 100,000 gallons of water per year directly to City trees located throughout the City via the pickup trucks equipped with 275-gallon water totes. Proposed irrigation activities are anticipated to occur over the course of a 6-month timeframe. Additionally, all truck trips associated with City tree irrigation operations would occur in off-peak hours to minimize traffic impacts.

LEVEL OF SERIVCE

According to the City's transportation system Level of Service (LOS) policy, impacts at intersections within the City are defined/analyzed when the addition of proposed project traffic causes any of the following:

a) For signalized intersections outside the Core Area, causes overall intersection operations to deteriorate from an acceptable level (LOS E or better in the AM or PM peak hour) to an unacceptable level (LOS F in the AM or PM peak hour);

b) For signalized intersections outside the Core Area, exacerbate unacceptable (LOS F) operations by increasing an intersection's average delay by five seconds or more;

c) For unsignalized intersections outside the Core Area, causes the worst-case movement (or average of all movements for all-way stop-controlled intersections) to deteriorate from an acceptable level (LOS E or better in the AM or PM peak hour) to an unacceptable level (LOS F in the AM or PM peak hour) and meet the California Manual on Uniform Traffic Control Devices (MUTCD) peak hour signal warrant;

d) For unsignalized intersections outside the Core Area that operate unacceptably (LOS F in the AM or PM peak hour) and meet MUTCD's peak hour signal warrant without the project, exacerbate operations by increasing the overall intersection's volume by more than one percent; or

e) For unsignalized intersections that operate unacceptably, but do not meet MUTCD's peak hour signal warrant without the project, add sufficient volume to meet the MUTCD peak hour signal warrant.

The Project would facilitate existing municipal operations and does not propose new construction or include new uses that would generate or attract substantial vehicle trips. Furthermore, the Project does not include changes to the existing road network, nor would it influence existing transit, bicycle and/or pedestrian facilities. The Project is limited to replacing existing water supplies with Project delivered Saved Water for existing operations at the following City facilities: The YCCL, WWTP, OLF, Davis Restoration Wetlands. Saved Water would be delivered to these facilities using existing pumpstations, pipelines and overland conveyance systems.

The only aspect of the Project that requires vehicle trips is the transport and delivery of saved water for the existing City tree irrigation program. Under this program, trees are irrigated using 275-gallon tanks (totes) contained in the back of pickup trucks. Under the proposed Project, this practice would continue with one modification. Instead of filling pickup truck totes with potable water, totes would be filled with Saved Water temporarily stored in a prefabricated 6,500-gallon recycled water tank that would be placed in the City Corporation Yard on 5th Street as part of the Project. From there, pickup trucks with totes would travel to locations where City tree irrigation is required consistent with existing practices. Thus, trips associated with tree irrigation are existing on the City's road network and consequently would not trigger intersection analysis based on the above LOS criteria.

The only new trips generated by the Project are trips required to fill the proposed Corporation Yard storage tank with Saved Water. As discussed in the Project Description, this would be accomplished using a 4,000-gallon tanker truck to transport Saved Water from the WWTP Outlet Hydrant to the proposed Corporation Yard storage tank. According to the Davis Recycled Water Project – Energy Impact Memorandum, Attachment A (April 2023. ECORP.), storage tank filling would require approximately 25

tanker truck trips per year, or just over two trips per month. A trip rate of two trips per month between the WWTP and City Corporation Yard is insignificant in comparison to existing traffic volumes and thus would not trigger the above criteria for intersection LOS analysis.

Based in the above discussion, the proposed Project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.

VEHICLE MILES TRAVELED

CEQA Guidelines Section 15064.3 subdivision (b) addresses the criteria for analyzing transportation impacts and establishes the Vehicle Miles Traveled (VMT) metric as the most appropriate measure of transportation impacts in a CEQA document. Vehicle Miles Traveled (VMT) refers to the amount and distance of vehicle travel attributable to a project. VMT generally represents the number of vehicle trips generated by a project multiplied by the average trip length for those trips. For CEQA transportation impact assessment, VMT shall be calculated using the origin-destination VMT method, which accounts for the full distance of vehicle trips with one end from the project.

