



# Pleasant Grove Wastewater Treatment Plant Expansion and Energy Recovery Project

## CEQA-Plus Initial Study/Mitigated Negative Declaration

December 2016



311 Vernon Street  
Roseville, CA 95678  
Contact: Mark Morse  
(916) 774-5499

**NOTICE OF INTENT**  
**TO ADOPT A MITIGATED NEGATIVE DECLARATION**  
for the  
**PGWWTP Expansion and Energy Recovery Project – City of Roseville**

Public Notice is hereby given that an Initial Study/Mitigated Negative Declaration (IS/MND) is available for public review for the Pleasant Grove Wastewater Treatment Plant (PGWWTP) Expansion and Energy Recovery Project. The IS/MND has been prepared in accordance with the California Environmental Quality Act (CEQA) and Environmental Review Process Guidelines for State Revolving Fund Loan Applicants (SWRCB 2015, as updated in 2016) and is expanded beyond the typical content requirements of an initial study to include additional “CEQA-Plus” information.

**Project Location:** Pleasant Grove Wastewater Treatment Plant and Southern Expansion Area located at 5150 Westpark Drive, Roseville, CA.

**Project Description:** An IS/MND has been prepared by the City of Roseville (City) to evaluate the environmental effects of the PGWWTP Expansion and Energy Recovery Project. The existing PGWWTP was designed to treat 12 million gallons per day (mgd); however, due to higher than anticipated organic loading, the PGWWTP’s effective treatment capacity is approximately 9.5 mgd. The Expansion Project would expand and increase treatment capacity of the existing PGWWTP to its original 12 mgd design capacity. The City is also considering the related but separate construction of new energy recovery facilities (Energy Recovery Project) that would beneficially utilize the digester gas produced by anaerobic digestion that is included in the Expansion Project. These projects combined represents the proposed project (Project). The Expansion Project can proceed without the Energy Recovery Project.

**Document Review and Availability:** In accordance with CEQA Guidelines Section 15105, the public review and comment period will extend for 38 days starting **December 19, 2016** and ending **January 25, 2017 at 5:00 p.m.** Although not required, this includes an additional eight days in recognition that the public review period extends over the holidays. The IS/MND is available for public review at the following location:

City of Roseville Permit Center  
311 Vernon Street  
Roseville, CA 95678  
(8:00 a.m. to 5:00 p.m. Monday through Friday)

The IS/MND can also available be viewed or downloaded from the City’s website via the following link:  
[http://www.roseville.ca.us/gov/development\\_services/planning/environmental\\_documents\\_n\\_public\\_notices.asp](http://www.roseville.ca.us/gov/development_services/planning/environmental_documents_n_public_notices.asp).

**Comments/Questions:** Comments and/or questions regarding the IS/MND may be directed to: Mark Morse, Environmental Coordinator at the above address or via email to [mmorse@roseville.ca.us](mailto:mmorse@roseville.ca.us).

**Public Meetings:** The Project and IS/MND are tentatively scheduled for consideration by the Roseville Public Utilities Commission on February 28, 2017 and by the Roseville City Council on April 5, 2017. Roseville Public Utility Meetings and City Council Meetings begin at 7:00 p.m. in the Roseville City Council Chambers, 311 Vernon Street, Roseville, CA 95678. Interested parties should call the Roseville City Clerk’s Office to confirm meeting agendas, times, and dates (916) 774-5263.

# PROPOSED MITIGATED NEGATIVE DECLARATION

**Project Title:** PGWWTP Expansion and Energy Recovery Project

**Project Location:** 5051 Westpark Drive in Roseville

**Date:** December 19, 2016

**Project Applicant:** City of Roseville

**Lead Agency:** City of Roseville

**Contact Person:** Mark Morse, Environmental Coordinator: (916) 774-5334

## PROJECT DESCRIPTION

This Initial Study and Mitigated Negative Declaration (IS/MND) evaluates the environmental effects of the Pleasant Grove Wastewater Treatment Plant (PGWWTP) Expansion and Energy Recovery Project. The PGWWTP was designed to treat 12 million gallons per day (mgd); however, due to high organic loading from water conservation and other factors, the PGWWTP's effective treatment capacity is approximately 9.5 mgd. The City is proposing to expand and increase treatment capacity of the existing PGWWTP (Expansion Project) so that it can meet its original 12 mgd design capacity. The City is also considering the related but separate construction of new energy recovery facilities (Energy Recovery Project) that would beneficially utilize the digester gas produced by anaerobic digestion that is included in the Expansion Project. These projects combined represents the proposed project (Project). The Expansion Project can proceed without the Energy Recovery Project.

## DECLARATION

The City of Roseville Environmental Coordinator has determined that the above Project will have no significant effect on the environment and is therefore exempt from the requirement of an Environmental Impact Report (EIR). The determination is based on the attached initial study and the following findings:

- a) The Project will not degrade environmental quality, substantially reduce habitat, cause a wildlife population to drop below self-sustaining levels, reduce the number or restrict the range of special-status species, or eliminate important examples of California history or prehistory.
- b) The Project does not have the potential to achieve short-term, to the disadvantage of long-term, environmental goals.
- c) The Project will not have impacts that are individually limited, but cumulatively considerable.
- d) The Project will not have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly.
- e) No substantial evidence exists that the Project will have a negative or adverse effect on the environment.
- f) The Project incorporates all applicable mitigation measures identified in the Initial Study.
- g) This Mitigated Negative Declaration reflects the independent judgment of the lead agency.

Written comments shall be submitted no later than January 25, 2017. City Council determination on this Mitigated Negative Declaration is final.

Submit comments to:

Mark Morse  
Environmental Coordinator  
Development and Operations Division  
City of Roseville  
311 Vernon Street  
Roseville, CA 95678

Posting Period:

December 19, 2016 through  
January 25, 2017

Initial Study approved by:



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Mark Morse, Environmental Coordinator

**CEQA-Plus Initial Study/Proposed Mitigated Negative Declaration  
for the  
PGWWTP Expansion and Energy Recovery Project**

**PREPARED FOR**

**City of Roseville**  
311 Vernon Street  
Roseville, California 95678  
Contact: Mark Morse

**PREPARED BY**

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**December 2016**

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## ACRONYMS AND ABBREVIATIONS

ADWF	average dry weather flow
AHPA	Archaeological and Historic Preservation Act
BOD	biochemical oxygen demand
CAA	Clean Air Act
CCR	California Codes of Regulations
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
City	City of Roseville
Clean Water Act or CWA	federal Water Pollution Control Act
CNG	compressed natural gas
CWA	Clean Water Act
EFH	Essential Fish Habitat
Energy Recovery Project	new energy recovery facilities
EO	Executive Order
EPA	U.S. Environmental Protection Agency
Expansion Project	Pleasant Grove Wastewater Treatment Plant
FEMA	Federal Emergency Management Agency's
FIRMs	Flood Insurance Rate Maps
FMP	fishery management plans
FOG	fats, oil, and grease
FPPA	Farmland Protection Policy Act
gpm	gallons per minute
IS/MND	initial study/proposed mitigated negative declaration
Master Plan EIR	Environmental Impact Report on the Roseville Regional Wastewater Treatment Service Area Master Plan
MBTA	Migratory Bird Treaty Act
MCC	motor control center
mgd	million gallons per day
NAAQS	National Ambient Air Quality Standards
NHPA	National Historic Preservation Act
NOAA Fisheries	National Oceanic and Atmospheric Administration Fisheries Service

NO <sub>x</sub>	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
Pb	lead
PCAPCD	Placer County Air Pollution Control District
PG&E	Pacific Gas & Electric
PGWWTP	Pleasant Grove Wastewater Treatment Plant
PM <sub>10</sub>	respirable particulate matter with an aerodynamic diameter of 10 micrometers or less
PM <sub>2.5</sub>	fine particulate matter with an aerodynamic diameter of 2.5 micrometers or less
PRC	Public Resources Code
Project	proposed project
psi	pounds per square inch
RAS	return activated sludge
rCNG	renewable compressed natural gas
RMC	Roseville Municipal Code
SCADA	supervisory control and data acquisition
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SPMUD	South Placer Municipal Utility District
SPWA	South Placer Wastewater Authority
SPWA	South Placer Water Agency
SRF	Clean Water State Revolving Fund
SRF	State Revolving Fund
SVAB	Sacramento Valley Air Basin
SWRCB	State Water Resources Control Board
TSS	total suspended solids
TWAS	thickened waste activated sludge
USFWS	U.S. Fish and Wildlife Service
UV	ultraviolet
VOC	volatile organic compounds
WAS	waste activated sludge

# 1 INTRODUCTION

This Initial Study and Mitigated Negative Declaration (IS/MND) evaluates the environmental effects of the Pleasant Grove Wastewater Treatment Plant (PGWWTP) Expansion and Energy Recovery Project. The PGWWTP was designed to treat 12 million gallons per day (mgd); however, due to high organic loading from water conservation and other factors, the PGWWTP's effective treatment capacity is approximately 9.5 mgd. The City is proposing to expand and increase treatment capacity of the existing PGWWTP (Expansion Project) so that it can meet its original 12 mgd design capacity. The City is also considering the related but separate construction of new energy recovery facilities (Energy Recovery Project) that would beneficially utilize the digester gas produced by anaerobic digestion that is included in the Expansion Project. These projects combined represent the proposed project (Project). The Expansion Project can proceed without the Energy Recovery Project.

This IS/MND was prepared to satisfy the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] 21000 et seq.) and State CEQA Guidelines (14 California Codes of Regulations [CCR] 15000 et seq.). The City of Roseville (City) is the lead agency for this proposed Project under CEQA. In addition, the South Placer Wastewater Authority would act as a responsible agency in approving the Project and Project funding.

Additionally, the proposed Project may be partially funded with a loan from the federal Clean Water State Revolving Fund (SRF) program established by the federal Water Pollution Control Act (Clean Water Act or CWA), as amended in 1987. This program is administered, nationally, by the U.S. Environmental Protection Agency, and in certain instances the administration has been delegated to the states. In California, administration of the SRF program has been delegated to the State Water Resources Control Board (SWRCB). In turn, the SWRCB requires that all projects being considered under the SRF program must comply with CEQA and certain federal environmental protection laws. Collectively, the SWRCB refers to these requirements as "CEQA-Plus." Therefore, this IS/MND has been prepared in accordance with the Environmental Review Process Guidelines for State Revolving Fund Loan Applicants (SWRCB 2015, as updated in 2016) and is expanded beyond the typical content requirements of an initial study to include additional "CEQA-Plus" information. Analysis of alternatives are provided to meet SRF Program requirements. CEQA does not require consideration of alternatives in MNDs; therefore, the evaluation of alternatives is provided in an appendix (Appendix A) to this document. The other CEQA-Plus requirements are fulfilled in the IS analysis and associated appendices (see Chapter 4, "Compliance with Federal Regulations," for a complete list of federal laws address in compliance with SRF Program requirements). The SWRCB, as a responsible agency for the Project, will consider this CEQA document prior to any SRF loan authorization.

## 1.1 PURPOSE OF THIS DOCUMENT

CEQA requires that all state and local government agencies consider the environmental consequences of projects over which they have discretionary authority before acting on those projects. An MND, which requires inclusion of an IS, is a public document used by the decision-making lead agency to determine whether a project may have a significant adverse impact on the environment. If the agency finds that the proposed Project may have a significant adverse impact on the environment, but that the impacts will be clearly reduced to a less-than-significant level through implementation of specific mitigation measures, a MND shall be prepared.

This IS/MND is a public information document that describes the proposed Project, existing environmental setting at the Project site, and potential environmental impacts of construction and operation of the proposed Project. It is intended to inform the public and decision-makers of the proposed Project's compliance with CEQA, State CEQA Guidelines, and SRF program requirements.

## 1.2 TIERING

CEQA allows for the preparation of environmental documents using a multilevel approach whereby a broad-level EIR, termed a “program EIR,” includes an analysis of general matters (e.g., the impacts of an entire plan, program, or policy), and subsequent project-level EIRs or negative declarations include analyses of the project-specific effects of projects within the program (State CEQA Guidelines Section 15168). State CEQA Guidelines Section 15168 describes the process of tiering from a program EIR, in which CEQA documents that follow a program EIR incorporate by reference and rely on the general discussions, program-wide analyses, and program-level mitigation measures from the broader EIR, and focus on the site-specific impacts of the individual projects that implement the plan, program, or policy.

The City’s Environmental Impact Report on the Roseville Regional Wastewater Treatment Service Area Master Plan (Master Plan EIR) (May 1996) broadly examined the significant environmental effects that could result from implementing the City’s Master Plan for major wastewater conveyance and treatment improvements—specifically, the report examined the physical effects associated with construction and operation of the PGWWTP. Potential effects of existing operations at the PGWWTP were covered by the Master Plan EIR. This IS/MND analyzes expansion of the existing PGWWTP and construction of the related but separate Energy Recovery Project, and is tiered from the analysis in the Master Plan EIR. Consistent with State CEQA Guidelines Section 15152 (tiering) and 15168, this IS/MND incorporates by reference general discussions and mitigation from the Master Plan EIR as appropriate, and focuses on the significant effects on the environment that were not sufficiently addressed in that EIR or would be peculiar to the project under consideration.

## 1.3 REVIEW PROCESS

This IS/MND is being circulated for public and agency review as required by CEQA. Because state agencies will act as responsible or trustee agencies, the City will circulate the IS/MND to the State Clearinghouse of the Governor’s Office of Planning and Research for distribution and a 30-day review period. A copy of the CEQA-Plus IS/MND is also available for review on the City’s website:  
[http://www.roseville.ca.us/gov/development\\_services/planning/environmental\\_documents\\_n\\_public\\_notices.asp](http://www.roseville.ca.us/gov/development_services/planning/environmental_documents_n_public_notices.asp).

During the review period, written comments may be submitted to:

Mark Morse  
Environmental Coordinator  
Development and Operations Division  
City of Roseville  
311 Vernon Street  
Roseville, CA 95678  
mmorse@roseville.ca.us

The Project and IS/MND are tentatively scheduled for consideration by the Roseville Public Utilities Commission on February 28, 2017 and by the Roseville City Council on April 5, 2017. Roseville Public Utility Meetings and City Council Meetings begin at 7:00 p.m. in the Roseville City Council Chambers, 311 Vernon Street, Roseville, CA 95678.

After comments are received from the public and reviewing agencies during the public comment period, the City may (1) adopt the Mitigated Negative Declaration and approve the proposed Project; (2) undertake additional environmental studies; or (3) disapprove the Project. If the Project is approved, the City may proceed with detailed design and construction.

## 1.4 DOCUMENT ORGANIZATION

This IS/MND is organized as follows:

**Chapter 1: Introduction.** This chapter provides an introduction to the environmental review process, and describes the purpose and organization of this document.

**Chapter 2: Project Description.** This chapter describes the background of the proposed Project, identifies basic Project objectives, provides a detailed description of the proposed Project, and required permits and approvals.

**Chapter 3: Environmental Checklist.** This chapter presents an analysis of a range of environmental issues identified in the CEQA Environmental Checklist and determines if Project actions would result in no impact, a less-than-significant impact, a less-than-significant impact with mitigation incorporated, or a potentially significant impact. If any impacts were determined to be potentially significant, an EIR would be required. For this Project, however, none of the impacts were determined to be significant. Where the Expansion Project and Energy Recovery Project would result in different impact conclusions, separate impact discussions and impact conclusions are provided for each; otherwise the effects of the Expansion Project and Energy Recovery Project are discussed together.

**Chapter 4: Compliance with Federal Environmental Laws and Regulations.** This chapter provides a discussion of compliance with federal executive orders and regulations required for “CEQA-Plus” compliance.

**Chapter 5: References.** This chapter lists the references used in preparation of this IS/MND.

**Chapter 6: List of Preparers.** This chapter identifies report preparers.

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## 2 PROJECT DESCRIPTION AND BACKGROUND

### 2.1 INTRODUCTION

The City of Roseville (City) is proposing to expand and increase the effective treatment capacity of the existing Pleasant Grove Wastewater Treatment Plant (PGWWTP) (Expansion Project) to its original (see discussion in Section 2.2) 12 million gallons per day (mgd) design capacity. The City is also considering the related but separate construction of new energy recovery facilities (Energy Recovery Project) that would beneficially utilize the digester gas produced by anaerobic digestion that is included in the Expansion Project. These projects combined represents the proposed project (Project). The Expansion Project can proceed without the Energy Recovery Project.

### 2.2 PROJECT BACKGROUND AND NEED

The City owns and operates the PGWWTP on behalf of the South Placer Wastewater Authority (SPWA). CEQA compliance for construction and initial operation of the PGWWTP was achieved with certification of the *Roseville Regional Wastewater Treatment Service Area Master Plan EIR* (City of Roseville 1996), with construction following; the plant began operation in 2004.

The PGWWTP presently treats 7.1 mgd average dry weather flow (ADWF), has an estimated capacity to treat 9.5 mgd ADWF, and is permitted to discharge 12 mgd ADWF. During its first year of operation, the influent biochemical oxygen demand (BOD) load to the PGWWTP was approximately 96 percent of the design capacity as a result of higher than expected wastewater strength. This change in wastewater characteristics was the result of a combination of factors; including low infiltration and inflow rates, changing demographics, and water conservation efforts. In 2005, the City together with the other SPWA partners (i.e., South Placer Municipal Utility District [SPMUD] and Placer County) began evaluation of expanding the PGWWTP facilities to address treatment capacity limitations resulting from wastewater strength and anticipated growth. A series of technical memoranda were prepared to evaluate expansion options. In 2009, the City completed the recommended Aeration System Upgrades Project, which increased capacity to treat the higher influent BOD load. Because of slow growth following the national housing market collapse in 2008, no further recommendations to expand the PGWWTP were implemented.

Recent and anticipated acceleration of growth within the SPWA service area is driving the need to expand the PGWWTP's treatment capacity. Construction of the proposed Expansion Project would increase the organic treatment capacity to meet the projected wastewater treatment requirements. Based on growth projections for the SPWA service area, ADWFs are projected to exceed 9 mgd around 2025 and be equal to or exceed the PGWWTP's treatment capacity of 9.5 mgd by 2027. In addition to wastewater flow rate, organic and solids loadings are important in determining the treatment capacity of the PGWWTP. Two of the key indicators considered for plant loading are the BOD and the total suspended solids (TSS).

To increase the organic loading capacity at the PGWWTP, the proposed Expansion Project would add primary clarification, sludge thickening, and anaerobic digestion to the treatment process. Anaerobic digestion produces digester gas, which when treated to remove hydrogen sulfide and carbon dioxide, is similar in composition to natural gas and can be utilized as fuel for stationary power generation and vehicles. Therefore, the City is also considering construction of the related but separate Energy Recovery Project that would beneficially use the digester gas produced by anaerobic digestion.

In addition to producing digester gas from the digestion of municipal wastewater solids, the new anaerobic digesters provide an opportunity for the PGWWTP to accept and treat trucked organic waste, such as fats, oil, and grease (FOG); food waste; or other high strength waste that can significantly increase digester gas

production when co-digested with municipal wastewater solids. The Energy Recovery Project would also provide a sustainable disposal option for FOG, food waste, and high strength waste throughout the SPWA service area.

## 2.3 PROJECT OBJECTIVES

As described above, the present treatment capacity of the PGWWTP is not adequate to treat the projected influent loads that the plant is expected to receive in the future. The Expansion Project is intended to achieve the following objectives:

- ▲ increase the treatment capacity of the existing PGWWTP from 9.5 mgd to be consistent with the original design capacity of 12 mgd ADWF and to accommodate the anticipated wastewater treatment demands through approximately 2040; and
- ▲ improve the WWTP's treatment reliability and operating efficiency.

Additionally, the Energy Recovery Project is being proposed as a separate project to beneficially use the digester gas produced by the Expansion Project and high strength waste including FOG and food waste. The Energy Recovery Project is intended to achieve the following objectives:

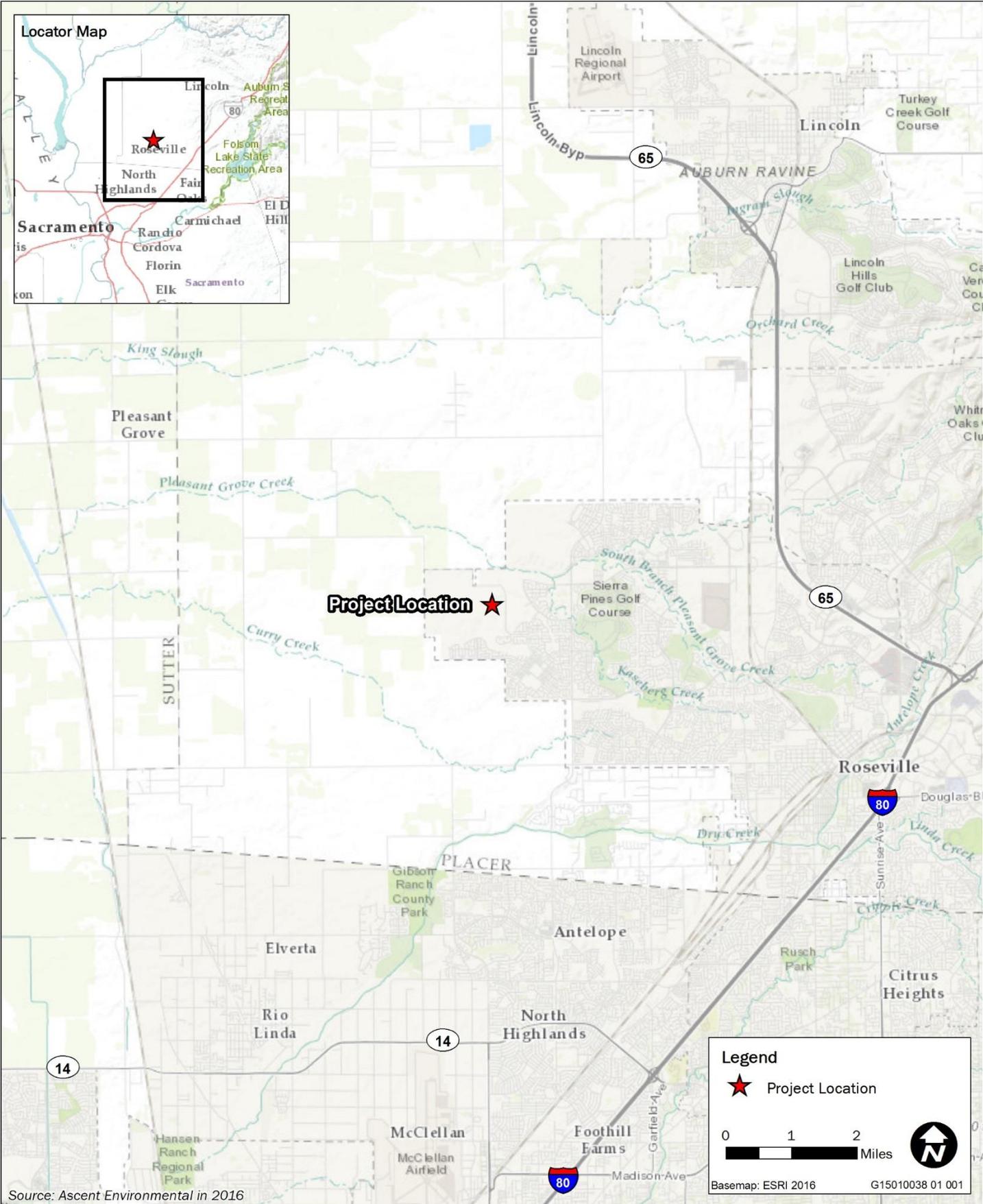
- ▲ make the best use of digester gas (highest economic and environmental value);
- ▲ provide an economically viable energy recovery facility;
- ▲ divert organics from landfills in anticipation of new regulatory requirements;
- ▲ maximize the beneficial uses of the energy recovery facility; and
- ▲ minimize odors and noise to nearby residences.

## 2.4 LOCATION

The Expansion Project facilities would be constructed within the existing PGWWTP boundaries located at 5051 Westpark Drive in Roseville, California (Exhibits 2-1 and 2-2). The PGWWTP is located on a 110-acre parcel located approximately 1.5 miles west of Del Webb Sun City Sierra Pines Golf Course, north of Pleasant Grove Boulevard, and south of Blue Oaks Boulevard. The Energy Recovery Project facilities would be constructed on City-owned property, intended for future wastewater treatment infrastructure and deeded to the City as part of the *West Roseville Specific Plan* (City of Roseville 2004). This property is located adjacent to, and immediately south of, the existing PGWWTP. This area is referred to hereafter as the Southern Expansion Area (Exhibit 2-3). The PGWWTP currently serves the north and northwest areas of the City of Roseville, the Stanford Ranch area of the SPMUD service area, the Sunset Industrial Area of Placer County, and will serve the City of Roseville approved (but not yet constructed) Creekview and Amoruso Ranch Specific Plan Areas in the future.

## 2.5 EXISTING FACILITIES

The current facility began operation in 2004, but was constructed in four phases between 2000 and 2010, and includes a series of treatment facilities that mechanically remove debris and biologically treat wastewater. The liquid treatment process includes raw wastewater screening and grit removal, generation of activated sludge using oxidation ditches, secondary clarification, tertiary filtration, ultraviolet (UV) disinfection for effluent discharge and recycled water. The solids treatment process includes dewatering of waste activated sludge (WAS), which is hauled to and disposed of, at the Western Regional Sanitary Landfill. Three treatment levels are typically assigned to wastewater treatment plants, primary (the most basic where solids are removed), secondary (typically includes chemical or biological breakdown of wastewater organics and nutrient removal), and tertiary (typically advanced filtration and final disinfection). Tertiary treated wastewater can be used as recycled water for certain irrigation, industrial, and construction applications.



Source: Ascent Environmental in 2016

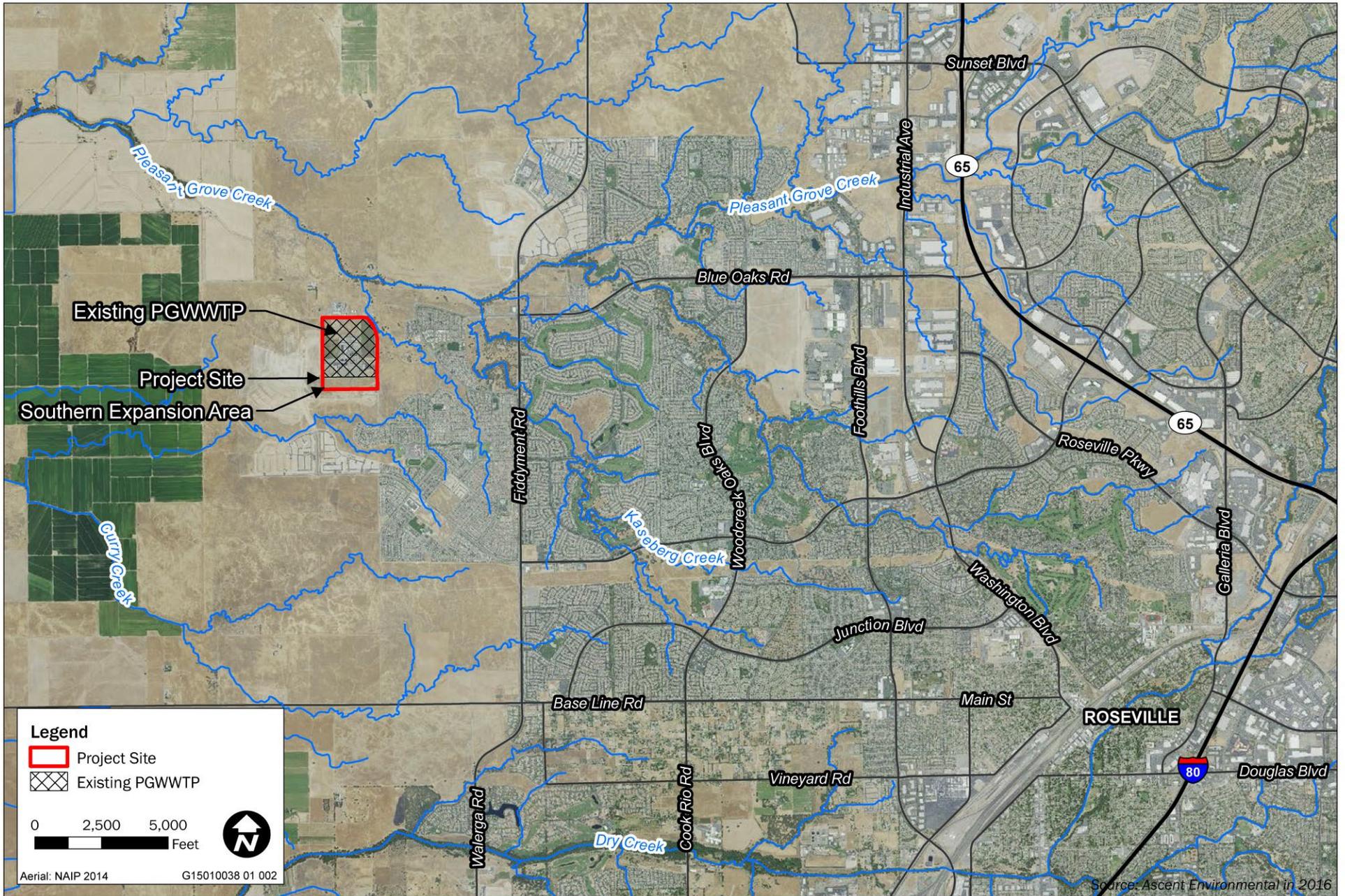
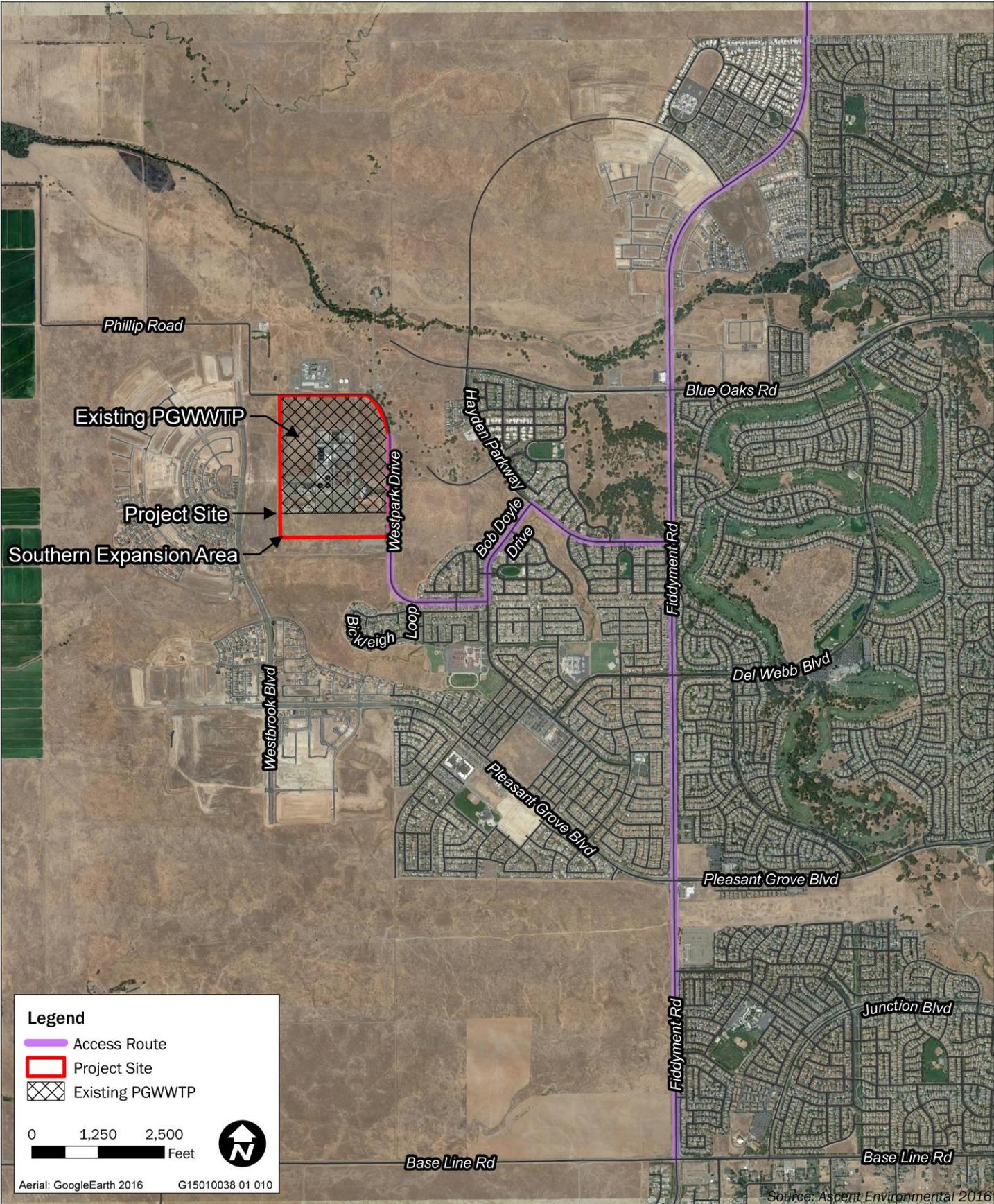


Exhibit 2-2

Project Location





**Exhibit 2-3**

**Roadways**



Wastewater at the PGWWTP is currently treated to tertiary levels and disinfected. It is either discharged into the Pleasant Grove Creek or pumped into the City's recycled water distribution system (described further below under Water Reclamation System).

In addition to systems dedicated to treatment of wastewater, the PGWWTP includes ancillary/support systems, such as an odor control system and water reclamation system, which are described in further detail below.

## 2.5.1 Capacity and Flows

The PGWWTP currently treats approximately 7.1 mgd ADWF, and is authorized to discharge treated effluent into Pleasant Grove Creek under the National Pollutant Discharge Elimination System (NPDES) Permit No. CA0084573/WDR No. R5-2014-0051, which was adopted on March 28, 2014. Under this permit, the PGWWTP is permitted to discharge 12 mgd ADWF to Pleasant Grove Creek. The NPDES permit effluent limitations for the 12 mgd capacity are summarized in Table 2-1.

**Table 2-1 Effluent Limitations for 12 MGD**

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
<b>Conventional Pollutants</b>						
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	20	-	-
	lbs/day	1,000	1,500	2,000	-	-
pH	standard units	-	-	-	6.5	8.3
Total Suspended Solids	mg/L	10	15	20	-	-
	lbs/day	1,000	1,500	2,000	-	-
<b>Non-Conventional Pollutants</b>						
Ammonia Nitrogen, Total (as N)	mg/L	1.4	-	2.9	-	-
	lbs/day	140	-	290	-	-
Nitrate Plus Nitrite (as N)	mg/L	10	-	-	-	-
Source: Central Valley RWQCB 2014						

## 2.5.2 Existing Wastewater Treatment Process

The PGWWTP provides tertiary-level treatment including full nitrification and de-nitrification, and produces recycled water that meets Title 22, Division 4, Chapter 3 of the California Code of Regulations (Section 60301 et seq.) for full, unrestricted use. Administration of the Drinking Water Program, including recycled water, has been transferred from the California Department of Public Health to the State Water Resources Control Board (SWRCB) Division of Drinking Water. Wastewater treated to a level consistent with these Title 22 requirements is subject to a high level of contaminant removal resulting in effluent that is acceptable for many forms of reuse including landscape irrigation where public contact may occur (e.g., golf courses, parks).

The PGWWTP wastewater treatment processes currently include the following components:

- ▲ screening and grit removal,
- ▲ secondary treatment,
- ▲ tertiary filtration, and
- ▲ disinfection with UV light

## ▲ Screening and Grit Removal

The screening and grit removal facilities include coarse screens, influent pump station, and grit chambers. The screening facility includes two mechanically cleaned bar screens with 0.5-inch openings to screen out and remove large material from influent flows. The influent pump station lifts screened influent into the aerated grit influent channel, and includes two low-range pumps and two high-range pumps. Adjacent to the influent pump station is a side-stream pump station that returns recycle flows (e.g., centrate, filter backwash) to the aerated grit influent channel. Two pumps are used to return these side streams. The influent and sidestream flows then move through the two aerated grit basins to remove grit and sand.

## SECONDARY AND TERTIARY TREATMENT

The wastewater then goes through secondary treatment, which includes three processes: oxidation ditches, secondary clarifiers, and a return activated sludge pumping station. There are three, 3.2 mg oxidation ditches which provide for removal of dissolved organics as well as nitrification/denitrification, and four 125-foot diameter secondary clarifiers. The secondary clarifiers are designed to perform two functions: clarification to produce a clean effluent and thickening of the settled activated sludge. The activated sludge is either returned to the beginning of the secondary process (known as return activated sludge [RAS]) or is wasted. Wasted sludge, referred to as WAS, is currently dewatered and hauled to a landfill for disposal. There are six filter cells, each consisting of 10 continuous backwash filter modules that are used to treat secondary effluent prior to UV disinfection.

The PGWWTP has internal recycle flows from tertiary filtration, secondary clarifier scum, WAS dewatering operations, onsite wastewater and stormwater, which are combined in the side stream wet well and returned to the aerated grit influent channel for subsequent retreatment and discharge.

## DISINFECTION

Following secondary treatment, wastewater is disinfected. The PGWWTP uses UV light to disinfect tertiary effluent discharged to the creek and for recycled water production. The UV disinfection system has three active reactors, each equipped with three banks consisting of UV lamps submerged in open channels. As tertiary effluent travels through the channel, it is exposed to UV light, and any remaining pathogens are irradiated and are inactivated.

## STORAGE BASINS, EMERGENCY STORAGE, AND OUTFALL DISCHARGE

The PGWWTP includes three storage basins totaling approximately 31.8 acres with a combined capacity of 48.5 million gallons that provide storage capacity and 100-year flood protection. UV effluent that does not meet disinfection criteria is automatically diverted to the storage basins. The non-compliant water is pumped to the sidestream wet well for treatment. The plant stormwater collection and site drainage systems discharge to the Stormwater Drainage Basin. The tertiary filtration system is equipped to divert filtered effluent that does not comply with Title 22 standards to the emergency storage basin. During intense storm events, UV effluent can be diverted to the effluent storage basins to prevent creek flooding events. UV effluent can be stored in the effluent storage basins while creek levels are high. Water in the three storage basins is returned to the sidestream wet well for retreatment before being discharged to the creek. UV effluent flows over a cascade aeration system prior to being discharged to Pleasant Grove Creek via an outfall, approximately 0.35-mile northeast of the PGWWTP. The outfall structure consists of concrete energy dissipaters leading to the creek.

## SOLIDS HANDLING AND DISPOSAL

The wastewater treatment process generates a variety of solids that must be disposed, including grit, screenings (i.e., large debris), and WAS. Screenings are mechanically removed, dewatered, and sent to the Western Regional Sanitary Landfill for disposal. Grit collected during the grit removal process is cleaned,

dewatered, and sent to the Western Regional Sanitary Landfill for disposal. WAS is presently pumped into two 48-foot diameter by 26.5-foot sludge storage tanks for storing prior to dewatering and hauling off-site to the same landfill for disposal.

## CHEMICAL USE/HAZARDOUS MATERIALS

Treatment of wastewater at the PGWWTP requires the use of several types of chemicals. These chemicals include fuels, flocculants (to make suspended particles stick together), and algaecides. Chemicals currently used and stored onsite include, but are not limited to, the following:

- ▲ Hypochlorite (liquid)
- ▲ Caustic soda (liquid)
- ▲ Polymer (liquid)
- ▲ Ferric chloride (liquid)
- ▲ Diesel fuel
- ▲ Polyaluminum chloride (liquid)

## AUXILIARY SYSTEMS

In addition to the facilities associated with the wastewater treatment process at the PGWWTP, auxiliary systems are also in place and include: odor control systems, utility water system, potable water system, non-potable water system, recycled water pump station, and electrical and energy generation systems. These systems/processes are described separately below.

### Odor Control Systems

Odors at the PGWWTP are caused by a variety of compounds that result from natural biological activity and treatment processes. The City operates multiple odor control systems associated with screening structures, grit handling, grit removal, and sludge storage/dewatering. In general, foul air from inside buildings or closed vessels where odors are present is routed through biofilters prior to being discharged to the atmosphere.

### Water Systems

The PGWWTP has three existing water systems: potable, nonpotable, and utility. The potable water system is supplied by a 4-inch diameter connection to the City of Roseville's potable water distribution system. Potable water at the PGWWTP is currently being used for drinking, sanitary facilities, restrooms, emergency eyewash, and shower stations. Potable water is supplied to the non-potable water system through an air-gap. Nonpotable water is only used for pump seals. Utility water is used for all in plant water usage except pump seals, restrooms, and the lab. It supplies fire hydrants, all process sprays, hose stations, and centrifuge polymer dilution and wash-down water. Current estimated potable water demands at the PGWWTP, which includes both potable and nonpotable water, are approximately 5 gallons per minute (gpm), and the current demands for utility water are 800 gpm. The estimated capacity of the existing PGWWTP potable system is 480 gpm, and the estimated capacity of the utility water system is 4,500 gpm.

### Recycled Water Pump Station

A recycled water pump station conveys recycled water to the City's recycled water distribution system. Recycled water is used for irrigation, industrial cooling, and is available for use in construction activities (i.e., soil compaction, dust control, street sweeping).

### Electrical and Energy Generation Systems

There are currently two electrical buildings at the PGWWTP, and electricity is provided by Roseville Electric via a 12-kilovolt line. Backup power is provided to the WWTP by two existing 1,750 kilowatt standby generators.

## 2.6 DESCRIPTION OF PROPOSED PROJECT

### 2.6.1 Expansion Project

#### PROPOSED CAPACITY

The Expansion Project would increase the ADWF treatment capacity of the existing PGWWTP by 2.5 mgd, from 9.5 to 12 mgd (i.e., the original design capacity), and increase the BOD treatment capacity from 23,500 lbs/day to 34,500 lbs/day to accommodate projected growth through approximately 2040. The increased treatment capacity based on the proposed improvements would remain within the existing NPDES permit requirements.

#### PROPOSED FACILITIES

The proposed Expansion Project would include construction of the following facilities within the existing PGWWTP boundaries (Exhibit 2-4):

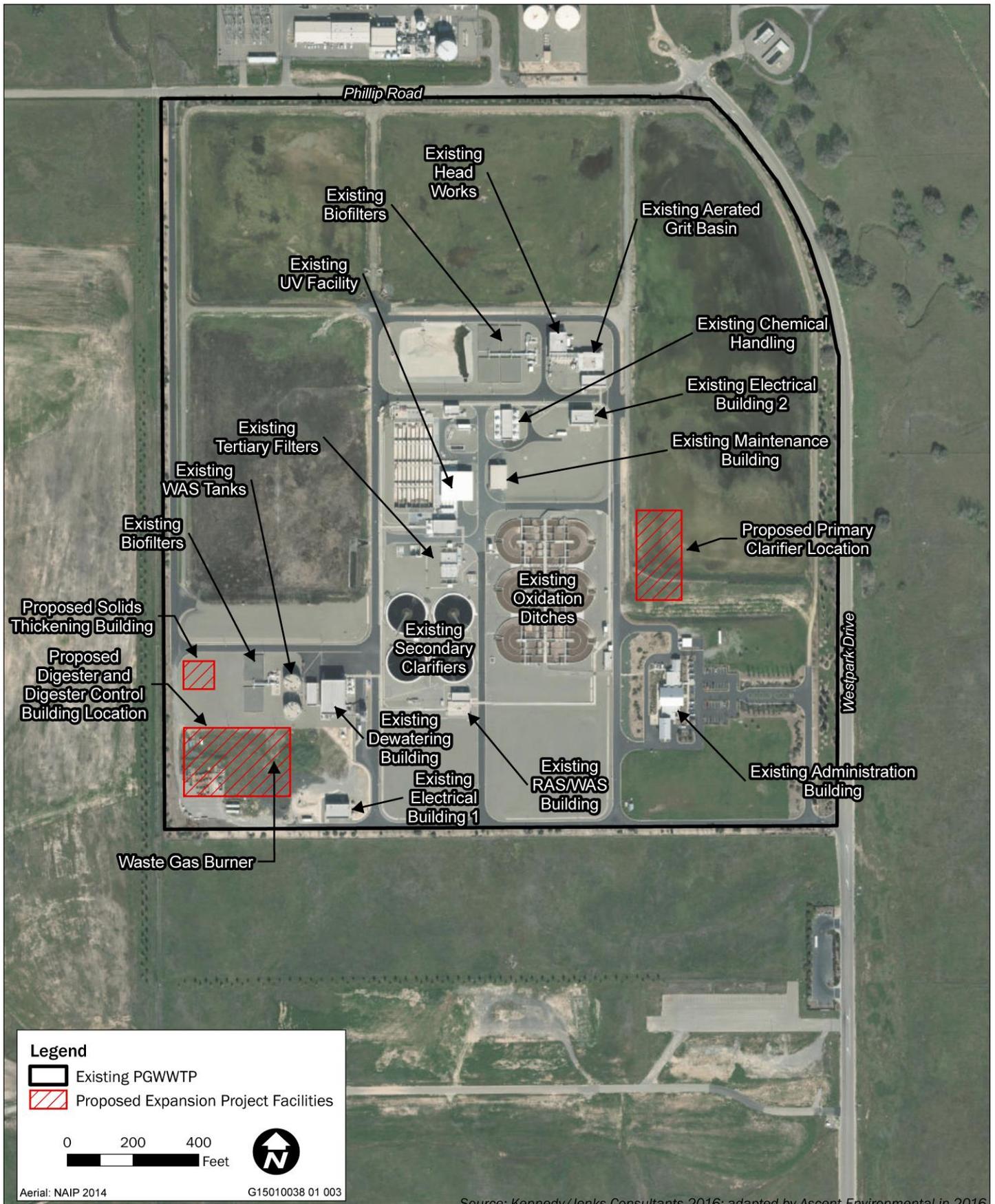
- ▲ four primary clarifiers with odor control facilities and an electrical building;
- ▲ a solids thickening building with odor control facilities;
- ▲ sludge pumping systems;
- ▲ two anaerobic digesters;
- ▲ a waste gas burner;
- ▲ two boilers;
- ▲ conversion of an existing WAS holding tank to a centrate storage tank;
- ▲ conversion of an existing WAS holding tank to a digested solids holding tank/secondary digester;
- ▲ centrate wet well and associated pump system;
- ▲ a digester control building; and
- ▲ ancillary facilities.

Each of these facilities is described in more detail below.

#### Primary Clarifiers

Four rectangular primary clarifiers, 15 feet wide by 150 feet long, would be located in the southwest corner of the existing Effluent Storage Basin No. 3, north of the existing administration building. The clarifiers would be constructed of cast-in-place concrete with common walls and elevated concrete walkways. An influent channel and pump gallery would be located on the north end of the primary clarifier tanks and an effluent channel would be located on the south end. Each clarifier would include a chain-and-flight sludge collection and automated scum removal mechanisms. The sludge collection mechanism would move primary sludge from the bottom of the clarifier into a sludge hopper located near the clarifier influent where it would then be pumped from the hopper to the digesters. Two positive displacement type pumps would be provided for each rectangular clarifier to pump primary sludge to the solids handling facilities. The scum removal mechanisms would collect and transfer scum floating on the water surface of the clarifiers to a common wet well. A positive displacement pump would convey scum into the primary sludge piping and delivered to the solids handling facilities. The area surrounding the clarifiers would be constructed at the same grade as the existing paved road to the west. Paved roadways would be provided around the primary clarifiers and odor control facilities.

A new motor control center (MCC) would be located in a new electrical building located west of the primary clarifiers. A foul-air system would convey odors from the primary clarifier head space to a biofiltration system located north of the primary clarifiers.



**Exhibit 2-4**

**Proposed Expansion Project Facilities**



Source: Kennedy/Jenks Consultants 2016; adapted by Ascent Environmental in 2016

Aerial: NAIP 2014

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## Solids Thickening Building

A new 5,800 square foot single-story two-room solids thickening building would be constructed in a newly paved area immediately west of the existing WAS tanks and associated biofilters. The building would be constructed of concrete masonry block. Rotary drum thickeners would be housed inside this building and used to thicken sludge prior to digestion to reduce the volume of sludge fed to the anaerobic digesters, decrease the required volume of the digesters, and decrease the heat demand of the digesters. The sludge conditioning system would be located upstream of the thickeners and would consist of an in-line, non-clog, mechanical static mixer and polymer injection system. Odors would be conveyed from the Rotary Drum Thickeners through ductwork to the existing adjacent biofilters (City of Roseville 2016a). Electrical equipment would be housed in a second room.

## Sludge Pumping Systems

The existing RAS/WAS pump station would pump WAS through a new WAS feed line in the utility trench from the RAS/WAS wet well to the solids thickening building or to the anaerobic digesters. The pump station is equipped with two WAS pumps. New positive displacement pumps would deliver the thickened WAS from the rotary drum thickeners to the digestion process. Each thickener unit would have a dedicated pump. Cross connections between the pumps would allow for redundancy (City of Roseville 2016a).

## Anaerobic Digesters

Two new anaerobic digesters (where organic constituents are broken down in the absence of oxygen) would be constructed with the Expansion Project. Each anaerobic digester would be 90 feet in diameter, and would be constructed of concrete with fixed domed covers (City of Roseville 2016a). The digesters would be capable of producing Class B biosolids suitable for use, such as land application. There are two classifications for biosolids as defined by the U.S. Environmental Protection Agency 503B Sludge Regulations:

- ▲ Class B biosolids are suitable for land application in areas with restricted public access, and there are limits to the duration of time that must pass before crops exposed to biosolids are harvested.
- ▲ Class A biosolids are a higher quality and do not have federal restriction on land application, though there are applicable county ordinances and industry accepted best practices that should be followed.

The anaerobic digestion facilities would be sized to meet maximum month conditions with both digesters in service. If one digester is out of service during maximum month loading conditions, sludge feed can be reduced to achieve a solids retention time suitable to meet Class B standards. If the digestion process fails and Class B biosolids cannot be produced per 503B requirements, the non-Class B sludge must be dewatered and processed elsewhere to meet 503B standards (e.g., composted) or disposed in a landfill.

## Digester Control Building

A new single-story multi-room digester control building would be constructed in a previously disturbed area between the two new digesters and immediately south of the existing WAS tanks and associated biofilters. The building would be separated from each of the digesters by 20 feet to allow vehicle passage and to comply with National Electrical Code classification requirements and National Fire Protection Association codes and standards. The digester control building would be approximately 6,500 square feet, and would be designed to accommodate three digester mixing pumps, two heat exchangers, two boilers, three digested solids recirculation pumps, two grinders, three digested solids transfer pumps, and three hot water pumps. The building would also include an electrical room and restroom, and would be equipped with a bridge crane for access to and maintenance of digester equipment (City of Roseville 2016a).

A new waste gas burner would be constructed immediately east of the digester facility and would be used to combust excess digester gas that is not utilized by the digester boilers or Energy Recovery facility.

## Digested Solids and Centrate Storage

PGWWTP currently has two 48-foot diameter WAS storage tanks. With the Expansion Project, one of the existing WAS storage tanks would be converted to a digested solids storage tank by removing foul air piping, sealing penetrations, installing hatches, and adding digester gas handling equipment and piping. The digested solids storage tank or “secondary digester” would be unheated and completely mixed. The digested solids would continue to produce digester gas and; therefore, must be connected to the digester gas system.

The other existing WAS storage tank would be converted to a centrate storage tank. Centrate is a byproduct of the dewatering process, and has minimal solids. A separate wet well that receives centrate by gravity, pumps it to the centrate storage tank. Three centrate metering pumps would be located adjacent to the tank and would convey centrate to the onsite system that discharges to the sidestream wet well. The centrate would then be pumped back to the process for retreatment.

## Ancillary Systems

### Electrical

The existing electrical utility service would remain unchanged with the Expansion Project. Under normal operating conditions, the utility service has sufficient capacity to operate the entire WWTP. In the event of a loss of utility power, the existing standby generators provide sufficient emergency power to support continued operation at full treatment capacity. All underground electrical construction would consist of steel reinforced concrete encased duct bank construction. Conduits would be PVC with plastic coated steel elbows and risers.

New Motor Control Centers and power feeds from existing switchgear would be provided for equipment used to operate primary clarification, solids thickening, and anaerobic digestion processes.

New programmable logic control panels would be located in the solids thickening building and digester control building. The existing fiber-optic cable network would be modified and extended to serve the new controllers (City of Roseville 2016a).

### Lighting

Outdoor areas would be lit by pole mounted LED fixtures. To minimize increases in nighttime lighting, all outdoor lighting would be shielded so the illuminated footprint does not extend beyond the area required to be lit. In addition, directional lighting would be used to avoid spillover to adjacent areas, and light levels would be reduced to minimum levels required for operator safety after 10:00 p.m. (City of Roseville 2016a).

### Water Systems and Drainage Facilities

The Expansion Project is expected to increase potable water demands by 10 to 40 gpm. The existing potable water piping system would be extended as part of the Expansion Project to supply potable water to the proposed Solids Thickening and Digester Control Buildings for use in the restrooms and emergency eyewash and shower stations. In addition, the Expansion Project would require construction of a new stormdrain facilities that would connect new impervious surfaces to the existing stormdrain system.

## CONSTRUCTION

Construction of the Expansion Project would last approximately 24 months and is anticipated to begin in fall of 2017. Typical construction activities would include earthwork such as grading, excavation, trenching, backfilling, hauling, and compaction, and would also include borrow and disposal of spoils and excess earth. Additionally, underground piping and utilities would be constructed. Paving, lighting, drainage, tanks, and reinforced structures including the solids thickening building, digester control building, and electrical building would be constructed. Delivery of construction materials and supplies to the site and off-hauling of approximately 6,000 cubic yards of demolished and excavated material would be required. Excavation, grading, trenching, and earth removal would be required for the new facilities. In total, approximately 6.1 acres would be disturbed and approximately 34,000 cubic yards of material would be imported.

Construction activities would generally take place from Monday through Friday during normal daytime working hours, however, there is the potential for construction activities to occur on weekends or evenings such as tie-ins of new equipment and piping that would be required during low flow conditions, which occur at night.

Ingress and egress for construction would be via the existing PGWWTP entrance off Westpark Drive. Construction traffic would access the site using Fiddymment Road to Hayden Parkway and then to Bob Doyle Drive, which connects to Westpark Drive.

## OPERATIONS AND MAINTENANCE

Operation of the Expansion Project would not change the operating hours at the existing PGWWTP. Currently, the plant operates continuously 24 hours per day, every day. PGWWTP staff is onsite 10 hours a day, 7 days a week. The PGWWTP is monitored remotely when staff are not onsite (up to 14.5 hours per day), via the City's supervisory control and data acquisition (SCADA) system, from the Dry Creek WWTP. The Dry Creek WWTP has four operators who run 24-hour shifts. Routine maintenance would occur for all new and expanded facilities, and would generally include preventative maintenance, daily, weekly, monthly, quarterly, and annual inspections and adjustments, and lubrication of bearings and seals. Maintenance would occur periodically or annually depending on the specific facility and would be similar to existing maintenance. Operation of the Expansion Project would require an estimated two additional full-time employees to operate and maintain the new facilities. Operation of the Expansion Project would result in a small increase in long-term vehicle trips associated with the two new employees and increased maintenance activity. In the near-term, operations-related vehicle trips would use the same access route as identified above for construction (Fiddymment Road to Hayden Parkway to Bob Doyle Drive to Westpark Drive). In the long-term, Blue Oaks Boulevard would be extended west to connect to Westbrook Boulevard and Westpark Drive would be extended north to connect with the extended Blue Oaks. Under these built out conditions, operations-related vehicle trips would access the site via Blue Oaks Boulevard to Westpark Drive to Phillip Road, and would use the northwest access to the PGWWTP.

### 2.6.2 Energy Recovery Project

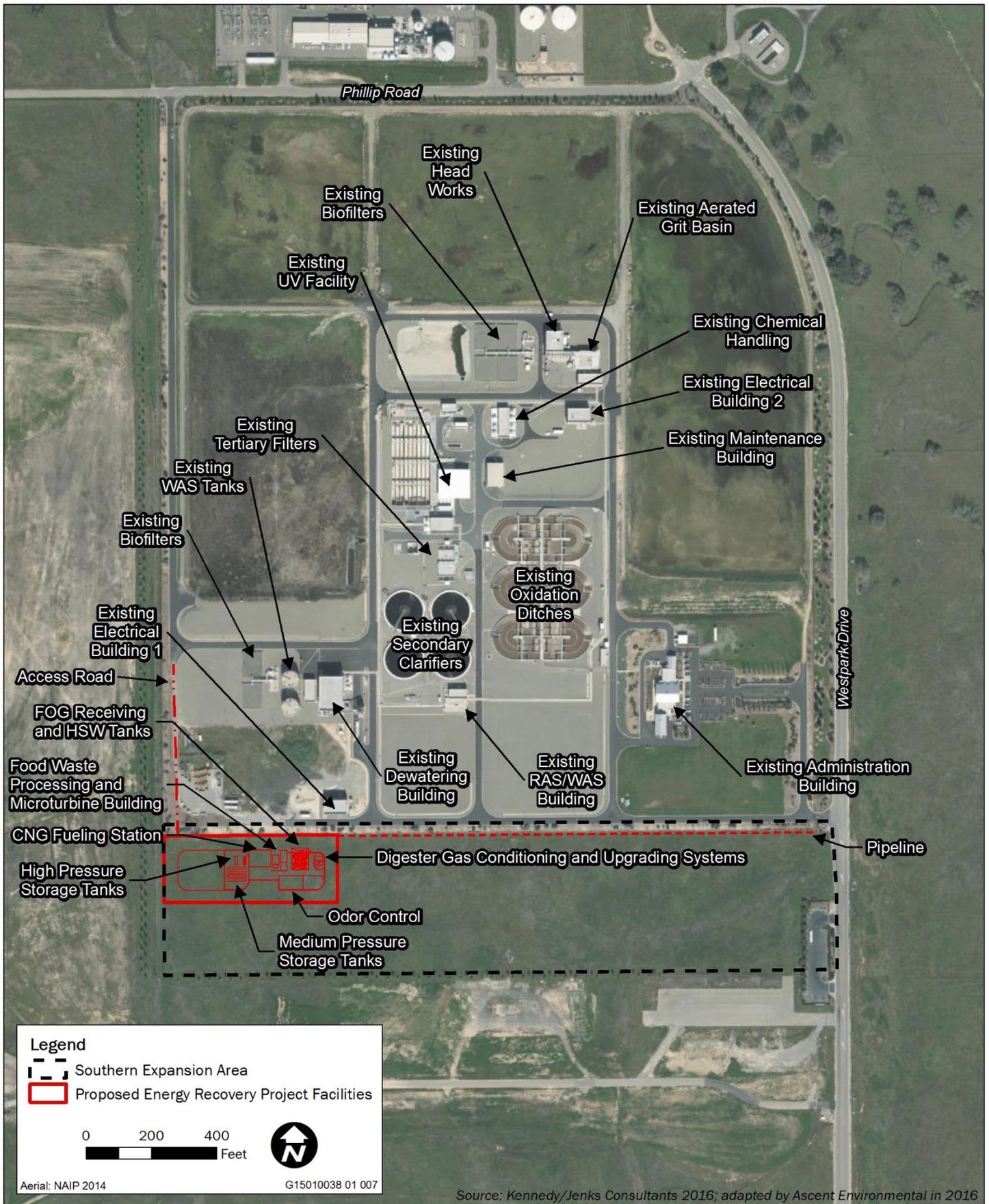
The proposed Energy Recovery Project would be located immediately south of the existing PGWWTP within the Southern Expansion Area (Exhibit 2-5), and would beneficially use digester gas from the anaerobic digesters constructed under the Expansion Project to generate fuel for solid waste trucks, generate electricity, and provide heating for the anaerobic digesters. The Energy Recovery Project would also provide a new receiving location for high strength waste that is currently being collected within the City and hauled to disposal locations outside of the City including CleanWorld in Sacramento.

## PROPOSED PROGRAMS AND FACILITIES

The Energy Recovery Project would include the following programs and facilities:

- ▲ a high strength waste receiving facility;
- ▲ a food waste pre-processing facility;
- ▲ digester gas conditioning system;
- ▲ digester gas upgrading system;
- ▲ up to four microturbines (three constructed immediately and one constructed in the future); and
- ▲ a renewable compressed natural gas fueling station and parking associated with fueling.

Each of these facilities is described in more detail below.



**Exhibit 2-5**

**Proposed Energy Recovery Project Facilities**



## High Strength Waste Receiving Facility

A new high strength waste (also referred to as HSW) receiving facility would be constructed that would include between two and four vertical storage tanks, associated grinders, mixing pumps, transfer pumps, heat tracing, rock trap and odor control on a concrete slab. This facility would be approximately 50 feet by 50 feet. A pipeline would be installed to connect the high strength waste to the new digesters (City of Roseville 2016b).

## Food Waste Processing Facility

A new food waste processing facility would be constructed that would include food waste storage tanks, pumps, a dilution water storage tank, a tipping floor and containment area, a packaged pre-processing system, and a reject material hopper. This facility would be approximately 80 feet by 50 feet. A pipeline would be installed to feed the food waste slurry to the digesters. The facility would be enclosed in a building to contain and treat the odors generated from pre-processing the food waste.

## Digester Gas Conditioning System

The Energy Recovery Project would also include a new digester gas conditioning system. The digester conditioning system would remove hydrogen sulfide, siloxanes, and water from the gas using a media that would be disposed of at an approved landfill. This system would consist of the following individual components (City of Roseville 2016b):

- ▲ hydrogen sulfide removal vessels (granular iron oxide or iron sponge)
- ▲ optional ammonia removal vessels if deemed necessary
- ▲ cooling heat exchangers
- ▲ blower
- ▲ glycol chillers and pumps
- ▲ siloxane removal vessels
- ▲ particle filters

## Digester Gas Upgrading System

The conditioned gas would be processed by a digester gas upgrading system that would use a membrane to separate the CO<sub>2</sub> from the methane. The CO<sub>2</sub> removal process is assumed to have 90 percent methane capture efficiency. In addition, the gas would undergo compression before it is conveyed via pipeline to the fueling station. This renewable natural gas would be compressed to approximately 4,000 pounds per square inch (psi) and would be suitable for use as vehicle fuel. The digester gas upgrading system would be mounted on a skid and be approximately 12 feet by 19 feet and located adjacent to the digester gas conditioning system.

Utility natural gas would be blended with tail gas from the digester gas upgrading system to be used as fuel for the microturbines (City of Roseville 2016b).

## Microturbines

Three 200 kW microturbines would be installed within the Energy Recovery Project boundary to produce electrical power and heat for the digesters. In addition, one additional 200 kW microturbine may be added in the future. Tail gas from the digester gas upgrading system would be blended with utility natural gas to fuel the microturbines. Also, if CNG production is out of service, digester gas could be sent directly to the microturbines. Digester gas production would be increased with the co-digestion of high-strength waste, such as FOG and food waste. These facilities would produce a minimum of 1.4 million British thermal units per hour of heat (City of Roseville 2016b).

## Renewable CNG Fueling Station

A fueling station would also be constructed that would use renewable compressed natural gas (rCNG) or high-pressure methane generated from the digesters for use as vehicle fuel for the City's solid waste truck fleet. The City's solid waste truck fleet would be converted from diesel to CNG over time separate from the

Project; however, the Energy Recovery Project would allow the City to generate rCNG for fueling of approximately half of the 55 trucks in the solid waste truck fleet to offset the purchase of CNG.

Under the Energy Recovery Project, the gas generated from the digesters would be further compressed using a larger compressor. This rCNG would be stored adjacent to the fueling station in high pressure storage tanks and fed to the dispensers for use. The fueling station would require paving and truck lanes to accommodate solid waste trucks; and the gas compression, storage, and drying equipment would be housed within an area enclosed by a security fence. The dispensers would be located away from the high-pressure storage tank as a safety precaution and to provide space for vehicles. The Energy Recovery Project would produce enough daily rCNG to meet the demands of approximately half of City's current solid waste truck fleet. The ultimate number of vehicles that would be filled at the fueling station each day would be approximately 55 vehicles. The existing access road along the western boundary of the PGWWTP would be extended south and provide access to the fueling station.

Fast-fill and slow-fill fueling station options are being considered for this site. The fast-fill station would have less space for staged vehicles and would incorporate a gas compressor to speed up the transfer from the high-pressure storage tank to the vehicle to quickly fill the vehicles. A slow-fill station would only rely on the pressure difference between the rCNG storage tank and vehicle to fill the vehicle. The slow-fill option would allow additional space on the site to stage up to 55 vehicles at the site for filling whereas the fast fill station would only have spaces for approximately 5 to 10 vehicles at one time. The rCNG storage tanks would have a conservative pressure rating and would be able to withstand up to 1.25 times the tank operating pressure as a safety precaution. Additionally, valves and other safety devices would be included with the fueling stations to prevent leakage from the tank and dispensers. Emergency shutoffs, warning signage, and safety bollards would also be included to protect the rCNG tanks and associated equipment.

## Ancillary Systems

### Pipelines

A 4-inch CNG pipeline would be constructed from the Pacific Gas & Electric (PG&E) main, located east of the PGWWTP along Westpark Drive, to the proposed Energy Recovery Project facilities (Exhibit 2-5). The pipeline would be constructed just south of the southern boundary of the existing PGWWTP. Two additional 3-inch CNG pipelines would also be constructed from the new 4-inch CNG pipeline line to the microturbines and another to the vehicle fueling facility.

### Lighting

Outdoor areas would be lit by pole mounted LED fixtures. To minimize increases in nighttime lighting, all outdoor lighting would be shielded so the illuminated footprint does not extend beyond the area required to be lit. In addition, directional lighting would be used to avoid spillover to adjacent areas, and light levels would be reduced to minimum levels required for operator safety after 10:00 p.m. (City of Roseville 2016a).

### Water Systems and Drainage Facilities

The Energy Recovery Project would require the use of potable and non-potable water and would be connected to the existing potable water piping system. Potable water would be used for the new restroom and emergency eyewash stations. Non-potable water would be used for dilution of FOG and food waste. In addition, the Energy Recovery Project would require construction of a new stormdrain facilities that would connect new impervious surfaces to the existing stormdrain system within the existing PGWWTP.

## CONSTRUCTION

Construction of the Energy Recovery Facilities would last approximately 18 months and would begin in late 2017 or early 2018. Approximately 2.5 acres would be disturbed for the Energy Recovery Project and minimal vegetation clearing would be required. All of the facilities would be slab-on-grade foundations. There would be minimal excavation and cut and fill would be balanced onsite (City of Roseville 2016b).

Construction activities would generally take place from Monday through Friday during normal daytime working hours. Ingress and egress for construction would be via the existing PGWWTP entrance off Westpark Drive. Construction traffic would access the site using Fiddymont Road to Hayden Parkway and then to Bob Doyle Drive, which connects to Westpark Drive.

## OPERATIONS AND MAINTENANCE

The Energy Recovery facilities would be operated continuously. Vehicle fueling for the City's solid waste truck fleet would be limited to daytime hours. Routine maintenance would occur for all new and expanded facilities, and would generally include preventative maintenance, regular inspections and adjustments, replacing media in the digester gas scrubbing system, and replacing oil in compressors. Maintenance would occur periodically or annually depending on the specific equipment. The Energy Recovery Project would require one additional full-time employee to operate and maintain the new facilities. Operation of the Energy Recovery Project would result in long-term vehicle trips associated with one additional full-time employee and occasional trips associated with maintenance.

In addition, operation of the Energy Recovery Project may also provide an opportunity to process high strength waste including FOG and food waste for co-digestion. Food waste is currently being hauled from food service establishments within the City to Clean World in Sacramento. FOG is currently being collected within the City, and although the disposal locations are not currently known, there is currently no FOG receiving facility within the City. Therefore, although it is difficult to quantify, the new high strength waste receiving facility has the potential to reduce total miles of high strength waste because there is currently no disposal location within the City limits for these types of waste.

In the near-term, operations-related vehicle trips would use the same access route as identified above for construction (Fiddymont Road to Hayden Parkway to Bob Doyle Drive to Westpark Drive). In the long-term, Blue Oaks Boulevard would be extended west to connect to Westbrook Boulevard and Westpark Drive would be extended north to the extended Blue Oak Boulevard. Operations-related trips from the north would access the site via Blue Oaks Boulevard to Westpark Drive to Phillip Road. Access from the south would be from Pleasant Grove Boulevard to Westbrook Boulevard to Blue Oaks Boulevard to Westpark Drive, and then to Phillip Road. Operations-related trips would then travel along the western boundary of the PGWWTP. The existing access road along the western boundary of the PGWWTP would be extended south and provide access to the energy recovery facilities (Exhibit 2-5).

## 2.7 CITY OF ROSEVILLE MITIGATION ORDINANCES, GUIDELINES, AND STANDARDS

The City has adopted the following regulations and ordinances, which include standards and policies that are uniformly applied throughout the City, that substantially mitigate specified environmental effects of future projects:

- ▲ Noise Regulation (Roseville Municipal Code [RMC] Ch. 9.24)
- ▲ Urban Stormwater Quality Management and Discharge Control Ordinance (RMC Ch. 14.20)
- ▲ Stormwater Quality Design Manual (Resolution 07-42)
- ▲ City of Roseville Design and Construction Standards (Resolution 07-137)
- ▲ Community Design Guidelines (Resolution 95-347)

The City adopted CEQA Findings (Resolution 08-173) that the above ordinances, guidelines and regulations provide mitigation for certain environmental impacts. The City's mitigating ordinances, guidelines, and standards are referenced, where applicable, in the environmental checklist (Chapter 3 of this IS/MND), and would be implemented by the City as part of the proposed Project to reduce potential impacts to a less-than-significant level.

## 2.8 REQUIRED PERMITS AND PROJECT APPROVALS

Construction of the proposed Project may be partially funded through the Clean Water State Revolving Fund (SRF) loan program, which uses federal funds to reduce interest costs on funds used for clean water Projects. Therefore, the Project is subject to federal environmental regulations, including the Federal Endangered Species Act (Section 7), the National Historic Preservation Act (Section 106), and the General Conformity Rule for the Clean Air Act, among others. In addition to the City (lead agency) approval and CEQA-Plus compliance with the federal regulations for the SRF loan, the SPWA would act as a responsible agency in approving the Project and Project funding. It is expected that the Project would also require a NPDES construction stormwater permit (Notice of Intent to proceed under General Construction Permit) for disturbance of more than 1 acre administered by the SWRCB, and amendments to the Placer County Air Pollution Control District: Authority to construct (for devices that emit air pollutants), permit to operate, and Air Quality Management Plan consistency determination.

### 3 ENVIRONMENTAL CHECKLIST

#### ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

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

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> Aesthetics                         | <input type="checkbox"/> Agriculture and Forest Resources | <input type="checkbox"/> Air Quality                     |
| <input type="checkbox"/> Biological Resources               | <input type="checkbox"/> Cultural Resources               | <input type="checkbox"/> Geology / Soils                 |
| <input type="checkbox"/> Greenhouse Gas Emissions           | <input type="checkbox"/> Hazards & Hazardous Materials    | <input type="checkbox"/> Hydrology / Water Quality       |
| <input type="checkbox"/> Land Use / Planning                | <input type="checkbox"/> Mineral Resources                | <input type="checkbox"/> Noise                           |
| <input type="checkbox"/> Population / Housing               | <input type="checkbox"/> Public Services                  | <input type="checkbox"/> Recreation                      |
| <input type="checkbox"/> Transportation / Traffic           | <input type="checkbox"/> Tribal Cultural Resources        | <input type="checkbox"/> Utilities / Service Systems     |
| <input type="checkbox"/> Mandatory Findings of Significance |   | <input checked="" type="checkbox"/> None with Mitigation |

### DETERMINATION (To be completed by the Lead Agency)

On the basis of this initial evaluation:

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

\*\*\*

Signature

Date

12-19-16

Mark Morse, Environmental Coordinator

\*\*\*

City of Roseville

### 3.1 AESTHETICS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>I. Aesthetics. Would the project:</b>				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### 3.1.1 Environmental Setting

Aesthetic resources are generally defined as both the natural and built features of the landscape that contribute to the public’s experience and appreciation of the environment. Depending on the extent to which a project’s presence would negatively alter the perceived visual character and quality of the environment, there may be impacts to aesthetic resources.

The existing PGWWTP is located in an area mixed with development and undeveloped open space. Foreground views to the east, west, and south are of non-native grassland, which are dry most of the year, and landscaping trees along the property line provide screening of the PGWWTP property. Background views to the east, west, and south are of residential development and overhead utility lines (Exhibit 3.1-1). Views to the north are a contrast of the industrial development associated with Roseville Energy Park and the natural riparian area along Pleasant Grove Creek. The nearest sensitive viewers include residences to the east, west, and south located beyond the open space buffer surrounding the existing PGWWTP. Views of the existing PGWWTP include several concrete buildings, large tanks, chain-link fencing, lighting and utility infrastructure, and landscaping trees along the border of the property (Exhibit 3.1-2). Existing security lighting is used on-site. Because of the flat topography, surrounding residences generally have direct, but distant views of the PGWWTP.

There are no scenic roads, resources, or views within or adjacent to the Project site. In addition, the area is not designated as a scenic area in the *City of Roseville General Plan* (City General Plan), *West Roseville Specific Plan (WRSP)*, or the *Placer County General Plan* (City of Roseville 2004).

#### 3.1.2 Discussion

**a) Would the project have a substantial adverse effect on a scenic vista?**

**No impact.** A scenic vista is generally considered a view of an area that has remarkable scenery or a resource that is indigenous to the area. There are no scenic vistas in the Project vicinity or with views of the Project site. Because the proposed Project would not adversely affect a scenic vista, there would be no impact.



Source: Ascent Environmental 2016

**Exhibit 3.1-1a**

**Looking East, from Southern Expansion Area**



Source: Ascent Environmental 2014

X15010038 01 001

**Exhibit 3.1-1b**

**Looking West, toward Southern Expansion Area**





**Exhibit 3.1-2a**

**Looking South, from Southern Expansion Area**



Source: Ascent Environmental 2014

X15010038.01 002

**Exhibit 3.1-2b Existing PGWWTW Facilities looking north from Southern Expansion Area**



**b) Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?**

**No impact.** The proposed Project would not be located near a designated or eligible state scenic highway (California Department of Transportation [Caltrans] 2016). Furthermore, the proposed Project would not damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings. Therefore, no impact would occur.

**c) Would the project substantially degrade the existing visual character or quality of the site and its surroundings?**

**Less than significant.** The Project site is primarily surrounded by non-native grassland. Although the proposed Project would include construction of new facilities within and south of the existing WWTP, the addition of like buildings and facilities to an already developed site would not substantially change the existing views of the site. Proposed facilities would be visible to persons living in the residences located to the east, west, and south, and motorists on surrounding roadways including Westpark Drive and Westbrook Boulevard. Although views of the site would be altered, the Project would not substantially change the visual character of the site because the proposed Project would be located at or immediately adjacent to the already developed WWTP site. The proposed facilities would be similar in height and visual appearance as the existing WWTP facilities. Minimal new lighting would be used for the Project facilities consistent with existing security lighting. The Project would be visually consistent with the existing WWTP and would not substantially change the surrounding visual character. Therefore, this impact would be less than significant.

**d) Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?**

**Less than significant.** Glare is caused by light reflections from vehicles and building materials such as reflective glass and polished surfaces. During daylight hours, the amount of glare depends on the intensity and direction of sunlight. At night, artificial light can cause glare. The proposed Project would include the addition of new lighting fixtures, primarily for the security needs of the WWTP. New lighting would be installed within the WWTP site and the Southern Expansion Area. The new lighting would be directed downward and fully screened to avoid nighttime lighting spillover effects on adjacent land uses and nighttime sky conditions. The limited amount of new lighting would represent a negligible addition relative to the existing facility lighting. In addition, proposed facilities would be constructed with non-reflective materials similar to the existing facilities. Therefore, this impact would be less than significant.

### 3.2 AGRICULTURE AND FOREST RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>II. Agriculture and Forest Resources.</b>				
<p>In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997, as updated) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state’s inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.</p>				
Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.2.1 Environmental Setting

Farmlands are mapped by the State of California Department of Conservation (DOC) under the Farmland Mapping and Monitoring Program (FMMP). The FMMP was created by the State of California to provide data on farmland quality for use by decision makers in considering possible conversion of agricultural lands. Under the FMMP, land is delineated into the following eight categories: Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, Grazing Land, Urban or Built-Up Land, Other Land, and Water. Mapping is conducted on a county-wide scale, with minimum mapping units of

10 acres unless otherwise specified. The proposed facilities would be within the boundaries of and immediately south of the existing PGWWTP. The existing PGWWTP is designated under the FMMP as Urban and Built-Up Land, and the area immediately south of the PGWWTP, where the Energy Recovery Project would be located, is designated as grazing land, although it is not being actively grazed (Exhibit 3.2-1) (DOC 2014).

### 3.2.2 Discussion

**a) Would the project 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?**

**No impact.** The Expansion Project facilities would be constructed on developed land within the existing boundary of the PGWWTP. The site is not used for agricultural production and is designated as Urban and Built-Up Land by the FMMP (DOC 2014). Although the Southern Expansion Area, where the Energy Recovery Project facilities would be located, is designated as grazing land by the FMMP, it is not considered Important Farmland and is not being actively grazed. Therefore, Important Farmland would not be converted to a non-agricultural use as a result of the Project, and there would be no impact.

**b) Would the project conflict with existing zoning for agricultural use or a Williamson Act contract?**

**No impact.** The PGWWTP and the Southern Expansion Area are not subject to Williamson Act contract. Therefore, implementation of the Project would not conflict with existing zoning for agricultural use or a Williamson Act contract. No impact would occur.

**c) Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?**

**No impact.** No portion of the existing PGWWTP or adjacent lands are zoned for forest land, timberland, or timberland zoned Timberland Production. Therefore, the Project would not conflict with existing zoning for forest land or timberland. No impact would occur.

**d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?**

**No impact.** The Expansion Project facilities would be within the boundary of the existing PGWWTP and the footprint for these facilities is either disturbed or currently developed. The Energy Recovery Project facilities would be located in an area of disturbed grassland. No forest lands exist within either footprint. Therefore, implementation of the Project would not result in conversion of forest land to non-forest uses, and there are no Project elements that would otherwise affect forest lands. Therefore, no impact would occur.

**e) Would the project 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?**

**No impact.** No forest or agricultural resources are located within or adjacent to the PGWWTP. Therefore, implementation of the Project would not result in conversion of farmland to non-agricultural use or forest land to non-forest use. No impact would occur.



**Legend**

- Existing PGWWTP
- Southern Expansion Area
- Proposed Energy Recovery Project Facilities
- Proposed Expansion Project Facilities
- Proposed Pipeline
- Proposed Access Road

- FMMP Designation**
- Grazing Land
  - Urban and Built-Up Land
  - Other Land



Aerial: NAIP 2014

G15010038 01 005

Source: FMMP 2014

**Exhibit 3.2-1**

**FMMP Designations**



### 3.3 AIR QUALITY

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

#### 3.3.1 Environmental Setting

The Project site is located in the western portion of Placer County, California, which is within the Sacramento Valley Air Basin (SVAB). The SVAB also includes all of Butte, Colusa, Glenn, Sacramento, Shasta, Sutter, Tehama, Yolo, and Yuba Counties; and the eastern portion of Solano County. The ambient concentrations of air pollutant emissions are determined by the amount of emissions released by the sources of air pollutants and the atmosphere’s ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, atmospheric stability, and sunlight. Therefore, existing air quality conditions in the area are determined by such natural factors as topography, meteorology, and climate, in addition to the amount of emissions released by existing air pollutant sources, as discussed separately below.

The SVAB is a relatively flat area bordered by the north Coast Ranges to the west and the northern Sierra Nevada to the east. Air flows into the SVAB through the Carquinez Strait, the only breach in the western mountain barrier, and moves across the Sacramento River–San Joaquin River Delta from the San Francisco Bay area.

Of the many pollutants, ozone, particulate matter [i.e., respirable (PM<sub>10</sub>) and fine (PM<sub>2.5</sub>)], and carbon monoxide (CO) are of primary concern within the County, as well as for much of the rest of the State. The SVAB portion of Placer County is considered by the State, under the terms of the California Clean Air Act (CCAA), to be “non-attainment” for ozone and PM<sub>10</sub> and to be either “attainment” or unclassified for other pollutants [California Air Resources Board (ARB) 2015a]. Additionally, under the terms of the National Ambient Air Quality Standards (NAAQS), the County is categorized as “non-attainment” for ozone and PM<sub>2.5</sub>, a

“moderate maintenance” area for carbon monoxide, and “attainment” or unclassified for other pollutants [U.S. Environmental Protection Agency (EPA) 2016a].

Criteria air pollutant concentrations are measured at several monitoring stations in SVAB. The Roseville-N Sunrise Boulevard station is the closest station to the Project site, located approximately 7 miles northwest of the Project site, and reports air quality data for ozone, PM<sub>2.5</sub>, and PM<sub>10</sub>. In general, the ambient air quality measurements from these stations are representative of the air quality near the Project site. Table 3.3-1 summarizes the air quality data for the three most recent calendar years for which data is available. No CO monitoring data was available at monitoring stations within the SVAB, Mountain Counties Air Basin, or San Joaquin Valley Air Basin.

**Table 3.3-1 Summary of Annual Data on Ambient Air Quality (2013-2015)<sup>1</sup>**

	2013	2014	2015
<b>Ozone</b>			
Maximum concentration (1-hr/8-hr avg, ppm)	0.111/0.084	0.097/0.087	0.098/0.085
Number of days state standard exceeded (1-hr/8-hr)	2/8	4/21	1/6
Number of days national standard exceeded (1-hr/8-hr)	0/2	0/10	0/3
<b>Fine Particulate Matter (PM<sub>2.5</sub>)</b>			
Maximum concentration (24-hour µg/m <sup>3</sup> )	57.0	30.7	44.1
Number of days national standard exceeded (24-hour measured <sup>2</sup> )	0	0	0
<b>Respirable Particulate Matter (PM<sub>10</sub>)</b>			
Maximum concentration (24-hour µg/m <sup>3</sup> )	55.5	31.8	59.1
Number of days state standard exceeded (measured/calculated <sup>2</sup> )	1/*	0/0	1/*
Number of days national standard exceeded (measured/calculated <sup>2</sup> )	0/0.0	0/0	0/*
<b>Notes:</b>			
<sup>1</sup> Measurements from the Roseville-N Sunrise Boulevard Monitoring Station.			
<sup>2</sup> Measured days are those days that an actual measurement was greater than the level of the state daily standard or the national daily standard. Measurements are typically collected every 6 days. Calculated days are the estimated number of days that a measurement would have been greater than the level of the standard had measurements been collected every day. The number of days above the standard is not necessarily the number of violations of the standard for the year.			
µg/m <sup>3</sup>	=	micrograms per cubic meter	
ppm	=	parts per million	
*	=	There was insufficient data to determine the value.	
Source: ARB 2016a,b			

Although naturally occurring asbestos occurs throughout the State, occurrences within Placer County are located in central areas of the County and are not located within the Roseville City limits. Thus, naturally occurring asbestos is unlikely to be found within the Project area (Van Gosen and Clinkenbeard 2011).

There are several sensitive receptors, mostly single family residences, within 2,000 feet of the PGWWTP with the closest sensitive receptor located as close as 845 feet from the proposed construction staging area on the west side of the Project site. Several clusters of single family homes and some multifamily homes are located between 845 and 3,200 feet west, east, and south of PGWWTP. Chilton Middle School, an existing school with outdoor athletic facilities, is located approximately 2,930 feet southeast of the Project site.

## PLACER COUNTY AIR POLLUTION CONTROL DISTRICT

Placer County Air Pollution Control District (PCAPCD) attains and maintains air quality conditions in Placer County through a comprehensive program of planning, regulation, enforcement, technical innovation, and

promotion of the understanding of air quality issues. The clean air strategy of PCAPCD includes the preparation of plans and programs for the attainment of ambient-air quality standards, adoption and enforcement of rules and regulations, and issuance of permits for stationary sources. PCAPCD also inspects stationary sources, responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements other programs and regulations required by the CAA, CAAA, and CCAA.

All projects are subject to adopted PCAPCD rules and regulations in effect at the time of construction. Specific rules applicable to the construction and operation of the proposed Project may include but are not limited to the following:

- ▲ **Rule 202—Visible Emissions.** Requires that opacity emissions from any source not exceed 20 percent for more than 3 minutes in any 1 hour.
- ▲ **Rule 217—Cutback and Emulsified Asphalt Paving Materials.** Prohibits the use of the following asphalt materials for road paving: rapid cure cutback asphalt; slow cure cutback asphalt; medium cure cutback asphalt; or emulsified asphalt.
- ▲ **Rule 218—Application of Architectural Coatings.** Requires architectural coatings to meet various volatile organic compound (VOC) content limits.
- ▲ **Rule 228—Fugitive Dust.** Establishes standards to be met by activities generating fugitive dust. Minimum dust control requirements include, but are not limited to:
  - Visible emissions are not allowed beyond the project boundary line.
  - Sufficient water must be applied to the area to be disturbed prior to any ground disturbance, including grading, excavating, and land clearing.
  - Speed of vehicle or equipment travelling on unpaved areas must not exceed 15 miles per hour unless the road is sufficiently stabilized.
  - Visible emissions may not have opacity of greater than 40 percent at any time.
  - Track-out must be minimized from paved public roadways.
- ▲ **Rule 242—Stationary Internal Combustion Engines.** Establishes limits for NO<sub>x</sub> and CO emissions from internal combustion engines.
- ▲ **Rule 250—Stationary Gas Turbines.**
  - Requires that NO<sub>x</sub> emissions from gas, include natural, digester, and landfill gases, turbines rated between 0.3 and 2.9 megawatts (MW) not exceed the compliance limit of 42 ppm at 15 percent oxygen (O<sub>2</sub>) averaged over one hour, except during start up and shut down cycles.
  - The NO<sub>x</sub> emissions shall meet at least one of the following averaged over the duration of the startup or shutdown period:
    - 70 ppm at 15 percent O<sub>2</sub> for turbines fired on gas or,
    - 0.16 pounds per MMBtu input for turbines fired on gas or oil.
  - The NO<sub>x</sub> emissions shall be kept to a minimum by use of the following:
    - Manufacturer's recommendation for operation during startup and shutdown.
    - Injection of water as soon as reasonably possible
    - Maintaining proper air to fuel ratios

- ▲ **Rule 401—Permit Required.** Any person building, altering, or replacing any source of air contaminants shall first obtain an Authority to Construct from the Air Pollution Control Officer. An Authority to Construct shall remain in effect until the Permit to Operate for that source for which the application was filed is either granted or denied or until termination pursuant to other provisions of this Regulation.
- ▲ **Rule 501—General Permit Requirements.** Establishes that new stationary sources of air emissions require operating permits from PCAPCD.
- ▲ **Rule 502—New Source Review.** Establishes permitting requirements for new sources. This includes thresholds for the requirement to utilize “Best Available Control Technology” and the need to meet “emission offsets” by obtaining emission reduction credits.

## Criteria Air Pollutants

As a part of the Sacramento federal ozone nonattainment area, PCAPCD works with the Sacramento Metropolitan Air Pollution Control District (SMAQMD) and other local air districts within the Sacramento area to develop a regional air quality management plan under CAA requirements. The Sacramento Regional 8-hour Ozone Attainment and Reasonable Further Progress Plan, also referred to as the Sacramento Ozone SIP, was prepared to meet requirements of the CAA for the 1997 8-hour ozone standard and was most recently amended in 2013. The SIP describes and demonstrates how Placer County, as well as the Sacramento nonattainment area, would attain the federal 1997 ozone standard by 2018. The new ozone SIP to meet the 2008 ozone standard will be prepared for the Sacramento nonattainment area at a future date (SMAQMD 2013, PCAPCD 2012). One of the proposed mitigation strategies in the SIP is a program that would provide monetary incentives for NO<sub>x</sub> reduction in heavy-duty vehicles. Other strategies include reviewing land use projects to ensure the region’s vision for “smart growth” is implemented, reducing vehicle miles traveled (VMT) and subsequent mobile-source emissions (SMAQMD 2013).

PCAPCD also adopted the *2014 Reasonably Available Control Technology State Implementation Plan Analysis* (2014 RACT SIP) as federally required for SIPs. The 2014 RACT SIP analysis provides guidelines for specific emission control technologies recommended for 16 difference source categories, including gas turbines, natural gas service stations, fuel tanks, and asphalt (PCACPD 2014).

Plans to maintain the federal PM<sub>2.5</sub> attainment status in the western portion of Placer County include the *PM<sub>2.5</sub> Maintenance Plan and Redesignation Request for the Sacramento PM<sub>2.5</sub> Nonattainment Area* and primarily consist of enforcing the existing PCAPCD rules which has led to current attainment levels (SMAQMD et. al 2013).