Because the City of Davis has not yet adopted guidelines for addressing VMT impacts for land development projects in compliance with CEQA Guidelines Section 15064.3, guidance provided in the Governor's Office of Planning and Research (OPR) technical directive on CEQA has been employed. The directive addresses several aspects of VMT impact analysis, and is organized as follows:

- Screening Criteria: Screening criteria are intended to quickly identify when a project should be expected to cause a less-than-significant VMT impact without conducting a detailed study
- Significance Thresholds: Significance thresholds define what constitutes an acceptable level of VMT and what is considered a significant level of VMT requiring mitigation
- Analysis Methodology: These are the procedures and tools for producing VMT forecasts to use in the VMT impact assessment
- Mitigation: Projects that are found to have a significant VMT impact based on the applicable significance thresholds are required to implement mitigation measures to reduce impacts to a less than significant level (or to the extent feasible).

Screening criteria can be used to quickly identify whether sufficient evidence exists to presume a project will have a less than significant VMT impact without conducting a detailed study. Projects meeting at least one of the applicable criteria can be presumed to have a less than significant VMT impact, absent substantial evidence that the project will lead to a significant impact. The available screening criteria were reviewed, and it was determined the "Small Projects" criteria applies to the proposed Project. Under the Small Projects criteria, a project that generates 110 or fewer average daily vehicle trips or less than 880 VMT on a typical day is presumed to have a less than significant VMT impact. As discussed above, the proposed Project would only generate vehicle trips for the transport of Saved Water related to the City's existing tree irrigation program, and only tanker truck trips associated with filling the proposed Corporation Yard storage tank would be considered new

trips. The task of filling the Corporation Yard tank would generate an estimated 25 tanker truck trips per year or slightly over two trips per month which equates to 0.5 trips per day which is well below the 110 daily trip threshold. Thus, the Small Project exemption applies to the Project and a detailed VMT analysis is not required. It should be noted that even if pickup truck tote trips associated with tree irrigation were assumed to also be new trips, the project would only average approximately 1.5 trips per day and would still remain well below the 110 trip per day threshold.

REFERENCES

ECORP. April 2023. City of Davis Recycled Water Project – Energy Impact Memorandum

KD Anderson & Associates, Inc. November 3, 2022. Traffic Impact Analysis for 3808 Faraday Avenue Biotech Manufacturing, Davis, CA 95618

APPENDIX F

Davis Recycled Water Project – Energy Impact Memorandum

ECORP Consulting, Inc. April 2023.

April 2023

Josie Tellers
City of Davis Public Works Utilities and Operations Department
1717 5th Street
Davis, California 95616

Re: *Davis Recycled Water Project – Energy Impact Memorandum*

PURPOSE

This memorandum documents the results of Energy Impact Assessment completed for the Davis Recycled Water Project (Project). The purpose of this memorandum is to estimate Project-generated energy usage and to determine the level of impact the Project would have on the environment.

PROJECT DESCRIPTION

The City of Davis (City) is proposing the delivery of reclaimed recycled water to various sites around the City. Recent upgrades to the treatment processes at the Davis Wastewater Treatment Plant (WWTP) have allowed a significant portion of treated wastewater that was historically lost to evaporation to be reclaimed. The amount of salvaged water, or water saved from loss by evaporation, is approximately 1.8 million gallons per day (MGD), as an annual average, or 2,016 acre-feet per year (afy). This additional water supply would be put to beneficial use at several locations within and around the City, including the Yolo County Central Landfill (YCCL) where it would assist with standard landfill operations, at a composting facility located within the YCCL property (Napa Recycling Compost Facility) where it would be used to assist the composting process, at a 160-acre open space site east of the WWTP where it would be used for irrigation, and on City property and within the City limits where the additional water supply would be used for tree irrigation. The water supply to the YCCL and the open space area would be transported via existing pumps and pipelines. The water supply used to water trees throughout the City would first be delivered from the WWTP via a tanker truck to a 6,500 gallon storage tank, which is proposed to be placed on existing pavement at the City's Public Works Corporation Yard on 5th Street in Davis, and then delivered to the watering sites by pickups trucks equipped with 275-gallon water totes. No construction is proposed for this Project. The operation of this Proposed Project would result in additional water being pumped via the existing pipeline system from the WWTP to the YCCL and the 160-acre open space area, and the delivery of approximately 100,000 gallons of water per year directly to City trees located throughout the City via the pickup trucks equipped with 275-gallon water totes. Proposed irrigation activities are anticipated to occur over the course of a 6-month timeframe. Additionally, all truck trips associated with City tree irrigation operations would occur in off-peak hours to minimize traffic impacts.