With respect to ozone and PM<sub>10</sub> non-attainment of the CAAQS, the CCAA requires PCAPCD and other districts in the SVAB to assess the level of air quality improvement and emissions reductions from control measures for the preceding 3-year period. The most recent report is the *2015 Triennial Report and Progress Plan* compiled by SMAQMD on behalf of air districts within the SVAB, including PCAPCD. This plan includes two major programs relevant to this Project. The Vehicle and Engine Technology program focuses on reducing NO<sub>x</sub> emissions from heavy-duty diesel engines and provides financial incentives for replacing or retrofitting on-road heavy-duty diesel vehicles; and the Land Use and Transportation program requires NO<sub>x</sub> reductions from diesel construction equipment if the Project has potential air quality impacts (SMAQMD 2015).

## Toxic Air Contaminants

At the local level, air pollution control or management districts may adopt and enforce ARB’s control measures. PCAPCD limits emissions and public exposure to TACs through a number of programs. PCAPCD prioritizes TAC-emitting stationary sources based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors.

Sources that require a permit are analyzed by PCAPCD (e.g., health risk assessment) based on their potential to emit toxics. If it is determined that the Project would emit toxics in excess of PCAPCD’s threshold of significance for TACs (identified below under Thresholds of Significance), sources have to implement

PCAPCD's T-BACT requirement for TACs to reduce emissions. If a source cannot reduce the risk below the threshold of significance even after T-BACT has been implemented, PCAPCD will deny the permit required by the source. This helps to prevent new problems and reduces emissions from existing older sources by requiring them to apply new technology when retrofitting with respect to TACs.

## **METHODS AND ASSUMPTIONS**

Construction and operational emissions were calculated using a combination of model and off-model methods along with the assumptions dictated in the Project description. Emissions from Project construction were estimated with the CalEEMod (Version 2016.3.1) computer program (SCAQMD 2016), recommended by PCAPCD (PCAPCD 2012, PCAPCD 2016a).

In accordance with PCAPCD-recommended methodologies, emissions generated by the Project are modeled and presented on a pound-per-day basis with respect to the metrics in the selected thresholds of significance.

### **Construction**

Construction modeling was performed separately for the Expansion Project and Energy Recovery Project. The modeling was conducted in this manner because the Expansion Project may proceed without the Energy Recovery Project. However, if the Energy Recovery Project is also approved, construction of it and the Expansion Project may overlap; therefore, the modeling results were combined outside of CalEEMod to assess the potential impacts of overlapping construction phases. As stated in Chapter 2, "Project Description and Background," construction modeling assumed construction of the Expansion Project would last approximately 24 months starting in fall of 2017. Construction of the Energy Recovery Project is assumed to begin late 2017 or early 2018 and last approximately 18 months. Construction phasing and equipment details were provided by the City. Additional details with respect to model inputs and assumptions can be found in Appendix B.

### **Operations**

#### **Mobile Sources**

##### **Expansion Project**

For the Expansion Project, criteria pollutant emissions from mobile sources considered those that would result from the combustion of gasoline and diesel vehicle fuels. Maximum daily VMT and fuel use by vehicle type and fuel type were compared between existing and build-out conditions under the Expansion Project. Emissions calculations accounted for the VMT changes in employee commute trips; conversion of waste activated sludge (WAS) hauling to biosolids hauling; and hauling of chemicals. These calculations were based on data provided by the City and Kennedy/Jenks Consultants (City of Roseville 2016a). The changes in vehicle trips and trip lengths used to calculate the changes in mobile source emissions are shown in Table 3.3-2 below. Additional details can be found in Appendix B.

Vehicle exhaust emissions were calculated using mileage-based emission factors from ARB's Emissions FACTor model (EMFAC2014) for the 2020 calendar year for the Sacramento Valley-portion of Placer County (ARB 2015b). Full project build-out has been assumed in the modeling of operations to represent a worst-case scenario. This is a conservative estimate that assumes full capacity would be reached by the first full year of operation (2020). In reality, there would be an interim period where the amount of wastewater treated would gradually increase in response to new development. This assumption is also conservative because vehicle emissions further into the future are anticipated to decline due to technological and regulatory improvements and a flowrate of 12 mgd may not occur until 2040.

**Table 3.3-2 Changes in Daily Vehicle Activity between Existing and Build-Out Conditions of the Expansion Project**

Mobile Source	Existing Trips per day	Project Trips per day	Existing Trip Length (mi)	Project Trip Length (mi)
Employee Commute <sup>1,2</sup>	0	2	15	15
Hauling: WAS/Biosolids <sup>2</sup>	6	7	6	45
Hauling: Chemicals <sup>3</sup>	2	3	7	7

Notes: Amounts may not sum to totals due to rounding. It is assumed that all vehicle trips except for employee commute trips would occur 5 days per week. Employee commute trips would occur 7 days per week.

<sup>1</sup> Accounts for new employee trips only.

<sup>2</sup> Based on data provided by City and Kennedy/Jenks Consultants (City of Roseville 2016a)

<sup>3</sup> Scaled by growth in wastewater treatment capacity.

WAS = waste activated sludge

Source: Compiled by Ascent Environmental in 2016.

### Energy Recovery Project

The Energy Recovery Project would use digester gas produced by the Expansion Project and would not be able to operate independently; therefore, operational emissions modeled for the Energy Recovery Project also include operation of the Expansion Project. References to Energy Recovery Project below are assumed to include operation of the Expansion Project. Mobile emission sources modeled for the Energy Recovery Project would include the mobile emission sources modeled above for the Expansion Project in addition to mobile emission sources unique to the Energy Recovery Project (i.e., CNG solid waste collection vehicles, additional employees, and hauling of high strength waste).

Mobile emissions associated with the Energy Recovery Project were based on changes in daily VMT by vehicle type compared to existing conditions and the conversion of solid waste collection vehicle fuel use from CNG to a renewable CNG (rCNG) blend. Maximum daily VMT by vehicle type and fuel type were compared between existing and build-out conditions under the Energy Recovery Project. Using mileage-based emission factors, most mobile source emissions were calculated based on increased employee commute trips; changes in trip length associated with conversion of WAS hauling to biosolids hauling; and hauling of high strength waste (HWS) (including fats, oils, and grease [FOG] and food waste); and increased chemical hauling trips. The changes in vehicle trips and trip lengths used to calculate these changes in mobile source emissions in this analysis are shown in Table 3.3-3 below. Emissions related to the conversion of CNG to an rCNG blend are discussed further below. These calculations were based on data provided by the City and Brown and Caldwell (City of Roseville 2016b,c). Additional details can be found in Appendix B.

Mileage-based tailpipe emission factors for all vehicle types were taken from EMFAC2014 and Argonne National Laboratory's Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation model (GREET 2015), respectively (ARB 2015b, Argonne National Laboratory 2015). Energy-based emission factors for the upstream production of CNG and rCNG were provided by the California-modified version of GREET (CA-GREET Tier 1 Version 2.0) (ARB 2016c). Both upstream and tailpipe emissions were included because the Energy Recovery Project would result in GHGs from the production of rCNG and offset the production of conventional CNG. Upstream emissions include refining, fuel distribution, and pumping emissions for on-site compression and production for rCNG. (ARB 2015c, ARB 2016c, Argonne National Laboratory 2015).

To calculate the CNG and rCNG energy use needed for the upstream emissions calculations, the energy content of the CNG and rCNG used in the solid waste collection vehicles was calculated using energy demand estimates quantified in the *Pleasant Grove Wastewater Treatment Plant Energy Recovery Project Basis of Design Report (Energy Recovery Project Basis of Design Report)* (City of Roseville 2016c). According to this report, the Energy Recovery Project is designed to accommodate a vehicle fuel demand of 2,500 diesel gallons equivalents (DGE) per day. The CNG fuel required to meet that demand would be a blend between the rCNG derived from the digester gas and conventional CNG purchased from the local utility. The vehicle fuel production at the Energy Recovery Project would require approximately 7.9 MMBTU per hour of

natural gas under normal operating conditions (210 scf per minute of digester gas production). Using a lower heating value of 139,000 BTU per gallon of diesel, the Energy Recovery Project would produce 1,136 DGE of digester gas and require 1,364 DGE of natural gas use per day. Assuming production would occur 365 days per year, the annual combustion of digester gas and natural gas for vehicle fuels would be 57,673 MMBTU and 69,251 MMBTU, respectively. This assumes all rCNG produced by the Energy Recovery Project in a single year would be combusted, regardless of decreased fueling activity during weekends and holidays or level of storage. Actual emissions from vehicles fuels may vary depending on the level of digester gas production and diversion ratio of the digester gas between vehicle fuels and the proposed microturbines.

**Table 3.3-3 Changes in Daily Vehicle Activity between Existing and Build-Out Conditions of the Energy Recovery Project**

Mobile Source	EMFAC Vehicle Type	Existing Trips per day	Project Trips per day	Existing Trip Length (mi)	Project Trip Length (mi)
Employee Commute <sup>1,2</sup>	LDA/LDT1/LDT2	0	2	15	15
Hauling: HSW <sup>2</sup>	MMDT	2	2	21	7
Hauling: WAS/Biosolids <sup>2</sup>	HHDT	6.4	6.7	6	45
Hauling: Chemicals <sup>3</sup>	MMDT	2	3.4	7	7
CNG Solid Waste Collection Vehicles <sup>4</sup>	T7 SWCV	NA	NA	NA	NA

Notes: Amounts may not sum to totals due to rounding. It is assumed that all vehicle trips except for employee commute trips would occur 5 days per week. Employee commute trips would occur 7 days per week.

- 1 Accounts for new employee trips only.
- 2 Based on data provided by City and Kennedy/Jenks Consultants (City of Roseville 2016a)
- 3 Scaled by growth in wastewater treatment capacity.
- 4 Daily trips and trip lengths not available. Emission calculations based on usage of 2,500 diesel gallon equivalents per day, or 6,250 miles per day.

HSW = high strength waste  
 WAS = waste activated sludge  
 NA = not available  
 LDA/LDT1/LDT2 = light duty vehicles and trucks  
 HHDT = heavy duty vehicles  
 MMDT = medium duty vehicles  
 T7 SWCV = T7 rated solid waste collection vehicle  
 CNG = compressed natural gas

Source: Compiled by Ascent Environmental in 2016.

**Process Emissions**

**Expansion Project**

With respect to process emissions, criteria pollutants would result from wastewater treatment processes, flaring of digester gas, and combustion of natural gas for the proposed boilers that provide heat for the digester. Emissions from wastewater treatment processes were scaled from ARB’s stationary source facility emissions database for the PGWWTP (ARB 2016d). Process emissions from PGWWTP were available for 2014 and were scaled by the anticipated changes in the wastewater treatment volumes from 7.1 mgd under existing conditions to 12 mgd at full buildout.

Daily emissions from digester gas flaring and natural gas combustion in boilers were calculated by multiplying the estimated daily energy content of each gas by EPA’s AP-42 emission factors specific to these applications (EPA 2000). At full build-out and under normal conditions, approximately 210 standard cubic feet (scf) of digester gas per minute (302,400 scf per day) would be produced and flared. Assuming a lower heating value of 546 BTU/scf, the Expansion Project would produce and flare approximately 165 million BTU (MMBTU) of digester gas per day. EPA’s AP-42 emission factors for flares of synthetic waste gases were used as a proxy to calculate ROG and NO<sub>x</sub> emissions from the proposed digester gas flares. No other criteria pollutant emission factors related to flaring were available.

Natural gas is currently not used on-site. However, with the Expansion Project, approximately 89 MMBTU of natural gas per day will be combusted in small boilers to heat the anaerobic digesters. Criteria pollutant emissions were calculated from EPA's AP-42 factors for uncontrolled combustion of natural gas in boilers (EPA 2000).

### Energy Recovery Project

As discussed above, operational modeling for the Energy Recovery Project includes operation of the Expansion Project and references to the Energy Recovery Project below are assumed to include both projects. Process emissions modeled for the Energy Recovery Project included the process emissions discussed above for the Expansion Project as well as criteria pollutants that would result from combustion of natural gas and tail gas in the proposed microturbines. Tail gas is a byproduct from the conversion of digester gas into biomethane used for vehicle fuel.

To calculate emissions from the combustion of tail gas and natural gas in the proposed microturbines, the annual energy use of each gas was calculated and multiplied by the energy-based emission factors from EPA's AP-42 guidance for natural gas-powered turbines (EPA 2000). The Energy Recovery Project would require 2.6 MMBTU per hour of natural gas for use in the microturbines. Based on the microturbine energy requirements in Section 11.1.3.1 of the Energy Recovery Project Basis of Design Report, the combined methane content of tail gas and natural gas used in the microturbines must be equal 50 percent. Tail gas and natural gas have a methane content of 28 and 75 percent, respectively. Assuming a lower heating value of 259 BTU/scf for tail gas, the Energy Recovery Project would combust 18 MMBTU per day of tail gas and 62 MMBTU per day of natural gas in the proposed microturbines.

### Thresholds of Significance

As stated in Appendix G of the CEQA Guidelines, the significance criteria established by the applicable AQMD or APCD may be relied on to make the above determinations. PCAPCD adopted revised CEQA thresholds of significance for criteria pollutant emissions on October 13, 2016 (PCAPCD 2016b). These new thresholds are supported by PCAPCD's *California Environmental Quality Act Thresholds of Significance Justification Report* released in September 2016 (PCAPCD 2016a), and were used in evaluation of impacts related to the proposed Project. PCAPCD thresholds of significance are the following:

- ▲ a net increase in short-term construction-related emissions of ROG, NO<sub>x</sub>, or PM<sub>10</sub> that exceed mass emissions of 82 pounds per day (lbs/day) in Placer County (PCAPCD 2016a:12);
- ▲ a net increase in long-term operation-related (regional) emissions of ROG and NO<sub>x</sub> that exceed mass emissions of 55 lbs/day and emissions of PM<sub>10</sub> that exceed mass emissions of 82 lbs/day in Placer County (PCAPCD 2016a:12);
- ▲ exposure of sensitive receptors to TAC emissions that would exceed 10 in 1 million for the carcinogenic risk (i.e., the risk of contracting cancer) or a non-carcinogenic Hazard Index of 1 for the maximally exposed individual (PCAPCD 2012:70); and/or
- ▲ a net increase in short-term construction-related or long-term operation-related (regional) emissions of CO that would result in CO concentrations that exceed the 1-hour CAAQS of 20 ppm or the 8-hour CAAQS for the LTAB of 6 ppm.

In addition, according to PCAPCD, a project would result in a considerable contribution to a cumulative impact to air quality if it would result in:

- ▲ a net increase in long-term operation-related (regional) emissions of ROG or NO<sub>x</sub> that exceed 55 lb/day or emissions of PM<sub>10</sub> that exceed 82 lbs/day (PCAPCD 2016a:12).

### 3.3.2 Discussion

**a) Would the project conflict with or obstruct implementation of the applicable air quality plan?**

**Less than significant.** The emission inventories used to develop a region’s air quality attainment plans are based primarily on land use growth patterns, enforcing limits in emissions through BACT requirements, and enforcing other existing PCAPCD rules. Therefore, projects that would result in increases in population or employment growth beyond that projected in regional or community plans could result in increases in VMT above that planned in the air quality plans, further resulting in mobile-source emissions that could conflict with a region’s air quality planning efforts. Also, stationary-source projects that are inconsistent with PCAPCD technology requirements and rules could also conflict with the emission reduction goals in the federal and state attainment plans.

The proposed Project would not result in increases in population or employment beyond those projected in the General Plans of local jurisdictions within the Service Area. Instead, the Project would serve the utility needs identified in those General Plans to accommodate planned growth within the PGWWTP Service Area. The Expansion Project would increase the PGWWTP’s ADWF treatment capacity from 9.5 to 12 mgd.

The Expansion Project would result in new stationary sources of emissions related to the new wastewater treatment processes, boilers, and flare operations. The Expansion Project would be subject to all PCAPCD rules pertaining to new stationary sources, including Rule 250, 401, 501, and 502, which are aimed at maintaining or achieving attainment of the NAAQS in the SVAB. However, this analysis assumes the flare and boilers would have no criteria pollutant controls as a conservative estimate.

**Table 3.3-4 Summary of Modeled Maximum Daily Emissions of Criteria Air Pollutants and Precursors Associated with Expansion Project Operation<sup>1</sup>**

Emissions Source	ROG (lb/day)	NO <sub>x</sub> (lb/day)	PM <sub>10</sub> (lb/day)	PM <sub>2.5</sub> (lb/day)
Mobile Sources <sup>2</sup>	0.0	0.8	0.0	0.0
WWTP Processes <sup>3</sup>	11.4	2.1	<0.1	<0.1
Digester Gas Flare <sup>4</sup>	10.4	11.2	0.0 <sup>5</sup>	0.0 <sup>5</sup>
Natural Gas Boilers <sup>4</sup>	0.5	8.6	0.5	0.2
TOTAL	22.3	22.8	0.5	0.2
PCAPCD Thresholds of Significance	55	55	82	NA
Exceeds Thresholds?	No	No	No	NA

Notes: Amounts may not sum to totals due to rounding. See Appendix B for more details.

1 Operation is assumed to begin in 2020.

2 Accounts for changes in employee commute, elimination of WAS hauling, increases in biosolids hauling, and chemical hauling. Emissions estimated using emission factors from EMFAC2014.

3 The increase in emissions from the expanded WWTP is based on 2014 facility-level emissions report from ARB (ARB 2016d) and scaled by the anticipated change in wastewater volume (7.1 to 12 mgd).

4 Estimated using emission factors from EPA’s AP-42 guidance documentation (EPA 2000).

5 No emission factors were available for this activity and pollutant.

- lb/day = pounds per day
- ROG = reactive organic gases
- NO<sub>x</sub> = oxides of nitrogen
- PM<sub>10</sub> = respirable particulate matter with an aerodynamic diameter of 10 micrometers or less
- PM<sub>2.5</sub> = respirable particulate matter with an aerodynamic diameter of 2.5 micrometers or less
- WWTP = wastewater treatment plant
- NA = not available
- ARB = California Air Resources Board
- PCAPCD = Placer County Air Pollution Control District

Source: ARB 2016d, EPA 2000, PCAPCD 2016a, modeling conducted by Ascent Environmental in 2016.

As shown in Table 3.3-4 above, the Expansion Project would result in maximum daily emissions of 22.3 lb ROG/day, 22.8 lb NO<sub>x</sub>/day, 0.5 lb PM<sub>10</sub>/day, and 0.2 lb PM<sub>2.5</sub>/day and would not exceed applicable air quality thresholds.

The Energy Recovery Project would result in a new stationary source of emissions related to the microturbines. The Energy Recovery Project would be subject to all PCAPCD rules pertaining to new stationary sources, including Rule 250, 401, 501, and 502, which are aimed at maintaining or achieving attainment of the NAAQS in the SVAB.

**Table 3.3-5 Summary of Modeled Maximum Daily Emissions of Criteria Air Pollutants and Precursors Associated with Energy Recovery Project Operation<sup>1</sup>**

Emissions Source	ROG (lb/day)	NO <sub>x</sub> (lb/day)	PM <sub>10</sub> (lb/day)	PM <sub>2.5</sub> (lb/day)
Mobile Sources <sup>2</sup>	2.1	1.4	0.3	0.3
WWTP Processes <sup>3</sup>	11.4	2.1	<0.1	<0.1
Microturbines <sup>4</sup>	0.2	22.9	0.5	0.1
TOTAL	13.8	26.4	0.8	0.4
PCAPCD Thresholds of Significance	55	55	82	NA
Exceeds Thresholds?	No	No	No	NA

Notes: Amounts may not sum to totals due to rounding. See Appendix B for more details.

- 1 Operation is assumed to begin in 2020.
- 2 Accounts for changes in employee commute, elimination of WAS hauling, increases in biosolids hauling, increased hauling of high strength waste, increased chemical hauling, and replacing CNG with a renewable CNG blend in solid waste collection vehicles. Emissions estimated using emission factors from EMFAC2014.
- 3 The increase in emissions from the expanded WWTP is based on 2014 facility-level emissions report from ARB (ARB 2016d) and scaled by the anticipated change in wastewater volume (7.1 to 12 mgd).
- 4 Estimated using emission factors from EPA's AP-42 guidance documentation (EPA 2000).

lb/day	=	pounds per day
ROG	=	reactive organic gases
NO <sub>x</sub>	=	oxides of nitrogen
PM <sub>10</sub>	=	respirable particulate matter with an aerodynamic diameter of 10 micrometers or less
PM <sub>2.5</sub>	=	respirable particulate matter with an aerodynamic diameter of 2.5 micrometers or less
WWTP	=	wastewater treatment plant
WAS	=	waste activated sludge
NA	=	not available
CNG	=	compressed natural gas
mgd	=	million gallons per day
ARB	=	California Air Resources Board

Source: ARB 2016d, EPA 2000, PCAPCD 2016a, modeling conducted by Ascent Environmental in 2016.

As shown in Table 3.3-5 above, the Energy Recovery Project (including the Expansion Project) would result in maximum daily emissions of 13.8 lb ROG/day, 26.4 lb NO<sub>x</sub>/day, 0.8 lb PM<sub>10</sub>/day, and 0.4 lb PM<sub>2.5</sub>/day and would not exceed applicable air quality thresholds. These emissions are less than the maximum emissions under the Expansion Project alone mainly because the Energy Recovery Project would use less natural gas and would not have flaring-related emissions.

Both the Expansion Project by itself and Energy Recovery Project and Expansion Project together, would result in emissions consistent with both the NAAQS and CAAQS attainment plans, based on the Project's consistency with PCAPCD thresholds. Also, the neither the Expansion Project nor the Energy Recovery Project and Expansion Project together would result in any regional population growth beyond what is anticipated by the General Plans of local jurisdictions within the Service Area. Therefore, neither the Expansion Project or

the Energy Recovery Project and Expansion Project together would conflict with or obstruct implementation of any air quality planning efforts. As a result, this impact would be less than significant.

**b) Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?**

As discussed above, modeling was conducted for the Expansion Project by itself and for the Energy Recovery Project and Expansion Project together (referred to as the Energy Recovery Project). The Expansion Project and Energy Recovery Project would both result in emissions of criteria air pollutants and precursors, including ROG, NO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> associated with construction (short-term) and operation (long-term). Short-term construction-related and long-term operational impacts are assessed separately below.

**Short-Term Construction-Related Regional Criteria Air Pollutant and Precursor Emissions**

**Less than significant.** Table 3.3-6 below summarizes the modeled construction-related emissions of criteria air pollutants and ozone precursors for the Expansion Project by construction year. This reflects maximum daily emissions that would occur due to overlapping construction phases within a calendar year. The significance of construction-related air quality impacts was determined by comparing these modeling results with applicable significance thresholds. Refer to Appendix B for detailed modeling input parameters and results.

**Table 3.3-6 Summary of Modeled Maximum Daily Emissions of Criteria Air Pollutants and Precursors Generated during Expansion Project Construction <sup>1</sup>**

Construction Year	ROG (lb/day)	NO <sub>x</sub> (lb/day)	PM <sub>10</sub> (lb/day)	PM <sub>2.5</sub> (lb/day)
2017 <sup>2</sup>	6.7	69.3	15.2	9.4
2018	0.8	6.2	0.5	0.4
2019	1.7	13.2	1.0	0.7
PCAPCD Thresholds of Significance	82	82	82	NA
Exceeds Thresholds?	No	No	No	NA

Notes: Amounts may not sum to totals due to rounding.

1 Modeled using CalEEMod 2016.3.1 (SCAQMD 2016).

2 Construction is assumed to begin in June 2017 and last for approximately 24 months.

lb/day = pounds per day

ROG = reactive organic gases

NO<sub>x</sub> = oxides of nitrogen

PM<sub>10</sub> = respirable particulate matter with an aerodynamic diameter of 10 micrometers or less

PM<sub>2.5</sub> = fine particulate matter with an aerodynamic diameter of 2.5 micrometers or less

See Appendix B for detailed model inputs, assumptions, and Project-specific modeling parameters.

Source: Modeling conducted by Ascent Environmental in 2016 using CalEEMod Version 2016.3.1 (SCAQMD 2016).

Based on the modeling conducted, construction of the Expansion Project would result in maximum daily emissions of approximately 6.7 lb/day of ROG, 69.3 lb/day of NO<sub>x</sub>, 15.2 lb/day of PM<sub>10</sub> and 9.4 lb/day of PM<sub>2.5</sub> starting in 2017. These emissions would be less than PCAPCD-recommended thresholds. The Expansion Project would also apply all feasible dust control measures as required by PCAPCD Rule 228 to reduce fugitive dust generated during construction. Although construction of the Expansion Project would be subject to the requirements under Rule 228, the construction emissions estimates do not account for the dust control measures required by Rule 228. Applying Rule 228 requirements to construction activities would result in PM<sub>10</sub> and PM<sub>2.5</sub> emissions below those presented in Table 3.3-6. Consequently, the Expansion Project would not result in short-term construction-related emissions that violate any air quality standard or contribute substantially to an existing or projected air quality violation.

Table 3.3-7 summarizes the modeled construction-related emissions of criteria air pollutants and ozone precursors for the Energy Recovery Project by construction year. This reflects maximum daily emissions that would occur due to overlapping construction phases of the Energy Recovery Project and overlapping phases with the Expansion Project within a calendar year. The significance of construction-related air quality impacts was determined by comparing these modeling results with applicable significance thresholds. Refer to Appendix B for detailed modeling input parameters and results.

**Table 3.3-7 Summary of Modeled Maximum Daily Emissions of Criteria Air Pollutants and Precursors Generated during Energy Recovery Project Construction <sup>1</sup>**

Construction Year	ROG (lb/day)	NO <sub>x</sub> (lb/day)	PM <sub>10</sub> (lb/day)	PM <sub>2.5</sub> (lb/day)
2017 <sup>2</sup>	6.7	69.3	15.2	9.4
2018	3.0	28.3	3.1	1.6
2019	6.2	54.1	3.6	2.4
PCAPCD Thresholds of Significance	82	82	82	NA
Exceeds Thresholds?	No	No	No	NA

Notes: Amounts may not sum to totals due to rounding.

<sup>1</sup> Modeled using CalEEMod 2016.3.1 (SCAQMD 2016).

<sup>2</sup> Construction is assumed to begin in June 2017 and last for approximately 24 months.

lb/day = pounds per day

ROG = reactive organic gases

NO<sub>x</sub> = oxides of nitrogen

PM<sub>10</sub> = respirable particulate matter with an aerodynamic diameter of 10 micrometers or less

PM<sub>2.5</sub> = fine particulate matter with an aerodynamic diameter of 2.5 micrometers or less

See Appendix B for detailed model inputs, assumptions, and Project-specific modeling parameters.

Source: Modeling conducted by Ascent Environmental in 2016 using CalEEMod Version 2016.3.1 (SCAQMD 2016).

Based on the modeling conducted, construction of the Energy Recovery Project would result in maximum daily emissions of approximately 6.7 lb/day of ROG, 69.3 lb/day of NO<sub>x</sub>, 15.2 lb/day of PM<sub>10</sub> and 9.4 lb/day of PM<sub>2.5</sub> starting in 2017. These emissions would be less than PCAPCD-recommended thresholds. The Energy Recovery Project would also apply all feasible dust control measures as required by PCAPCD Rule 228 to reduce fugitive dust generated during construction. Although project construction would be subject to the requirements under Rule 228, the construction emissions estimates do not account for the dust control measures required by Rule 228. Applying Rule 228 requirements to construction activities would result in PM<sub>10</sub> and PM<sub>2.5</sub> emissions below those presented in Table 3.3-7. Consequently, the Energy Recovery Project would not result in short-term construction-related emissions that violate any air quality standard or contribute substantially to an existing or projected air quality violation.

Therefore, this impact would be less than significant for both the Expansion Project and Energy Recovery Project and Expansion Project together.

#### **Long-Term Operational-Related Regional Criteria Air Pollutant and Precursor Emissions**

**Less than significant.** Operation of the Expansion Project would result in emissions from additional worker commute trips, materials deliveries, biosolids hauling, WWTP process emissions, flaring of digester gas, and combustion of natural gas in boilers. Table 3.3-4, above, summarizes the modeled increase in emissions of criteria air pollutants and ozone precursors that would occur during operation of the Expansion Project.

The significance of operational air quality impacts was determined by comparing these modeling results with applicable significance thresholds. Refer to Appendix B for detailed modeling input parameters and results. Based on the modeling conducted, operation of the Expansion Project would result in an operational emission increase of approximately 22.3 lb ROG/day, 22.8 lb NO<sub>x</sub>/day, 0.5 lb PM<sub>10</sub>/day, and 0.2 lb

PM<sub>2.5</sub>/day. Maximum emissions estimates would be below applicable PCAPCD-recommended significance thresholds. Thus, the Expansion Project would not result in long-term operational emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation.

In addition to the emissions listed above for the Expansion project, operation of the Energy Recovery Project would result in emissions from additional worker commute trips, materials deliveries, hauling of high strength waste, and combustion of natural gas and digester gas derivatives in microturbines and CNG vehicles; however, the emissions associated with flaring digester gas would be eliminated under the Energy Recovery Project. Table 3.3-5, above, summarizes the modeled increase in emissions of criteria air pollutants and ozone precursors that would occur during operation of the Energy Recovery Project, including operation of the Expansion Project.

Based on the modeling conducted, operation of the Energy Recovery Project, including the Expansion Project, would result in an operational emissions increase of approximately 13.8 lb/day of ROG, 26.4 lb/day of NO<sub>x</sub>, 0.8 lb/day of PM<sub>10</sub>, and 0.4 lb/day of PM<sub>10</sub>. Maximum emissions estimates would be below applicable PCAPCD-recommended significance thresholds. Thus, the Energy Recovery Project would not result in long-term operational emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation.

Therefore, this impact would be less than significant for both the Expansion Project and Energy Recovery Project and Expansion Project together.

**c) Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?**

**Less than significant.** The SVAB, including the City of Roseville and the western portion of Placer County, is currently designated as a nonattainment with respect to the NAAQS and CAAQS for ozone and for the CAAQS for PM<sub>10</sub>. Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its very nature, regional air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts.

In developing its thresholds of significance for air pollutants, PCAPCD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified cumulative significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions.

As discussed in the analysis under item b) above, Project-generated emissions, including the Expansion Project by itself and Energy Recovery Project and Expansion Project together, would not exceed PCAPCD's thresholds of significance. PCAPCD's recommended cumulative thresholds are equivalent to their operational thresholds. Therefore, the Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is in non-attainment under the CAAQS or NAAQS. As a result, Project-generated emissions of criteria air pollutants and precursors would not be cumulatively considerable. This would be a less-than-significant impact.

**d) Would the project expose sensitive receptors to substantial pollutant concentrations?**

Several residences are located within 2,000 feet of the Project site. The nearest sensitive receptors are single family homes located approximately 845 feet west of the site. The exposure of these nearby sensitive receptors to substantial air pollutant concentrations during construction and operation of the Project are discussed separately below.

### **Short-Term Construction**

**Less than significant.** Construction-related activities associated with the Expansion Project and Energy Recovery Project and Expansion Project together would result in temporary, short-term emissions of diesel particulate matter (diesel PM) from the exhaust of off-road, heavy-duty diesel equipment for site preparation (e.g., excavating); underground work; equipment installation; and other miscellaneous activities. Particulate exhaust emissions from diesel-fueled engines (i.e., diesel PM) was identified as a TAC by the ARB in 1998. The potential cancer risk from the inhalation of diesel PM, as discussed below, outweighs the potential for all other health impacts (ARB 2003), so diesel PM is the focus of this discussion. Based on the emission modeling conducted and presented in Appendix B, maximum daily emissions of exhaust-related PM<sub>2.5</sub>, considered a surrogate for diesel PM, would not exceed 3.3 lb/day which would occur during simultaneous grading and trenching phases for construction in the later part of 2017.

Although PCAPCD does not have a recommended mass emission threshold for evaluating emissions of PM<sub>2.5</sub>, the dose to which receptors are exposed is the primary factor used to determine health risk (i.e., potential exposure to TAC emission levels that exceed applicable standards). Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for any exposed receptor. Thus, the risks estimated for an exposed individual are higher if a fixed exposure occurs over a longer period of time. According to the Office of Environmental Health Hazard Assessment (OEHHA), health risk assessments, which determine the exposure of sensitive receptors to TAC emissions, should be based on a 30-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the proposed Project (OEHHA 2012:11-3). Consequently, it is important to consider that the use of off-road heavy-duty diesel equipment would be limited to the duration of construction period, which would not exceed 24 months. Also, studies show that diesel PM is highly dispersive from its source (e.g., decrease of 70 percent at 500 feet from the source) (Zhu et al. 2002).

With the nearest sensitive receptors more than 800 feet from on-site construction and considering the highly dispersive properties of diesel PM, the relatively low mass of diesel PM emissions that would be generated during construction, and the relatively short duration of construction activities; construction-related TAC emissions would not expose sensitive receptors to an incremental increase in cancer risk that exceeds 10 in one million or a hazard index greater than 1.0.

As a result, emissions generated during construction of either the Expansion Project or Energy Recovery Project and Expansion Project together would not result in an exceedance of PCAPCD thresholds for risks and hazards. Additionally, the Project would not exceed applicable thresholds with respect to short-term construction emissions, as discussed under b). Thus, the Project would not expose sensitive receptors to substantial pollutant concentrations during construction. This impact would be less than significant.

### **Long-Term Operation**

**Less than significant.** The Expansion Project would include new stationary sources of TAC emissions, including natural gas-fired boilers and digester gas flares, and the Energy Recovery Project would include new stationary sources of TAC emissions, including microturbines. These types of stationary sources, in addition to any other stationary sources that may emit TACs, would be subject to all applicable PCAPCD rules (e.g., Rules 250, 401, 501, and 502). Thus, PCAPCD would analyze the potential for these sources to emit TACs, potentially including the preparation of a detailed health risk assessment. If it is determined that the sources would emit TACs in excess of PCAPCD's applicable significance threshold, T-BACT would be implemented to reduce emissions. If the implementation of T-BACT would not reduce the risk below the applicable threshold, PCAPCD would deny the required permit to operate.

In addition to T-BACT requirements, permits for equipment that emit TACs may also contain conditions required by the national emissions standards for hazardous air pollutants and Airborne Toxic Control Measures promulgated by the EPA and ARB, respectively. In short, a new stationary source of TACs would not receive the authority to construct or permit to operate if it would result in an incremental increase in cancer risk greater than 10 in 1 million at any off-site receptor; and/or an off-site ground-level concentration of

noncarcinogenic TACs generated from either the Expansion Project or Energy Recovery Project and Expansion Project that would result in a Hazard Index greater than 1.

These permitting criteria are identical to PCAPCD's thresholds of significance for TACs generated by stationary sources. Therefore, this impact would be less than significant.

**e) Would the project create objectionable odors affecting a substantial number of people?**

**Less than significant.** The occurrence and severity of odor impacts depend on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptors. Although offensive odors rarely cause physical harm, they may still be very unpleasant, leading to considerable distress and often generating citizen complaints to local governments and regulatory agencies.

Operation of the expanded WWTP would not place receptors substantially closer to existing sources of odors, but would add new permanent odor-generating facilities. For the Expansion Project, these facilities would include new clarifiers, solids thickening building, and digested solids and centrate storage tanks; however, these facilities would be equipped with odor control facilities. In addition, the Energy Recovery Project would result in odors associated with the high strength waste receiving and pre-processing facilities. However, these facilities would be enclosed in buildings with an odor control system. Although the facility's treatment capacity would increase, PCAPCD has not received odor complaints specifically related to current WWTP facility operations; and based on annual on-site inspections, PCAPCD has found odors generated at the existing PGWWTP to be mild. On some occasions PCAPCD found strong odors associated with transport of WAS between the PGWWTP and the Western Regional Sanitary Landfill, mostly along Fiddymont Road (Springsteen, pers. comm. 2016a,b). The Project would reduce these odors because all WAS would be converted to biosolids and WAS would no longer be hauled off-site. There would be an increase in the haul trips associated with biosolids; however, biosolids have an odor similar to topsoil and generally does not have a strong or objectionable odor.

Thus, the Project would not likely result in additional objectionable odors from the expanded WWTP facilities and would eliminate odors associated with WAS transport. Therefore, development of the proposed Project would not expose the nearby existing receptors to new or additional objectionable odors and overall, would reduce odors.

Construction associated with the Project would result in temporary odors from exhaust emissions from onsite diesel equipment, asphalt paving, and the application of architectural coatings. Construction of the Expansion Project would also require cleaning of process tanks that can result in substantial short-term odor; however, cleaning of process tanks is occurring periodically under existing routine maintenance of the PGWWTP and would continue to occur periodically with or without the Project. In addition, such emissions would be intermittent in nature and would dissipate rapidly with increasing distance from the source. Nuisance odors associated with routine maintenance of the PGWWTP were previously addressed in the 1996 Master Plan EIR and were found to be significant and unavoidable under Impact 8-7: Nuisance Odor at Pleasant Grove WWTP.

Implementation of the Project would not involve the construction or operation of any new major odor sources. Thus, based on past maintenance practices and resulting lack of complaints the proposed Project would not be anticipated to result in the exposure of sensitive receptors to objectionable odors. As a result, this impact is expected to be less than significant.

### 3.4 BIOLOGICAL RESOURCES

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

#### 3.4.1 Environmental Setting

The facilities proposed for the Expansion Project would be completely within the boundary of the existing PGWWTP. Lands within the PGWWTP boundary are developed with WWTP facilities, paved areas, or other disturbed areas. Because this area is completely developed and does not contain habitat or sensitive resources, the analysis of biological resources focuses on the Energy Recovery Project area within the larger Southern Expansion Area.

A reconnaissance-level survey of the Energy Recovery Project area was conducted by an Ascent biologist on August 9, 2016, to describe the existing conditions and identify the potential occurrence of sensitive biological resources, including special-status plant and wildlife species and sensitive natural communities. The Energy Recovery Project area was surveyed on foot. Common vegetation and wildlife species observed

were recorded and habitat vegetation communities were assessed according to California Department of Fish and Wildlife's (CDFW's) List of Vegetation Alliances and Associations (CDFG 2010).

The Southern Expansion Area, including the Energy Recovery Project area, consists entirely of annual grassland, which varies from open to dense vegetation, with 10 to 25 percent bare ground throughout, and consists of a mix of native and non-native grasses and forbs. The area is regularly disked to maintain the site in "development ready" condition. The undulating topography ranges in elevation from approximately 90 to 110 feet above mean sea level. Dominant species include wild oat (*Avena fatua*), Medusa head (*Elymus caput-medusae*), Italian rye grass (*Festuca perennis*), soft chess (*Bromus hordeaceus*), spikeweed (*Centromadia fitchii*), and narrow tarplant (*Holocarpha virgata*). Other plant species observed include valley tassels (*Castilleja attenuata*), silver hairgrass (*Aira caryophyllea*), little quaking grass (*Briza minor*), yellow star thistle (*Centaurea solstitialis*), and Spanish lotus (*Acmispon americanus*). There is one tree, a willow (*Salix* sp.), along the northeast border of the Energy Recovery Project area.

A row of small redwood trees (*Sequoia sempivirons*) planted as landscaping for the PGWWTP are located along the west and south property borders of the Southern Expansion Area.

Common wildlife species observed during the survey include black-tailed jack rabbit (*Lepus californicus*), house finch (*Haemorhous mexicanus*), and American crow (*Corvus brachyrhynchos*). Coyote (*Canus latrans*) scat and ground squirrel (*Otospermophilus beecheyi*) burrows were also observed during the survey.

The Project site is surrounded by mostly undeveloped industrial and recreation designated land that currently supports annual grassland and serves as a buffer between the existing PGWWTP and surrounding residential developments.

## SPECIAL-STATUS SPECIES

Special-status species are plants and animals in the following categories:

- ▲ officially listed by California or the federal government as endangered, threatened, or rare;
- ▲ a candidate for state or federal listing as endangered, threatened, or rare;
- ▲ taxa (i.e., taxonomic category or group) that meet the criteria for listing, even if not currently included on any list, as described in California Code of Regulations (CCR) Section 15380 of the State CEQA Guidelines;
- ▲ species identified by CDFW as Species of Special Concern;
- ▲ species listed as Fully Protected under the California Fish and Game Code;
- ▲ species afforded protection under local planning documents; and
- ▲ plants considered by the CDFW to be "rare, threatened, or endangered in California" and assigned a California Rare Plant Rank (CRPR). The CDFW system includes five rarity and endangerment ranks for categorizing plant species of concern, which are summarized as follows:
  - CRPR 1A - Plants presumed to be extinct in California;
  - CRPR 1B - Plants that are rare, threatened, or endangered in California and elsewhere;
  - CRPR 2 - Plants that are rare, threatened, or endangered in California but more common elsewhere;
  - CRPR 3 - Plants about which more information is needed (a review list); and
  - CRPR 4 - Plants of limited distribution (a watch list).

Prior to the field survey, information on sensitive biological resources previously recorded in the Project vicinity was collected through a search of the following databases:

- ▲ CDFW California Natural Diversity Database (CNDDDB) for a 3-mile radius around the project site.
- ▲ California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants for the nine U.S. Geological Service (USGS) quadrangles (quads) that surround the project site (CDFW 2016, CNPS 2016).

A list of special-status plant and wildlife species was compiled from CNPS and CNDDDB queries and is presented in Table 3.4-1. This table describes the common and scientific names of each of the species identified, along with their legal status and a brief assessment of the likelihood that the species would occur on the Project site.

There are six special-status wildlife species that are known to occur within a 3-mile radius of the Project site. Of the six species, two (vernal pool fairy shrimp [*Branchinecta lynchi*] and western spadefoot [*Spea hammondi*]) were eliminated from further analysis because both species are associated with vernal pool habitat, which is not present on the Project site. In addition, tricolored blackbird (*Agelaius tricolor*) was eliminated from further consideration because suitable nesting and foraging habitat for this species is not present on the Project site. The remaining three species are Swainson’s hawk, white-tailed kite, and burrowing owl.

The nearest known CNDDDB occurrences of Swainson’s hawk and white-tailed kite are approximately 1.6 and 2.7 miles to the east, respectively. Annual grassland within the Southern Expansion Area could provide foraging habitat for these species; however, suitable nesting habitat is not present because there are no trees of adequate size to support nest structures for Swainson’s hawk and white-tailed kite.

The Southern Expansion Area provides potential nesting habitat for burrowing owls in areas of annual grassland that are not densely vegetated. Ground squirrel burrows, which can be used as habitat for burrowing owls, were observed near the northern boundary of the Southern Expansion Area. The nearest known CNDDDB occurrence for burrowing owl is approximately 0.2-mile southeast of the Southern Expansion Area.

Nine special-status plant species are known to occur within the Pleasant Grove USGS quad and the nine surrounding quads. It is unlikely that any of these species would occur within the Southern Expansion Area for one or more of the following reasons: the species are associated with habitats (such as vernal pool and freshwater marsh) that are not within the Southern Expansion Area; the Southern Expansion Area is outside the elevational range for the species being evaluated; or microhabitat or soil conditions are not likely to support the species (Table 3.4-1).

**Table 3.4-1 Potential for Sensitive Species to Occur on the Project site**

Common Name and Scientific Name	Federal Status <sup>1</sup>	State Status <sup>1</sup>	California Rare Plant Rank <sup>1</sup>	Potential to Occur within the Southern Expansion Area
<b>INVERTEBRATES</b>				
Vernal pool fairy shrimp ( <i>Branchinecta lynchi</i> )	Threatened	None		None. Vernal pool habitat is not present within the Southern Expansion Area.
<b>AMPHIBIANS</b>				
Western spadefoot ( <i>Spea hammondi</i> )	None	SSC		None. Vernal pool habitat required for breeding, and aestivation, is not present within the Southern Expansion Area.
<b>BIRDS</b>				
Tricolored blackbird ( <i>Agelaius tricolor</i> )	None	SSC		None. No suitable nesting and foraging habitat within the Southern Expansion Area.
Burrowing owl ( <i>Athene cunicularia</i> )	None	SSC		Could occur. Areas of sparsely vegetated annual grassland and ground squirrel burrows were observed on the project site during the reconnaissance survey. The nearest known occurrence (#2115), presumably extant, is approximately 0.15 mile southeast of the Southern Expansion Area.

**Table 3.4-1 Potential for Sensitive Species to Occur on the Project site**

Common Name and Scientific Name	Federal Status <sup>1</sup>	State Status <sup>1</sup>	California Rare Plant Rank <sup>1</sup>	Potential to Occur within the Southern Expansion Area
Swainson's hawk ( <i>Buteo swainsoni</i> )	None	Threatened	1B.2	Could forage onsite but no suitable breeding habitat is present. Suitable foraging habitat is present in the annual grassland on the project site. Suitable nesting habitat is present along Pleasant Grove Creek, approximately 0.78 mile to the north. The nearest known CNDDDB occurrence is 1.57 miles east of Southern Expansion Area.
White-tailed kite ( <i>Elanus leucurus</i> )	None	FP	1B.2	Could forage onsite but no suitable breeding habitat is present. Suitable foraging habitat is present in the annual grassland on the project site. The nearest known CNDDDB occurrence is 2.65 miles east of the Southern Expansion Area.

**PLANTS**

Big-scale balsamroot ( <i>Balsamorhiza macrolepis</i> )	None	None	1B.2	Unlikely to occur. Suitable annual grassland habitat is present within the Southern Expansion Area; however, the elevation of the project site is approximately 200 feet below the lowest known elevation for this species. Additionally, this species is very rare in the region; there are only two CNDDDB occurrences from Placer County that were recorded more than 50 years ago.
Hispid bird's-beak ( <i>Chloropyron molle</i> ssp. <i>Hispidum</i> )	None	None	1B.1	Unlikely to occur. Alkaline soils are not present within the Southern Expansion Area.
Dwarf downingia ( <i>Downingia pusilla</i> )	None	None	2B.2	Unlikely to occur. Vernal pool habitat is not present within the Southern Expansion Area.
Boggs Lake hedge-hyssop ( <i>Gratiola heterosepala</i> )	None	Endangered	1B.2	Unlikely to occur. Vernal pool habitat is not present within the Southern Expansion Area.
Ahart's dwarf rush ( <i>Juncus leiospermus</i> var. <i>ahartii</i> )	None	None	1B.1	Unlikely to occur. Requires mesic soils and is very rare; only 10 occurrences recorded in the CNDDDB; only one extirpated occurrence in the 9 quads surrounding the Southern Expansion Area.
Red Bluff dwarf rush ( <i>Juncus leiospermus</i> var. <i>leiospermus</i> )	None	None	1B.2	Unlikely to occur. Vernal pool and vernal mesic habitat is not present within the Southern Expansion Area.
Legenere ( <i>Legenere limosa</i> )	None	None	1B.1	Unlikely to occur. Vernal pool habitat is not present within the Southern Expansion Area.
Pincushion navarretia ( <i>Navarretia myersii</i> ssp. <i>Myersii</i> )	None	None	1B.1	Unlikely to occur. Vernal pool habitat is not present within the Southern Expansion Area.
Sanford's arrowhead ( <i>Sagittaria sanfordii</i> )	None	None	1B.2	Unlikely to occur. Suitable aquatic habitat, such as marshes and swamps, is not present within the Southern Expansion Area.

**Notes:**

<sup>1</sup> Status definitions:

**Federal:**

Threatened (legally protected under ESA)

**State:**

Endangered (legally protected under CESA)

Threatened (legally protected under CESA)

FP Fully Protected (legally protected under California Fish and Game Code)

SSC Species of Special Concern (protected under CEQA, but not legally protected under CESA)

**California Rare Plant Rank (CRPR):**

1B Plant species considered rare or endangered in California and elsewhere (protected under CEQA, but not legally protected under ESA or CESA)

2 Plant species considered rare or endangered in California but more common elsewhere (protected under CEQA, but not legally protected under ESA or CESA)

**CRPR Extensions:**

.1 Seriously endangered in California (>80% of occurrences are threatened and/or high degree and immediacy of threat)

.2 Fairly endangered in California (20 to 80% of occurrences are threatened)

.3 Not very endangered in California

## WETLANDS AND WATERS OF THE U.S.

There are no wetlands currently on the site, with the exception of one potential seasonal wetland that is likely a remnant of a larger wetland that was not completely filled under the Section 404 permit previously issued for development of the Southern Expansion Area (see Regulatory History section below for more detail).

## REGULATORY HISTORY

Development of the entire Project site (including the existing PGWWTP and Southern Expansion Area) and fill of wetlands and waters of the United States onsite have been authorized by U.S. Army Corps of Engineers (USACE) Section 404 federal Clean Water Act (CWA) permits.

Development and fill of wetlands and waters of the United States within the “fence-line” boundary of the existing PGWWTP was covered under a Nationwide Permit 26 authorization letter (No. 199800481) issued on December 4, 1998 for construction of the existing PGWWTP. Mitigation credits were purchased to mitigate for impacts to jurisdictional waters. Consultation under Section 7 of the federal Endangered Species Act (ESA) for vernal pool fairy shrimp and vernal pool tadpole shrimp and their critical habitat was also conducted in support of this Nationwide Permit. U.S. Fish and Wildlife Service (USFWS) issued a Biological Opinion (BO) and exemption for incidental take for direct and indirect effects to listed species on May 25, 1999. All conservation measures and Reasonable and Prudent Measures (RPMs) from the BO were implemented, including the purchase of vernal pool creation and preservation credits in 1999 and consultation with USFWS for Phase II of the PGWWTP.

Development and fill of wetlands and waters of the United States within the Southern Expansion Area, was covered under the Section 404 CWA individual permit for the *West Roseville Specific Plan*. The Section 404 individual permit (SPK-2002-00666) was issued for the *West Roseville Specific Plan* on October 21, 2004. An extension of this permit was issued on December 30, 2015, to allow additional time to complete the work covered under the permit. Impacts to jurisdictional waters has been mitigated through on-site mitigation within the *West Roseville Specific Plan* area and purchase of mitigation credits. Section 7 consultation for vernal pool fairy shrimp and vernal pool tadpole shrimp and their critical habitat was also conducted in support of the *West Roseville Specific Plan* Section 404 permit. USFWS issued a BO for this Specific Plan, including the Southern Expansion Area, on March 10, 2005. The BO concluded that this take was not likely to result in jeopardy of these species. The conservation measures from the BO were implemented and vernal pool creation and preservation credits were purchased in 2015. The BO included the RPMs to minimize direct and indirect impacts where vernal pool habitats could be avoided or preserved within the larger *West Roseville Specific Plan Area*. The RPMs from the BO do not apply to the Southern Expansion Area because vernal pool habitats have been filled and the small remnant seasonal wetland would be filled under the conditions of the Section 404 permit.

### 3.4.2 Discussion

- a) **Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?**

#### Expansion Project

**No impact.** The Expansion Project facilities would be within the “fence-line” boundary of the existing PGWWTP. As described above, this area is completely developed or disturbed and there is no habitat for sensitive or special-status species present. Therefore, development of the Expansion Project facilities would have no impact on sensitive or special-status species.

**Energy Recovery Project**

**Less than significant with mitigation.** There are no trees within the Southern Expansion Area, and the rows of redwoods along the property border to the south and west are too small to provide suitable habitat for raptors, including Swainson's hawk and white-tailed kite. The nearest oak trees that could provide suitable habitat for nesting raptors are 0.25-mile northeast of the Southern Expansion Area. Therefore, Project-related construction is not likely to disturb nesting raptors that may be nesting in those trees or affect nesting success.

Approximately 2.5 acres of annual grassland would be developed by the Energy Recovery Project. The loss of approximately 2.5 acres of grassland would not substantially reduce the amount of foraging habitat for Swainson's hawk and white-tailed kite in the Project vicinity. In addition, the Southern Expansion Area is within the planning area for the *West Roseville Specific Plan* and all wetland and grassland impacts, including loss of Swainson's hawk and white-tailed kite foraging habitat, have been evaluated and mitigated for in the EIR for the *West Roseville Specific Plan* (City of Roseville 2004).

Annual grassland within the Southern Expansion Area could provide foraging and nesting habitat for burrowing owl. Burrowing owls were not observed on the site during the reconnaissance survey, but if they nest on the site during Project construction, ground-disturbing activities during the burrowing owl breeding season (February–August) could result in nest abandonment and the mortality of eggs and chicks. Although the loss of 2.5 acres of burrowing owl foraging habitat would not be substantial in relation to the total available foraging habitat in the surrounding area, the loss of burrowing owl nest sites or individuals would be a significant impact.

**Mitigation Measure 3.4-1 (Implement *West Roseville Specific Plan* EIR Mitigation Measure 4.7-6 Avoid Nesting Sites)**

The *West Roseville Specific Plan* EIR includes Mitigation Measure 4.7-6 Avoid Nesting Sites. This mitigation measure addresses potential impacts to fully protected bird and raptor species. The only protected bird species that has the potential to be affected by the Energy Recovery Project is burrowing owl. Therefore, those requirements listed under Mitigation Measure 4.7-6 that are not applicable to the Project have been omitted below:

- (b) Prior to the beginning of mass grading, including grading for major infrastructure improvements, during the period between February 15 and August 30, all trees and potential burrowing owl habitat within 350 feet of grading or earthmoving activity shall be surveyed for active raptor nests or burrows by a qualified biologist no more than 30 days prior to disturbance. If active raptor nests or burrows are found, and the site is within 350 feet of potential construction activity, a fence shall be erected around the tree or burrow(s) at a distance of 350 feet, depending on the species, from the edge of the canopy to prevent construction disturbance and intrusions on the nest area. The appropriate buffer shall be determined by the City in consultation with CDFW.
- (c) No construction vehicles shall be permitted within restricted areas (i.e., raptor protection zones), unless directly related to the management or protection of the legally protected species.
- (d) In the event that a nest is abandoned, despite efforts to minimize disturbance, and if the nestlings are still alive, the City shall contact CDFW and, subject to CDFW approval, fund the recovery and hacking (controlled release of captive reared young) of the nestling(s).
- (f) The City, in consultation with CDFW, shall conduct a pre-construction survey within the phases of the project site that are scheduled for construction activities. The survey shall be conducted by a qualified biologist to determine if burrowing owls are occupying the project site. The survey shall be conducted no more than three weeks prior to grading of the project site.

If the above survey does not identify burrowing owls on the project site, then no further mitigation would be required. However, should burrowing owls be found on the project site, the following measures shall be required.

- (g) The City shall avoid all potential burrowing owl burrows that may be disturbed by project construction during the breeding season between February 15 and August 30 (the period when the nest burrows are typically occupied by adults with eggs or young). Avoidance shall include the establishment of a 350-foot diameter non-disturbance buffer zone around any occupied burrows. The buffer zone shall be delineated by highly visible temporary construction fencing. Disturbance of any occupied burrows shall only occur outside of the breeding season (August 30 through February 15).
- (h) Based on approval by CDFW, preconstruction and nonbreeding season exclusion measures may be implemented to preclude burrowing owl occupation of the project site prior to project-related disturbance (such as grading). Burrowing owls may be passively excluded from burrows in the construction area by placing one-way doors in the burrows according to current CDFW protocol. The one-way doors must be in place for a minimum of three days. All burrows that may be occupied by burrowing owls, regardless of whether they exhibit signs of occupation, must be cleared. Burrows that have been cleared through the use of one-way doors shall then be closed or backfilled to prevent owls from entering the burrow. The one-way doors shall not be used more than two weeks before construction to ensure that owls do not recolonize the area of construction.

#### **Significance after Mitigation**

Implementation of Mitigation Measure 3.4-1 would reduce impacts on burrowing owl to a **less-than-significant** level because it would prevent Project-related disturbance during the breeding season and would reduce the likelihood of nest abandonment and loss of eggs or young.

**b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?**

**No impact.** No riparian vegetation or sensitive natural communities occur within the Project site. Therefore, the proposed Project would not result in adverse effects on any riparian habitat or other sensitive natural community identified in local or regional plans, policies or regulations or by CDFW or USFWS.

**c) Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?**

**No impact.** There are no wetlands or waters of the U.S. located within the “fence-line” boundary of the PGWWTP. Furthermore, former wetlands located within the Southern Expansion Area have been filled (as permitted) as a result of minor grading and annual maintenance disking. One small, potential seasonal wetland was noted during field surveys conducted for the Project in the northwest corner of the Southern Expansion Area. This area and any other remnant wetlands within the Southern Expansion Area are permitted for filling in accordance with the recently modified and reissued *West Roseville Specific Plan 404* Permit (December 30, 2015) (SPK 2002-00666). All mitigation credits have been purchased as required by the reissued Section 404 Permit (Appendix C). Therefore, no impact would occur that would result in a substantial adverse effect to federally protected wetlands.

**d) Would the project 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?**

**No impact.** Wildlife corridors are features that provide connections between two or more areas of habitat that would otherwise be isolated and unusable. Often drainages, creeks, or riparian areas are used by wildlife as movement corridors as these features can provide cover and access across a landscape. Pleasant

Grove Creek, located 0.4-mile north of the site is the nearest wildlife corridor. Development within the Project site would not affect Pleasant Grove Creek or otherwise interfere with biological connectivity between the surrounding annual grassland and Pleasant Grove Creek. Therefore, the proposed Project would not impede wildlife movement and no impact would occur.

**e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?**

**No impact.** Native oak trees in the City of Roseville are protected by City's Tree Preservation Ordinance (Roseville Municipal Code Chapter 19.66). There are no oaks trees within the Project site. In addition, the Project would not require any tree removal. Therefore, the proposed Project would not conflict any local policies or ordinances protecting trees and no impact would occur.

**f) Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?**

**No impact.** The Project site is part of the Civic and Resource Protection Zone and within the Public/Quasi-Public District applied to land intended for water treatment plants, according to the Zoning Ordinance (Title 19 of the Roseville Municipal code) for the City of Roseville (City of Roseville 1996a). The Project would not result in a change to land use or land use designation. Mitigation Measure 3.4-1 would reduce any impacts to burrowing owl to a less-than-significant level and therefore the proposed Project would not conflict with policies that address the conservation of natural resources outlined in the Open Space and Conservation Element of the City General Plan. Placer County is in the process of developing the Placer County Conservation Plan (PCCP), which will serve as a Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP) for development within the county. The City has an existing memorandum of understanding with USFWS and is not participating in the PCCP. Therefore, there are no HCP/NCCPs that are applicable to the Project site. There would be no impact.

### 3.5 CULTURAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>V. Cultural Resources. Would the project:</b>				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Disturb any human remains, including those interred outside of dedicated cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### 3.5.1 Environmental Setting

The primary source of information for this section is the Cultural Resources Inventory and Effects Assessment for the City of Roseville Pleasant Grove Wastewater Treatment Plant Project (Natural Investigations Company 2016). A confidential records search for the Project site was conducted in July 2016 North Central Information Center (NCIC) at California State University, Sacramento. The records searched included the Project site and a 0.5-mile buffer area. The records search at the NCIC indicates ten prior studies have been completed within the 0.5-mile search radius. Two of these previous studies included the entirety of the Project site. The records search at the NCIC indicates no cultural resources have been previously recorded within the Project site, while 12 cultural resources are mapped within the 0.5-mile search radius. The 12 known resources include one prehistoric site, two historic-era archaeological sites associated with the Fiddymment Ranch, five historic-era resources with assorted debris, one dirt road, one barn, and two historic-era isolated finds. The Fiddymment Ranch Main Complex, was listed in the National Register of Historic Places (NRHP) in 2010. In addition, Natural Investigations Company conducted a pedestrian survey within the Area of Potential Effects (APE) on August 2, 2016, using intensive-level transect spacing in undeveloped land (20.5 acres) (within the Southern Expansion Area) and a cursory-level survey in the existing PGWWTP facility completed in 2003 (110 acres).

A Project description and maps were sent to the Native American Heritage Commission (NAHC). The purpose was to request a search of the NAHC’s sacred lands file and request a list of Native American contacts for the Project area. The NAHC responded on August 12, 2016, stating the sacred land file failed to indicate the presence of Native American traditional cultural properties in the immediate Project vicinity. Each of the four Native American individuals from three tribes provided by the NAHC were contacted by letter dated August 15, 2016, requesting any information regarding sacred lands or other heritage sites that might be affected by the proposed Project. If no response was received, follow-up telephone calls were made on August 29, 2016. To date, no responses have been received from the contact list and messages have been left on voice mail.

- ▲ Shingle Springs Band of Miwok Indians, Nicholas Fonseca, Chairperson: unavailable on August 29, 2016; left voice mail.

- ▲ T-si Akim Maidu, Grayson Coney, Cultural Director: unavailable on August 29, 2016; left voice mail.
- ▲ T-si Akim Maidu, Don Ryberg, Chairperson: unavailable on August 29, 2016; left voice mail.
- ▲ United Auburn Indian Community of the Auburn Rancheria, Gene Whitehouse, Chairperson: Mr. Whitehouse was unavailable on August 29, 2016; left voice mail.

## PALEONTOLOGICAL SETTING

Significant nonrenewable vertebrate and invertebrate fossils and unique geologic units have been documented throughout California. The fossil-yielding potential of a particular area is highly dependent on the geologic age and origin of the underlying rocks. Paleontological potential refers to the likelihood that a rock unit will yield a unique or significant paleontological resource. All sedimentary rocks, some volcanic rocks, and some low-grade metamorphic rocks have potential to yield paleontological resources. Depending on location, the paleontological potential of subsurface materials generally increases with depth beneath the surface, as well as with proximity to known fossiliferous deposits.

Pleistocene or older (older than 11,000 years) continental sedimentary deposits are considered as having a high paleontological potential while Holocene-age deposits (less than 10,000 years old) are generally considered to have a low paleontological potential because they are geologically immature and are unlikely to have fossilized the remains of organisms. Metamorphic and igneous rocks have a low paleontological potential, either because they formed beneath the surface of the earth (such as granite), or because they have been altered under high heat and pressures, chaotically mixed or severely fractured. Generally, the processes that form igneous and metamorphic rocks are too destructive to preserve identifiable fossil remains.

The Project is located in the Great Valley geomorphic province, consisting of the central part of California between the Coast Range and the Sierra Nevada. The Great Valley is an alluvial plain that is approximately 50 miles wide and 400 miles long where sediment has been deposited almost continually for approximately 160 million years. The Project site is located in the northern part of the Great Valley, which is drained by the Sacramento River (California Geological Survey [CGS] 2002). Geology in the area consists of transitional formations between alluvial deposits of the central valley and volcanic material of the Sierra Nevada. Subsurface conditions are mapped by the California Geological Survey as Miocene nonmarine sandstone, shale, siltstone, conglomerate, and breccia (DOC 1981) from Pleistocene-age alluvial sediments of the Middle Unit of the Riverbank Formation. Riverbank Formation sediments consist of weathered reddish gravel, sand, and silt that form alluvial terraces and fans. Estimates place the age of the formation between 450,000 and 130,000 years before present. A search of the University of California Museum of Paleontology's (UCMP) database was conducted on August 4, 2016. The database did not list any paleontological resources from the Riverbank Formation (UCMP 2016).

## REGIONAL PREHISTORY

With the timeframes adjusted for modern calibration curves for radiocarbon dates, the chronological sequence for the Central Valley is: Paleo-Indian (11,500–8,550 cal [calibrated] B.C.), Lower Archaic (8,550–5,550 cal B.C.), Middle Archaic (5,550–550 cal B.C.), Upper Archaic (550 cal B.C.–cal A.D. 1,100), and Emergent or Late Prehistoric Period (cal A.D. 1,100–Historic Contact). There is little evidence of the Paleo-Indian and Lower Archaic periods in the Central Valley. As shown by geoarchaeological studies, large segments of the Late Pleistocene landscape throughout the central California lowlands have been buried or removed by periodic episodes of deposition or erosion.

The archaeological evidence that is available for the Paleo-Indian Period is comprised primarily by basally thinned, fluted projectile points. These points are morphologically similar to the well-dated Clovis points found elsewhere in North America. In the Central Valley, only three archaeological localities (Merced County, Tracey Lake in San Joaquin County, and Tulare Lake basin in Kings County) contain fluted points, which were

recovered at each from remnant features of the Pleistocene landscape. In the Central Valley, the Lower Archaic Period is mainly represented by isolated finds as the early landscape was buried by natural alluvial fan and floodplain deposition. Cultural material dating to this period has been found at only one site in the Central Valley proper. Although abundant milling slabs and handstones have been recovered from Lower Archaic Period foothill sites in eastern Contra Costa County and Calaveras County, no milling tools or plant remains have been found at the valley floor site.

The cultural framework subsequent to the Paleo-Indian and Lower Archaic periods is further divided into three regionally based “patterns.” Specific to the Central Valley prehistory and the current Project region, the regionally based patterns are the Windmill, Berkeley, and Augustine. The patterns mark changes in distinct artifact types, subsistence orientation, and settlement patterns, which began circa 5,550 cal B.C. and lasted until historic contact in the early 1800s.

### **Middle Archaic Period/Windmill Pattern (5,550–550 cal B.C.)**

For the first 3,000 years of the Middle Archaic, archaeological sites on the valley floor are relatively scarce, in part because of natural geomorphic processes, unlike the foothills where a number of buried sites have been found. The archaeological record in the valley and foothills indicates the subsistence system during this period included a wide range of natural resources that indicate people followed a seasonal foraging strategy. Projectile points with a triangular blade and contracting stems are common at Windmill Pattern sites. The presence of milling implements (grinding slabs, handstones, and mortar fragments) indicate acorns or seeds were an important part of the Middle Archaic diet. The variety of artifacts recovered from Windmill Pattern sites includes shell beads, ground and polished charmstones, and bone tools, as well as impressions of twined basketry. Baked clay items include pipes, discoids, and cooking “stones” as well as the net sinkers. The presence of an established trade network is indicated by the recovery of *Olivella* shell beads, obsidian tools, and quartz crystals. Obsidian sources during the Middle Archaic included quarries in the North Coast Ranges, eastern Sierra, and Cascades.

### **Upper Archaic Period/Berkeley Pattern (550 cal B.C.–cal A.D. 1,100)**

Excavated archaeological sites of this period signal an increase in mortars and pestles, as well as archaeobotanical remains, accompanied by a decrease in slab milling stones and handstones. Large, mounded villages that developed around 2,700 years ago in the Delta region included accumulations of habitation debris and features, such as hearths, house floors, rock-lined ovens, and burials. The remains of a variety of aquatic resources in the large shell midden/mounds that developed near salt or fresh water indicate exploitation of shellfish was relatively intensive. Berkeley Pattern artifact assemblages are also characterized by *Olivella* shell beads, *Haliotis* ornaments, and a variety of bone tool types. Mortuary practices continue to be dominated by interment, although a few cremations have been discovered at sites dating to this period. Trade networks brought obsidian toolstone to the Central Valley from the North Coast Ranges and the east side of the Sierra Nevada Range.

### **Late Prehistoric Period/Augustine Pattern (cal A.D. 1,100–Historic Contact)**

The comprehensive archaeological record for this period shows an increase in the number of archaeological sites in the lower Sacramento Valley/Delta region, as well as an increase in the number and diversity of artifacts. The Late Prehistoric Period was shaped by a number of cultural innovations, such as the bow and arrow and more elaborate and diverse fishing technology, as well as an elaborate social and ceremonial organization. During the Late Prehistoric Period, numerous villages were established along the valley floor sloughs and river channels and along the foothills sidestreams. The increase in sedentism and population growth led to the development of social stratification, with an elaborate social and ceremonial organization.

## **ETHNOGRAPHY**

The proposed Project is located in lands historically occupied by the Nisenan (also known as the Southern Maidu). Prior to Euro-American contact, Nisenan territory included the southern extent of the Sacramento Valley, east of the Sacramento River between the North Fork Yuba River and Cosumnes Rivers on the north

and south, respectively, and extended east into the foothills of the Sierra Nevada Range. Neighboring groups included the Plains Miwok on the south, Southern Patwin to the west across the Sacramento River beyond the Yolo Basin, and Konkow and Maidu to the north.

Ethnographic Nisenan established central villages and smaller satellite villages along the main watercourses in their territories. The semi-permanent or winter villages, as well as seasonally occupied campsites were used at various times during the seasonal round of subsistence activities associated with hunting, fishing, and gathering plant resources. Like the majority of Native Californians, the Nisenan relied on acorns as a staple food, which were collected in the fall and then stored in granaries. These seasonally mobile hunter-gatherers also relied on a wide range of abundant natural resources that were available in their territories, including: pronghorn antelope, deer, tule elk cottontails, salmon, pine nuts, and hazelnuts. Foods were processed with a variety of tools, such as bedrock mortars, cobblestone pestles, and anvils. Additional tools and implements included knives, leaching baskets and bowls, and woven strainers.

The traditional culture and lifeways of the Nisenan who inhabited the fertile plains between Sacramento and the Sierra foothills, were disrupted beginning in the early 1800s. Although Spanish explorers entered Nisenan territory as early as 1808, there is no record of the forced movement of Nisenan to the missions. During the Mexican period, native peoples were affected by land grant settlements and decimated by foreign disease epidemics that swept through the densely populated Central Valley. An epidemic that swept the Sacramento Valley in 1833 caused the death of an estimated 75 percent of the Valley Nisenan population, wiping out entire villages.

In the heart of Nisenan territory, the discovery of gold in 1848 at Sutter's Mill on the American River near Coloma had a devastating impact on the remaining Nisenan, as well as other groups of Native Americans in the Central Valley and along the Sierra Nevada foothills. By 1850, with their lands, resources and way of life being overrun by the steady influx of non-native people during the Gold Rush, surviving Nisenan retreated to the foothills and mountains or labored for the growing ranching, farming, and mining industries. Nisenan descendants reside on the Auburn, Berry Creek, Chico, Enterprise, Greenville, Mooretown, Shingle Springs, and Susanville rancherias, as well as on the Round Valley Reservation.

## REGIONAL HISTORY

Post-contact history for the State of California generally is divided into three specific periods: Spanish Period (1769–1822), Mexican Period (1822–1848), and American Period (1848–present). The Spanish expeditions into the Central Valley in 1806 and 1808 led by Lieutenant Gabriel Moraga explored along the main rivers, including the American, Calaveras, Cosumnes, Feather, Merced, Mokelumne, Sacramento, San Joaquin, and Stanislaus. The last Spanish expedition into California's interior was led by Luis Arguello in 1817 and traveled up the Sacramento River, past the future site of the City of Sacramento to the mouth of the Feather River, before returning to the coast.

After the end of the Mexican Revolution (1810–1821) against the Spanish crown, the Mexican Period is marked by an extensive era of land grants, most of which were in the interior of the state, as well as by exploration by American fur trappers west of the Sierra Nevada Mountains. The largest land grants in the Sacramento Valley were awarded to John Sutter who had become a Mexican citizen. In 1839, he founded a trading and agricultural empire that was headquartered at Sutter's Fort in Sacramento. Between 1830 and 1833, and again in 1837, diseases introduced by the non-indigenous explorers, trappers, and settlers, as well as relocation to the missions, military raids, and settlement by non-native groups, decimated native Californian populations, communities, and tribes in the Sacramento and San Joaquin valleys.

The American Period was initiated in 1848 with the signing of the Treaty of Guadalupe Hidalgo, which ended the Mexican–American War (1846–1848), and California became a territory of the United States. Gold was discovered at Sutter's Mill on the American River in Coloma the same year, and by 1849, nearly 90,000 people had journeyed to the gold fields. In 1850, largely as a result of the Gold Rush, California became the thirty-first state. Four years later, the bustling boomtown of Sacramento became the state capital. In contrast

to the economic boom and population growth that enabled statehood, the loss of land and territory (including traditional hunting and gathering locales), malnutrition, starvation, and violence further contributed to the decline of indigenous Californians in the Central Valley and all along the Sierra Nevada foothills.

## LOCAL HISTORY

Placer County was organized in 1851 from parts of neighboring Sutter and Yuba counties, and named after its principal economy at that time, placer mining. The City of Auburn, one of the earliest mining towns in California, was designated the seat of justice when the county was created, and continues to be the county seat today.

The earliest settlers in the general Project vicinity arrived in the late 1840s, as miners poured into the region in search of placer deposits. By the mid-1850s the area was sparsely settled and dotted with small-scale ranches. By the mid-1860s, the construction and development of the railroad industry played a significant role in the region's development. The tracks of the Central Pacific Railroad (later Southern Pacific Railroad [SPRR]) reached Roseville and Rocklin in 1864. Roseville prospered as a principal rail head that provided the frontier towns with goods and services. When the SPRR moved its major locomotive terminal from Rocklin to Roseville in 1908, that town expanded to one of the largest railroad centers in the country. The City was incorporated 3 years after the SPRR moved its facilities to Roseville.

The Boutwell-Dunlap-Kaseberg Ranch and the Fiddymment Ranch, located east of the existing PGWWTP, are among the earliest farms and ranches in this region. Stephen Boutwell acquired 10,500 acres in 1856 and used that acreage for a sheep ranch along with additional holdings acquired by 1861 with partners, William Dunlap and James Kaseberg. Their ranch raised some of the first thoroughbred and trotting horses in California. The extended Fiddymment family continued to live on and run ranch operations, acquiring an airplane by the 1950s, unsuccessfully trying rice farming, raising and selling pistachios on a portion of the land near Pleasant Grove Creek beginning in the early 1970s. As of 2004, Walter Fiddymment's descendants still lived on the family property and continued to work cattle on the ranch. The 14-acre Fiddymment Ranch Main Complex, which is located 0.1 mile east of the existing PGWWTP, was listed in the NRHP in 2010 (No. 10000503). The complex includes the main residence and outbuildings associated with 125 years of ranching by the Fiddymment family. It is significant for its association with early settlement of the region and the architectural style of the ranch house.

The City amended its Sphere of Influence (SOI) to include a 5,527-acre area immediately west of the corporate boundaries and adopted the *West Roseville Specific Plan* in 2004. The SOI does not include the 110-acre PGWWTP or the 70-acre property (Roseville Energy Park) immediately north of the PGWWTP, both owned by the City. The *West Roseville Specific Plan*, which covers 3,162 acres of the SOI Amendment Area, was annexed into the City's jurisdiction to provide for orderly and systematic mixed-used development consistent with the City General Plan policies. The *West Roseville Specific Plan* includes the 1,679-acre Fiddymment Ranch and the 1,483-acre Westpark property located east and south, respectively, of the PGWWTP. A "Remainder Area" for which project objectives had not yet been identified is the 2,365 acres of the SOI outside the *West Roseville Specific Plan* boundaries, divided between an area north of the Roseville Energy Park and west of Fiddymment Ranch, and a second area south of the Westpark property and north of Baseline Road.

## 3.5.2 Discussion

### a) Would the project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

**No impact.** The Project site includes the existing PGWWTP and Energy Recovery Project area to the south. The current facility was constructed between 2000 and 2008, and includes treatment facilities that treat wastewater. To be considered historical (or architectural), a resource would need to be a standing building (e.g., house, barn, outbuilding, cabin) or intact structure (e.g., dam, bridge) that is at least 50 years old. Therefore, there are no qualifying historic (or architectural) structures within the Project site.

Federal protection of resources is legislated by (a) the National Historic Preservation Act (NHPA) of 1966 as amended by 16 U.S. Code 470, (b) the Archaeological Resource Protection Act of 1979, and (c) the Advisory Council on Historical Preservation. These laws and organizations maintain processes for determination of the effects on historical properties eligible for listing in the National Register of Historic Places (NRHP). Federal and federally-sponsored programs and projects are reviewed pursuant to Section 106 of the NHPA. Section 106 of the NHPA requires federal agencies to consider the effects of proposed federal undertakings on historic properties. Compliance with Section 106 is discussed in Chapter 4, "Compliance with Federal Regulations."

All properties listed in or formally determined eligible for listing in the NRHP are eligible for the California Register of Historical Resources (CRHR). A historic resource must be significant at the local, state, or national level under one or more of the criteria defined in the California Code of Regulations (CCR) Title 15, Chapter 11.5, Section 4850. The CRHR criteria are similar to the NRHP criteria and are tied to CEQA because any resource that meets the criteria is considered a historical resource under CEQA.

The background literature and NWIC records search did not identify any cultural resources (either historical or archaeological) within the Project site and the pedestrian survey on August 2, 2016, identified no historic-era built environment resources. The NRHP-listed Fiddyment Ranch Main Complex is located outside of the Project site. Therefore, there are no resources eligible for listing in the NRHP or CRHR and Project construction and operation would have no impact on historical resources.

### b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

**Less than significant with mitigation incorporated.** Excavation, grading, trenching, and earth removal for the Expansion Project would involve approximately 6 acres of disturbed area and approximately 5,300 cubic yards (cy) of material would be excavated during construction. The greatest depth of excavation of 26 feet would occur near the new primary clarifier building (see Exhibit 2-4 in Chapter 2, "Project Description and Background"). For the Energy Recovery Project, approximately 2.5 acres would be disturbed and minimal vegetation clearing would be required. All of the facilities would be slab-on-grade foundations, and the maximum depth of excavation would be 6 feet for pipe trenches.

As discussed above under historic resources, federal and federally-sponsored programs and projects are reviewed pursuant to Section 106 of the NHPA. Section 106 of the NHPA requires federal agencies to consider the effects of proposed federal undertakings on historic properties. Compliance with Section 106 is discussed in Chapter 4, "Compliance with Federal Regulations." All properties listed in or formally determined eligible for listing in the NRHP are eligible for the CRHR, and any resource that meets the criteria is considered a historical resource under CEQA.

The background literature and NWIC records search did not identify any cultural resources within the Project site. Archaeologists conducted a pedestrian survey within the Southern Expansion Area on August 2, 2016.

No prehistoric or historic-era archaeological, or ethnographic resources were identified or recorded during the survey.

Historically, this region has been dominated by agricultural activities, most notably ranching. Agricultural/ranching activities over the last 150 years on the 1,679-acre Fiddymont Ranch on the east and the 1,483-acre Westpark property bordering the Project on the west have included raising poultry and livestock (cattle and sheep) and mainly dry-land farming with some rice and orchard plantings. During the prehistoric, protohistoric, and historic periods, Native Americans established temporary resource gathering or processing camps or permanent settlements near reliable fresh water sources. Only one prehistoric site is mapped within the 0.5-mile search radius, a surface ground stone scatter with no subsurface component. As Pleasant Grove Creek is named “Dry Creek” on the 1855 GLO Plat, and both Pleasant Grove and Curry Creeks, which are located north and south of the Project site, are shown as intermittent streams on historic maps, Native American settlement along these streams or within the Project site appears unlikely.

However, previous disturbance and the lack of previously recorded archaeological resources does not preclude the possibility that significant subsurface cultural resources could be discovered during Project-related grading, excavation, and other earth-moving activities during construction. Impacts of the proposed Project on previously undocumented significant archaeological resources or human remains would be a potentially significant impact.

### **Mitigation Measure 3.5-1**

In the event that any prehistoric or historic-era subsurface archaeological features or deposits, including locally darkened soil (potentially a “midden”), that could conceal cultural deposits, are discovered during construction, all ground-disturbing activity within 100 feet of the resources shall be halted and a qualified professional archaeologist shall be retained to assess the significance of the find. If the find is determined to be significant by the qualified archaeologist (i.e., because it is determined to constitute either an historical resource or a unique archaeological resource), the archaeologist shall develop appropriate procedures to protect the integrity of the resource and ensure that no additional resources are affected. Procedures could include but would not necessarily be limited to preservation in place, archival research, subsurface testing, or contiguous block unit excavation and data recovery.

#### **Significance after Mitigation**

Implementation of Mitigation Measure 3.5-1 would reduce impacts associated with archaeological resources to a **less-than-significant** level because it would require the performance of professionally accepted and legally compliant procedures for the discovery of previously undocumented significant archaeological resources.

### **c) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?**

**Less than significant.** A search of the UCMP database listed 64 paleontological resources in Placer County; however, all resources are located approximately 30 miles northeast of the City of Roseville, in Tahoe National Forest. The database did not list any paleontological resources from the Riverbank Formation (UCMP 2016).

Greatest depth of excavation of 26 feet would occur near the new primary clarifier building (see Exhibit 2-4 in Chapter 2, “Project Description and Background”). For the Energy Recovery Project facilities, the maximum depth of excavation would be 6 feet for pipe trenches. No documented paleontological resources have been identified within 30 miles of the Project site and no paleontological resources were discovered when the existing PGWWTP was constructed. The UCMP database does not list any paleontological resources from the Riverbank Formation. For these reasons, the potential of encountering paleontological resources within the Project site is considered extremely unlikely. Impacts on paleontological resources would be less than significant.

**d) Would the project disturb any human remains, including those interred outside of formal cemeteries?**

**Less than significant with mitigation incorporated.** Based on documentary research, no evidence suggests that any prehistoric or historic-era marked or un-marked human interments are present within or in the immediate vicinity of the Project site. However, there is a possibility that unmarked, previously unknown Native American or other graves could be present within the Project site and could be uncovered by Project-related construction activities.

The California Native American Historical, Cultural and Sacred Sites Act applies to both State and private lands. The Act requires that upon discovery of human remains, construction or excavation activity cease and the county coroner be notified. If the remains are of a Native American, the coroner must notify the NAHC. The NAHC then notifies those persons most likely to be descended from the Native American's remains. Similarly, Section 7050.5(b) of the California Health and Safety code specifies protocol when human remains are discovered.

The location of grave sites and Native American remains can occur outside of identified cemeteries or burial sites. For the Expansion Project, excavation, grading, trenching, and earth removal would be required for the new facilities. In total, approximately 6 acres would be disturbed, approximately 34,000 cy of material would be imported and approximately 6,000 cy of material would be excavated during construction and hauled offsite for disposal. For the Energy Recovery Project, approximately 2.5 acres would be disturbed for this project with minimal vegetation clearing and minimal excavation and fill and cut would be required.

These construction activities would create ground disturbance that could uncover previously unknown human remains. Although there are no known prehistoric or early historic interments on the Project site, Project-related construction activities could uncover or otherwise disturb previously undiscovered or unrecorded human remains. Because any disturbance of human remains would be a significant impact, this impact would be potentially significant.

### **Mitigation Measure 3.5-2**

If human remains are discovered during any construction activities, potentially damaging ground-disturbing activities in the area of the remains will be halted immediately, and the City will notify the Placer County coroner and the NAHC immediately, according to Section 5097.98 of the State Public Resources Code and Section 7050.5 of California's Health and Safety Code. If the remains are determined by the NAHC to be Native American, the guidelines of the NAHC will be adhered to in the treatment and disposition of the remains. The City will also retain a professional archaeologist with Native American burial experience to conduct a field investigation of the specific site and consult with the Most Likely Descendant (MLD), if any, identified by the NAHC. Following the coroner's and NAHC's findings, the archaeologist, and the NAHC-designated MLD will determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments are not disturbed. The responsibilities for acting upon notification of a discovery of Native American human remains are identified in California Public Resources Code Section 5097.94.

#### **Significance after Mitigation**

Implementation of Mitigation Measure 3.5-2 would reduce potentially significant impacts to human remains because actions would be implemented to avoid, move, record, or otherwise treat the remains appropriately, in accordance with pertinent laws and regulations. By providing an opportunity to avoid or minimize the disturbance of human remains, and to appropriately treat any remains that are discovered, this impact would be reduced to a **less-than-significant** level.

### 3.6 GEOLOGY AND SOILS

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

#### 3.6.1 Environmental Setting

The geologic, soil, and seismic setting for both the Expansion Project and the Energy Recovery Project, with respect to geology, soils, and seismicity are the same. The specific soil units that have been mapped by the National Resource Conservation Service (NRCS) beneath the proposed expansion and energy recovery facilities differ; however, the scale at which these soils have been mapped is not amenable to a precise description of the soils within the Project site. As such, the NCRS soils survey provides a general description of the types of soils that may be present beneath the facilities, but more detailed, site-specific geotechnical information will be required prior to construction.

#### GEOLOGY

The Project site is situated within the eastern margin of the Great Valley geomorphic province of California, near the transition to the Sierra Nevada geomorphic province to the east (CGS 2002). The Great Valley is an alluvial basin comprised of thick alluvial sediments lain atop a Mesozoic sequence of thickly-bedded

sedimentary rocks. These alluvial sediments were deposited over millions of years through the erosion and redeposition of the Sierra Nevada mountains. Consequently, the geology in the Project vicinity is entirely alluvial outwash deposits.

The geology in the Project vicinity consists of sedimentary deposits from the coalesced American River – Pleasant Grove Creek alluvial fan. These include, from west to east, the Riverbank, Modesto, Turlock Lake, and Mehrten Formations. The Project vicinity and Project site are comprised of the Riverbank Formation, and younger, unconsolidated Quaternary alluvium. These stratigraphic units are all generally characterized by nested alluvial fans, grading larger from west to east.

## SOILS

Soils at the Project site are generally defined by the characteristics present in the alluvial deposits of the Riverbank Formation and other, younger local alluvial deposits in shallow deposits. Soil limitations have been well-characterized in these units, and include slow or variable permeability, low to moderate soil strength, and low to moderate shrink-swell potential associated with clay content. Specific soil units in the Project area include:

- ▲ **Cometa-Fiddymment complex (141), 1 to 5 percent slope:** The families that comprise this soil complex, Cometa and Fiddymment, are deep, well-drained, alluvial soils comprised of sandy loam, clay loam, loam, and clay. They occur in alluvial terrace deposits formed from erosion of the weathered granites of the eastern Sierra Nevada (NRCS 2016). Classified as Hydrologic Group D by NRCS, they exhibit a high runoff potential. The Cometa-Fiddymment complex soils do not exhibit episodes of ponding or flooding (NRCS 2013).
- ▲ **Cometa-Ramona sandy loams (142), 1 to 5 percent slope:** The soils that comprise this group are similar to the Cometa-Fiddymment complex, but with a higher proportion of sand and loam relative to clay content. Ramona soils exhibit some gravel deep in the soil horizon (between 55 and 73 inches) (NRCS 2016). Ramona soils have a slightly lower runoff potential and are classified by NRCS in Hydrologic Group C (moderately high runoff potential) (NRCS 2013).
- ▲ **San Joaquin-Cometa sandy loams (182), 1 to 5 percent slope:** San Joaquin soils have a very similar profile and physical characteristics to Cometa soils, but are comprised of slightly higher proportions of sand.

## SEISMICITY

The Project site is situated east of the Sierra Nevada foothills, an area of inactive quaternary faulting. Active faults are defined as those having exhibited movement during the Holocene (less than 11,700 years ago). The nearest faults lie within the Foothills Fault Zone, approximately 16 – 20 miles east of the Project site (Table 3.6-1).

**Table 3.6-1 Faults Near the Project Site**

Fault or Fault Zone	Distance from Project Site	Status <sup>1</sup>
Spenceville Fault	16 miles	Late Quaternary (<130,000 years ago)
Deadman Fault	17 miles	Late Quaternary
Maidu East Fault	17 miles	Quaternary (<1.6 million years ago)
Dewitt Fault	18 miles	Late Quaternary
Highway 49 Fault (Foothills Fault System, north central reach section)	18 miles	Late Quaternary
Rescue Fault (Foothills Fault System, north central reach section)	20 miles	Late Quaternary

Source: DOC 2010.

<sup>1</sup> Only Holocene-age faults are considered potentially active. Only Quaternary and Late Quaternary movements have occurred in the Project vicinity.

While there are no active faults within the Project vicinity, the State of California generally exhibits more seismic activity than other areas. As a consequence, the state maintains a host of earthquake evaluation resources, including the Ground Motion Interpolator, which identifies the ground motion probability rating for a given location. These probabilities are measured in terms of peak ground acceleration (g), which is the rate of change of speed of ground motion exhibited during an earthquake. Ground motion probabilities are dependent on a range of factors, including soil conditions, slope conditions, and proximity to active faults. At the Project site, ground motion probability is a 2 percent chance of exceeding 0.259 g over a 50-year period (DOC 2008).

Peak acceleration can be converted to earthquake intensity on the Modified Mercalli Intensity Scale, which assigns an intensity value and gives a verbal description of the effects of ground shaking, as experienced by an individual on the ground, based on a range of peak acceleration values (see Table 3.6-2). Based on a peak acceleration of 0.259 g, the Project site has a Modified Mercalli Intensity of VIII, which would result in slight damage to well-designed and engineered structures, and increased damage in structures of lower engineering standard (Table 3.6-2).

**Table 3.6-2 Modified Mercalli Intensity Scale**

Intensity Value	Intensity Description	Average Peak Acceleration
I.	Not felt except by a very few persons under especially favorable circumstances.	<0.0015g
II.	Felt only by a few persons at rest, especially on upper floors on buildings. Delicately suspended objects may swing.	<0.0015g
III.	Felt quite noticeably indoors, especially on upper floors of buildings, but many persons do not recognize it as an earthquake. Standing cars may rock slightly. Vibration similar to the passing of a truck. Duration estimated.	<0.0015g
IV.	During the day felt indoor by many, outdoors by few. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motorcars rocked noticeably.	0.015g - 0.02g
V.	Felt by nearly everyone, many awakened. Some dishes, windows, etc., broken; a few instances of cracked plaster; unstable objects overturned. Disturbances of trees, poles, and other tall objects sometimes noticed. Pendulum clocks may stop.	0.03g - 0.04g
VI.	Felt by all, many frightened and run outdoors. Some heavy furniture moved; a few instances of fallen plaster or damaged chimneys. Damage slight.	0.06g - 0.07g
VII.	Everybody runs outdoors. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving cars.	0.10g - 0.15g
VIII.	Damage slight in specially designed structures; considerable in ordinary substantial buildings, with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, and walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving cars disturbed.	0.25g - 0.30g
IX.	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.	0.50g - 0.55g
X.	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from riverbanks and steep slopes. Shifted sand and mud. Water splashed (slopped) over banks.	>0.60g
XI.	Few, if any, masonry structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.	>0.60g
XII.	Damage total. Practically all works of construction are damaged greatly or destroyed. Waves seen on ground surface. Lines of sight and level are distorted. Objects are thrown upward into the air.	>0.60g

Note: g = gravity = 9.8 meters per second per second.