ENERGY CONSUMPTION

Environmental Setting

Energy relates directly to environmental quality. Energy use can adversely affect air quality and other natural resources. The vast majority of California's air pollution is caused by burning fossil fuels. Consumption of fossil fuels is linked to changes in global climate and depletion of stratospheric ozone. Transportation energy use is related to the fuel efficiency of cars, trucks, and public transportation; choice of different travel modes (auto, carpool, and public transit); vehicle speeds; and miles traveled by these modes. Construction and routine operation and maintenance of transportation infrastructure also consume energy. In addition, residential, commercial, and industrial land uses consume energy, typically through the usage of natural gas and electricity.

Energy Types and Sources

California relies on a regional power system comprised of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation resources. Natural gas provides California with a majority of its electricity followed by renewables, large hydroelectric and nuclear. Valley Clean Energy (VCE) provides energy services to the City of Davis. VCE buys cleaner, renewable based electricity and contracts other energy providers to deliver it to customers. VCE invests the program profits to develop beneficial energy programs for local communities that allow cleaner and less damaging fuel to power homes in the Davis area. The company is committed to greener electricity and the transition to fully renewable energy sources, in addition to furthering their environmental justice goals.

Energy Consumption

Electricity use is measured in kilowatt-hours (kWh), and natural gas use is measured in therms. Vehicle fuel use is typically measured in gallons (e.g. of gasoline or diesel fuel), although energy use for electric vehicles is measured in kWh. The electricity consumption associated with all nonresidential uses in Yolo County from 2017 to 2021 is shown in Table 1. As indicated, the demand has increased since 2017.

Table 1. Nonresidential Electricity Consumption in Yolo County 2017-2021

Year	Electricity Consumption (kilowatt hours)
2021	1,228,350,239
2020	1,200,933,084
2019	1,202,699,561
2018	1,201,438,595
2017	1,205,896,977

Source: California Energy Commission 2022

Automotive fuel consumption in Yolo County from 2018 to 2022 is shown in Table 2. Fuel consumption demand has decreased since 2018.

Table 2. Automotive Fuel Consumption in Yolo County 2018-2022	
Year	**Total On-road Fuel Consumption**
2022	127,475,931
2021	127,834,986
2020	115,330,185
2019	129,329,268
2018	128,430,100

Source: CARB 2021

Regulatory Framework

State

Integrated Energy Policy Report

Senate Bill 1389 (Bowen, Chapter 568, Statutes of 2002) requires the California Energy Commission (CEC) to prepare a biennial integrated energy policy report that assesses major energy trends and issues facing California's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the State's economy; and protect public health and safety (Public Resources Code Section 25301a). The CEC prepares these assessments and associated policy recommendations every two years, with updates on alternate years, as part of the Integrated Energy Policy Report (IEPR).

The 2017 IEPR focuses on next steps for transforming transportation energy use in California. The 2017 IEPR addresses the role of transportation in meeting state climate, air quality, and energy goals; the transportation fuel supply; the Alternative and Renewable Fuel and Vehicle Technology Program; current and potential funding mechanisms to advance transportation policy; transportation energy demand forecasts; the status of statewide plug-in electric vehicle infrastructure; challenges and opportunities for electric vehicle infrastructure.

Executive Order B-55-18

In September 2018 Governor Jerry Brown Signed Executive Order (EO) B-55-18, which establishes a new statewide goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." Carbon neutrality refers to achieving a net zero carbon dioxide emissions. This can be achieved by reducing or eliminating carbon emissions, balancing carbon emissions with carbon removal, or a combination of the two. This goal is in addition to existing statewide targets for greenhouse gas emission reduction. EO B-55-18 requires the California Air Resource Board (CARB) to "work with relevant state agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal.

Senate Bill 1368

On September 29, 2006, Governor Arnold Schwarzenegger signed into law Senate Bill (SB) 1368 (Perata, Chapter 598, Statutes of 2006). The law limits long-term investments in baseload generation by the state's utilities to those power plants that meet an emissions performance standard jointly established by the CEC and the California Public Utilities Commission (CPUC).

The CEC has designed regulations that:

- Establish a standard for baseload generation owned by, or under long-term contract to, publicly owned utilities, of 1,100 pounds carbon dioxide per megawatt hour. This would encourage the development of power plants that meet California's growing energy needs while minimizing their emissions of greenhouse gas.
- Require posting of notices of public deliberations by publicly owned utilities on long-term investments on the CEC website. This would facilitate public awareness of utility efforts to meet customer needs for energy over the long term while meeting the State's standards for environmental impact.
- Establish a public process for determining the compliance of proposed investments with the Emissions Performance Standard (Perata, Chapter 598, Statutes of 2006).