Source: Bolt 1988

## 3.6.2 Discussion

a) **Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:**

i. **Rupture of a known earthquake fault as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to California Geological Survey Special Publication 42)?**

**Less than significant.** The Project site is not located in a fault zone, as delineated on an Alquist-Priolo Fault Zoning map (DOC 2007). The nearest fault is approximately 16 miles east of the Project site, in the Sierra Nevada foothills. The Project would not subject people or structures to adverse effects related to rupture of a known fault because there are no known active faults in the Project vicinity (Table 3.6-1). Therefore, this impact would be less than significant.

ii. **Strong seismic ground shaking?**

**Less than significant.** The Project site is susceptible to moderate ground shaking (<0.3g) associated with a major earthquake on nearby faults, in which slight to moderate damage to ordinary structures and negligible damage to well-designed and constructed structures is possible. The Project would be designed and constructed to withstand the effects of moderate ground shaking, in compliance with the California Building Code (CBC). The CBC has adopted a modified version of the International Building Code (IBC) for California conditions with modified and/or more stringent regulations. The CBC contains specific minimum safety and design requirements in Chapter 16, including seismic factors that must be considered in structural design. Therefore, this impact would be less than significant.

iii. **Seismic-related ground failure, including liquefaction?**

**Less than significant.** Liquefaction is possible in the Project vicinity in areas of loose, sandy soils with a high water content. However, the soils located within the Project site are generally well-drained with a high runoff potential, and therefore have a relatively low potential for liquefaction. Additionally, the City General Plan (City of Roseville 2016d) indicates that liquefaction has not been a significant problem in soils within the City limits. Appropriate grading and foundation preparation would reduce the potential for liquefaction to a negligible level. Therefore, this impact would be less than significant.

iv. **Landslides?**

**Less than significant.** The Project site is located on terraced, flat to gently sloping land (0 to 5 percent slopes), with moderately competent rock and soil types. Together, the slope and rock strength for the area results in a landslide susceptibility between 0 and V as defined by the CGS and the U.S. Geological Survey (USGS) in their Susceptibility to Deep-Seated Landslides in California (CGS and USGS 2011). These are the lowest landslide susceptibility classes. In general, landslide susceptibility is very low where slopes are low, even in weak ground material. Because slopes are generally flat in the Project vicinity, landslide susceptibility for the Project would be low. Therefore, this impact would be less than significant.

b) **Would the project result in substantial soil erosion or the loss of topsoil?**

**Less than significant.** As part of the City's Mitigating Ordinances, Guidelines, and Standards (described in Chapter 2), the proposed Project would be constructed in a manner that minimizes soil erosion or loss of topsoil. However, construction of the Project would involve clearing, grading, and paving, as well as construction of buildings, tanks, and other structures, including concrete slab foundations. Construction of these structures would include moving soil and increasing the overall extent of impervious surfaces on the Project site. Under uncontrolled conditions, construction could increase erosion and result in significant topsoil loss.

However, construction activities associated with either the Expansion Project and/or Energy Recovery Project would require ground disturbance in excess of 1 acre, thereby requiring coverage under the state General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activity (General Permit). This permit is required under the State Water Resources Control Board (SWRCB) Storm Water Program, and is intended to regulate storm water discharges and protect receiving water bodies. A primary objective of the General Permit is to reduce erosion associated with storm water discharges. Implementation of a Storm Water Pollution Prevention Plan (SWPPP) is required by the permit, and must contain measures to limit or prevent erosion. By implementing these measures and adhering to the SWPPP, the potential for erosion and loss of topsoil would be reduced to a less-than-significant level.

**c) Would the project be located on a geologic unit or soil that is unstable, or would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?**

**Less than significant.** Soils within the Project vicinity are identified by NRCS with a range of potential engineering constraints, but generally tend toward the less-hazardous end of the soil spectrum. The soils exhibit low shrink-swell capacity, variable drainage characteristics, and medium soil strength. Shrink-swell activity in soils has the potential to exert force on building and structure foundations, and could result in some damage if not adequately addressed during the construction of foundations. Variable permeability could cause issues with site drainage, and medium soil strength characteristics can result in overloading and soil failure.

However, the proposed Project would comply with the City's Mitigating Ordinances, Guidelines, and Standards to reduce impacts related to soil, including on- or off-site landslides, lateral spreading, subsidence, liquefaction, collapse, or expansive soils. In addition, the City would ensure the design specifications in the site-specific geotechnical and geomorphic reports prepared for the Project are incorporated into the Project, in accordance with City of Roseville Design and Construction Standards. Engineering and geotechnical investigations, and compliance with CBC regulations and the City of Roseville Design and Construction Standards would limit the extent to which soil characteristics would impact structures. Development would occur pursuant to the City of Roseville building permit process, during which time evaluations of site-specific conditions would take place, and design and construction would be carried out according to results of those evaluations. Therefore, this impact would be less than significant.

**d) Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial risks to life or property?**

**Less than significant.** The soils in the upper 18 inches of the soil profile at the Project site have clay contents of approximately 15 percent, and a coefficient of linear extensibility of 1.5 percent. These properties indicate that the soils have a low expansion potential (NRCS 2013: 618-A.37). These soils are not identified as expansive soils as defined in Table 18-1-B of the Uniform Building Code. Therefore, this impact would be less than significant.

**f) Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?**

**No impact.** Any wastewater generated by the Project would be treated on-site at the PGWWTP. The Project would not involve the use of septic tanks or alternative wastewater disposal systems. Therefore, there would be no impact.

### 3.7 GREENHOUSE GAS EMISSIONS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>VII. Greenhouse Gas Emissions. Would the project:</b>				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?				
Expansion Project	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Energy Recovery Project	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?				
Expansion Project	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Energy Recovery Project	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### 3.7.1 Environmental Setting

Certain gases in the earth’s atmosphere, classified as greenhouse gases (GHGs), play a critical role in determining the earth’s surface temperature. GHGs are responsible for “trapping” solar radiation in the earth’s atmosphere, a phenomenon known as the greenhouse effect. Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Non-CO<sub>2</sub> GHGs can have global warming potentials (GWPs) from a few hundred to several thousand times that of CO<sub>2</sub>.

Human-caused emissions of these GHGs in excess of natural ambient concentrations are responsible for intensifying the greenhouse effect and have led to a trend of unnatural warming of the earth’s climate, known as global climate change or global warming. It is extremely unlikely that global climate change of the past 50 years can be explained without the contribution from human activities (Intergovernmental Panel on Climate Change [IPCC] 2007:86). By adoption of Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006, and Senate Bill (SB) 97, the State of California has acknowledged that GHGs cause adverse environmental impacts. AB 32 mandates that emissions of GHGs must be capped at 1990 levels by the year 2020 (Health and Safety Code Section 38530).

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

GHGs have the potential to adversely affect the environment because such emissions contribute, on a cumulative basis, to global climate change. Although the emissions of one single project would not cause global climate change, GHGs from multiple projects throughout the world result in a cumulative impact with respect to global climate change.

#### METHODS AND ASSUMPTIONS

Emissions from the construction of the Project were estimated using CalEEMod. Operational emissions were estimated for a variety of emission sources including operation of the Expansion Project and Energy

Recovery Project and changes in the type of fuel used for solid waste trucks. The level of GHGs generated by the Project are presented in metric tons of CO<sub>2</sub> equivalents per year (MT CO<sub>2</sub>e/year). This analysis uses 100-year GWP factors from IPCC's Fourth Assessment Report, consistent with ARB's GHG inventory (ARB 2016e). The Expansion Project is evaluated on its own, first, because it is independent of the Energy Recovery Project and may be approved on its own. The analysis of the Energy Recovery Project also includes the Expansion Project because the Energy Recovery Project would not be constructed independently; both would be constructed and operated.

## Construction

Construction-related GHGs are described as "short term" or temporary in duration but have the potential to stay in the atmosphere for long durations. Construction-related activities would result in GHGs associated primarily with the use off-road (e.g., gas and diesel) construction equipment and secondary sources such as on-road hauling trucks and worker commute trips.

The methods and assumptions used to calculate GHGs associated with construction activities of the Project are consistent with those described in Section 3.3, "Air Quality." Refer to Appendix B for additional detail about the methods used to estimate construction emissions.

## Operations

The proposed Project would result in the operation of new wastewater treatment processes as part of the Expansion Project and new fuel sources as part of the Energy Recovery Project. The Project would also result in changes to three main GHG emission sources: mobile sources, electricity use, and WWTP processes, including combustion of natural and digester gas.

The Expansion Project would be constructed to accommodate the anticipated wastewater treatment demands through approximately 2040. Operational emissions assume 2040-level operations would occur in 2020 as a worst-case scenario. Refer to Appendix B for additional calculation details.

## Mobile Sources

### Expansion Project

For the Expansion Project, GHGs from mobile sources would result from the combustion of gasoline and diesel vehicle fuels. Annual vehicle miles travelled (VMT) and fuel use by vehicle type and fuel type were compared between existing and Expansion Project build-out conditions. Emissions calculations accounted for the VMT changes in employee commute trips, conversion of hauling waste activated sludge (WAS) to hauling biosolids, and hauling of chemicals. VMT changes for all hauling trip types except for chemicals are based on changes in trip lengths due to the different disposal locations for the WAS and biosolids. Table 3.7-1 shows the changes in annual VMT by mobile source and is based on data provided by the City and Kennedy/Jenks Consultants (City of Roseville 2016a). Additional details can be found in Appendix B.

Vehicle exhaust emissions were calculated using mileage-based emission factors from ARB's Emissions FACTor model (EMFAC2014) for the 2020 calendar year for the Sacramento Valley-portion of Placer County (ARB 2015b). Full Project capacity use has been assumed in the modeling of operations to represent a worst-case scenario. This is a conservative estimate that assumes full capacity would be reached by the first full year of operation (2020). In reality, there would be an interim period where the amount of wastewater treated would gradually increase in response to new development. This assumption is also conservative because vehicle emissions further into the future are anticipated to decline due to technological and regulatory improvements and a flowrate of 12 mgd may not occur until 2040.

**Table 3.7-1 Changes in Annual Vehicle Activity between Existing and Build-Out Conditions of the Expansion Project**

Mobile Source	EMFAC Vehicle Type	Existing Annual VMT	Project Annual VMT
Employee Commute <sup>1,2</sup>	LDA/LDT1/LDT2	0	10,950
Hauling: WAS/Biosolids <sup>2</sup>	HHDT	9,406	79,794
Hauling: Chemicals <sup>3</sup>	MMDT	686	1,160

Notes: Amounts may not sum to totals due to rounding. It is assumed that all vehicle trips except for employee commute trips would occur five days per week. Employee commute trips would occur seven days per week.

1 Accounts for new employee trips only.

2 Based on data provided by City and Kennedy/Jenks Consultants (City of Roseville 2016a)

3 Scaled by growth in wastewater treatment capacity.

VMT = vehicle miles travelled  
 WAS = waste activated sludge  
 LDA/LDT1/LDT2 = light duty vehicles and trucks  
 HHDT = heavy duty vehicles  
 MMDT = medium duty vehicles

Source: Compiled by Ascent Environmental in 2016.

### Energy Recovery Project

The Energy Recovery Project would use digester gas produced by the Expansion Project and would not be able to operate independently; therefore, operational emissions modeled for the Energy Recovery Project also include operation of the Expansion Project. References to Energy Recovery Project below include operation of the Expansion Project. Mobile emission sources modeled for the Energy Recovery Project would include the mobile emission sources modeled above for the Expansion Project and mobile emission sources unique to the Energy Recovery Project (i.e., CNG solid waste collection vehicles, additional employees, and hauling of high strength waste).

Mobile emissions associated with the Energy Recovery Project were based on changes in annual VMT by vehicle type compared to existing conditions and the conversion of solid waste collection vehicle fuel use from CNG to a renewable CNG (rCNG) blend. Using mileage-based emission factors, most emissions calculations were based on increased employee commute trips; changes in trip length associated with conversion of WAS hauling to biosolids hauling and hauling of high strength wastes; and increased chemical hauling trips. Emissions related to the conversion of CNG to a rCNG blend for solid waste collection vehicles are discussed further below. The basis for these calculations were provided by the City and Brown and Caldwell (City of Roseville 2016b,c). The VMT used to calculate mobile source emissions in this analysis are shown in Table 3.7-2 below. Additional details can be found in Appendix B.

Mileage-based tailpipe emission factors for all vehicle types were taken from EMFAC2014 and Argonne National Laboratory's Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation model (GREET 2015), respectively (ARB 2015, Argonne National Laboratory 2015). Energy-based emission factors for the upstream production of CNG and rCNG were provided by the California-modified version of GREET (CA-GREET Tier 1 Version 2.0) (ARB 2016). Both upstream and tailpipe emissions were included because the Energy Recovery Project would result in GHGs from the production of rCNG and also offset the production of conventional CNG. Upstream emissions include refining, fuel distribution, and pumping emissions for on-site compression and production for rCNG. (ARB 2015, ARB 2016, Argonne National Laboratory 2015).

To calculate the CNG and rCNG energy use needed for the upstream emissions calculations, the energy content of the CNG and rCNG used in the solid waste collection vehicles was calculated using energy demand estimates quantified in the *Energy Recovery Basis of Design Report* (City of Roseville 2016c). According to this report, the Energy Recovery Project is designed to accommodate a vehicle fuel demand of 2,500 diesel gallons equivalents (DGE) per day. The CNG fuel required to meet that demand would be a blend between the rCNG derived from the digester gas and additional conventional CNG purchased from the local utility. The vehicle fuel production of the Energy Recovery Project would require approximately 7.9 MMBTU per hour of natural gas under normal operating conditions (210 scf per minute of digester gas production). Using a conversion factor of 7.19 DGE per MMBTU, the Energy Recovery Project would produce

1,136 DGE of digester gas and require 1,364 DGE of natural gas use per day. Assuming production would occur 365 days per year, the annual combustion of digester gas and natural gas for vehicle fuels would be 57,673 MMBTU and 69,251 MMBTU, respectively. This assumes all rCNG produced by the Energy Recovery Project in a single year would be combusted, regardless of decreased fueling activity during weekends and holidays or level of storage. Actual emissions from vehicle fuels may vary depending on the level of digester gas production and diversion ratio of the digester gas between vehicle fuels and the proposed microturbines.

**Table 3.7-2 Changes in Annual Vehicle Activity between Existing and Build-Out Conditions for the Energy Recovery Project**

Mobile Source	EMFAC Vehicle Type	Existing Annual VMT	Project Annual VMT
Employee Commute <sup>1,2</sup>	LDA/LDT1/LDT2	0	21,915
Hauling: HSW <sup>2,3</sup>	MMDT	10,250	3,500
Hauling: WAS/Biosolids <sup>2</sup>	HHDT	9,406	79,794
Hauling: Chemicals <sup>4</sup>	MMDT	686	1,160
CNG Solid Waste Collection Vehicles <sup>5</sup>	T7 SWCV	2,282,813	2,282,813

Notes: Amounts may not sum to totals due to rounding. It is assumed that all vehicle trips except for employee commute trips would occur 5 days per week. Employee commute trips would occur 7 days per week.

- 1 Accounts for new employee trips only.
- 2 Based on data provided by City, Kennedy/Jenks Consultants, Brown and Caldwell (City of Roseville 2016a,b,c).
- 3 Roseville-based hauling trips would change from Clean World’s Fruitridge location to the Pleasant Grove Wastewater Treatment Plant, a change from 21 miles per trip to 7 miles per trip.
- 4 Scaled by growth in wastewater treatment capacity.
- 5 Project would not contribute to changes in solid waste collection truck VMT; however, emissions calculations still require VMT to calculate emissions using mileage-based emission factors. VMT based on usage of 2,500 diesel gallon equivalents per day with a fuel efficiency of 2.5 miles per gallon.

VMT = vehicle miles travelled  
 HSW = high strength waste  
 FOG = fats, oils, and grease  
 WAS = waste activated sludge  
 LDA/LDT1/LDT2 = light duty vehicles and trucks  
 HHDT = heavy duty vehicles  
 MMDT = medium duty vehicles  
 T7 SWCV = T7 rated solid waste collection vehicle

Source: Compiled by Ascent Environmental in 2016.

**Electricity Use**

**Expansion Project**

To estimate the additional electricity demands from the Expansion Project, current electricity use at the PGWWTP (13,716 megawatts [MWh] per year) was scaled by the change in anticipated wastewater flow between existing conditions (7.1 mgd) and the permitted future scenario (12 mgd). Based on this approach, the Expansion Project would require 9,466 MWh per year of additional electricity.

**Energy Recovery Project**

At full build-out with a normal digester gas production rate of 210 scf per minute, the Energy Recovery Project would operate a cogeneration facility that uses three-200 kW microturbines with a fourth for backup. Assuming full operation 24 hours per day and 365 days per year, the microturbines would generate 5,260 MWh per year and require an additional load of 877 kWh per year. When combined with the additional load required by the Expansion Project (9,466 MWh per year), the Expansion Project and Energy Recovery Project together would require 5,083 MWh per year of additional electricity beyond existing conditions. The microturbines would also provide residual heat for the digesters.

A CO<sub>2</sub> emission factor of 381 lb CO<sub>2</sub>/MWh was scaled from Pacific Gas & Electric’s 2014 emission factors assuming the utility’s renewable mix would increase from 28 percent to 37 percent based on existing

conditions and contract agreements with the California Public Utilities Commission (CPUC) (The Climate Registry 2016, CPUC 2016). CH<sub>4</sub> and N<sub>2</sub>O electricity emission factors that are representative of California were provided by the EPA eGRID data and were scaled by the State's anticipated overall change in the renewable energy mix from 22.7 percent in 2014 to 33 percent in 2020 (EPA 2015, CPUC 2016).

### Process Emissions

#### **Existing Conditions**

Under existing conditions, only N<sub>2</sub>O emissions are emitted from wastewater during treatment. No CH<sub>4</sub> emissions are emitted during treatment due to aerobic treatment processes. N<sub>2</sub>O emissions from nitrification and denitrification processes and effluent discharge were based on Equations 10.7 and 10.10, respectively, from the ARB's *Local Government Operations Protocol* (LGOP) Version 1.1 (ARB 2010). These two equations calculated emissions using the estimated population served by the existing PGWWTP.

CH<sub>4</sub> emissions are not generated until the disposal of WAS at the end of the treatment processes. PGWWTP currently sends WAS to the Western Regional Sanitary Landfill (WRSL), located 5.6 miles north of the WWTP, to be landfilled. Landfilled WAS results in methane emissions from the anaerobic decomposition of the buried organic material. However, WRSL also captures landfill gas (LFG) and converts it to electricity for use at the landfill and for sale as a renewable source of electricity. To estimate the net GHG emissions from the landfilling of WAS, the following outlines the calculation of the existing net GHG emissions from PGWWTP's landfilled WAS.

The net emissions from landfilled WAS is the sum of fugitive CH<sub>4</sub> emissions generated by anaerobic decomposition of wastewater sludge, the unburned CH<sub>4</sub> emissions from electricity generation, and the GHG emissions credits from electricity produced by the captured CH<sub>4</sub> generated by the WAS. Fugitive CH<sub>4</sub> emissions are the CH<sub>4</sub> emissions that escape from the LFG capture systems and into the atmosphere. The level of CH<sub>4</sub> production is based on an emission factor of 195 kg CH<sub>4</sub> per MT of dry weight raw sludge from an IPCC background paper (Hobson 1999). PGWWTP landfilled 12,306 lbs per day (5.6 MT/day) of dry weight sludge in 2014, which is equivalent to 1,451 MT per year assuming hauling occurs 5 days per week (Seymour pers. comm., 2016). Using default values from Equation 9.1 of the LGOP, it was assumed the WRSL has a CH<sub>4</sub> collection efficiency of 75 percent. Unburned CH<sub>4</sub> emissions from electricity generation were calculated assuming a default destruction efficiency of 99 percent, also based on Equation 9.1 in the LGOP. Emissions credits from the generation of electricity with the remaining CH<sub>4</sub> are calculated by multiplying the amount of electricity generated by the CH<sub>4</sub> by the local PG&E electricity emission factor (0.174 MT CO<sub>2e</sub>/MWh). Electricity generation was estimated by multiplying the remaining CH<sub>4</sub> emissions by the heat of combustion (i.e., energy per kg) of CH<sub>4</sub> and the efficiency of the generators used (36.4 percent for CAT 3561 engines) (WPWMA 2015, Caterpillar 2016). Additional details can be found in Appendix B.

#### **Expansion Project**

Under the Expansion Project, GHG emissions would result from anaerobic wastewater treatment processes, flaring of digester gas, and combustion of natural gas for the proposed boilers that provide heat for the digesters. Additional emissions of N<sub>2</sub>O would result from the expansion of wastewater treatment processes. N<sub>2</sub>O emissions from nitrification and denitrification processes and effluent discharge were based on Equations 10.7 and 10.10, respectively, from the LGOP (ARB 2010). These two equations calculated emissions using the estimated population served by the PGWWTP under the Expansion Project. There would be no emissions from WAS disposal under the Expansion Project because wastewater would be anaerobically treated on-site and would produce biosolids instead of WAS. Biosolids do not generate GHG emissions. Emissions associated with the Expansion Project are estimated based on the difference between existing and project conditions.

Approximately 210 scf of digester gas per minute (302,400 scf per day) would be produced and flared at full build out of the Expansion Project. Assuming 365 days per year and a lower heating value of 546 BTU/scf, the Expansion Project would produce and flare approximately 60,307 million BTU (MMBTU) of digester gas per year. CO<sub>2</sub> emissions from flaring of digester gas is assumed to be biogenic and was not counted towards the GHG emissions related to the Expansion Project. EPA's AP-42 emission factors for flares of synthetic

waste gases were used as a proxy to calculate CH<sub>4</sub> emissions from the proposed digester gas flares. No other GHG emission factors related to flaring activity were available.

Natural gas is currently not used on-site. However, with the Expansion Project, approximately 32,600 MMBTU of natural gas per year would be combusted in boilers to heat the anaerobic digesters (Ryan pers. comm., 2016). GHG emissions were calculated from EPA's AP-42 factors for combustion of natural gas in boilers (EPA 2000).

### Energy Recovery Project

Under the Energy Recovery Project, conversion of WAS to biosolids, nitrification and denitrification processes, and effluent discharge would be the same as under the Expansion Project. Additionally, the same amount of digester gas would be produced overall. However, digester gas would be converted into tail gas and blended natural gas for use in the proposed microturbines instead of being flared. Tail gas is a byproduct from the conversion of digester gas into biomethane used for vehicle fuel.

To calculate emissions from the combustion of tail gas and natural gas in the proposed microturbines, the annual energy use of each gas was calculated and multiplied by the energy-based GHG emission factors from EPA's AP-42 guidance for natural gas-powered turbines (EPA 2000). The Energy Recovery Project would require 2.6 MMBTU per hour of natural gas per hour for use in the microturbines. Based on the microturbine energy requirements in Section 11.1.3.1 of the Energy Recovery Basis of Design Report, the combined methane content of tail gas and natural gas used in the microturbines must equal 50 percent (City of Roseville 2016c). Tail gas and natural gas have a methane content of 28 and 75 percent, respectively. Assuming a lower heating value of 259 BTU/scf for tail gas, the Energy Recovery Project would combust 6,743 MMBTU per year of tail gas and 22,792 MMBTU per year of natural gas in the proposed microturbines. It is assumed that any CO<sub>2</sub> emissions from the combustion of tail gas would be biogenic and are not counted toward Project-related emissions.

### Thresholds of Significance

PCAPCD recently adopted new CEQA thresholds of significance for evaluating whether the GHG emissions of different types of projects would be a cumulatively considerable contribution to climate change. These new thresholds are supported by PCAPCD's California Environmental Quality Act Thresholds of Significance Justification Report released in September 2016 (PCAPCD 2016). PCAPCD's proposed GHG thresholds more accurately reflect the historical CEQA projects reviewed by PCAPCD over the last 13 years (2003-2015) and the CEQA significance thresholds adopted by other air districts in the Sacramento Area (PCAPCD 2016:5). PCAPCD has adopted an array of GHG thresholds for determining whether a project's GHG emissions would be cumulatively considerable. More specifically, PCAPCD's thresholds include the following:

- ▲ a "floor" mass emission threshold of 1,100 MT CO<sub>2</sub>e/year, which, if not exceeded, means the project's GHGs would be less than cumulatively considerable (regardless of the project's GHG efficiency).
- ▲ a "bright-line cap" mass emission threshold of 10,000 MT CO<sub>2</sub>e/year levels, which, if exceeded, means the project's GHGs would be cumulatively considerable regardless of the project's GHG efficiency; and
- ▲ GHG efficiency-based thresholds for land use development projects, depending on whether the project is rural or urban and residential or non-residential (e.g., 4.5 MT CO<sub>2</sub>e/year per capita and 26.5 MT CO<sub>2</sub>e/year/1,000 square feet for residential and non-residential land uses in urban areas, respectively) (PCAPCD 2016:E-2).

For this Project, the net change in GHGs from the Project were evaluated in light of the "floor" mass emission thresholds being proposed by PCAPCD. This is because per-capita and per-square footage efficiency metrics are not suitable for industrial sites that provide wastewater treatment and/or fuel and electricity production.

## 3.7.2 Discussion

### a) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

**Less than significant with mitigation.** The levels of GHGs associated with construction and operation of the proposed Project are discussed separately below.

#### Construction

##### **Expansion Project**

Construction of the Expansion Project would generate GHGs from off-road heavy-duty equipment, trucks hauling construction supplies, and worker commute trips. As mentioned in Chapter 2, “Project Description and Background,” construction would start in fall of 2017 and last approximately 24 months through 2019. Estimated levels of construction-related GHGs are summarized in Table 3.7-3, listed by calendar year.

**Table 3.7-3 Summary of Modeled GHGs Associated with Expansion Project Construction Activities<sup>1</sup>**

Year	MT CO <sub>2</sub> e/year
2017	204
2018	93
2019	69
<b>Total</b>	<b>367</b>
Amortized Construction Emissions assuming a 30-year operational life	12

Notes: Amounts may not sum to totals due to rounding. Amounts may not sum to totals due to rounding.

GHG = greenhouse gas

MT CO<sub>2</sub>e/year = metric tons of carbon dioxide-equivalent per year

Source: Modeling conducted by Ascent Environmental in 2016 using CalEEMod Version 2016.3.1 (SCAQMD 2013).

As shown in Table 3.7-3, the maximum annual GHGs (204 MT CO<sub>2</sub>e/year) from construction of the Expansion Project would occur in 2017. Moreover, total construction emissions over the multi-year construction period would be 367 MT CO<sub>2</sub>e, which is less than the annual “floor” mass emissions threshold of 1,100 MT CO<sub>2</sub>e. To determine whether emissions from construction activities exceed thresholds, construction emissions were amortized assuming a 30-year operational life for the new facilities. The level of amortized construction-related GHGs is also combined with annual operational GHG estimates, which are presented below.

##### **Energy Recovery Project**

Construction of the Energy Recovery Project, which would include construction of both the expansion and the Energy Recovery Facility, would generate GHGs from off-road heavy-duty equipment, trucks hauling construction supplies, and worker commute trips. As mentioned in Chapter 2, “Project Description and Background,” construction would start in late 2017 or early 2018 and last approximately 18 months through 2019. Estimated levels of construction-related GHGs are summarized in Table 3.7-4, listed by calendar year.

**Table 3.7-4 Summary of Modeled GHGs Associated with the Energy Recovery Project Construction Activities**

Year	Expansion Project (MT CO <sub>2</sub> e/year)	Energy Recovery Project (MT CO <sub>2</sub> e/year)	Combined (MT CO <sub>2</sub> e/year)
2017	204	0	204
2018	93	323	416
2019	69	325	394
<b>Total</b>	<b>367</b>	<b>648</b>	<b>1,015</b>
Amortized Construction Emissions assuming a 30-year operational life	12	22	34

Notes: Amounts may not sum to totals due to rounding.

GHG = greenhouse gas

MT CO<sub>2</sub>e/year = metric tons of carbon dioxide-equivalent per year

Source: Modeling conducted by Ascent Environmental in 2016 using CalEEMod Version 2016.3.1 (SCAQMD 2013).

As shown in Table 3.7-4, the maximum annual GHGs (416 MT CO<sub>2</sub>e/year) from construction of the Energy Recovery Project would occur in 2018. Moreover, total construction emissions over the multi-year construction period would be 1,015 MT CO<sub>2</sub>e, which is less than the annual “floor” mass emissions threshold of 1,100 MT CO<sub>2</sub>e. To determine whether emissions from construction activities exceed thresholds, construction emissions were amortized assuming a 30-year operational life for the new facilities. The level of amortized construction-related GHGs is also combined with annual operational GHG estimates, which are presented below.

## Operations

### Expansion Project

Implementation of the Expansion Project would result in new GHG emissions associated with changes in mobile source emissions, as shown in Table 3.7-1; increased use of electricity for the expanded operations; increased natural gas use for boilers and digester heating; the conversion of the WWTP from aerobic to anaerobic treatment, which results in new CH<sub>4</sub> emissions contained within digester gas; and the conversion of WAS to biosolids. The Expansion Project would flare the emitted digester gas to reduce GHG emissions from the CH<sub>4</sub> generated by the anaerobic wastewater treatment processes. A summary of the change in GHG emissions is provided in Table 3.7-5.

**Table 3.7-5 Summary of Modeled GHG Emissions Associated with Operation of the Expansion Project<sup>1</sup>**

Emissions Source	Existing Conditions (MT CO <sub>2</sub> e/year)	Existing Facility + Expansion Project (MT CO <sub>2</sub> e/year)	Net Change (MT CO <sub>2</sub> e/year)
Employee Commute <sup>2</sup>	0	3	3
Hauling: WAS/Biosolids	17	142	126
Hauling: Chemicals	0.8	1.4	0.6
Wastewater Treatment Processes <sup>3</sup>	1,364	2,244	880
Digester Gas Flare	0	53	53
Natural Gas Boiler	0	1,723	1,723
Electricity Consumption	2,380	4,023	1,643
Landfilled WAS at WRSL <sup>4</sup>	1,615	0	-1,615
<b>Total</b>	<b>5,377</b>	<b>8,189</b>	<b>2,812</b>

**Table 3.7-5 Summary of Modeled GHG Emissions Associated with Operation of the Expansion Project<sup>1</sup>**

Emissions Source	Existing Conditions (MT CO <sub>2</sub> e/year)	Existing Facility + Expansion Project (MT CO <sub>2</sub> e/year)	Net Change (MT CO <sub>2</sub> e/year)
Amortized Construction Emissions <sup>5</sup>	0	12	12
Net Change in Greenhouse Gas Emissions			<b>2,825</b>
PCAPCD "floor" GHG Emission Thresholds			1,100
Exceeds Thresholds?			Yes

Notes: Totals may not equal sum due to rounding. Annual emissions modeled assuming full build-out operations in 2020.

- 1 See Appendix B for detail on model inputs, assumptions, and Project specific modeling parameters.
- 2 Existing number of employees was not available. Only the additional employee commute emissions were quantified.
- 3 Includes N<sub>2</sub>O emissions from nitrification/denitrification and effluent discharge to surface waters.
- 4 Net emissions from landfilling WAS at WRSL, which captures landfill gas and generates electricity with the gas. Assumes a 75 percent collection efficiency, a 99 percent destruction efficiency, and a 36.4 percent efficient generator, based on the operation of CAT 3516 engines (WPWMA 2015, CAT 2016, ARB 2010).
- 5 Refer Table 3.7-3 for a summary of construction-related emissions.

GHG = greenhouse gas  
 MT CO<sub>2</sub>e/year = metric tons of carbon dioxide equivalent per year  
 WAS = waste activated sludge  
 CNG = compressed natural gas  
 PCAPCD = Placer County Air Pollution Control District  
 WRSL = Western Regional Sanitary Landfill

Source: Modeling conducted by Ascent Environmental in 2016.

As shown in Table 3.7-5, implementation of the Expansion Project would result in a net increase in GHG emissions of 2,825 MT CO<sub>2</sub>e/year over existing conditions at full build-out. Thus, operation of the Expansion Project would exceed PCAPCD’s proposed “floor” mass emission threshold of 1,100 MT CO<sub>2</sub>e/year by 1,725 MT CO<sub>2</sub>e/year, and implementation of the Expansion Project would result in a cumulatively considerable contribution of GHGs. As a result, this impact would be potentially significant.

**Mitigation Measure 3.7-1**

To reduce GHG emissions from the Expansion Project, the City may choose any combination of the following measures, to achieve a net reduction of 1,725 MT CO<sub>2</sub>e/year (equivalent to reducing the use of 194,104 gallons of gasoline or generating 9,941 MWh/year of electricity from renewable energy).

- ▲ improve energy efficiency and provide renewable vehicle fuels through the construction and implementation of the Energy Recovery Project which would reduce additional operational emissions from the Expansion Project by 103 percent, reducing emissions below existing conditions, as described herein,
- ▲ purchase electricity from a higher percentage of renewable sources; or
- ▲ purchase GHG offsets.

Implementation of Mitigation Measure 3.7-1 would ensure that GHG emissions would be reduced below recommended thresholds of significance. The cogeneration capabilities of the Energy Recovery Project would prevent methane-containing digester gas from being flared at the PGWWTP, would combine the conditioned and upgraded digester gas with natural gas to create renewable fuel blend for CNG vehicles, and use the waste tail gas, from digester gas upgrade process (blended with natural gas) for the generation of electricity and heat for digesters. This cogeneration capability would relieve electrical load from local utilities by providing a direct and renewable source of electricity for the PGWWTP.

**Significance after Mitigation**

Implementation of Mitigation Measure 3.7-1 would reduce the Expansion Project's overall GHG emissions to a level that is below the threshold of 1,100 MT CO<sub>2</sub>e/year. Therefore, this impact would be reduced to a **less-than-significant** level with mitigation.

**Less than significant****Energy Recovery Project**

As discussed under "Methods and Assumptions" above, implementation of the Energy Recovery Project would result in new GHG emissions associated with changes mobile source emissions, as shown in Table 3.7-2; a net increase in the use of electricity for the expanded operations; increased natural gas use for microturbines and fuel blending; the conversion of the WWTP from aerobic to anaerobic treatment, which results in new CH<sub>4</sub> emissions contained within digester gas, and the conversion of WAS to biosolids. The Energy Recovery would utilize the emitted digester gas as a rCNG vehicle fuel and in microturbines along with natural gas to reduce GHG emissions from the CH<sub>4</sub> generated by the anaerobic wastewater treatment processes. A summary of the change in GHG emissions is provided in Table 3.7-6.

**Table 3.7-6 Summary of Modeled GHG Emissions Associated with Operation of the Energy Recovery Project<sup>4</sup>**

Emissions Source	Existing Conditions (MT CO <sub>2</sub> e/year)	Existing Facility + Expansion Project with Energy Recovery (MT CO <sub>2</sub> e/year)	Net Change (MT CO <sub>2</sub> e/year)
Employee Commute <sup>2</sup>	0	7	7
Hauling: HSW	12	4	-8
Hauling: WAS/Biosolids	17	142	126
Hauling: Chemicals	1	1	1
CNG Solid Waste Collection Vehicles	5,171	3,606	-1,565
Wastewater Treatment Processes <sup>3</sup>	1,364	2,244	880
Microturbines	0	1,186	1,186
Electricity Consumption	2,380	3,262	882
Landfilled WAS at WRSL <sup>4</sup>	1,615	0	-1,615
<b>Total</b>	<b>10,560</b>	<b>10,452</b>	<b>-108</b>
Amortized Construction Emissions <sup>5</sup>	0	34	34
Net Change in Greenhouse Gas Emissions			-74
PCAPCD "floor" GHG Emission Thresholds			1,100
Exceeds Thresholds?			No

Notes: Totals may not equal sum due to rounding. Annual emissions modeled assuming full build-out operations in 2020.

1 See Appendix B for detail on model inputs, assumptions, and Project-specific modeling parameters.

2 Only the additional employee commute emissions were quantified.

3 Includes N<sub>2</sub>O emissions from nitrification/denitrification and effluent discharge to rivers.

4 Net emissions from landfilling WAS at WRSL, which captures landfill gas and generates electricity with the gas. Assumes a 75 percent collection efficiency, a 99 percent destruction efficiency, and a 36.4 percent efficient generator, based on the operation of CAT 3516 engines (WPWMA 2015, CAT 2016, ARB 2010).

5 Refer Table 3.7-4 for a summary of construction-related emissions.

GHG = greenhouse gas  
 MT CO<sub>2</sub>e/year = metric tons of carbon dioxide equivalent per year  
 HWS = high strength waste  
 WAS = waste activated sludge  
 CNG = compressed natural gas  
 PCAPCD = Placer County Air Pollution Control District  
 WRSL = Western Regional Sanitary Landfill

Source: Modeling conducted by Ascent Environmental in 2016.

As shown in Table 3.7-6, implementation of the Energy Recovery Project would result in a net decrease in GHG emissions of 74 MT CO<sub>2</sub>e/year over existing conditions at full build-out. The Energy Recovery Project would reduce additional operational emissions from the Expansion Project by 103 percent, reducing emissions below existing conditions. Thus, the operation of the Energy Recovery Project would not exceed PCAPCD's proposed "floor" mass emission threshold of 1,100 MT CO<sub>2</sub>e/year. As a result, implementation of the Energy Recovery Project would not result in a cumulatively considerable contribution of GHGs, and this impact would be less than significant.

**b) Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?**

**Less than significant with mitigation.**

**Expansion Project**

As described in a) above, the Expansion Project would exceed the GHG emission thresholds adopted by PCAPCD. These emissions would not be consistent with State targets to reduce overall emissions and would be inconsistent with the Air Quality Element of the City's General Plan because of the substantial increase in GHG emissions. Therefore, the Expansion Project alone would conflict with and obstruct implementation of ARB's Scoping Plan for achieving GHG reductions consistent with AB 32, would be inconsistent with PCAPCD's guidance, and would conflict with applicable General Plan policies. This impact would be potentially significant.

**Mitigation Measure 3.7-2**

Implement Mitigation Measure 3.7-1 above.

**Significance after Mitigation**

Implementation of Mitigation Measure 3.7-1 would reduce the Expansion Project's overall GHG emissions to a level that is below PCAPCD's GHG threshold of 1,100 MT CO<sub>2</sub>e/year. Mitigation Measure 3.7-1 would minimize GHG emissions from stationary, mobile, and other emission sources. With minimization of emissions and consistency with the PCAPCD GHG threshold, the Expansion Project would not conflict with or obstruct ARB's Scoping Plan for achieving GHG reductions consistent with AB 32, would be consistent with applicable General Plan policies, and would be consistent with PCAPCD's guidance. Therefore, this impact would be reduced to a **less-than-significant** level.

**Less than significant.**

**Energy Recovery Project**

As described in a) above, the Energy Recovery Project would meet GHG emission thresholds adopted by PCAPCD, reducing emissions below existing conditions. Thus, these emissions would be consistent with State targets to reduce overall emissions. The Energy Recovery Project would also be consistent with the Air Quality Element of the City's General Plan because the Energy Recovery Project would minimize stationary source emissions from digester gas flares and promote energy conservation. Therefore, the Energy Recovery Project would not conflict with or obstruct ARB's Scoping Plan for achieving GHG reductions consistent with AB 32 and would be consistent with PCAPCD's guidance. This impact would be **less than significant**.

### 3.8 HAZARDS AND HAZARDOUS MATERIALS

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

#### 3.8.1 Environmental Setting

A data search of various agency lists was conducted for the Project site and surrounding areas to identify potential hazardous contamination sites. The PGWWTP and the Roseville Energy Park immediately north of the Project site are listed as facilities that report to the EPA according to the Envirofacts Web database (EPA 2016b). There are no sites included in the California Department of Toxic Substances Control (DTSC) EnviroStor Database (DTSC 2016), or the Cortese List that are located in the Project vicinity (California Environmental Protection Agency (CalEPA) 2016).

Current operations at the PGWWTP include the transport, storage, and use of hazardous materials. Section 2.5.2 of Chapter 2, "Project Description and Background," includes examples of the types of hazardous materials currently used onsite. Hazardous chemicals onsite are stored in designated hazardous materials storage or containment areas, depending on the nature of the chemical, and are stored according to local, state, and federal regulations.

The PGWWTP currently has an Emergency Action Plan (EAP). The EAP includes the means for addressing and managing all aspects of emergency response that could foreseeably be required at the site, including first aid and medical treatment, evacuation, information on the responsible authorities to notify in the event of an emergency, internal chain-of-command contacts, and documentation. To avoid emergency situations and ensure proper functioning, maintenance workers at the site are responsible carrying out routine maintenance on equipment, which is also documented in the EAP. The PGWWTP also has a Spill Prevention Control and Countermeasure Plan (SPCC), which contains information on the correct maintenance and handling of hydrocarbons and hydrocarbon-related containment.

### 3.8.2 Discussion

#### a) **Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?**

**Less than significant.** Construction of the Project would involve the routine transport and handling of hazardous substances such as diesel fuels, lubricants, solvents, epoxies, and paints. Handling and transport of these materials could result in the exposure of workers to hazardous materials. In addition, operation of the existing PGWWTP includes routine transport, use, and disposal of hazardous materials as described in Section 2.5.2 of Chapter 2, "Project Description and Background." Hazardous materials used for operation of the Expansion Project would be similar to existing operations.

The Project, would result in several new hazardous materials and byproducts onsite, including hydrogen sulfide, siloxane, carbon dioxide, and CNG. However, the Project would be constructed and operated in compliance with applicable federal, state, and local laws pertaining to the handling, transport, usage, and disposal of hazardous substances, including the California Occupational Safety and Health Act (CAL/OSHA) regulations, DTSC regulations, EPA, and regulations specified by the Roseville Fire Department. The Energy Recovery Project would not accept any hazardous high strength waste. In addition, the PGWWTP currently has a SPCC for onsite for storage and handling of hydrocarbons, and an EAP for addressing and managing all aspects of emergency response and these plans will be updated to cover any new facilities and processes included as part of the Project. Contractors handling hazardous materials would also be required to be familiar with the requirements of both the SPCC and EAP. Contractors would be trained in the procedures to follow in the event of a spill, and in the deployment of containment and clean up equipment.

Therefore, because the City and its contractors would implement and comply with these regulations during construction and operation of the Project, impacts related to creation of significant hazards to the public through routine transport, use, and disposal of hazardous materials would not occur. This impact would be less than significant.

#### b) **Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?**

**Less than significant.** There is a small risk of upset during implementation of the Project during commissioning of new treatment facility components; however, non-compliant effluent would not constitute a hazardous waste. In addition, the City would coordinate with the Central Valley Regional Water Quality Control Board (RWQCB) prior bringing new facility components online to minimize the risk of upset. In the event that an upset should occur during commissioning, it would be handled according to existing protocols, which include diverting non-compliant effluent into the on-site effluent storage basins. Chemicals used in the

treatment process would be managed and contained similar to existing operations, and would be handled according to existing protocols in the event of an upset during Project implementation. Additional hazardous materials would be used onsite as part of the Energy Recovery Project; however, as discussed in a), above, the Project would be subject to local, state, and federal laws concerning the use of hazardous materials at the site. In addition, continued implementation of the SPCC and EAP would also minimize the potential for release of hazardous substances. Therefore, this impact would be less than significant.

**c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?**

**Less than significant.** There are no existing schools within a 0.25-mile radius of the Project area. The nearest existing school to the Project area is Chilton Middle School, which is approximately 0.6-mile southeast of the Project site. A high school is proposed within 0.25-mile of the Project site, but none of the buildings would be within this footprint. The SPCC and EAP are currently in place to reduce the risk to adjacent properties associated with existing operations and this would also address the Project. While the CNG fueling station would be added to the site, a number of safety features are included to conservatively regulate pressure, ensure no leakage (and detect any leakage if it were to occur), and otherwise provide a margin of safety such that there are no hazards off-site. Therefore, the impact on nearby schools would be less than significant.

**d) Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or the environment?**

**Less than significant.** As discussed above in Section 3.8.1, the PGWWTP and the Roseville Energy Park are listed as facilities that report to EPA. However, the Project site is not identified by EPA, DTSC, or Cal EPA as a hazardous materials site (EPA 2016b, DTSC 2016, CalEPA 2016). Thus, the Project would not create a significant hazard to the public or to the environment as a result of existing hazardous material contamination. Therefore, this impact would be less than significant.