Senate Bill 1368 Renewable Energy Sources (Renewable Portfolio Standards)

Established in 2002 under SB 1078 and accelerated by SB 107 (2006) and SB 2 (2011), California's Renewables Portfolio Standard (RPS) obligates investor-owned utilities, energy service providers, and community choice aggregators to procure 33 percent of their electricity from renewable energy sources by 2020. Eligible renewable resources are defined in the 2013 RPS to include biodiesel; biomass; hydroelectric and small hydro (30 megawatts or less); Los Angeles Aqueduct hydro power plants; digester gas; fuel cells; geothermal; landfill gas; municipal solid waste; ocean thermal, ocean wave, and tidal current technologies; renewable derived biogas; multi-fuel facilities using renewable fuels; solar photovoltaic; solar thermal electric; wind; and other renewables that may be defined later. Governor Jerry Brown signed SB 350 on October 7, 2015, which expands the RPS by establishing a goal of 60 percent of the total electricity sold to retail customers in California per year by December 31, 2030. In addition, SB 350 includes the goal to double the energy efficiency savings in electricity and natural gas final end uses (such as heating, cooling, lighting, or class of energy uses upon which an energy efficiency program is focused) of retail customers through energy conservation and efficiency. The bill also requires the CPUC, in consultation with the CEC, establish efficiency targets for electrical and gas corporations consistent with this goal. SB 350 also provides for the transformation of the California Independent System Operator (CAISO) into a regional organization to promote the development of regional electricity transmission markets in the western states and to improve the access of consumers served by the CAISO to those markets, pursuant to a specified process. In 2018, SB 100 was signed by Governor Brown, codifying a goal of 60 percent renewable procurement by 2030 and 100 percent by 2045 Renewables Portfolio Standard.

ENERGY CONSUMPTION IMPACT ASSESSMENT

Thresholds of Significance

The impact analysis provided below is based on the following CEQA Guidelines Appendix G thresholds of significance. The Project would result in a significant impact to energy if it would do any of the following:

1) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

2) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

The impact analysis focuses on the two sources of energy that are relevant to the Proposed Project: electricity and the automotive fuel necessary for Project operations. Addressing energy impacts requires an agency to make a determination as to what constitutes a significant impact. There are no established thresholds of significance, statewide or locally, for what constitutes a wasteful, inefficient, and unnecessary consumption of energy for a proposed land use. For the purposes of this analysis, the amount of electricity estimated to be consumed by the Project are quantified and compared to that consumed by all nonresidential land uses in Yolo County. Similarly, the amount of fuel necessary for Project operations is calculated and compared to that consumed in Yolo County.

Methodology

Levels of operational related energy consumption estimated to be consumed by the Project include the number of kWh of electricity and gallons of gasoline. The amount of total construction-related fuel used was estimated using ratios provided in the Climate Registry's General Reporting Protocol for the Voluntary Reporting Program, Version 2.1. Electricity was calculated using the California Emissions Estimator Model (CalEEMod), version 2022.1, in accordance with the CEC's Recommended Revised Estimates for Embedded Energy Use (2006). CalEEMod is a statewide land use computer model designed to quantify resources associated with both construction and operations from a variety of land use projects. Operational automotive fuel consumption has been calculated with EMFAC 2021. EMFAC 2021 is a mathematical model that was developed to calculate emission rates and rates of gasoline consumption from motor vehicles that operate on highways, freeways, and local roads in California.

Project Energy Consumption Impact Analysis

Project Energy Consumption

The Project is proposing the delivery of recycled water via pumps and the existing pipeline system from the WWTP to the YCCL and the 160-acre open space area, and the delivery of approximately 100,000 gallons of water per year directly to City trees located throughout the City via the pickup trucks. It is noted that this Project does not have a construction phase.

For the purpose of this analysis, the amount of electricity from pumping the water is estimated and compared to that consumed by all nonresidential land uses in Yolo County. The amount of fuel necessary for Project operations is calculated and compared to that consumed by on-road vehicles in Yolo County.

Energy consumption associated with the proposed Project is summarized in Table 3.

Table 3. Proposed Project Energy and Fuel Consumption

Energy Type	Annual Energy Consumption	Percentage Increase Countywide
Pumping Energy Consumption		
Electricity Consumption[1]	269,464 kilowatt-hours	0.022 percent
Automotive Fuel Consumption		
Trucking Trips[2]	187 gallons	0.0001 percent

Source: [1]CalEEMod; [2]EMFAC2021 (CARB 2021)
Notes: The Project increases in electricity consumption is compared with all nonresidential uses in Yolo County in 2021, the latest data available. The Project increases in automotive fuel consumption are compared with the anticipated countywide fuel consumption in 2022, the most recent full year of data.

As indicated in Table 3, the Project's gasoline fuel consumption during operations, which includes all trucking trips, is estimated to be 187 gallons annually. This would increase the annual countywide gasoline fuel use in the county by 0.0001 percent. As such, Project operations would have a nominal effect on local and regional energy supplies. It is expected that construction fuel consumption associated with the Project would not be any more inefficient, wasteful, or unnecessary than other similar development projects of this nature.

Additionally, operations of the Proposed Project would include electricity from pumping water to the various locations within Yolo County. As shown in Table 3, the annual electricity consumption due to operations would be 269,464 kilowatt-hours resulting in an imperceivable increase (0.022 percent) in the typical annual electricity consumption attributable to all nonresidential uses in Yolo County. However, this is potentially a conservative estimate. In September 2018 Governor Jerry Brown Signed EO B-55-18, which established a new statewide goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." Carbon neutrality refers to achieving a net zero carbon dioxide (CO_2) emissions. This can be achieved by reducing or eliminating carbon emissions, balancing carbon emissions with carbon removal, or a combination of the two. This goal is in addition to existing statewide targets for greenhouse gas emission reduction. Governor's Executive Order B-55-18 requires CARB to "work with relevant state agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal."

Project Consistency with State and Local Plans for Renewable Energy/Energy Efficiency

The Project would be designed in a manner that is consistent with relevant energy conservation plans designed to encourage development that results in the efficient use of energy resources. The Proposed Project would not conflict with the City of Davis General Plan Energy Section and its goals and policies. As

seen in Table 3, the Proposed Project will not result in the excessive use of energy resources in the region. Therefore, the Proposed Project would be consistent with all plans for renewable energy and energy efficiency.

REFERENCES

California Air Resources Board (CARB). 2021. EMFAC2021 Web Database Emissions Inventory. https://arb.ca.gov/emfac/emissions-inventory/ec071cac74fe5a18643f8fabd288deac764132f4

California Energy Commission (CEC). 2022. California Energy Consumption Database. http://www.ecdms.energy.ca.gov/Default.aspx.

Climate Registry. 2016. *General Reporting Protocol for the Voluntary Reporting Program version 2.1.* January 2016. http://www.theclimateregistry.org/wp-content/uploads/2014/11/General-Reporting-Protocol-Version-2.1.pdf

Valley Clean Energy. 2023. About Us. https://valleycleanenergy.org/about-us/

APPENDIX A

Energy Consumption Calculations

Proposed Project
Total Operational
Gasoline Usage

Operations

Table 1. Average Miles per Gallon in Yolo County in 2023

Area	Sub-Area	Cal. Year	Season	Veh_tech	EMFAC 2021 Category	Total Onroad Vehicle Gallons Consumed in Yolo County in 2023	Total Onroad Vehicle Miles Traveled in Yolo County in 2023	Total Passenger Vehicle Miles per Gallon in Yolo County in 2023
Sub-Areas	Yolo County	2023	Annual	Tanker Truck	T7 Utility Class 8	29,065	168,093	5.78

Source:
California Air Resource Board. 2021. EMFAC2021 Mobile Emissions Model.

Table 2. Average Miles per Gallon in Yolo County in 2023

Area	Sub-Area	Cal. Year	Season	Veh_tech	EMFAC 2021 Category	Total Onroad Vehicle Gallons Consumed in Yolo County in 2023	Total Onroad Vehicle Miles Traveled in Yolo County in 2023	Total Passenger Vehicle Miles per Gallon in Yolo County in 2023
Sub-Areas	Yolo County	2023	Annual	Pick-up Truck	LDT1	4,592,874	109,713,729	23.89

Source:
California Air Resource Board. 2021. EMFAC2021 Mobile Emissions Model.

Table 3. Total Gallons for Tanker Truck

Project Onroad Vehicle Annual Trips	Estimated Miles per Trip	Project Onroad Vehicle Annual Miles Traveled	Project Onroad Vehicle Annual Fuel Consumption
25	15	375.00	**65**

Source:
Ecorp Consulting 2023

Table 4. Total Gallons During Project Operations

Project Onroad Vehicle Annual Trips	Estimated Miles per Trip	Project Onroad Vehicle Annual Miles Traveled	Project Onroad Vehicle Annual Fuel Consumption
364	8	2,912.00	**122**



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