**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 projects result in a safety hazard for people residing or working in the project area?**

**No impact.** The nearest airport to the Project area is Lincoln Regional Airport, approximately 8 miles north of the Project site. The Project site is not located within the airport land use plan for this airport, or any other airport, nor is it located in a restricted airport zone. Therefore, there would be no impact.

**f) For a project within the vicinity of a private airstrip, would the projects result in a safety hazard for people residing or working in the project area?**

**No impact.** There are no private airstrips in the vicinity of the Project site. Therefore, there would be no impact.

**g) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?**

**No impact.** The City has an Emergency Operations Plan (EOP) and a Multi-Hazard Mitigation Plan addressing emergencies within the City. As discussed above, the PGWWTP also has an EAP for operation of the existing facility. This plan would be updated to cover any new facilities and processes included as part of the Project. The Project would not physically interfere with any of these plans. Therefore, there would be no impact.

**h) Would the project expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?**

**Less than significant.** The Project site is not located within a forested area, and is not designated as a high fire zone by California Department of Forestry and Fire Protection (CALFIRE 2008). The immediate Project vicinity is dominated by annual grassland, with trees bordering the Project site. Activities associated with construction, including the use of vehicles and other equipment could result in ignition sparks, but contractors would be trained to execute work in a manner that is safe with respect to fire hazards, and fire suppression equipment would be readily available at the construction site. In addition, the use of CNG onsite would increase the potential for a fire during operations. However, the CNG facilities would be within a paved area, and the facilities would have extensive safety measures including being designed with a conservative pressure rating and ability to withstand up to 1.25 times the tank operating pressure. Additionally, valves and other safety devices would be included with the fueling stations to prevent leakage from the tank and dispensers. Emergency shutoffs, warning signage, and safety bollards would also be included to protect the CNG tanks and associated equipment. Additionally, as discussed in Section 3.14, "Public Services," adequate fire protection services are available to serve the Project site. Because of the Project site is not within an area designated as a high fire zone and numerous safety measures would be implemented as part of the Project, this impact would be less than significant.

### 3.9 HYDROLOGY AND WATER QUALITY

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

## 3.9.1 Environmental Setting

### HYDROLOGY

The Project site is located within the Pleasant Grove Creek watershed. The existing WWTP is within the area covered by the *Pleasant Grove Ecosystem Restoration Plan* (Placer County 2006), which guides various aspects of Pleasant Grove Creek watershed planning, including pollution control, storm water management, and improvement of upstream and headwater conditions.

Pleasant Grove Creek is approximately 0.4-mile north of the Project site, and Curry Creek is located to the south and drains lands south of the Project site. The PGWWTP currently discharges effluent to Pleasant Grove Creek approximately 1 mile downstream of the confluence of the main branch and Kaseberg Creek.

Pleasant Grove Creek is an intermittent, and primarily surface water-fed stream that drains approximately 30,600 acres in the northwestern portion of the cities of Roseville and Rocklin and their outlying western suburbs. The creek comprises four subbasins: Lower Pleasant Grove Creek, Upper Pleasant Grove Creek, South Branch Pleasant Grove Creek, and Kaseberg Creek. The creek headwaters begin in Upper Pleasant Grove Creek, in the low Sierra Nevada foothills at an elevation of approximately 590 feet above mean sea level (amsl), eventually flowing into the Pleasant Grove Creek Canal at approximately 35 feet amsl. The main stretch of the creek, where PGWWTP effluent is discharged, is flat and meandering, with slopes of less than 5 percent.

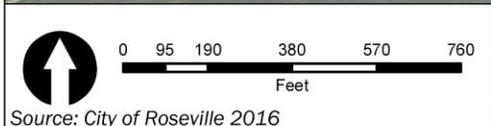
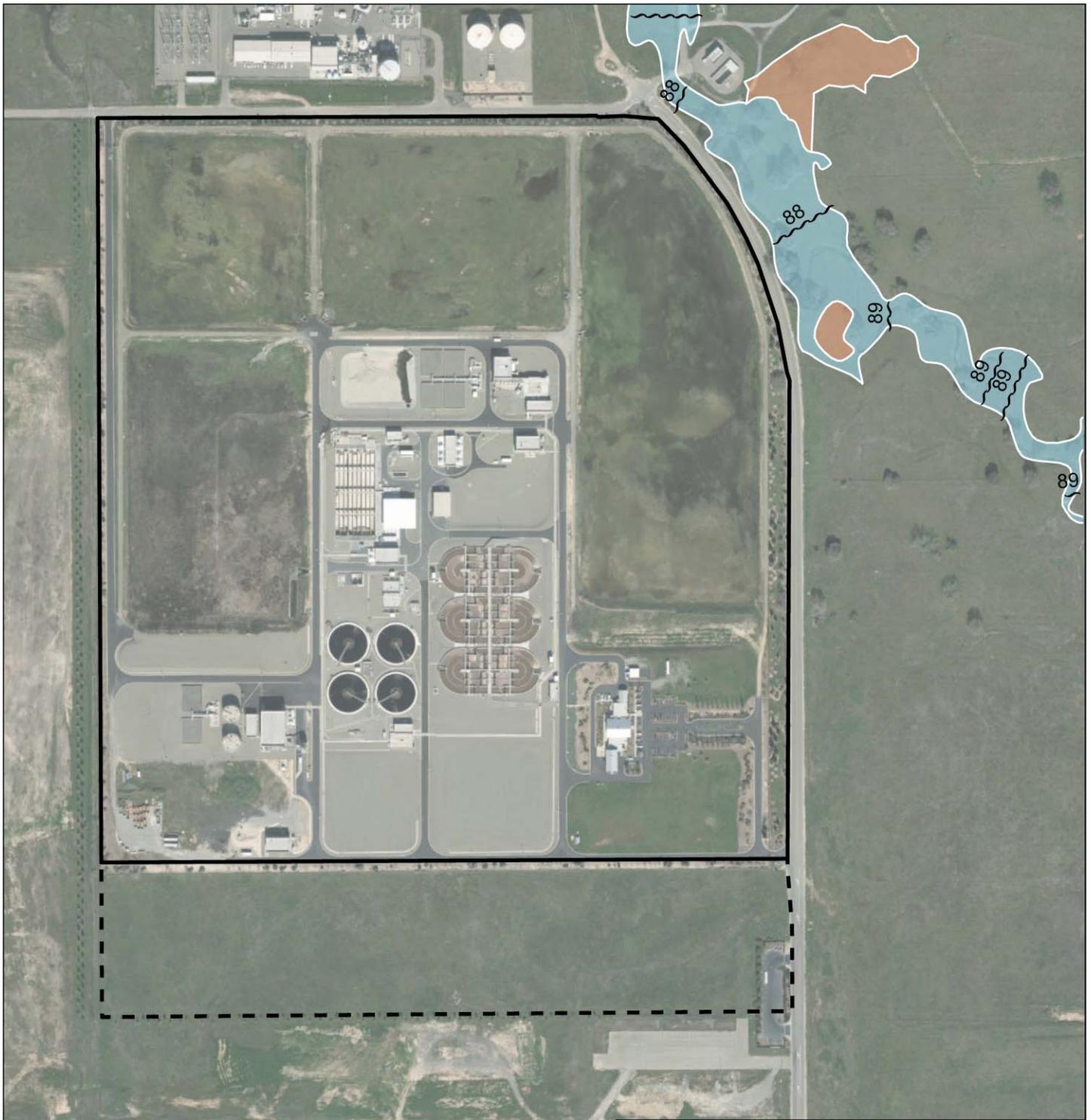
Streams in the Project vicinity are fed chiefly by surface runoff from rainfall. Consequently, many streams in the area are intermittent, flowing only during the wet season or during rainfall events. In an effort to control the drainage pattern of Pleasant Grove Creek and other rivers in the region, dikes and levees have been constructed in agricultural areas to create a predictable channelized stream. These modifying features have forced Pleasant Grove Creek into what is today a highly channelized stream morphology, which has resulted in increased stage heights during periods of high flow. As a result, the natural floodplain has been all but eliminated, and flooding occurs above areas on the creek where the channel is not capable of accommodating artificially high stage heights. Development in the Roseville area has exacerbated this problem, which has increased direct surface runoff to the stream channel. As a consequence, large swaths of land on either side of Pleasant Grove Creek area are identified by the Federal Emergency Management Agency (FEMA) as having a moderate flood hazard, including the location of the Project site. The moderate flood hazard rating corresponds to the 500-year flood event. While the Project site lies within the 500-year designated floodplain, regulatory restrictions on building are limited to the 100- and 200-year floodplains (Exhibit 3.9-1). Floodplain hazards for the Project site are described in further detail below.

### BENEFICIAL USES

Pleasant Grove Creek has no existing cold water fishery and limited warm water fishery value. Because the creek is intermittent, with no flow during the summer months, its value as a recreational resource is limited. However, the creek is of agricultural value, with several sites where water is withdrawn for irrigation. In addition to receiving effluent from the PGWWTP, the stream also receives effluent from several local industry point sources.

### WATER QUALITY

Water quality in Pleasant Grove Creek has been degraded by agricultural uses, and contains elevated levels of nitrogen, phosphorus, and coliform bacteria (City of Roseville 1996b: 7-3). It is also currently a Section 303(d) listed water for ammonia, specific conductance, and pH (SWRCB 2012).



Source: City of Roseville 2016

**Legend**

- Zone AE - With Base Flood Elevation
- 0.2% Annual Chance Flood Hazard
- Base Flood Elevation Line (BFE) - NAVD 88
- SFHA/Flood Zone Boundary
- Existing PGWWTP
- Southern Expansion Area

X15010038 01.003

**Exhibit 3.9-1**

**Flood Zones**



## NPDES PERMIT CONDITIONS

The PGWWTP operates under the Waste Discharge Requirements (WDR) specified in National Pollutant Discharge Elimination System (NPDES) permit No. CA0084573, issued by the Central Valley RWQCB under Order No. R5-2014-0051 (Appendix D). Under this permit, the PGWWTP is permitted to discharge 12 million gallons per day (mgd) average dry weather flow (ADWF) to Pleasant Grove Creek. The discharge permit implements the Basin Plan's water quality objectives, and establishes PGWWTP effluent standards and receiving water quality standards for Pleasant Grove Creek. The permit sets discharge limitations for contaminants of concern in effluent discharges, including biological oxygen demand, pH, total suspended solids (TSS), total ammonia nitrogen, and total nitrogen, and combined nitrate and nitrite. The permit also sets limits on the quality of water in Pleasant Grove Creek downstream of the treatment facility. The permit dictates that discharge from the PGWWTP shall not cause adverse effects on the following parameters of concern in Pleasant Grove Creek, downstream of the treatment facility:

- ▲ Bacteria
- ▲ Biostimulatory substances
- ▲ Chemical constituents
- ▲ Color
- ▲ Chemical constituents
- ▲ Floating material
- ▲ Oil and grease
- ▲ pH
- ▲ Pesticides
- ▲ Radioactivity
- ▲ Suspended sediments
- ▲ Settleable substances
- ▲ Taste and odors
- ▲ Temperature
- ▲ Toxicity
- ▲ Turbidity

## REGULATORY FLOODPLAIN

The FEMA oversees federal floodplain management policies and runs the National Flood Insurance Program (NFIP) adopted under the National Flood Insurance Act of 1968. FEMA prepares Flood Insurance Rate Maps (FIRM) that delineate the regulatory floodplain to assist local governments with land use planning and floodplain management decisions to meet the requirements of the NFIP. Floodplains are divided into flood hazard areas, which are areas designated according to their potential for flooding, as delineated on FIRMs. Special Flood Hazard Areas (SFHAs) are the areas identified as having a one percent chance of flooding in a given year (otherwise known as the 100-year flood). In general, the NFIP mandates that development is not to proceed within the regulatory 100-year floodplain, if the development is expected to increase flood elevation by 1 foot or more. The PGWWTP is not located on an SFHA, as identified on FIRM panel 06061C0394F, dated June 8, 1998 (FEMA 1998).

In 2007, the State of California passed a series of laws referred to as SB 5 directing California Department of Water Resources (DWR) to prepare flood maps for the central valley flood system and the State Plan of Flood Control, which includes a system of levees and flood control facilities located in the Central Valley. This legislation also set specific locations within the area affected by the 200-year flood event as the urban level of flood protection (ULOP) for the Central Valley.

SB 5 "requires all cities and counties within the Sacramento–San Joaquin Valley, as defined in California Government Code Sections 65007(h) and (j), to make findings related to a ULOP or the national FEMA standard of flood protection before: (1) entering into a development agreement for any property that is located within a flood hazard zone; (2) approving a discretionary permit or other discretionary entitlement, or a ministerial permit that would result in the construction of a new residence, for a project that is located

within a flood hazard zone; or (3) approving a tentative map, or a parcel map for which a tentative map was not required, for any subdivision that is located within a flood hazard zone.”

The City of Roseville has updated its General Plan to meet the requirements of SB 5. There are five locational criteria that must all be met for a ULOP to apply, of which two are applicable across the entire City: the City is an urban area of greater than 10,000 people, and is located within the Sacramento–San Joaquin Valley. The remaining three are:

- ▲ The area must be located within a flood hazard zone that is mapped as either an SFHA, of an area of moderate hazard (identified by FEMA as the 500-year floodplain) of FEMA’s official FIRM for the NFIP;
- ▲ The area must be located within an area with a potential flood depth above three feet, from sources other than localized conditions; and
- ▲ The area must be located within a watershed with a contributing area of more than 10 square miles.

Based on these criteria, the Project site is not located in an area covered by the ULOP for the City of Roseville, as identified on Figure VIII-2 of the City General Plan (City of Roseville 2016d).

## GROUNDWATER

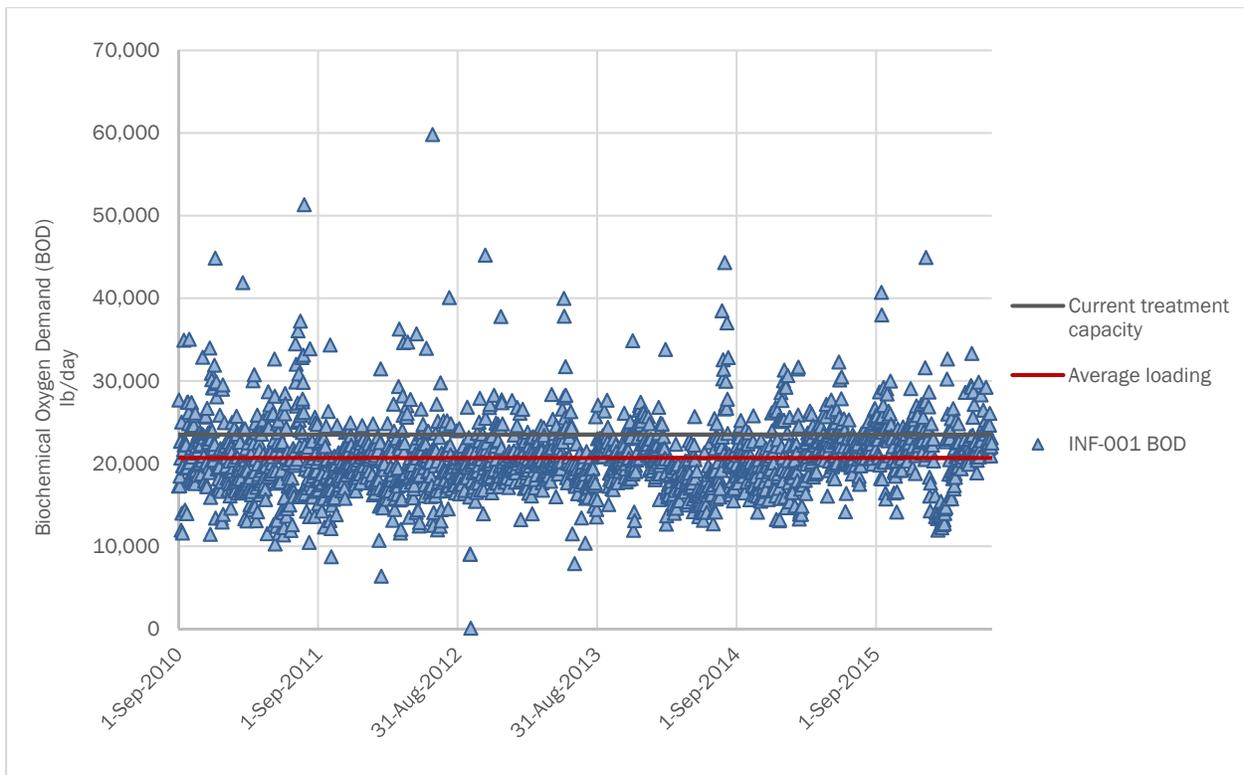
The City of Roseville is located on the approximately 350,000-acre North American River subbasin, which extends beneath western Placer County, southern Sutter County and northern Sacramento County, and is a subbasin of the broader Sacramento Groundwater Basin (DWR 2006).

The North American subbasin hydrogeology is characterized by an upper groundwater system and a lower groundwater system. The upper groundwater system exists in the deep Quaternary alluvial deposits described in Section 3.6, Geology and Soils. The lower groundwater system is largely confined, and exhibits recharge characteristics that indicate that it is somewhat hydraulically isolated from the upper system. Water-bearing features in the upper system are generally limited to loose, unconsolidated sediments, with water flowing intermittently. The vadose zone is relatively deep, and becoming deeper over time due to groundwater withdrawal for agricultural use. Groundwater recharge occurs through surface water and snowmelt infiltration (DWR 2006).

### 3.9.2 Discussion

#### a) Would the project violate any water quality treatment standards or waste discharge requirements?

**Less than significant.** While the existing PGWWTP operates within the design range for flow rates, biochemical oxygen demand (BOD) loading in existing flows averaged 20,678 lbs/day from September 2010 through June 2016, which represents 88 percent of the 23,500 lbs/day treatment capacity (Exhibit 3.9-2). The higher than anticipated BOD loads increase the potential for exceeding water quality standards and reduce the treatment capacity of the PGWWTP.



**Exhibit 3.9-2 Influent Biochemical Oxygen Demand Loading and Treatment Capacity**

While the PGWWTP is permitted and has hydraulic capacity to treat and discharge 12 mgd ADWF, the current BOD loading reduces the treatment capacity to an estimated 9.5 mgd. The Expansion Project would increase the treatment capacity of the PGWWTP, and allow the WWTP to continue to reliably meet effluent limits set forth in the NPDES permit by increasing BOD treatment capacity from 23,500 lb/day to 34,500 lb/day. Water quality in Pleasant Grove Creek is not expected to change as a result of this expansion, and the PGWWTP would continue to operate in compliance with water quality standards set forth in the NPDES permit.

Startup and incorporation of the new water treatment system components into the existing treatment system has the potential to cause a system upset and result in a violation of effluent or receiving water permit limitations. To minimize the risks associated with upset conditions, the City would coordinate with the Central Valley RWQCB prior bringing new facility components online. In the event that an upset should occur during commissioning, it would be handled according to existing protocols.

Operation of the Energy Recovery Project would have no impact on water quality in the Pleasant Grove Creek watershed related to effluent discharges.

Construction activities associated with both the Expansion Project and Energy Recovery Project would include additional site grading and an overall increase in the total acreage of impervious surfaces on the Project site as a result of concrete slabs for additional facilities, and asphalt surfaced roadways and parking areas. To achieve compliance and effectively implement the CWA, the City has adopted Ordinance No. 4822 relating to urban stormwater quality management and discharge control. This chapter of the City code (City of Roseville Code of Ordinances Chapter 14.20) sets forth requirements for any development that would require stormwater control measures. The City would comply with the provisions of this ordinance including preparing a Stormwater Management Plan congruent with the City of Roseville’s Stormwater Quality Design Manual and a Stormwater Maintenance Plan.

In addition to the City requirements, the Central Valley RWQCB requires compliance with the General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activity (General Permit) for disturbances over 1 acre. Construction site erosion control methods and other best management practices (BMPs) would be included in the development of Storm Water Pollution Prevention Plans (SWPPPs), per the requirements of the General Permit. Implementation of BMPs during construction would safeguard against violation of the General Permit and associated water quality impacts. Compliance with City and Central Valley RWQCB requirements would reduce this impact to a less-than-significant level.

**b) Would the project substantially deplete groundwater supplies or interfere substantially with groundwater discharges such that there would be a net deficient in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?**

**No impact.** The Project would not use groundwater, nor would it have an impact on groundwater recharge in the area. Therefore, no impact would occur.

**c) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?**

**Less than significant.** Construction of the proposed Project would result in minor alterations to the existing drainage pattern of the site. Grading activities for facility construction could result in increased sediment in stormwater runoff. Through the City stormwater management permitting process, a local grading plan would be developed, which would minimize runoff generation during construction. Additionally, as discussed above under a), SWPPPs would be developed under the General Permit, and incorporate BMPs to minimize stormwater drainage and erosion related to construction.

The Project would increase the amount of impervious surfaces on the site. Grading and construction would be carried out in compliance with SWPPP BMPs, and new stormwater collection facilities would be constructed for the Project that would allow new impervious surfaces to drain into the existing stormwater system. Stormwater that enters the existing WWTP area is currently collected and retained on-site in the stormwater pond, and treated on-site when there is available capacity. Stormwater collected from the new impervious surfaces would be conveyed to the stormwater pond.

The existing stormwater collection system has been designed to avoid substantial erosion on-site or off-site, including within Pleasant Grove Creek. The Project would be designed and constructed to minimize erosion off-site utilizing existing BMPs, and would be incorporated into the existing stormwater collection system. Therefore, this impact would be less than significant.

**d) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?**

**Less than significant.** As discussed in c), the Project would alter the drainage pattern at the site and increase impervious surfaces. New impervious surfaces would be connected to the on-site stormwater collection system, and BMPs would be employed during construction to minimize construction impacts.

The additional area covered by new impervious surfaces would be small in relation to the overall site, and the existing stormwater collection system has been designed to avoid substantial on-site or off-site flooding, including Pleasant Grove Creek. Therefore, this would be less than significant.

**e) Would the project create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?**

**Less than significant.** Stormwater that enters the existing WWTP area is currently collected and retained on-site in the stormwater basins, and treated on-site when there is available capacity. Likewise, stormwater collected from the new impervious surfaces would be conveyed to the stormwater basins. The Project would be designed to have adequate on-site drainage, and the PGWWTP would continue to operate in a manner that minimizes stormwater pollution in accordance with City Ordinance No. 4822. During construction activities, BMPs detailed in the SWPPP and in the Stormwater Management Plan would be implemented to minimize the risk of stormwater pollution from erosion. Therefore, this impact would be less than significant.

**f) Would the project otherwise substantially degrade water quality?**

**Less than significant.** The proposed Project would add primary clarifiers and anaerobic digesters to the existing treatment system at the PGWWTP. With these additions, the PGWWTP would continue to operate in compliance with the existing NPDES permit. In addition, the Project would comply with City and Central Valley RWQCB requirements for construction and stormwater runoff. Therefore, construction and operation of the Project would not degrade water quality. This impact would be less than significant.

**g) Would the project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation boundary?**

**No impact.** The Expansion Project proposes upgrades to the PGWWTP, and the Energy Recovery Project would involve construction of co-generation facilities. No housing is planned as a part of the Project. Therefore, there would be no impact.

**h) Would the project place within a 100-year flood hazard area structures which would impede or redirect flows?**

**No impact.** The Project site is not located within the 100-year flood hazard area as depicted on the FEMA Flood Insurance Rate Map (Map No. 0601C0394 F, FEMA 1998). Therefore, no structures would be placed within a 100-year floodplain. There would be no impact.

**i) Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of a failure of a levee or dam?**

**Less than significant.** Increased stormwater runoff and the potential for flooding at the PGWWTP was previously addressed in the 1996 Roseville Regional Wastewater Treatment Service Area Master Plan EIR (Master Plan EIR) and was found to be significant under Impact 6-3: Increased Stormwater Runoff; and, Impact 6-6: Contribution to Flooding of Pleasant Grove Creek. Mitigation Measure 6-2 in the 1996 Master Plan EIR required preparation of a hydrologic study to address these impacts. In 1999, the *Hydrologic Analysis for Pleasant Grove Creek Pleasant Grove Wastewater Treatment Plant Project* was prepared in accordance with this mitigation measure (City of Roseville 1999). This Hydrologic Analysis concluded that a minimum of 48 million gallons (mg) of on-site storage would be needed to avoid downstream flooding during a 100-year flood event. According to the discharge permit, the PGWWTP includes three storage basins with a total of 65.1 mg of storage capacity for 100-year flood protection. The Project would reduce the capacity of Effluent Storage Basin No. 3 due to construction of the new primary clarifier building. New construction within Storage Basin No. 3 would displace between 2.6 and 2.9 mg of existing on-site storage. Therefore, with project implementation, total on-site storage volume would be between 62.2 to 62.5 mg which would continue to accommodate on-site retention requirements during flood events. Thus, the expanded treatment plant would not expose people or structures to a significant risk of loss, injury, or death involving flooding.

In addition, Folsom Dam, which is located more than 12 miles southeast of the Project site, is the closest dam to the Project site. While portions of the City could be subject to flooding in the event of failure or

damage of the Folsom Dam, the Project would not include construction of housing. In addition, the Project would include expansion of an existing facility and would not introduce people or structures into a previously unoccupied area. Therefore, the Project would not pose a new significant risk related to failure of a levee or dam. This impact would be less than significant.

**j) Would the project expose people or structures to a significant risk of loss, injury or death as a result of inundation of seiche, tsunami, or mudflow?**

**No impact.** The proposed Project is not located in a coastal region, and is therefore not exposed to the risk of tsunami. Nor is the Project located near a large inland waterbody that would expose it to the risk of seiche. In addition, the Project site is not located in an area where steep terrain would result in the risk of mudslides during an earthquake or heavy rainfall event. Therefore, there would be no impact.

### 3.10 LAND USE AND PLANNING

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>X. Land Use and Planning. Would the project:</b>				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.10.1 Environmental Setting

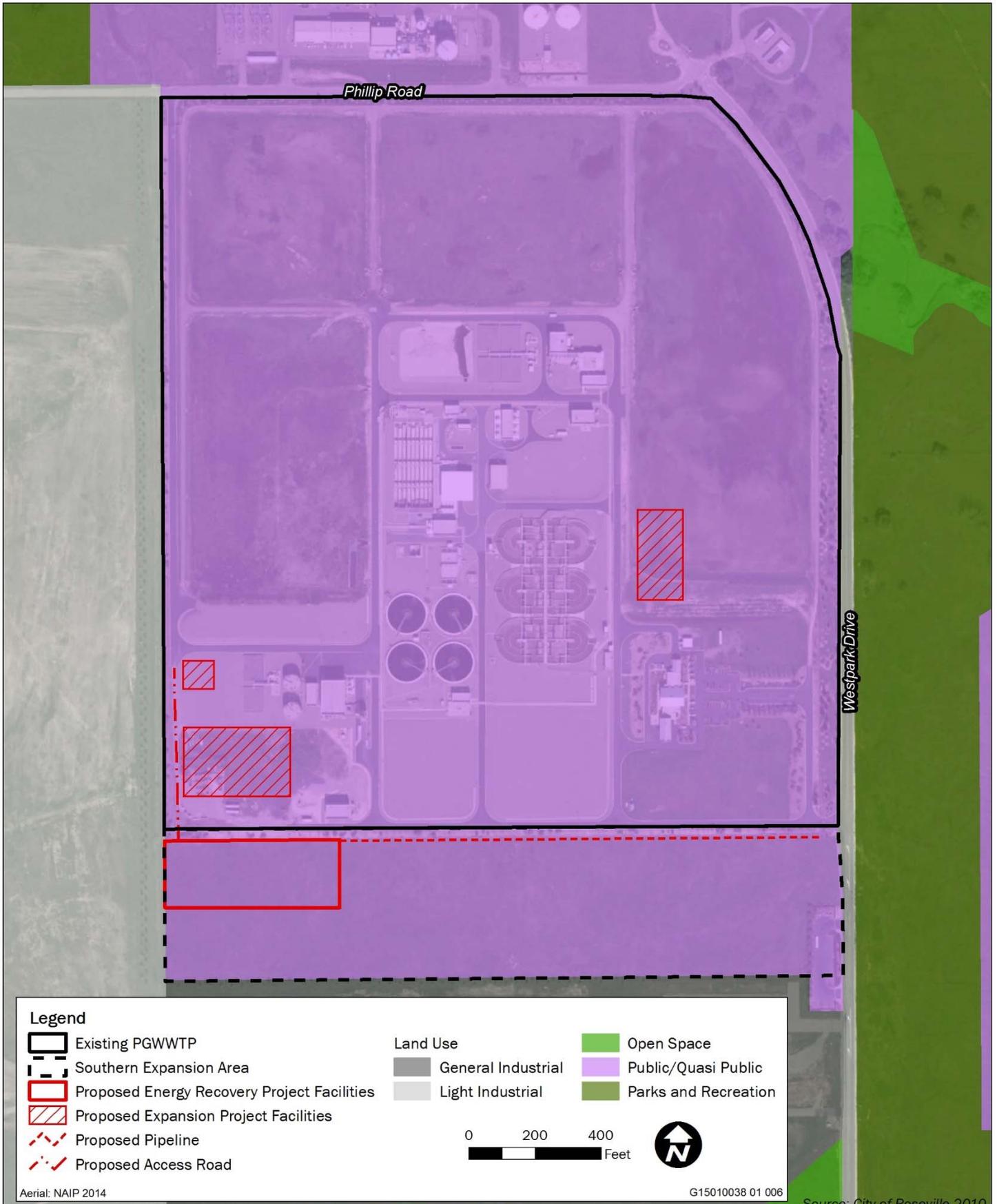
Lands surrounding the PGWWTP include Public/Quasi Public lands to the north (the existing Roseville Energy Park), undeveloped open space/parks and recreation designated lands to the east and northwest, and undeveloped lands designated general industrial to the south, and light industrial to the west. To minimize compatibility concerns, a 769-foot non-residential buffer surrounds the PGWWTP with the nearest residences being approximately 845 feet to the west.

The existing PGWWTP is located within the City of Roseville and is designated as Public/Quasi Public by the City General Plan (Exhibit 3.10-1) (City of Roseville 2016d). The City-owned parcel immediately south of the PGWWTP, where the Energy Recovery Project facilities would be located, is also within the City of Roseville, and is within the *West Roseville Specific Plan* area. This parcel is also designated as Public/Quasi Public (City of Roseville 2004). Lands with this designation include areas for education, religious assembly, governmental offices, municipal corporation yards, and water treatment plants. The existing PGWWTP and parcel immediately to the south are both zoned as Public/Quasi Public (City of Roseville 1996a). Lands within the PGWWTP fence-line boundary are developed with WWTP facilities, paved areas, or other disturbed areas. The parcel to the south is currently undeveloped and is primarily disturbed grassland.

#### 3.10.2 Discussion

##### a) Would the project physically divide an established community?

**No impact.** The Project facilities for the Expansion Project and the Energy Recovery Project would be located within and adjacent to the existing PGWWTP property, which is separated from the surrounding residential uses by approximately 845 feet. Thus, the Project would not divide an established community and no impact would occur.



**Exhibit 3.10-1**

**Land Use Designations**



**b) Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?**

**No impact.** As discussed above, the existing PGWWTP and the city-owned parcel immediately to the south are currently designated as Public/Quasi Public. The PGWWTP and city-owned parcel to the south are also both zoned as Public/Quasi Public, which corresponds to open space and public uses (City of Roseville 1996a). Expansion of the existing WWTP and construction of energy recovery facilities would be consistent with the existing land use and zoning designations. Therefore, the Project would remain consistent with the land use and zoning designation of the site. There would be no impact related to a conflict with a land use policy.

**c) Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?**

**No impact.** Placer County is in the process of developing the Placer County Conservation Plan (PCCP), which will serve as a HCP/NCCP for development within the county. The City has an existing memorandum of understanding with USFWS and is not participating in the PCCP. Therefore, there are no HCP/NCCPs that are applicable to the Project site. There would be no impact.

### 3.11 MINERAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XI. Mineral Resources. Would the project:</b>				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.11.1 Environmental Setting

According to the City General Plan, mineral resources are limited and no mineral extraction operations currently exist within the City General Plan (City of Roseville 2016d). The California Geologic Survey (CGS) classifies the Project site as Mineral Resource Zone (MRZ)-4, which is an area of unknown mineral resource potential. However, the site is not designated by CGS as an area of gold, aggregate, clay, or granite production, and there is no active mineral extraction occurring on-site (DOC 1995).

#### 3.11.2 Discussion

**a) Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?**

**No impact.** Mineral resources within the City are limited, and the Project site is not located within an area of known mineral resources. Therefore, development of the Project would have no effect on the availability of known mineral resources that would be of value to the region and the residents of the state, and no impact would occur.

**b) Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?**

**No impact.** There are no locally important mineral resource recovery sites delineated on a local general plan, specific plan, or other land use plan that include the Project site. Therefore, development of the Project would have no effect on the availability of known mineral resources, and no impact would occur.

### 3.12 NOISE

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XII. Noise. Would the project result in:</b>				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### 3.12.1 Environmental Setting

Existing noise- and vibration-sensitive land uses in the Project vicinity primarily include single-family residences. These residences are considered to be noise-sensitive because they are land use types where noise exposure could result in health-related risks to individuals, as well as places where a quiet setting is an essential element for 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. Residential land uses are also considered to be sensitive to noticeable levels of ground vibration. There are noise-sensitive receptors west of the Project along Westbrook Boulevard, southeast of the Project site along Westpark Drive, and east of the Project site along Hayden Parkway, Bickleigh Loop, and Bellanca Way. The residences nearest to the Project site are approximately 845 feet west of the PGWWTP property boundary. Residences are also located approximately 1,500 feet to the east of where the proposed primary clarifiers would be located, and 1,200 feet south of where the proposed energy recovery facilities would be located.

The existing noise environment in the Project vicinity is primarily influenced by transportation noise from vehicle traffic on the surrounding roadway systems (e.g., Westbrook Boulevard, West Park Drive, Pleasant Grove Boulevard) and the Roseville Energy Park to the north. Other noise sources that contribute to the existing noise environment include existing WWTP activities at the Project site. These include mobile noise sources from equipment such as maintenance vehicles, and employee vehicles, as well as stationary noise sources associated with pumps and motors that run the various processes at the WWTP.

An ambient noise survey was conducted on August 24, 2016. The purpose of the survey was to establish existing noise conditions in the Project vicinity, as well as noise levels at existing noise sensitive receptors. Several short-term noise measurements were taken to capture the reference noise levels for equipment on the Project site. Additionally, one long-term noise measurement was taken to capture the ambient noise environment on the western boundary of the Project sites (the area nearest to sensitive receptors). The location of each noise measurement is shown on Exhibit 3.12-1 and the measured noise levels are shown in Table 3.12-1 with corresponding location numbers. Noise level measurements were taken in accordance with American National Standards Institute standards using a Larson Davis Laboratories Model 820 precision integrating sound level meter. The CNEL measured during the long-term noise measurement was 51.5 dB.

**Table 3.12-1 Summary of Existing Ambient Noise Measurements Normalized to a Distance of 100 feet**

Location <sup>1</sup>	Noise Source	Start (Date/Time)	Stop (Date/Time)	Sound Level (dB)		
				L <sub>eq</sub>	L <sub>max</sub>	L <sub>min</sub>
1	Secondary Clarifiers	August 24, 2016 at 10:22 a.m.	August 24, 2016 at 10:33 a.m.	64.5	74.4	65.2
2	Dewatering Building	August 24, 2016 at 10:48 a.m.	August 24, 2016 at 11:03 a.m.	65.6	66.4	64.7
LT <sup>2</sup>	PGWWTP Operations	August 24, 2016 at 12:00 p.m.	August 25, 2016 at 12:00 p.m.	59.4	80.2	55.0

Notes: L<sub>eq</sub> = Equivalent Noise Level, or the equivalent steady-state noise level in a stated period of time that would contain the same acoustic energy as the time-varying noise level during the same period (i.e., average noise level); L<sub>max</sub> = maximum noise level, or the highest instantaneous noise level during a specified time period; L<sub>min</sub> = minimum noise level, the lowest instantaneous noise level during a specified time period.

<sup>1</sup> Refer to Exhibit 3.12-1 for ambient noise level measurement locations.

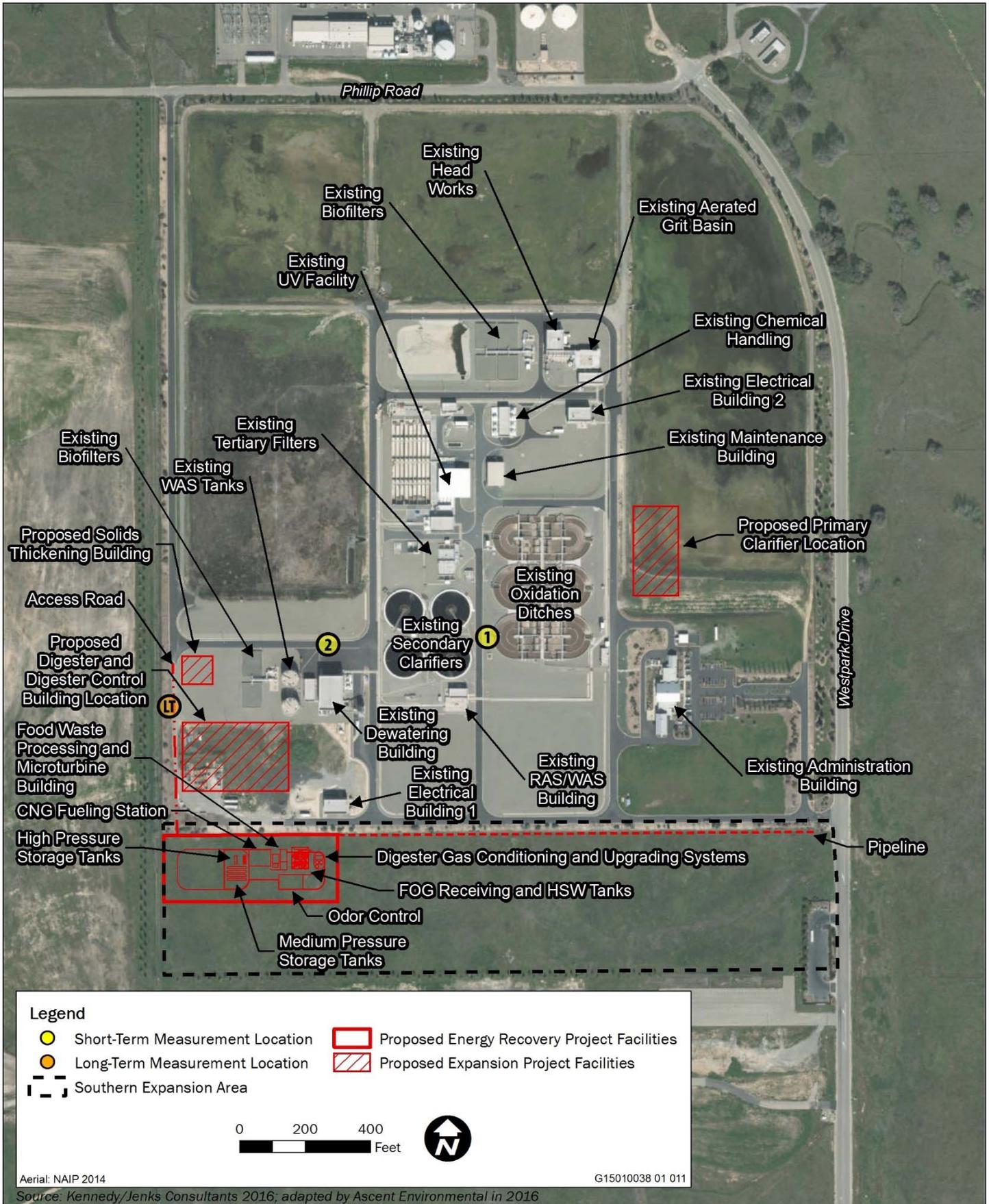
<sup>2</sup> The Community Noise Equivalent Level (CNEL) measured was 51.5 dB.

Source: Data collected by Ascent Environmental in 2016

## CITY OF ROSEVILLE GENERAL PLAN

The Noise Element of the City General Plan (City of Roseville 2016d) contains goals, policies, and implementation measures to ensure that residents are not subjected to noise beyond acceptable levels. City General Plan policies applicable to the Project are included below.

- ▲ **Policy 1:** Allow the development of new noise-sensitive land uses (which include but are not limited to residential, schools, and hospitals) only in areas exposed to existing or projected levels of noise from transportation noise sources which satisfy the levels specified in Table IX-1 (presented as Table 3.12-2 in this document). Noise mitigation measures may be required to reduce noise in outdoor activity areas and interior spaces to the levels specified in Table IX-1 (presented as Table 3.12-2 in this document).
- ▲ **Policy 7:** Require proposed fixed noise sources adjacent to noise-sensitive uses to be mitigated so as not to exceed the noise level performance standards of Table IX-3 (presented as Table 3.12-3 in this document).
- ▲ **Policy 9:** Where noise mitigation measures are required to achieve the standards of Tables IX-1 and IX-3 (presented as Tables 3.12-2 and 3.12-3 in this document), the emphasis of such measures should be placed on site planning and project design. These measures may include, but are not limited to, building orientation, setbacks, landscaping, and building construction practices. The use of noise barriers, such as soundwalls, should be considered as a means of achieving the noise standards only after all other practical design-related noise mitigation measures have been integrated into the project.
- ▲ **Policy 10:** Regulate construction-related noise to reduce impacts on adjacent uses consistent with the City's Noise Ordinance.



**Exhibit 3.12-1**

**Noise Measurement Locations**



**Table 3.12-2 Maximum Allowable Noise Exposure for Transportation Noise Sources**

Land Use	Outdoor Activity Areas <sup>1</sup> (L <sub>dn</sub> /CNEL, dB)	Interior Spaces	
		(L <sub>dn</sub> /CNEL, dB)	Leq, dB <sup>2</sup>
Residential	60 <sup>3</sup>	45	-
Transient Lodging	60 <sup>3</sup>	45	-
Hospitals, Nursing Homes	60 <sup>3</sup>	45	-
Theaters, Auditoriums, Music Halls	-	-	35
Churches, Meeting Halls	60 <sup>3</sup>	-	40
Office Buildings	65	-	45
Schools, Libraries, Museums	-	-	45
Playground, Neighborhood Parks	70	-	-

Notes: L<sub>dn</sub> = Day-Night Noise Level; CNEL = Community Noise Equivalent Level; dB = decibel; Leq = Equivalent Noise Level

<sup>1</sup> Outdoor activity areas for residential developments are considered to be the backyard patios or decks of single family dwellings, and the patios or common areas where people generally congregate for multi-family developments.

Outdoor activity areas for non-residential development are considered to be those common areas where people generally congregate, including pedestrian plazas, seating areas and outside lunch facilities.

Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use.

<sup>2</sup> As determined for a typical worst-case hour during periods of use.

<sup>3</sup> Where it is not possible to reduce noise in outdoor activity areas to 60 dB L<sub>dn</sub>/CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 75 dB L<sub>dn</sub>/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

Note: Where a proposed use is not specifically listed on this table, the use shall comply with the noise exposure standards for the nearest similar use as determined by the Planning Division. Commercial and industrial uses have not been listed because such uses are not considered to be particularly sensitive noise exposure.

Source: City of Roseville 2016d:IX-14

**Table 3.12-3 Performance Standards for Non-Transportation Noise Sources or Projects Affected by Non-Transportation Noise Sources**

Noise Level Descriptor	Daytime (7:00 a.m. to 10:00 p.m.)	Nighttime (10:00 p.m. to 7:00 a.m.)
Hourly L <sub>eq</sub> , dB	50	45
Maximum Level, dB	70	65

Notes: L<sub>eq</sub> = Equivalent Noise Level

For municipal power plants consisting primarily of broadband, steady state noise sources, the hourly (L<sub>eq</sub>) noise standard may be increase up to 10 dB(A), but not exceed 55 dB(A) Hourly L<sub>eq</sub> dB.

Each of the noise levels specified above should be lowered by 5 dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noise. Such noise levels are generally considered by residents to be particularly annoying and are a primary source of noise complaints. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings).

No standards have been included for interior noise levels. Standard construction practices should, with exterior noise levels identified, result in acceptable interior noise levels.

Source: City of Roseville 2016d

## CITY OF ROSEVILLE MUNICIPAL CODE

### Chapter 9.24, Noise Regulation

#### 9.24.030 – Exemptions

Private construction between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday, and between the hours of 8:00 a.m. and 8:00 p.m. Saturday and Sunday; provided, however, that all construction equipment shall be fitted with factory installed muffling devices and that all construction equipment shall be maintained in good working order.

**9.24.100 Sound Limits for Sensitive Receptors**

It is unlawful for any person at any location to create any sound, or to allow the creation of any sound, on property owned, leased, occupied or otherwise controlled by such person, which causes the exterior sound level when measured at the property line of any affected sensitive receptor to exceed the ambient sound level by 3 dB or exceed the sound level standards as set forth in Table 3.12-4, by 3 dB, whichever is greater.

**Table 3.12-4 Sound Level Standards (for Non-Transportation or Fixed Sound Sources)**

Sound Level Descriptor	Daytime (7:00 a.m. to 10:00 p.m.)	Nighttime (10:00 p.m. to 7:00 a.m.)
Hourly $L_{eq}$ , dB	50	45
Maximum Level, dB	70	65

Notes:  $L_{eq}$  = Equivalent Noise Level  
 Source: City of Roseville 2016d

**9.24.140 Operational Standards for City Activities**

Notwithstanding any other provisions of this chapter, City operations and activities are not subject to the provisions of this chapter. The City council may, by resolution, adopt operational standards for City activities to effectuate the purposes of this chapter.

**3.12.2 Discussion**

- a) **Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards?**

**Less than significant.** New stationary noise sources associated with the Expansion Project would include new primary clarifiers and the associated electrical building located on the east side of the Project site just north of the existing administration building, a solids thickening building located near the western boundary of the Project site, and anaerobic digestion facilities, located near the southwest corner of the Project site. New stationary noise sources associated with the Energy Recovery Project would include food waste receiving and processing facilities, microturbines, a vehicle fueling station, digester gas conditioning and upgrading system located near the southwest corner of the Project site. The locations of these new noise-generating facilities are show in Exhibit 3.12-1.

It is assumed that the noise levels generated by all of the proposed new stationary sources would be similar to the noise levels generated by existing stationary sources on the Project site. Based on the sound measurements collected and summarized in Table 3.12-1, the highest noise levels generated by existing stationary noise sources are 65.6 dB  $L_{eq}$  and 80.2 dB  $L_{max}$ . Although the new stationary sources could generate equally loud noise levels, they would be located closer to the PGWWTP property boundary and, therefore, closer to off-site noise-sensitive receptors. The new solids thickening building on the west side of the Project site would be closest to existing off-site noise-sensitive receptors, which are single family residences located approximately 845 feet from the Project site along the west side of Westbrook Boulevard. Through distance alone, the noise levels generated by new on-site stationary noise sources would attenuate to 42 dB  $L_{eq}$  and 56 dB  $L_{max}$ , which would be less than the daytime and nighttime hourly  $L_{eq}$  and  $L_{max}$  standards established by the City General Plan (Table 3.12-2) and Noise Ordinance (Table 3.12-3). See Appendix E for noise attenuation calculations. Therefore, the new stationary noise sources that would be part of the Project would not result in the exposure of persons to or generation of noise levels in excess of applicable local standards. Potential impacts associated with mobile noise sources (i.e., transportation-related noise) are discussed below under c). This impact would be less than significant.

**b) Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?**

**Less than significant.** Operation of the Expansion Project and the Energy Recovery Project would not result in any new long-term operational sources of ground vibration. Some ground vibration would be generated during construction of new facilities that would be a part of the Expansion Project and the Energy Recovery Project. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. Construction-related ground vibration is normally associated with impact equipment such as jackhammers and the operation of some heavy-duty construction equipment, such as dozers and trucks. The effects of ground vibration may be unnoticeable at the lowest levels, result in low rumbling sounds and detectable vibrations at moderate levels, and high levels of vibration can cause sleep disturbance in places where people normally sleep or annoyance in buildings that are primarily used for daytime functions and sleeping.

Construction activities would require the use of heavy-duty off-road equipment such as dozers, graders, excavators, concrete trucks and pumps, compressors, and various trucks (e.g., material and equipment haul trucks, water trucks, fuel trucks). No pile driving or blasting would take place. Table 3.12-5 presents the levels of ground vibration that could be generated by the types of heavy equipment that could be used during construction of the Expansion Project and Energy Recovery Project.

**Table 3.12-5 Representative Ground Vibration and Noise Levels for Construction Equipment**

Equipment	PPV at 25 feet (in/sec)	Approximate L <sub>v</sub> (VdB) at 25 feet
Small Dozer	0.003	58
Loaded Trucks	0.076	86
Large Dozer	0.089	87
Vibratory Roller (Compactor)	0.210	94

Notes: PPV = peak particle velocity; L<sub>v</sub> = the root mean square velocity expressed in vibration decibels (VdB), assuming a crest factor of 4; VdB = vibration decibel  
 Source: FTA 2006

As shown in Table 3.12-5, of the heavy equipment that could be used during Project construction the highest level of ground vibration would be generated by a vibratory roller. A vibratory roller operated within approximately 25 feet of an existing building or structure could expose that structure to levels of ground vibration that exceed Caltrans’s recommended level of 0.2 in/sec PPV with respect to the prevention of structural damage. Also, a vibratory roller operated within 75 feet of a building could expose the building occupants to ground vibration levels that exceed the Federal Transit Administration’s (FTA) maximum-acceptable vibration standard of 80 VdB with respect to human annoyance for residential uses. Because all construction activity would take place at least 845 from sensitive receptors, there would be no exceedance of Caltrans’s recommended level of 0.2 in/sec PPV with respect to the prevention of structural damage and FTA’s standard of 80 VdB with respect to human annoyance for residential uses. Therefore, the proposed Project would not expose of persons to excessive levels of groundborne vibration. This impact would be less than significant.

**c) Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?**

**Less than significant.** Separate discussions are provided below for increases in stationary noise sources and traffic-related noise sources generated by the proposed Project.

**Long-term Operational Stationary Source Noise Exposure to Existing Receptors**

As discussed under a) above, new stationary sources would not expose existing off-site noise-sensitive receptors to noise levels that would exceed daytime or nighttime noise standards established in the City General Plan (Table 3.12-2) or Noise Ordinance (Table 3.12-3).

**Long-term Operational Traffic Noise Exposure to Existing Receptors**

Operation of the Expansion Project would include long-term vehicle trips associated with up to two additional full-time employees, hauling of biosolids, and maintenance. Operation of the Energy Recovery Project would include long-term vehicle trips associated with one additional full-time employee, haul trips for high strength waste, and solid waste trucks fueling at the site. At build-out, a maximum of 55 solid waste trucks would be accessing the site per day; however, the number of trucks fueling at the site would increase gradually as the City’s fleet is converted to CNG, and these trips would only occur during daytime hours (i.e., 7:00 a.m. to 10:00 p.m.), with approximately half of the trucks refueling in the morning, and half refueling in the afternoon. In the near-term (i.e., prior to project build-out) operations-related vehicle trips would access the site via Fiddymont Road to Hayden Parkway to Bob Doyle Drive, and then to Westpark Drive. Although there are sensitive receptors along this route, soundwalls such as those separating the roadways and residences along this route typically provide a 7 dB or greater (depending on design and materials) reduction in noise (FHWA 2010). In addition, this route would only be used in the interim and would not be used at project build-out, when the increase in vehicle trips would be at a maximum. A doubling of ADT is required to result in a 3 dBA increase in noise (i.e., the level of increase perceptible to the human ear). The number of trips associated with operational vehicle trips in the interim would be a small fraction of existing and future traffic. Such an increase would not result in a doubling of ADT on any nearby roads and, therefore, would not result in an audible increase in traffic-related noise.

In the long-term, Blue Oaks Boulevard would be extended west to connect to Westbrook Boulevard, and Westpark Drive would be extended north to the extended Blue Oaks Boulevard. Operations-related vehicle trips would use Blue Oaks Boulevard to Westpark Drive to Phillip Road to access the Project site from the north. The existing access road along the western boundary of the PGWWTP would be extended south and provide access to the Energy Recovery Project. Access from the south would be from Pleasant Grove Boulevard to Westbrook Boulevard to Blue Oaks Boulevard to Westpark Drive, and then to Phillip Road. Because these roadways would experience the maximum increase in traffic-related noise at Project build-out, traffic noise levels along Westbrook Boulevard were modeled with and without Project-generated trips using the U.S. Department of Transportation Federal Highway Administration Traffic Noise Model (FHWA 1998). The baseline traffic volume for the modeled roadway segments were provided in the *Final Traffic Study for the Amoruso Ranch Specific Plan* (Fehr & Peers 2016). This modeling was performed to evaluate the degree to which Project-generated vehicle trips would result in a change in traffic noise levels, rather than precisely estimate the roadside noise levels. Table 3.12-6 summarizes the modeled traffic noise levels along these roadway segments under existing and existing-plus-project conditions. For further details on traffic-noise modeling inputs and parameters, refer to Appendix E.

**Table 3.12-6 Modeled Traffic Noise Levels along Solid Waste Truck Access Route under Existing and Existing-Plus-Project Conditions**

Roadway Segment	CNEL (dB) at 50 feet from Roadway Centerline <sup>1</sup>					
	Existing Conditions	Existing +Project Conditions	Change (dB)	Cumulative No Project Conditions	Cumulative + Project Conditions	Change (dB)
Westbrook Boulevard north of Pleasant Grove Boulevard <sup>2</sup>	59.7	61.3	+1.6	71.9	71.9	0.0

Notes: dB = decibels; CNEL = community noise equivalent level

<sup>1</sup> This modeling was performed to evaluate the degree to which Project-generated vehicle trips would result in a change in traffic noise levels, rather than precisely estimate the roadside noise levels.

<sup>2</sup> Modeled traffic noise levels do not account for noise reduction provided by the existing sound walls on the west side of Westbrook Boulevard.

Source: Modeled by Ascent Environmental 2016. Refer to Appendix E for detailed noise modeling input data and output results.

With respect to how humans perceive and react to changes in noise levels, a 1 dB increase is unnoticeable, a 3 dB increase is barely noticeable, a 6 dB increase is clearly noticeable, and a 10 dB increase is

subjectively perceived as approximately twice as loud (Egan 2007:21; Caltrans 2013:2-45). As shown in Table 3.12-6, Project-related vehicle trips would not result in a noticeable increase in traffic noise levels (i.e., 3 dB or greater) along Westbrook Boulevard. Thus, the proposed Project would not result in a substantial permanent increase in traffic noise levels in the Project vicinity above levels existing without the Project. This impact would be less than significant.

**d) Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?**

**Less than significant with mitigation.** The Project would include the Expansion Project, which would increase the treatment capacity of the existing PGWWTP, and the Energy Recovery Project, which would use digester gas to generate fuel for vehicles and electricity and heat. Construction of the Expansion Project would last approximately 24 months and is anticipated to begin in the fall of 2017. Construction of the Energy Recovery Facilities would last approximately 18 months and would begin in late 2017 or early 2018.

Construction of the Energy Recovery Project facilities would occur Monday through Friday between 7:00 a.m. and 7:00 p.m., with the potential for limited work to occur on Saturday or Sunday between 8:00 a.m. and 8:00 p.m. Construction of the Expansion Project would also primarily occur during the noise exempt hours; however, there is the potential for some construction activity to be required outside of these exempt hours. Construction activities would consist of excavation, underground pipeline installation, concrete work, building construction, equipment installation, paving, and testing. No pile driving or blasting would take place. Construction noise levels in the Project vicinity would fluctuate depending on the type, number, and duration in which various equipment would be used. The effects of construction noise largely depend on the type of construction activities occurring on any given day, noise levels generated by those activities, distances to noise-sensitive receptors, and the existing ambient noise environment at nearby receptors. Table 3.12-7 lists reference noise levels for the types of equipment that would generally be used during Project construction. Site preparation and grading typically generates the highest noise levels because these activities involve the use of some of the larger, heavy, off-road equipment operating at full power.

**Table 3.12-7 Noise Emission Levels from Construction Equipment**

Equipment Type	Typical Noise Level (dB) at 50 feet <sup>1</sup>
Grader	85
Paver	85
Concrete Pump	82
Roller	74
Excavator	85
Dozer	85
Backhoe	80
Fork lift	85
Generator	81

Notes: dB = decibels

<sup>1</sup> Assumes all equipment is fitted with a properly maintained and operational noise control device, per manufacturer specifications. Noise levels listed are manufacturer-specified noise levels for each piece of heavy construction equipment.

Source: FTA 2006

Noise-sensitive receptors near the Project site could, at times, experience elevated noise levels from construction activities. As shown in Table 3.12-7, the loudest piece of equipment that may be used during construction, such as a grader, excavator, or forklift, would generate a noise level of 85 dB at a distance of 50 feet. Through distance alone, this noise level would attenuate to less than the City’s nighttime hourly  $L_{eq}$

noise standard of 45 dB (Table 3.12-2 and Table 3.12-3) at distance of 1,600 feet (See Appendix E for noise attenuation calculations). Therefore, the single-family homes along Bickleigh Loop, the single-family home at the west end of Bellanca Way, and the Siena Apartments off of Hayden Parkway would not be exposed to noise levels that exceed the daytime or nighttime noise standards established in the City General Plan (Table 3.12-2) or Noise Ordinance (Table 3.12-3).

The single-family homes along the west side of Westbrook Boulevard, however, are located approximately 845 feet from the southeast portion of the Project site where the Energy Recovery Project and solids thickening building would be constructed. At this distance, construction noise levels would attenuate to 53 dB at the nearest property line of the residences along Westbrook Boulevard. (See Appendix E for noise attenuation calculations.) The existing masonry wall along the west side of Westbrook Boulevard would provide, at least 5 dB of noise reduction, thus, reducing the construction noise level at these residential land uses to 48 dB. Any work occurring between 7:00 a.m. and 10:00 p.m. would be subject to the City's daytime noise standards. This level of noise exposure would not exceed the 50 dB daytime hourly  $L_{eq}$  standard established in the City General Plan (Table 3.12-2) and Noise Ordinance (Table 3.12-3). Although it is not anticipated, noise generated by any construction activity using heavy equipment or haul trucks occurring on the west side of the Project site during evening or nighttime hours (i.e., 10:00 p.m. to 7:00 a.m.), would exceed the City's 45 dB nighttime hourly  $L_{eq}$  standard.

Although most construction would occur during the exempt daytime hours and/or would be located at sufficient distance from sensitive receptors for noise levels to attenuate below noise thresholds, any construction with heavy equipment or haul trucks required outside of the noise-exempt hours would be potentially significant.

### Mitigation Measure 3.12-1

Noise curtains shall be used during any nighttime construction activity (i.e., occurring between 10:00 p.m. and 7:00 a.m.) involving the operation of heavy equipment or haul trucks on the west side of the Project site (i.e., where there are sensitive receptors closer than 1,600 feet). The temporary noise curtains shall meet the following criteria:

- ▲ The temporary noise curtains shall achieve at a minimum 3 dB noise reduction;
- ▲ The temporary noise curtains shall be located or as close as possible to the area where heavy construction equipment would be operated; and
- ▲ Temporary noise curtains shall consist of durable, flexible composite material featuring a noise barrier layer bounded to sound-absorptive material on one side. The noise barrier layer shall consist of rugged, impervious, material with a surface weight of at least one pound per square foot, and shall be designed to block the line-of sight between construction activities and affected receptors.

#### Significance after Mitigation

Implementation of Mitigation Measure 3.12-1 would reduce construction-related noise levels, if it were to occur outside of noise exempt hours, to a **less-than-significant** level because it would reduce the level of noise exposure at off-site noise-sensitive receptors to less than the noise standards established in the City General Plan and Noise Ordinance. Implementation of Mitigation Measure 3.12-1 would prevent the occurrence of a substantial temporary or periodic increase in ambient noise levels at noise-sensitive receptors.

- e) **For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?**

**Less than significant.** The nearest airport to the Project site is the Lincoln Regional Airport, located approximately 8 miles to the north. At this distance low-flying aircraft performing take-offs and landings at

Lincoln Regional Airport would not affect the noise environment at the Project site. The nearest publicly owned airport to the Project is the Sacramento International Airport, approximately 12 miles southwest of the Project site. The Sacramento International Airport Land Use Compatibility Plan (SACOG 2013) establishes noise contours surrounding the Sacramento International Airport and the Project is located outside of those contours. There are no private airstrips located within the Project vicinity. Because of the distance of the Project site from the nearest airport, the Project would not expose people residing or working in the area to excessive noise levels from aircraft operations. This impact would be less than significant.

**f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?**

**Less than significant.** See e) above, for discussion.

### 3.13 POPULATION AND HOUSING

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XIII. Population and Housing. Would the project:</b>				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Displace substantial numbers of existing homes, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.13.1 Environmental Setting

According to the U.S. Census Bureau, the City of Roseville had a total population of 130,269 in 2015, an approximately 9.8 percent increase from the last population census in 2010. In 2015, the City had 47,757 housing units (U.S. Census Bureau 2015). No houses are located within the Project site, which is an existing wastewater treatment plant and undeveloped land. The nearest residences are located approximately 845 feet west of the Project site.

#### 3.13.2 Discussion

- a) **Would the project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?**

**Less than significant.** The proposed Project would require up to three new full-time employees to operate the expanded PGWWTP and energy recovery facilities. Construction of the facilities would not result in a substantial increase in the numbers of permanent workers/employees. Therefore, it is assumed that construction workers would be local residents and would not induce growth in the Project vicinity, either directly or indirectly.

The proposed Expansion Project would increase the capacity of the existing PGWWTP. By so doing, the Project would accommodate planned growth and expansion of the City through 2040. New collection systems would likely be required for the expanded PGWWTP to serve new developments, and construction of such collection system improvements would be subject to additional CEQA review. However, any new growth that could be served by the proposed Expansion Project was projected and planned for in the general plans of those local jurisdictions with the treatment plant’s service area which anticipate a population that exceeds 210,300 residents at full build-out (City of Roseville 2016d; City of Rocklin 2012; Placer County 2013). Goals and policies are outlined in the City of Roseville General Plan, City of Rocklin General Plan, and Placer County General Plan to accommodate this new growth, and its impacts were addressed in the respective EIRs for these general plans. In fact, the Expansion Project would restore the PGWWTP to its originally designed capacity of 12 mgd (see Section 2.2 for a discussion of the current treatment capacity and Project background). The Energy Recovery Project would not directly or indirectly induce growth.

An impact is only deemed to occur when it directly or indirectly affects the ability of agencies to provide needed public services, or if it can be shown that the growth will significantly affect the environment in some other way. While the Project in question would induce some level of growth, this growth was already identified and its effects disclosed and mitigated within the *Roseville Regional Wastewater Treatment Service Area Master Plan EIR* (City of Roseville 1996b), the City and County general plan EIRs, and subsequent specific plan EIRs that have been prepared for existing and proposed development within the wastewater service area. Therefore, the impact of the Project would be less than significant.

**b) Would the project displace substantial numbers of existing homes, necessitating the construction of replacement housing elsewhere?**

**No impact.** The proposed Project would be constructed within the existing PGWWTP boundary and Southern Expansion Area. No existing homes would be removed or displaced by construction or operation of the Project, nor would replacement housing be constructed elsewhere. Therefore, no impact would occur.

**c) Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?**

**No impact.** As described in b) above, the proposed Project would be constructed within and immediately adjacent to the existing PGWWTP property. Therefore, the proposed Project would not displace people or require the construction of replacement housing. No impact would occur.

### 3.14 PUBLIC SERVICES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XIV. Public Services. Would the project:</b>				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### 3.14.1 Environmental Setting

Fire protection, emergency medical services, and hazardous materials management within the City are provided by Roseville Fire Department (RFD). The RFD operates eight fire stations and one fire training center within the City. The RFD comprises approximately 100 staff members for fire operations, 7 fire and life safety personnel, 1 fire training professional, and 7 administrative support personnel (City of Roseville 2016e). The RFD has a mutual aid agreement with Placer County/California Department of Forestry and Fire Protection and the Sacramento Metropolitan Fire District. The RFD also has an automatic aid agreement with the South Placer Fire District, the Rocklin Fire Department, and the Sacramento Fire Metropolitan Fire District. The nearest fire station to the PGWWTP is Roseville Fire Station 9.

Law enforcement within the City is provided by the Roseville Police Department (RPD). The RPD is authorized to have 127 sworn officers and approximately 67 non-sworn employees headquartered at 1051 Junction Boulevard (City of Roseville 2016e). Sworn officers are responsible for emergency and law enforcement related activities. Non-sworn employees are responsible for other duties including: animal control, dispatch, record maintenance, jail management, and administrative tasks. The Placer County Sheriff’s Department is responsible for providing law enforcement services to the unincorporated areas of Placer County immediately adjacent to the City.

The nearest school to the PGWWTP is the Barbara Chilton Middle School located approximately 0.6-mile southeast of the site, which serves grades six through eight. The land to the east and northwest of the PGWWTP are designated as open space/parks and recreation; however, these areas are currently undeveloped and there are no park facilities. The nearest park facility is Norm Fratis Park, which is owned by the City, and is located approximately 0.5-mile east of the site.

### 3.14.2 Discussion

- a) **Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:**

#### **Fire protection?**

**Less than significant.** Roseville Fire Station 9, which is approximately 0.4-mile to the east, would continue to provide primary fire response services to the PGWWTP. Although the Project would include construction and operation of several new structures within and adjacent to the PGWWTP, including a fueling station, the existing PGWWTP is currently served by RFD and expansion of the existing facility is not expected to substantially increase the demand for fire services or reduce the response time. CNG and digester gas are volatile substances, and therefore use of these substances on-site could increase the existing fire risk. However, all facilities would be designed with safety features, including a conservative pressure rating, the ability to withhold up to 1.25 times the tank operating pressure, and valves and other safety devices to prevent leakage from the tank and dispensers. The fueling station would also be located away from habitable structures. The Expansion Project would result in two additional full-time employees, and the Energy Recovery Project would result in one additional full-time employee, resulting in up to three new full-time employees. However, this would be a small increase in demand for employees and is not expected to result in employees relocating to the City. In addition, the Project would not cause an increase in population that would require increased staffing of the RFD. Therefore, the Project would not substantially increase the demand for fire protection services, or increase the response time for RFD. Therefore, the Project would have a less-than-significant impact on fire protection services.

#### **Police protection?**

**No impact.** The PGWWTP would continue to be served by RPD. Several new structures would be constructed within and adjacent to the PGWWTP property; however, the Project would not increase the population in the Project vicinity, such that additional police services would be needed. Therefore, no impact to police protection would occur.

#### **Schools?**

**No impact.** The Project would be within and adjacent to the existing PGWWTP property and the nearest school is approximately 0.6-mile from the site. Therefore, the Project is not expected to have a direct effect on schools. In addition, the Project would not increase the population in the Project vicinity, such that additional schools would be needed. Therefore, the Project would not impact schools.

#### **Parks?**

**No impact.** The PGWWTP is located adjacent to open space and approximately 0.5-mile from the nearest park facility. However, the proposed facilities would be within and adjacent to the existing PGWWTP property, and would have no direct effect on parks or the adjacent open space areas. The Project would also not generate new population. Therefore, the Project would not require the construction of new parks or other public facilities or alterations to existing facilities to maintain performance objectives. Therefore, no impact on parks would occur.

#### **Other public facilities?**

**Less than significant.** The Project would include expansion of the existing PGWWTP, which is a public facility. Potential impacts associated with expansion of the PGWWTP and construction of energy recovery facilities are the subject of this Initial Study, and no additional significant environmental impacts are expected. In addition, the Project would not result in an increase in population in the Project vicinity that would increase the demand for other public facilities, such as libraries and community centers. Therefore, the Project would have a less than significant impact on public facilities.

### 3.15 RECREATION

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XV. Recreation. Would the project:</b>				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.15.1 Environmental Setting

As discussed above in Section 3.14, “Public Services,” the land east and northwest of the PGWWTP is designated as open space/parks and recreation; however, the area is currently undeveloped and there are no park facilities. The nearest park facility is Norm Fratis Park, which is owned by the City, and is located approximately 0.5-mile east of the site. This park is an approximately 6-acre neighborhood park that provides a play area, swings, covered picnic area, multi-use turf area, half court for basketball, and sand and grass volleyball courts (City of Roseville 2016f). A Class II bike trail is located along Westpark Drive east of Bickleigh Loop.

#### 3.15.2 Discussion

- a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?**

**No impact.** The Project would not increase the population or housing in the Project vicinity. Therefore, use of existing neighborhood and regional parks or other recreational facilities would not change as a result of the Project. Because the Project would not result in the physical deterioration of public recreational facilities, no impact would occur.

- b) Would the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?**

**No impact.** The Project would not increase the population in the Project vicinity. Therefore, the Project would not require construction of new homes or infrastructure, including parks and recreational facilities. No impact would occur.

### 3.16 TRANSPORTATION/TRAFFIC

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XVI. Transportation/Traffic. Would the project:</b>				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.16.1 Environmental Setting

##### ROADWAY SYSTEM

The Project is located within and adjacent to the existing PGWWTP property located on Westpark Drive in Roseville. Westpark Drive turns into Phillip Road north of the PGWWTP. Local roadways that would be used to access the Project site include Westpark Drive, Bob Doyle Drive, and Hayden Parkway. The main arterials in the vicinity of the Project site include Pleasant Grove Boulevard to the south, Fiddymment Road to the east, Westbrook Boulevard to the west, and Blue Oaks Boulevard to the northeast (see Exhibit 2-3, Chapter 2, “Project Description and Background”).

- ▲ **Pleasant Grove Boulevard** is an east–west arterial that extends from Market Drive to the City of Rocklin where it becomes Park Drive. It has four lanes from its western terminus at Market Drive to west of Foothills Boulevard. It has six lanes from west of Foothills Boulevard to State Route 65.
- ▲ **Fiddymment Road** is a north–south arterial connecting west Roseville with Placer County and the City of Lincoln. Fiddymment Road has recently been widened and realigned as part of the West Roseville Specific Plan. It is currently four lanes between Pleasant Grove Boulevard and the north Roseville City limit.

- ▲ **Westbrook Boulevard** is planned as a six-lane facility with a 100-foot ROW extending between a future extension of Blue Oaks Boulevard and Baseline Road.
- ▲ **Blue Oaks Boulevard** is an east–west arterial that links the cities of Roseville and Rocklin to each other and to SR 65. Blue Oaks Boulevard has recently been extended west of Fiddymment Road as part of the *West Roseville Specific Plan/Fiddymment Ranch* development, and it will be extended west in the future to Westbrook Boulevard. It is a six-lane facility east of Fiddymment Road. West of Fiddymment Road, Blue Oaks Boulevard is a five-lane facility for a short distance and then narrows to two-lanes.

**EXISTING LEVEL OF SERVICE**

Traffic operations are evaluated by determining the Level of Service (LOS), a qualitative ranking system which classifies road segments and intersections by progressively worsening traffic conditions. A roadway segment or intersection is assigned a grade, “A through F,” with LOS A representing the least amount of traffic congestion with either little or no delay and LOS F representing total breakdown of traffic operations. The City General Plan Circulation Element states that LOS D is the applicable minimum design standard; however, the overall LOS policy goal is to provide a LOS “C” or better at 70 percent of the signalized intersections during the p.m. peak hour (City of Roseville 2016d).

Existing intersection conditions and traffic counts for Pleasant Grove Boulevard, Westbrook Boulevard, Fiddymment Road, Blue Oaks Boulevard, and Hayden Parkway are provided in Tables 3.16-1 and 3.16-2. There are currently no intersection conditions or traffic counts available for Westpark Drive, Phillip Road, or Bob Doyle Drive. Under existing conditions, Pleasant Grove Boulevard has an LOS of B for a.m. peak hour and LOS A for p.m. peak hour at the intersection with Westbrook Boulevard, and an LOS C for a.m. and p.m. peak hour at the intersection with Fiddymment Road (Fehr & Peers 2016). Blue Oaks Boulevard has an LOS B for a.m. and p.m. peak hours at the intersection with Fiddymment Road, and Hayden Parkway has an LOS A for a.m. and p.m. peak hours at the intersection with Fiddymment Road (Fehr & Peers 2016). Traffic counts on Pleasant Grove Boulevard east of Fiddymment Road are 24,000 average daily traffic (ADT), traffic counts on Fiddymment Road north of Pleasant Grove Boulevard are 16,100 ADT, and traffic counts on Blue Oaks Boulevard are 2,500 ADT west of Fiddymment Road and 12,600 ADT east of Fiddymment Road (Fehr & Peers 2016). All of these roadways are currently operating at LOS A.

**Table 3.16-1 Existing Peak Hour Intersection Operations**

Intersection	Control	Peak Hour	Delay (seconds)	LOS
Pleasant Grove Boulevard/Westbrook Boulevard	Signal	AM	10	B
		PM	7	A
Pleasant Grove Boulevard/Fiddymment Road	Signal	AM	26	C
		PM	27	C
Fiddymment Road/Hayden Parkway	Signal	AM	8	A
		PM	8	A
Blue Oaks Boulevard/Fiddymment Road	Signal	AM	18	B
		PM	18	B
Hayden Parkway/Fiddymment Road (North)	Signal	AM	6	A
		PM	7	A
Hayden Parkway (South)/Fiddymment Road	Signal	AM	8	A
		PM	8	A

Source: Fehr & Peers 2016

**Table 3.16-2 Average Daily Traffic Counts in the Project Vicinity**

Roadway	Segment	Average Daily Traffic (ADT) Volume	Level of Service	Date of Collection
Pleasant Grove Boulevard	East of Fiddymment Road	24,000	A	2014
Fiddymment Road	North of Pleasant Grove Boulevard	16,100	A	2014
Blue Oaks Boulevard	East of Fiddymment Road	12,600	A	2014
Blue Oaks Boulevard	West of Fiddymment Road	2,500	A	2014

Source: Fehr &amp; Peers 2016

## TRANSIT SYSTEM

The City of Roseville Alternative Transportation Division of Public Works is responsible for providing public transit service within Roseville. The City owns and maintains the bus fleet and contracts with a transit provider to provide operation of Roseville Transit. Roseville Transit operates several distinct bus services including local, commuter, dial-a-ride, and paratransit services. Currently, the Project site is not directly served by Roseville Transit, with the nearest transit stop located at Rothbury Lane and Elmsett Place, approximately 1 mile southeast of the PGWWTP.

## BICYCLE/PEDESTRIAN SYSTEM

The City has an adopted Bicycle Master Plan, which provides guidelines for the development of a City-wide network of Class I, 1A, II, and III bicycle facilities and design standards (based on Caltrans standards) for new bicycle facilities within Roseville (City of Roseville 2008). The City also has a Pedestrian Master Plan that is intended to establish policies, projects, and programs that improve the pedestrian system in Roseville and increase walking for transportation, recreation, and health (City of Roseville 2011). The City has an extensive network of bicycle and pedestrian facilities. Most residential streets contain improved sidewalk facilities and crosswalks at intersections. Arterial roadways adjacent to existing residential development have wide sidewalks, often flanked by landscaping corridors. Class II bike trails are located along Westpark Drive east of Bickleigh Loop, and along Westbrook Boulevard. Class II bikeways are frequently referred to as on-street bike lanes.

### 3.16.2 Discussion

- a) **Would the project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?**

**Less than significant.** Construction of the Project would result in short-term increases in traffic on local roadways, primarily Westpark Drive, Bob Doyle Drive, Hayden Parkway, and Fiddymment Road. Construction activities would include construction worker commute trips and hauling of equipment and materials to and from the Project site. Construction of the Expansion Project is expected to begin in fall of 2017 and last for 24 months. Construction of the Energy Recovery Project is expected to begin in late 2017 or early 2018 and would last for 18 months. Construction activities and the number of daily vehicle trips would fluctuate during the construction period; however, the maximum number of trips expected during the peak of construction would be approximately 50 trips per day associated with haul trips and worker commute trips. Although there would be some vehicle traffic associated with hauling heavy equipment and construction materials to the site, this would occur for only a few weeks, and would not occur throughout the duration of Project

construction. Workers commuting to and from the site would be associated with the largest increase in traffic volumes during construction, but this would be limited mainly to morning arrival and afternoon departures and would generally not coincide with a.m. and p.m. peak hour traffic. As described above, the intersection of Hayden Parkway and Fiddymment Road has an existing LOS designations of A for a.m. and p.m. peak hour, which is acceptable by City standards. LOS data is not available for Bob Doyle Drive and Westpark Drive; however, the northern portion of Westpark Drive only serve the PGWWTP and Roseville Energy Park and; therefore, has low traffic volumes (Fehr & Peers 2016).

In the near-term, operations-related vehicle trips would use the same access route as identified for construction (Westpark Drive-Bob Doyle Drive-Hayden Parkway-Fiddymment Road). In the long-term (i.e., at project build-out), Blue Oaks Boulevard would be extended west to connect to Westbrook Boulevard and Westpark Drive would be extended north to connect with the extended Blue Oaks Boulevard. Therefore, operations-related vehicle trips from the north would use Blue Oaks Boulevard to Westpark Drive to Phillip Road to access the site. The existing access road along the western boundary of the PGWWTP would be extended south and provide access to the Energy Recovery Project. Access from the south would be from Pleasant Grove Boulevard to Westbrook Boulevard to Blue Oaks Boulevard to Westpark Drive, and then to Phillip Road. Operation of the Expansion Project would result in additional vehicle trips associated with two new full-time employees and hauling of biosolids, and would eliminate haul trips associated with WAS. Maintenance and operation of the Expansion Project would be similar to maintenance and operation of the existing PGWWTP and would not result in a substantial increase in long-term vehicle trips. Operation of the Energy Recovery Project would result in long-term vehicle trips associated with one additional full-time employee, two additional delivery trips per day for high strength waste, and occasional trips associated with maintenance.

Operation of the Energy Recovery Project would also include a fueling station for the City's solid waste truck fleet. A maximum of 55 truck trips per day would use the fueling station at build-out; however, the number of trucks fueling at the site would increase gradually as the City converts its fleet to CNG. At project build-out, approximately half of the fleet would fuel in the morning, and the other half would fuel in the afternoon. Each of these fueling periods would be 1 to 2 hours, resulting in a maximum of 28 truck trips associated with the fueling station in either the morning or afternoon. The solid waste truck fleet currently fuels at the City Corporation Yard located on Hilltop Circle approximately 5 miles southeast of the Project site. Therefore, the 55 truck trips per day associated with the fueling station would not be new truck trips generated by the Energy Recovery Project; however, the roadways affected by those truck trips would shift from PFE Road (adjacent to the existing fueling location) to roadways in the Project vicinity.

Cumulative conditions as forecasted by the City's 2035 Capital Improvement Program (CIP) travel demand model includes the roadway extensions and widenings in the City of Roseville CIP. Under the 2035 cumulative condition, Westbrook Boulevard would be operating at LOS B and the Blue Oaks Boulevard/Westbrook Boulevard intersection would be operating at LOS C. The 2035 CIP travel demand model does not include LOS data for Westpark Drive, Phillip Road, or Bob Doyle Drive; however, the Fiddymment Road/Hayden Parkway intersection would be operating at LOS C or better, which is acceptable under City standards.

No mass transit facilities or pedestrian and bicycle paths would be affected by the Project.

Because the Project would not affect any transit or pedestrian facilities, and construction- and operation-related traffic is not expected to be substantial in relation to existing or projected cumulative traffic on area roadways, such that LOS on any roadways would be degraded to an unacceptable level, this impact would be less than significant.

**b) Would the project conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?**

**Less than significant.** The City has prepared a CIP to respond to changing conditions and to ensure the development of an adequate transportation system, consistent with the City's LOS policy (City of Roseville 2007). As described in a) above, the addition of vehicle trips to the roadways in the Project vicinity during construction and operation is not expected to be substantial in relation to the existing capacity of those roadways and would not result in the degradation of LOS to an unacceptable level. This impact would be less than significant.

**c) Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?**

**No impact.** The nearest airport to the Project site is Lincoln Regional Airport, approximately 8 miles to the north. The Project does not propose any uses that could have an effect on air traffic patterns. Therefore, there would be no impact.

**d) Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?**

**Less than significant with mitigation.** The proposed Project would include construction of new facilities within the boundary of the existing PGWWTP and Energy Recovery Project area. These improvements would include ingress and egress of haul trucks during construction and the City's solid waste trucks during operation. Any roadway or parking improvements constructed as part of the Project would be subject to City's Design and Construction Standards and Community Design Guidelines as described in Section 2.7 of Chapter 2, "Project Description and Background," and would be reviewed by the City Engineering Division. However, Westpark Drive between Bickleigh Loop and Bob Doyle Drive, Phillip Road, Bob Doyle Drive, and Hayden Parkway are two-lane narrow roadways. In addition, Hayden Parkway, Bob Doyle Drive, and Westpark Drive have residences on one or both sides (although none of these residences face these streets). Therefore, use of these roadways as access routes for large trucks including haul trucks, could increase hazards related to incompatible uses. The addition of large trucks to these roadways would be potentially significant.

### **Mitigation Measure 3.16-1**

The City will require the construction contractor to implement a traffic management plan before construction activities begin. The traffic management plan will include measures to ensure local traffic, including bicycle traffic, is accommodated during construction. This plan would identify general methods by which construction activities will be managed to minimize substantial hazards related to large trucks.

These methods may include (but are not limited to):

- ▲ appropriately sequencing activities (e.g., segment phasing, timing of grading, hours of construction) to minimize conflicts with traffic on affected roadways,
- ▲ maintaining traffic flow in the project area to the extent possible,
- ▲ maintaining bicycle and pedestrian access, and
- ▲ use of flaggers to direct traffic, as needed for ingress or egress of large trucks.

#### **Significance after Mitigation**

Implementation of Mitigation Measure 3.16-1 would reduce hazards related ingress and egress of large trucks to a **less-than-significant** level because the contractor would implement a traffic control plan to minimize conflicts between large haul trucks and vehicle and pedestrian traffic.

**e) Would the project result in inadequate emergency access?**

**Less than significant.** Emergency access would be provided via Westpark Drive and Phillip Road. During construction activities, emergency access along these roads would be available at all times. All construction-related equipment and vehicles would park at the Project site and would not block roadways or result in inadequate emergency access. Access to the Project site would be maintained during the Project operation. Therefore, this impact would be less than significant.

**f) Would the project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?**

**No impact.** Project construction and operation would not result in the removal of, or need for, alternative transportation facilities such as bus turnouts or bicycle racks. There are bicycle lanes in the vicinity of the Project site; however, the Project would not interfere with continued use of these facilities. Therefore, the Project would not conflict with adopted policies, plans, or programs supporting alternative transportation. There would be no impact.

### 3.17 TRIBAL CULTURAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XVII. Tribal Cultural Resources. Would the project:</b>				
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
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	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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 Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### 3.17.1 Environmental Setting

Assembly Bill (AB) 52, signed by Governor Edmund G. Brown, Jr., in September 2014, established a new class of resources under CEQA: “tribal cultural resources” (TCRs). AB 52, as provided in Public Resource Code (PRC) Sections 21080.3.1, 21080.3.2, and 21082.3, requires that lead agencies undertaking CEQA review must, upon written request of a California Native American Tribe, begin consultation once the lead agency determines that the application for the project is complete, prior to the issuance of a Notice of Preparation (NOP) of an environmental impact report (EIR) or notice of intent to adopt a negative declaration or mitigated negative declaration.

AB 52 applies to those projects for which a lead agency had issued a NOP of an EIR or notice of intent to adopt a negative declaration or mitigated negative declaration on or after July 1, 2015. Therefore, the requirements of AB 52 apply and the City of Roseville has initiated consultation with Tribes that have requested consultation. On July 19, 2016, the City sent letters to Gene Whitehouse, Chairman of the United Auburn Indian Community (UAIC), Randy Yonemura, Cultural Committee Chair of the Lone Band of Miwok Indians, and Michael Mirelez, Cultural Monitoring Coordinator for the Torres Martinez Desert Cahuilla Indians. The City received one response, from UAIC on August 24, 2016. The letter requested copies of all cultural resource assessments and to participate in the pedestrian survey. The City will send a copy of the cultural resource survey report that was performed for this proposed Project. Because the survey was performed on August 2, 2016, it was not possible to fulfill the request to participate in the survey. The response letter from UAIC did not identify any tribal concerns or TCRs on the Project site; however, the City responded to UAIC to acknowledge receipt of the letter. In addition, because the letter from UAIC was received after the close of the 30-day response period for AB 52 as defined in PRC Section 21074, AB 52

consultation was not initiated and instead the City continues to communicate with UAIC through the normal CEQA process.

### 3.17.2 Discussion

- a) **Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:**

**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**

**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?**

**Less than significant.** In compliance with AB 52, the City of Roseville sent letters to three Native American Tribes; one response was received, from UAIC. The response did not identify any tribal concerns or TCRs on the Project site. In addition, because the letter from UAIC was received after the 30-day response period as defined in PRC Section 21074, the City will continue to coordinate with the tribe under CEQA rather than AB 52. As defined in PRC Section 21074, to be considered a TCR, a resource must be either:

1. listed or determined to be eligible for listing, on the national, state, or local register of historic resources, or
2. a resource that the lead agency determines, in its discretion and supported by substantial evidence, to treat as a tribal cultural resource pursuant to the criteria in PRC Section 50241(c). PRC Section 5024.1(c) provides that a resource meets criteria for listing as an historic resource in the California Register if any of the following apply:
  - (1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
  - (2) Is associated with the lives of persons important in our past.
  - (3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
  - (4) Has yielded, or may be likely to yield, information important in prehistory or history.

The Project site is located within the lands historically occupied by the Nisenan (see Section 3.5-1, "Environmental Setting," under Section 3.5, "Cultural Resources," above); however, the site is not known to have any special use. In addition, no archaeological remains have been identified on the Project site. The one prehistoric remain previously identified within the 0.5-mile buffer around the Project site was a ground stone scatter that was recorded as tested, was found to have no subsurface component, and it was concluded that it appears to have been destroyed. For these reasons, no areas within the Project site meet any of the PRC 5024.1(c) criteria listed above. Therefore, the Project would have a less-than-significant impact on TCRs as defined in PRC Section 21074.

### 3.18 UTILITIES AND SERVICE SYSTEMS

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

#### 3.18.1 Environmental Setting

##### WATER

Potable water within the City, including the PGWWTP, is provided by the City of Roseville. The primary source of water is the Central Valley Project, which is owned and operated by the U. S. Bureau of Reclamation (USBR). The City also has contracts with Placer County Water Agency (PCWA) and San Juan Water District (SJWD) for municipal and industrial water supply within the City. The City also uses groundwater as a backup water supply and recycled water for irrigation, industrial, and construction uses. In addition, supplemental water is available through interties with the following agencies: SJWD, Sacramento Suburban Water District, PCWA, the California American Water Company, and the Citrus Heights Water District (West Yost 2016).

The City's primary surface water supply is American River water diverted from Folsom Lake. Surface water is delivered from Folsom Lake via USBR facilities through a pumping plant and parallel 48-inch and 60-inch transmission lines to the City's Water Treatment Plant on Barton Road in Granite Bay. The City has contracts for 66,000 acre-feet per year (af/yr) of surface water through contracts with the USBR, PCWA, and SJWD. However, the City is a signatory to the Water Forum Agreement, which limits diversions from the American River to 58,900 af/yr in normal years, 54,900 af/yr in drier years, and 39,800 in the driest years (West Yost 2016).

The PGWWTP has three existing water systems: potable, nonpotable, and utility. The existing potable water system at the PGWWTP is supplied by a 4-inch diameter connection to the City of Roseville's potable water distribution system. Potable water at the PGWWTP is currently being used for drinking, sanitary facilities, restrooms, emergency eyewash, and shower stations. Potable water is supplied to the non-potable water system through an air-gap. Nonpotable water is only used for pump seals. Utility water is used for all in plant water usage except pump seals, restrooms, and the lab. It supplies fire hydrants, all process sprays, hose stations, and centrifuge polymer dilution and wash-down water.

Water for landscaping irrigation at the PGWWTP is recycled water generated on-site. The PGWWTP also supplies recycled to the City's recycled water distribution system. Recycled water is used within the City for irrigation, industrial cooling, and in some instances to support construction activity.

## **WASTEWATER**

The primary purpose of the existing PGWWTP is wastewater treatment, including wastewater generated on-site. The proposed Project would expand the treatment capacity of the existing PGWWTP. The PGWWTP presently treats 7.1 mgd ADWF, has a capacity to treat 9.5 mgd ADWF, and is permitted to discharge 12 mgd ADWF. A description of the existing and proposed wastewater treatment processes and facilities are provided in Chapter 2, "Project Description and Background."

## **STORMWATER**

In the City of Roseville, the stormwater drainage system consists of surface runoff to streets, subsurface storm drainage pipelines, canals, and retention basins. The northern portion of the Project site includes curb and gutter along the side of the road. There are no other stormwater drainage facilities in the Project site. Stormwater drainage is also described above in Section 3.9, "Hydrology and Water Quality."

## **SOLID WASTE**

Solid waste generated within the City, including the PGWWTP, is collected and hauled by the City to the Western Placer Waste Management Authority (WPWMA) for processing and disposal. The WPWMA owns and operates the Materials Recovery Facility and the Western Regional Sanitation Landfill (WRSL), located on 320 acres at the corner of Athens Avenue and Fiddymont Road in Placer County. Solid waste generated within the City limits is delivered to the Materials Recovery Facility, which separates, processes, and markets recyclable materials, prior to disposal of the waste at the WRSL. The Materials Recovery Facility has a mixed waste processing capacity of 2,000 tons per day (WPWMA 2016). In addition, FOG and food waste is currently collected by private companies from food service establishments within City limits. Food waste is currently hauled to CleanWorld, which is an anaerobic digestion facility located in Sacramento.

The WRSL is a Class II/III municipal solid waste (non-hazardous) landfill. The WRSL is permitted to accept 1,900 tons of solid waste per day, and has a total capacity of 36,350,000 cy (CalRecycle 2016). As of July 1, 2013, the WRSL had a remaining capacity of 25,677,600 cy and has an estimated closure date of 2058 (City of Roseville 2016e).

## **ELECTRICITY**

The City of Roseville Electric Department (Roseville Electric) provides electrical service to customers within the City, including the PGWWTP. Roseville Electric purchases electricity from the Western Area Power Agency and the Northern California Power Agency, which acquire electricity from various sources. There are currently two electrical buildings at the PGWWTP, and electricity is provided via a 12-kilovolt line. The existing PGWWTP is also served by two 1,750 kilowatt standby generators.

### 3.18.2 Discussion

**a) Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?**

**Less than significant.** The primary purpose of Expansion Project is to increase the treatment capacity of the existing PGWWTP. This expansion would allow the existing PGWWTP to meet the design discharge capacity currently permitted in the Central Valley RWQCB 2014 NPDES permit. The proposed WWTP expansion would be designed to meet the City's wastewater treatment demands through approximately 2040. Construction and operation of the energy recovery facilities is not expected to generate additional wastewater that would exceed the requirements of the existing RWQCB permit for the PGWWTP. Because the Project would be designed to meet existing permit requirements, this impact would be less than significant.

**b) Would the project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?**

**Less than significant with mitigation.** The proposed Project would consist of expansion of the existing PGWWTP, which could result in potentially significant impacts to biological resources, cultural resources, and traffic as discussed in the relevant areas of this Initial Study. However, all potentially significant impacts identified herein have been reduced to less than significant with the incorporation of mitigation. Therefore, this impact would be less than significant with mitigation.

**c) Would the project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?**

**Less than significant.** The existing WWTP site includes pervious surfaces and impervious surfaces that drain into and are held in an on-site stormwater pond. The stormwater is then discharged to the side stream wet well when treatment capacity is available. The existing WWTP is permitted under the State Water Resources Control Board Water Quality Order No. 2014-0057-DWQ, NPDES General Permit for Storm Water Discharges Associated with Industrial Activities. Consistent with the NPDES General Permit, the PGWWTP has implemented a certified SWPPP. Per the SWPPP, approximately 98 percent of the PGWWTP's stormwater runoff is returned to the WWTP for treatment. The remaining 2 percent of stormwater drains off-site. The proposed Project would involve the construction of additional impervious surfaces (i.e., paved areas and the covered facilities) for the Expansion Project and Energy Recovery Project, and would require modification of the existing stormwater collection system. The proposed Project would include stormwater collection facilities to capture runoff from the additional impervious surfaces associated with the expansion and energy recovery facilities that would connect to the existing stormwater collection system and treated on-site, consistent with current WWTP operations. The environmental impacts of constructing new and/or expanding existing stormwater drainage facilities are evaluated throughout this document and no additional significant impacts would occur. Therefore, this impact would be less than significant.

**d) Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?**

**Less than significant.** The Project is expected to result in a small increase in potable water demands; however, the existing potable water system has adequate capacity to accommodate increase in demand and is not expected to require capacity related upgrades. No new water supply entitlements, expanded entitlements, or facilities would be required. Therefore, this impact would be less than significant.

- e) Would the project result in a determination by the wastewater treatment provider that 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?**

**No impact.** The proposed Project would increase wastewater treatment capacity to accommodate existing and projected flows within the WWTP's service area through approximately 2040. Because the proposed expansion would be designed to accommodate existing and planned growth, projected demand for wastewater treatment services would be adequately served. No impact would occur.

- f) Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?**

**No impact.** Currently, solid waste, including dewatered WAS from the PGWWTP is hauled to WRSL. The Project would not require demolition of any structures, and solid waste generated during construction is expected to be minimal. Operation of the anaerobic digesters under the Expansion Project would convert the WAS to biosolids, and WAS would no longer be transported to the WRSL. Biosolids would be disposed of at an approved application site, whenever possible, and would be transported to a landfill when land application is not available (e.g., winter months). Therefore, the amount of waste that would need to be disposed of at a landfill would decrease overall.

In addition, the Energy Recovery Project would provide an additional location for disposal of high strength waste. These wastes are currently hauled to disposal locations outside of the City. Because these wastes are not currently hauled to a landfill, the Energy Recovery Project would have no impact on landfill capacity.

- g) Would the project comply with federal, state, and local statutes and regulations related to solid waste?**

**Less than significant.** The proposed Project would reduce the amount of solid waste disposed of at a landfill, and no hazardous wastes would be generated. The Project would continue to comply with federal, state, and local statutes and regulations related to solid waste. Therefore, this impact would be less than significant.

### 3.19 MANDATORY FINDINGS OF SIGNIFICANCE

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XVIII. Mandatory Findings of Significance.</b>				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Authority: Public Resources Code Sections 21083, 21083.5.

Reference: Government Code Sections 65088.4.

Public Resources Code Sections 21080, 21083.5, 21095; *Eureka Citizens for Responsible Govt. v. City of Eureka* (2007) 147 Cal.App.4th 357; *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th at 1109; *San Franciscans Upholding the Downtown Plan v. City and County of San Francisco* (2002) 102 Cal.App.4th 656.

#### 3.19.1 Discussion

- a) **Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?**

**Less than significant with mitigation.** As discussed in the Biological Resources, Cultural Resources, Transportation/Traffic, and Utilities and Service Systems sections of this Initial Study, the Project would result in potentially significant impacts and would have the potential to degrade the quality of the environment. However, adoption and implementation of mitigation measures described in this Initial Study would reduce these individual impacts to less-than-significant levels.

Burrowing owls are not expected to occur within the Expansion Project footprint. However, the Energy Recovery Project area contains potential burrowing owl habitat. If active nests are present in or adjacent to the Southern Expansion Area, vehicle and equipment movement and other construction-related disturbance

could disrupt normal behavior of burrowing owl or crush occupied burrows, which may result in nest abandonment or failure or entombment of individuals. However, Mitigation Measure 3.4-1 requires implementation of preconstruction surveys, consultation with CDFW, and protection of active nests, which would reduce this impact to a less-than-significant level.

Although no documented cultural resources are located at the Project site, the potential exists to encounter previously undiscovered archaeological resources during construction-related ground disturbing activities. However, adoption and implementation of Mitigation Measure 3.5-1 would reduce this potential impact to a less-than-significant level because it would require the performance of professionally accepted and legally compliant procedures for the discovery of previously undocumented significant archaeological resources.

No evidence suggests that any prehistoric or historic-era marked or unmarked interments are present within or in the immediate vicinity of the Project site. However, there is a possibility that unmarked previously unknown graves of Native American or Euro-Americans could be present within the Project site. Potential disturbance of previously undiscovered human remains during Project construction would be a potentially significant impact. Implementation of Mitigation Measure 3.5-2 would reduce the Project's potential for disturbance of human remains to a less-than-significant level because actions would be implemented to avoid, move, record, or otherwise treat the remains appropriately, in accordance with pertinent laws and regulations.

As explained in Section 3.16, "Transportation/Traffic," use of collector roadways serving residential areas by haul trucks would be potentially significant. However, implementation of Mitigation Measure 3.16-1 would require implementation of a traffic control plan that would minimize hazards related to large haul trucks. Because this mitigation measure would minimize hazards related to large trucks, this impact would be reduced to a less-than-significant level.

**b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)**

**Less than significant with mitigation.** Cumulative environmental effects are multiple individual effects that, when considered together, would be considerable or compound or increase other environmental impacts. Individual effects may result from a single project or a number of separate projects and may occur at the same place and point in time or at different locations and over extended periods of time. The purpose of the Project is to expand the treatment capacity of the existing PGWWT and construct energy recovery facilities. The Project would not increase population growth either directly or indirectly beyond what has been planned for in the City General Plan and subsequent specific plans. In addition, ongoing operation and maintenance of the Project would result in a very small increase in number of permanent workers/employees. Implementation of the mitigation measures proposed in this Initial Study would reduce the Project's impacts to a less-than-significant level. The Project's contribution to environmental impacts would be less than cumulatively considerable.

**c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?**

**Less than significant.** Although the majority of construction would occur during the exempt daytime hours and/or would be located at sufficient distance from sensitive receptors for noise levels to attenuate below noise thresholds, any construction with heavy equipment or haul trucks required outside of the noise-exempt hours would be potentially significant. Implementation of Mitigation Measure 3.12-1 would reduce construction-related noise levels, if it were to occur outside of noise exempt hours, to a less-than-significant level because it would reduce the level of noise exposure at off-site noise-sensitive receptors to less than the noise standards established in the City's General Plan and Noise Ordinance. This would be a less-than-significant impact.

## 4 COMPLIANCE WITH FEDERAL REGULATIONS

This chapter summarizes the federal environmental laws and regulations that apply to the Project and describes the Project's compliance with those laws and regulations. The federal regulations addressed in this section are based on guidance from the State Water Resources Control Board (SWRCB) for CEQA-Plus environmental review related to State Revolving Fund loans.

### 4.1 E1.1 CLEAN AIR ACT

#### 4.1.1 Regulatory Background

The Project site lies within the western portion of Placer County and in the Sacramento Valley Air Basin (SVAB) and is under the jurisdiction of the Placer County Air Pollution Control District (PCAPCD). Air quality within the county is regulated by such agencies as the U.S. Environmental Protection Agency (EPA) and California Air Resources Board (ARB) at the federal and state levels, respectively, and PCAPCD at the local level.

At the federal level, EPA implements the national air quality programs. EPA's air quality mandates are drawn primarily from the Federal Clean Air Act (CAA), enacted in 1970. The most recent major amendments were made by Congress in 1990, known as the federal Clean Air Act Amendments. The CAA requires EPA to establish National Ambient Air Quality Standards (NAAQS). EPA has established primary and secondary NAAQS for the following criteria air pollutants: ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, respirable particulate matter with an aerodynamic diameter of 10 micrometers or less (PM<sub>10</sub>), and fine particulate matter with an aerodynamic diameter of 2.5 micrometers or less (PM<sub>2.5</sub>), and lead (Pb). The primary standards protect public health and the secondary standards protect public welfare. The CAA also requires each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The objective of each SIP is to attain and maintain the NAAQS for all criteria air pollutants in the state. Areas that are not in attainment of NAAQS for any criteria air pollutant are referred to as nonattainment areas. The federal Clean Air Act Amendments added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution and attain the NAAQS.

Specifically, Section 176 (C) of the CAA (42 U.S.C. 7506 (C)) requires any entity of the federal government that engages in, supports, or in any way provides financial support for, licenses or permits, or approves any activity to demonstrate that the action conforms to the applicable SIP required under Section 110(a) of the CAA (42 U.S.C. 7401 (a)) before the action is otherwise approved. In this context, conformity means that such federal actions must be consistent with the SIP's objective to attain and maintain the NAAQS. Each federal agency must determine that any action it proposes conforms with the applicable SIP before the action is taken. This requirement is commonly known as the General Conformity Rule.

On November 30, 1993, EPA promulgated final general conformity regulations at 40 CFR 93 Subpart B for all federal activities except those covered under the transportation conformity rule. The general conformity regulations apply to a proposed federal action in a nonattainment or maintenance area of a particular criteria air pollutant if the total of direct and indirect emissions of the relevant criteria pollutant, or its precursors, caused by the proposed action equal or exceed applicable *de minimis* levels—this step is referred to as the general conformity applicability analysis. If an applicable *de minimis* level is exceeded, then a full general conformity analysis is needed to make a general conformity determination. A general conformity applicability analysis for the Project is provided below.

## 4.1.2 Affected Environment

EPA designates each county (or portions of counties) within California as attainment, maintenance, or nonattainment based on the area's ability to comply with NAAQS. Areas are designated as attainment for a particular criteria air pollutant if ambient air concentrations of the pollutant are less than the NAAQS. Areas are designated as nonattainment for a particular criteria air pollutant if ambient air concentrations of the pollutant exceed the NAAQS. Areas previously designated as nonattainment that subsequently demonstrated compliance with the NAAQS are designated as maintenance areas. Table 4-1 shows the designation status of the Project area located within the SVAB for each air pollutant.

**Table 4-1 Attainment Status**

Pollutant	Federal Attainment Classification	Applicable Standard Version
Ozone <sup>1</sup>	Nonattainment (Severe)	Both 1997 and 2008 standards
Respirable Particulate Matter (PM <sub>10</sub> )	Attainment	1989 standard
Fine Particulate Matter (PM <sub>2.5</sub> ) <sup>2</sup>	Moderate Non-Attainment	2006 standard only. Attainment for all other standard years.
Carbon Monoxide (CO)	Moderate Attainment/Maintenance Area	1971 standard
Nitrogen Dioxide (NO <sub>2</sub> )	Attainment	1971 standard
Sulfur Dioxide (SO <sub>2</sub> ) <sup>3</sup>	Attainment	Both 1971 and 2010 standards
Lead (Pb)	Attainment	Both 2008 and 1978 standards

Source: EPA 2016a

As mentioned above, a general conformity determination is required if a federal action results in the generation of air pollutants for which the total of direct and indirect emissions equals or exceeds the *de minimis* thresholds as shown below in Table 4-2. These emission rates are expressed in units of tons per year and are compared to the total of direct and indirect emissions caused by the Project for each 12-month period when construction and operational activities would take place.

**Table 4-2 De Minimis Thresholds for Determining Applicability of General Conformity Requirements for Federal Actions**

Pollutant	Federal Classification	General Conformity <i>De Minimis</i> Levels (tons per year)
Ozone	Severe Nonattainment	25
VOC (an ozone precursor)		
NO <sub>x</sub> (an ozone precursor)		
PM <sub>10</sub>	Attainment	NA
PM <sub>2.5</sub>	Nonattainment (Moderate) (2006 24-hour Standard)	100
CO	Maintenance	100
NO <sub>2</sub>	Attainment	NA
SO <sub>2</sub>	Attainment	NA
Pb	Attainment	NA

NA: Not Applicable  
Source: EPA 2016b

Because ozone is a secondary pollutant (i.e., it is not emitted directly into the atmosphere, but formed in the atmosphere from the photochemical reactions in the presence of sunlight), there are de minimis levels for the ozone precursor pollutants, including oxides of nitrogen (NO<sub>x</sub>) and volatile organic compounds (VOC). If the net emissions level for either NO<sub>x</sub> or VOCs exceeds the applicable de minimis level, then the federal action is subject to a general conformity evaluation for ozone.

### 4.1.3 Environmental Consequences

Construction emissions and operational emissions were estimated using the models and calculation methods described under “Methodology and Assumptions” in Section 3.3, “Air Quality.” Emission level estimates are summarized in Table 4-3.

**Table 4-3 Summary of Emissions of Criteria Air Pollutants and Precursors**

	Emissions (tons/year)			
	VOC	NO <sub>x</sub>	CO	PM <sub>2.5</sub>
Construction Emissions				
Expansion <sup>1</sup>	0.2 <sup>3</sup>	2.3	1.2	0.3
Energy Recovery Facility <sup>1</sup>	0.2 <sup>3</sup>	2.5	1.5	0.1
<b>Total<sup>2</sup></b>	<b>0.4</b>	<b>3.3</b>	<b>2.0</b>	<b>0.2</b>
Expansion Project Operations				
Mobile-Sources	<0.1 <sup>3</sup>	0.4	<0.1	<0.1
Wastewater Treatment Processes	2.1	0.4	<0.1	<0.1
Digester Gas Flaring	1.9	2.1	11.2	0.0
Natural Gas Boiler	0.1	1.6	1.3	<0.1
<b>Total</b>	<b>4.1</b>	<b>4.4</b>	<b>12.5</b>	<b>&lt;0.1</b>
Energy Recovery Project Operations				
Mobile-Sources	0.4 <sup>4</sup>	0.5	1.7	0.1
Wastewater Treatment Processes	2.1	0.4	<0.1	<0.1
Microturbines	<0.1	4.2	1.0	<0.1
<b>Total</b>	<b>2.5</b>	<b>5.0</b>	<b>2.7</b>	<b>0.1</b>
<i>De Minimis</i> Thresholds	25	25	100	100

Notes: Totals may not equal sum due to rounding. tons/year = tons per year; CO = carbon monoxide; NO<sub>x</sub> = oxides of nitrogen; ROG = reactive organic gases; PM<sub>2.5</sub> = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less, VOC = volatile organic compounds, EPA = U.S. Environmental Protection Agency, ARB = California Air Resources Board

- 1 Reflects maximum emissions per year.
- 2 Does not equal sum. Accounts for the maximum tons per day of the overlap between the construction of the Expansion and Energy Recovery Facility.
- 3 These emissions are reported as ROG, which is a subset of VOCs. ROG is assumed to be a suitable substitute for VOC for the purposes of this analysis. See additional explanation on the differences between ROG and VOC's in a comparison of definitions provided by ARB (ARB 2004).
- 4 These emissions are a combination of ROG and VOC, based on the available emission factors. Upstream emissions from the production of CNG were based on VOC emission factors. Tailpipe emission factors from all mobile sources were reported as ROG.

Refer to Appendix B for detailed assumptions and modeling output files.

Source: ARB 2004, EPA 2016b; Data modeled by Ascent Environmental in 2016.

As shown in Table 4-3, emissions of ozone precursors (i.e., VOCs and NO<sub>x</sub>), CO, and PM<sub>2.5</sub> and would be less than the applicable *de minimis* thresholds. Therefore, the General Conformity Rule would not apply to the Project.

## 4.2 E1.2 COASTAL BARRIERS RESOURCES ACT

The Coastal Barrier Resources Act (PL 97-348) designated various undeveloped coastal barrier islands, depicted by specific maps, for inclusion in the Coastal Barrier Resources System (System). Areas so designated were made ineligible for direct or indirect federal financial assistance that might support development, including flood insurance, except for emergency life-saving activities. Exceptions for certain activities, such as fish and wildlife research, are provided, and National Wildlife Refuges and other, otherwise protected areas are excluded from the System. The System includes relatively undeveloped coastal barriers along the Atlantic and Gulf coasts, as well as the Great Lakes and Puerto Rico and the Virgin Islands.

The Project site and surrounding lands are not located within the System; therefore, compliance with this Act is not applicable.

## 4.3 E1.3 COASTAL ZONE MANAGEMENT ACT

The Coastal Zone Management Act (PL 92-583), administered by NOAA Fisheries' Office of Ocean and Coastal Resource Management, provides for management of the nation's coastal resources, including the Great Lakes, and balances economic development with environmental conservation.

The Act outlines two national programs, the National Coastal Zone Management Program and the National Estuarine Research Reserve System. The 34 coastal programs aim to balance competing land and water issues in the coastal zone, while estuarine reserves serve as field laboratories to provide a greater understanding of estuaries and how humans impact them. The Act's overall program objectives remain balanced to "preserve, protect, develop, and where possible, to restore or enhance the resources of the nation's coastal zone."

The Project site and surrounding lands are not located within California's coastal zone, which generally extends 1,000 yards inland from the mean high tide line; therefore, compliance with this Act is not required.

## 4.4 E1.4 ENDANGERED SPECIES ACT

Pursuant to the federal Endangered Species Act (ESA) (PL 93-205), the U.S. Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration Fisheries Service (NOAA Fisheries) have regulatory authority over federally listed species. Under ESA, a permit to "take" a listed species is required for any federal action that may harm an individual of that species. Take is defined under ESA Section 9 as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Under federal regulation, take is further defined to include habitat modification or degradation where it would be expected to result in death or injury to listed wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. ESA Section 7 outlines procedures for federal interagency cooperation to conserve federally listed species and designated critical habitat. Section 7(a)(2) requires federal agencies to consult with USFWS and/or NOAA Fisheries to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species.

As discussed in Section 3.4, "Biological Resources," of this Initial Study, the Project would have no effect on listed species. Effects on vernal pool fairy shrimp and vernal pool tadpole shrimp and their critical habitat in the Project area for the Expansion Project were previously evaluated and USFWS prepared a biological opinion and exemption for incidental take (USFWS 1999, file number 1-1-99-F-0006). All conservation measures and Reasonable and Prudent Measures from the biological opinion were implemented and vernal pool creation and preservation credits were purchased in 1999 to offset the loss of species from development of the existing PGWWTP, which has already occurred. In addition, effects on vernal pool fairy shrimp and vernal pool tadpole shrimp and their critical habitat in the Southern Expansion Area (where the Energy Recovery Project would occur) were evaluated as part of the Section 7 consultation for the West

*Roseville Specific Plan*. As part of this consultation, the USFWS issued a biological opinion and exempted incidental take of vernal pool fairy shrimp and vernal pool tadpole shrimp from development activities associated with the specific plan, including the Southern Expansion Area (USFWS 2005, file number 1-1-05-F-0061). All conservation measures from the biological opinion were implemented and vernal pool creation and preservation credits were purchased in 2005 as part of the original permit and in 2015 as part of an Army Corps permit modification that extended the original permit term and approved changes to the mitigation and monitoring plan. These permits and documentation of required mitigation credit purchases is contained in Appendix C. No other listed species are expected to occur on the Project site and no other consultation with USFWS is required.

## 4.5 E1.5 ENVIRONMENTAL JUSTICE

Executive Order (EO) 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” (59 Federal Register 7629 (1994)), directs federal agencies to identify and address disproportionately high and adverse health or environmental effects of their actions on minority and low-income populations, to the greatest extent practicable and permitted by law. The EO also directs each federal agency to develop a strategy for implementing environmental justice. EO 12898 is also intended to promote nondiscrimination in federal programs that affect human health and the environment, as well as provide minority and low-income communities access to public information and public participation.

The Council on Environmental Quality (CEQ) has oversight of the federal government’s compliance with EO 12898. To facilitate compliance, CEQ prepared and issued, in consultation with EPA, Environmental Justice Guidance under the National Environmental Policy Act (CEQ 1997). According to the CEQ’s Environmental Justice Guidance, the first step in conducting an environmental justice analysis is to define minority and low-income populations. Based on these guidelines, a minority population is present in a Project area if either (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population. By the same rule, a low-income population exists if the Project area consists of 50 percent or more people living below the poverty threshold, as defined by the U.S. Census Bureau, or is significantly greater than the poverty percentage of the general population.

The second step of an environmental justice analysis requires a finding of a high or adverse effect. The CEQ guidance indicates that when determining whether the effects are high and adverse, agencies are to consider whether the risks or rates of impact “are significant (as employed by NEPA) or above generally accepted norms.” The final step requires a finding that the effect on the minority or low-income population be disproportionately high and adverse. The CEQ offers a non-quantitative definition stating that an effect is disproportionate if it appreciably exceeds the risk or rate to the general population.

The following population characteristics are considered in this analysis:

- ▲ race and ethnicity as described in the 2010 U.S. Census, and
- ▲ per capita income as it relates to the federal poverty threshold.

To make a finding that disproportionately high and adverse effects would likely fall on a minority or low-income population, three conditions must be met simultaneously: (1) there must be a minority or low-income population in the affected area, (2) a high and adverse effect must exist, and (3) the effect must be disproportionately high and adverse on the minority or low-income population.

For purposes of this analysis, information on demographics and income and poverty status was obtained for the City of Roseville, City of Rocklin, and Placer County. The data collected is from the 2010 U.S. Census, which, for purposes of this analysis, is considered “existing conditions.” Although more recent data on population is available, the 2010 U.S. Census provides the most comprehensive dataset available to allow a comparison of all potential environmental justice factors.

## 4.5.1 Demographics

Table 4-4 presents the demographics of City of Roseville, City of Rocklin, and Placer County from the 2010 U.S. Census. In 2010, approximately 79 to 84 percent of the population in the Project area identified themselves as white; approximately 1 to 2 percent identified themselves as black; less than 1 percent identified themselves as American Indian/Alaska Native; and approximately 6 to 8 percent identified themselves as Asian (U.S. Census Bureau 2010a, b, c). Approximately 15 percent of Roseville's and 12 percent of Rocklin's population identified themselves as Hispanic or Latino, which is similar to the County's estimate of 13 percent.

**Table 4-4 Demographics: Roseville, Rocklin, and Placer County**

	Roseville		Rocklin		Placer County	
	Number	Percent of Total Population	Number	Percent of Total Population	Number	Percent of Total Population
Total Population	118,788	100.0%	56,974	100.0%	348,432	100.0%
Race						
White	94,199	79.3%	47,047	82.6%	290,977	83.5%
Black or African American	2,329	2.0%	858	1.5%	4,751	1.4%
American Indian and Alaska Native	885	0.7%	410	0.7%	3,011	0.9%
Asian	10,026	8.4%	4,105	7.2%	20,435	5.9%
Native Hawaiian and Other Pacific Islander	346	0.3%	150	0.3%	778	0.2%
Some Other Race	5,087	4.3%	1,538	2.7%	13,375	3.8%
Two or More Races	5,916	5.0%	2,866	5.0%	15,105	4.3%
Hispanic or Latino (of any race)						
Hispanic or Latino	17,359	14.6%	6,555	11.5%	44,710	12.8%
Not Hispanic or Latino	101,429	85.4%	50,419	88.5%	303,722	87.2%

Source: U.S. Census Bureau 2010a,b,c

## 4.5.2 Income and Poverty Status

Table 4-5 presents household income, per capita income, and poverty status for Roseville, Rocklin, and Placer County per the 2010-2014 American Community Survey 5-Year Estimates. Median household income was \$76,712 in Roseville, \$79,274 in Rocklin, and \$73,747 in Placer County (U.S. Census Bureau 2014a,b,c). Between approximately 6 and 7 percent of families and between 8 and 9 percent of individuals in Roseville and Rocklin were below the poverty level, which was similar to that of the County (approximately 6 percent of families and 9 percent of individuals).

In 2010, the weighted average federal poverty threshold was \$11,139 for one person and \$17,374 for a three-person family (U.S. Census Bureau 2010d).

**Table 4-5 Income and Poverty Status: Roseville, Rocklin, and Placer County**

	Roseville		Rocklin		Placer County	
	Number	Percent of Total Population	Number	Percent of Total Population	Number	Percent of Total Population
<b>Households</b>	<b>45,657</b>	<b>100.0%</b>	<b>21,276</b>	<b>100.0%</b>	<b>134,111</b>	<b>100.0%</b>
Less than \$10,000	1,726	3.8%	843	4.0%	5,508	4.1%
\$10,000 to \$14,999	1,625	3.6%	781	3.7%	4,755	3.5%
\$15,000 to \$24,999	3,369	7.4%	1,432	6.7%	10,335	7.7%
\$25,000 to \$34,999	3,577	7.8%	1,561	7.3%	10,560	7.9%
\$35,000 to \$49,999	4,968	10.9%	2,124	10.0%	14,758	11.0%
\$50,000 to \$74,999	7,069	15.5%	3,246	15.3%	22,227	16.6%
\$75,000 to \$99,999	6,082	13.3%	3,134	14.7%	18,259	13.6%
\$100,000 to \$149,999	9,770	21.4%	4,330	20.4%	25,438	19.0%
\$150,000 to \$199,999	4,338	9.5%	2,199	10.3%	11,885	8.9%
\$200,000 or more	3,133	6.9%	1,626	7.6%	10,386	7.7%
Median Household Income	\$76,712	-	\$79,274	-	\$73,747	-
Per Capita Income	\$34,514	-	\$35,200	-	\$35,711	-
Poverty Status - Families	-	6.0%	-	6.6%	-	6.2%
Poverty Status - Individuals	-	8.6%	-	8.3%	-	8.9%

Source: U.S. Census Bureau 2014a,b,c

### 4.5.3 Impact Evaluation

#### (1) Is there a minority or low-income population in the affected area?

As described above, in the 2010 U.S. Census approximately 15 percent of Roseville's and 12 percent of Rocklin's population identified themselves as Hispanic or Latino, which is similar to the County's average (approximately 13 percent) (U.S. Census Bureau 2010a,b,c). Therefore, for purposes of this analysis, a disproportionately high minority population is not present in the Project area or the area served by the Project.

Between approximately 6 and 7 percent of families and 8 and 9 percent of individuals in Roseville and Rocklin were below the poverty level, which was similar to that of the County (approximately 6 percent of families and 9 percent of individuals). Therefore, for purposes of this analysis, a disproportionately high low-income population is not present in the Project area or the area served by the Project.

According to the EPA, either the county or state percentages can be used when considering the scope of the "general population." A definition of "meaningfully greater" is not given by the CEQ or EPA, although the EPA notes that any affected area that has a percentage of minorities that is above the State's percentage is potentially a minority community and any affected area with a minority percentage at least double that of the state is definitely a minority community under Executive Order 12898.

As discussed above, the percentage of persons of other races, including African Americans and persons of Hispanic origin in the Project vicinity, is slightly higher than the percentages for Placer County, but is not meaningfully greater than the county percentage. In addition, median household income and poverty levels within the Project area and the area served by the Project are similar to income and poverty levels within the overall county. Therefore, no minority or low-income populations have been identified that would be adversely impacted by the proposed Project as determined above. Therefore, in accordance with the provisions of Executive Order 12898 and FHWA Order 6640.23, no further Environmental Justice analysis is required.

## **(2) Is there a high and adverse effect? and (3) Is the effect disproportionately high and adverse on the minority population?**

Expansion of the existing PGWWTP would improve the reliability and operating efficiency for all customers in the service area, improving service for all customers equally. Temporary construction impacts associated with the Project would primarily occur on roadways providing access to the existing PGWWTP. Nearby residences could be subject to construction-related impacts, including increased noise and traffic. However, these impacts would be short-term, and construction would take place when most residents are not expected to be home (i.e., during working hours). In addition, the operation of the energy recovery facilities would primarily affect roadways providing access to the PGWWTP (Westbrook Boulevard and Westpark Drive), and residences adjacent to those roadways. Therefore, construction and operation of the Project would not have a disproportionately high and adverse effect on the minority population.

## **4.6 E1.6 FARMLAND PROTECTION POLICY ACT**

The purpose of the federal Farmland Protection Policy Act (FPPA) of 1981 (Public Law 97-98) is to minimize federal contributions to the conversion of farmland to nonagricultural uses by ensuring that Federal programs are administered in a manner compatible with state government, local government, and private programs designed to protect farmland. The Natural Resources Conservation Service (NRCS) is the agency primarily responsible for implementing the FPPA.

USDA Regulations (7 CFR Part 658) implementing the FPPA requires federal agencies to conduct a farmland conversion impact rating (using USDA Form AD-1006) when a project may convert farmlands to non-agricultural uses. This impact rating should be done when the impacts of a project will affect farmlands in the following categories:

- ▲ prime farmland - the highest quality land for food and fiber production having the best chemical and physical characteristics for producing;
- ▲ unique farmland - land capable of yielding high value crops such as citrus fruits, olives, etc.; and
- ▲ farmlands designated as important by state and local governments, with the approval of the Secretary of Agriculture.

Neither the Act nor the regulations apply if:

- ▲ the project site does not contain farmland in categories identified above.
- ▲ the project is on prime farmland that is already “committed” to urban development or water storage (applies to prime farmland only – refer to 7 CFR 658.2(a)).
- ▲ projects were beyond the planning stage prior to August 6, 1984.
- ▲ projects involve grants, loans or mortgage insurance for purchase or rehabilitation of existing structures.

As discussed in Section 3.2, “Agricultural Resources,” of this Initial Study, the PGWWTP Expansion and Energy Recovery Project facilities would be located within and adjacent to the existing PGWWTP, which is designated as Urban and Built-up Land and grazing land pursuant to the FMMP of the California Resources Agency (DOC 2014). Expansion of the existing PGWWTP and construction of energy recovery facilities would have no impact related to conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use.

Consultation with the NRCS (including submittal of the Farmland Conservation Impact Rating form) does not apply to Project sites that do not contain farmland in categories identified above, and therefore is not required for the project.

## 4.7 E1.7 FLOODPLAIN MANAGEMENT

EO 13690, “The Federal Flood Risk Management Standard” (January 30, 2015) revises EO 11988, “Floodplain Management” (May 24, 1977), and directs federal agencies to take the appropriate actions to reduce risk to federal investments, specifically to “update their flood-risk reduction standards.” The goal of this directive is improve the resilience of communities and federal assets against the impacts of flooding and recognizes the risks and losses due to climate change and other threats

The Federal Emergency Management Agency’s (FEMA) Flood Insurance Rate Maps (FIRMs) are used to determine if properties are located within Special Flood Hazard Areas. As explained in Section 3.9, “Hydrology and Water Quality,” of this Initial Study, the Project site is within the 500-year floodplain for Pleasant Grove Creek, but is outside of the 100-year and 200-year floodplain. In addition, the Project site is not located on a Special Flood Hazard Area, as identified on FIRM panel 06061C0394F, dated June 8, 1998 (FEMA 2006). Furthermore, the Project would include expansion of an existing WWTP and not any new residences. Therefore, the Project would not result in any additional exposure of people or structures to risk of flooding and the Project would have no impact related to a 100-year flood hazard area or risk of flooding.

## 4.8 E1.8 NATIONAL HISTORICAL PRESERVATION ACT

Federal protection of resources is legislated by (a) the National Historic Preservation Act (NHPA) of 1966 as amended by 16 U.S. Code 470, (b) the Archaeological Resource Protection Act of 1979, and (c) the Advisory Council on Historical Preservation. These laws and organizations maintain processes for determination of the effects on historical properties eligible for listing in the National Register of Historic Places (NRHP). Federal and federally-sponsored programs and projects are reviewed pursuant to Section 106 of the NHPA. Section 106 of the NHPA requires federal agencies to consider the effects of proposed federal undertakings on historic properties. NHPA requires federal agencies to initiate consultation with the State Historic Preservation Officer (SHPO) as part of the Section 106 review process.

### DETERMINATION OF EFFECTS

The area of potential effects (APE) has been highly disturbed by construction of the existing PGWWTP and grading related to maintenance of the Southern Expansion Area. The Project would have No Effect on Historic Properties. No documented archaeological or built environment resources are present within the APE (NIC 2016).

## 4.9 ARCHAEOLOGICAL AND HISTORIC PRESERVATION ACT

Passed and signed into law in 1974, the Archaeological and Historic Preservation Act (AHPA) amended and expanded the Reservoir Salvage Act of 1960. The AHPA provides for the preservation of historical and archeological data which might otherwise be irreparably lost or destroyed as the result of (1) flooding, the building of access roads, the erection of workmen’s communities, the relocation of railroads and highways, and other alterations of the terrain caused by the construction of a dam by any agency of the United States, or by any private person or corporation holding a license issued by any such agency or (2) any alteration of the terrain caused as a result of any federal construction project or federally licensed activity or program.

According to the Advisory Council on Historic Preservation, if a project will affect historic properties that have archeological value, the AHPA may impose additional requirements on an agency. As discussed in Section 3.5, “Cultural Resources,” the background literature and NWIC records search did not identify any cultural resources (either historical or archaeological) within the APE and the pedestrian survey on August 2, 2016 identified no historic-era built environment resources. Therefore, there are no properties on the Project site that have archaeological value and the AHPA does not apply.

## 4.10 E1.9 MAGNUSON-STEVENSON FISHERY CONSERVATION AND MANAGEMENT ACT

In response to growing concern about the status of United States fisheries, Congress passed the Sustainable Fisheries Act of 1996 (Public Law [PL] 104-297) to amend the Magnuson-Stevens Fishery Conservation and Management Act (PL 94-265), the primary law governing marine fisheries management in the Federal waters of the United States. The Magnuson-Stevens Conservation and Management Act, as amended (U.S.C. 180 et seq.), requires that Essential Fish Habitat (EFH) be identified and described in federal fishery management plans (FMPs). Federal action agencies must consult with NOAA Fisheries on any activity which they fund, permit, or carry out, that may adversely affect EFH. NOAA Fisheries is required to provide EFH conservation and enhancement recommendations to the Federal action agencies. EFH is defined as those waters and substrates necessary to fish for spawning, breeding, feeding or growth to maturity.

As discussed in Section 3.4, “Biological Resources,” of this Initial Study, no fish habitat occurs within the Project site. Implementation of the Project would not affect fisheries or waters nor the substrates necessary for fisheries.

## 4.11 E1.10 MIGRATORY BIRD TREATY ACT

The Migratory Bird Treaty Act (MBTA) (16 U.S.C. Section 703, et seq.), first enacted in 1918, provides for protection of international migratory birds and authorizes the Secretary of the Interior to regulate the taking of migratory birds. The MBTA provides that it shall be unlawful, except as permitted by regulations, to pursue, take, or kill any migratory bird, or any part, nest, or egg of any such bird. The current list of species protected by the MBTA can be found in Title 50 of the Code of Federal Regulations (CFR), Section 10.13 (50 CFR 10.13). The list includes nearly all birds native to the United States.

As discussed in Section 3.4, “Biological Resources,” of this Initial Study, the Southern Expansion Area provides potential nesting and foraging habitat for burrowing owl, and any ground-disturbing activities during the burrowing owl breeding season (February–August) could result in nest abandonment and the mortality of eggs and chicks. However, implementation of Mitigation Measure 3.4-1 would reduce impacts on burrowing owl to a less-than-significant level because it would prevent Project-related disturbance during the breeding season and would reduce the likelihood of nest abandonment and loss of eggs or young. As further discussed in Section 3.4, “Biological Resources,” the Project is not expected to impact any other migratory birds because the nearby trees are not suitable for nesting, and the annual grasslands on the Project site is regularly disked and does not provide suitable habitat for any other nesting birds.

## 4.12 E1.11 PROTECTION OF WETLANDS

The purpose of EO 11990 (May 24, 1977) is to “minimize the destruction, loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands.” To meet these objectives, EO 11990 requires federal agencies, in planning their actions, to consider alternatives to wetland sites and limit potential damage if an activity affecting a wetland cannot be avoided. EO 11990 applies to: acquisition, management, and disposition of federal lands and facilities construction and improvement projects which are undertaken, financed, or assisted by federal agencies; and federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulation, and licensing activities.

As discussed in Section 3.4, “Biological Resources,” of this Initial Study, implementation of the Project would result in no impact to federally protected wetlands. The City and private developers previously received permits under Section 404 of the Clean Water Act (CWA) for fill of wetlands and provided compensatory mitigation for the site. Development and fill of wetlands and waters of the United States within the boundary of the existing PGWWTP was covered under a Nationwide Permit 26 authorization letter (No. 199800481) issued on December 4, 1998, for construction of the existing PGWWTP. Development and fill of wetlands and waters of the United States within the Southern Expansion Area was covered under the Section 404 CWA individual permit for the *West Roseville Specific Plan*. The Section 404 individual permit (SPK-2002-

00666) was issued for the *West Roseville Specific Plan* on October 21, 2004. An extension of this permit was issued on December 30, 2015, to allow additional time to complete the work covered under the permit and to approve changes to mitigation and monitoring requirements. Impacts to jurisdictional waters have been mitigated through on-site mitigation within the *West Roseville Specific Plan* and purchase of mitigation credits and no further permitting or mitigation is necessary (see Appendix C for permits and mitigation credit purchase documents).

#### **4.13 FISH AND WILDLIFE CONSERVATION ACT**

The Fish and Wildlife Conservation Act of 1980 (16 USC 2901 et seq.) encourages federal agencies to conserve and promote conservation of non-game fish and wildlife species and their habitats. In addition, the Fish and Wildlife Conservation Act (16 USC 661 et seq.) requires federal agencies undertaking projects affecting water resources to consult with the USFWS and the state agency responsible for fish and wildlife resource whenever the waters of any stream or other body of water are proposed or authorized to be impounded, diverted, the channel deepened, or the stream or other body of water will otherwise be controlled or modified for any purpose whatsoever, including navigation and drainages. The 1988 amendment (Public Law 100-653, Title VIII) to the FWCA requires the Secretary of the Interior, through the USFWS, to “identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act of 1973.”

The Project would not affect or modify any stream or water body; therefore, compliance with this Act is not applicable.

#### **4.14 E1.12 SAFE DRINKING WATER ACT, SOLE SOURCE AQUIFER PROTECTION**

The Safe Drinking Water Act (42 USC Section 300f et seq.) was established to protect the quality of drinking water in the U.S. This law focuses on all waters actually or potentially designed for drinking use, whether from above ground or underground sources.

The Act authorizes EPA to establish minimum standards to protect tap water and requires all owners or operators of public water systems to comply with these primary (health-related) standards. The 1996 amendments to the Act require that EPA consider a detailed risk and cost assessment, and best available peer-reviewed science, when developing these standards. State governments, which can be approved to implement these rules for EPA, also encourage attainment of secondary standards (nuisance-related). Under the Act, EPA also establishes minimum standards for state programs to protect underground sources of drinking water from endangerment by underground injection of fluids.

The Project and surrounding lands are not located within a sole source aquifer, as designated by EPA Region 9 (2016c). In addition, Pleasant Grove Creek, which receives discharges from the PGWWTP is not designated for drinking use and the Project would have no effect on any public water systems or other drinking water sources.

#### **4.15 E1.13 WILD AND SCENIC RIVERS ACT**

The Wild and Scenic Rivers Act (16 USC Section 1271 et seq.) establishes a National Wild and Scenic Rivers System for the protection of rivers with important scenic, recreational, fish and wildlife, and other values. Rivers are classified as wild, scenic, or recreational. The act designates specific rivers for inclusion in the System and prescribes the methods and standards by which additional rivers may be added.

Pleasant Grove Creek is immediately north of the site, but is not designated as a wild and scenic river. The nearest designated wild and scenic river is the Lower American River, located more than 15 miles south of the site (BLM et al. 2016).

## 4.16 CLIMATE CHANGE

### 4.16.1 Vulnerability

Increases in greenhouse gas (GHG) concentrations in the atmosphere have led to increased global average temperatures (climate change) through the intensification of the greenhouse effect, and associated changes in local, regional, and global average climatic conditions. These changes may translate into a variety of issues and concerns that may affect the Project facilities, including but not limited to:

- ▲ increased frequency of droughts associated with changes to precipitation patterns;
- ▲ increased stormwater runoff associated with changes to precipitation patterns; and
- ▲ increased risk of flooding associated with changes to precipitation patterns.

Although uncertainty exists as to the precise levels of these impacts, there is consensus regarding the range, frequency, or intensity of these impacts that can be expected. The proposed Project could be subject to potential hazards that could be exacerbated by climate change, such as changes in the amount and strength of wastewater, timing and amount of runoff, and the increased risk of flooding associated with changes to precipitation.

Increases in the frequency of droughts could lead to water conservation efforts. There is a tendency for water conservation to result in higher strength effluent because less water is used in household sanitary systems to transport the same base materials (example, flushing the toilet less frequently). This could in turn cause higher strength effluent to flow to the plant, increasing the biological oxygen demand (BOD) load per unit of wastewater. However, the Project would add new treatment processes to the PGWWTP that would allow the WWTP to treat effluent with higher concentrations of BOD.

Increases in intense storm events could result in increases in effluent related to stormwater runoff. However, as discussed in Section 3.9, "Hydrology and Water Quality," the City has ordinances to address stormwater runoff throughout the City that would reduce the extent and severity of climate change-related impacts related to stormwater. In addition, the proposed Project would expand the existing WWTP treatment capacity, which would increase the ability to handle increases in stormwater effluent in the future.

As discussed in Section 3.9, "Hydrology and Water Quality," the Project site is not within a 100-year or 200-year floodplain (see Exhibit 3.9-1). The City has also established a flood mitigation fee program for the construction of a regional retention basin. These measures would reduce the extent and severity of climate change-related impacts to the Project from increased risk of flooding associated with changes to precipitation patterns. In addition, the Project is not located within a floodzone.

### 4.16.2 Adaptation

Adaptation measures are measures taken in direct response to vulnerabilities to climate change. Inclusion of the Energy Recovery Project would reduce the Project's use of nonrenewable resources and improve the long-term sustainability of the PGWWTP.

Implementation of anaerobic digesters under the Expansion Project would allow the PGWWTP to treat higher concentrations of effluent that could occur more frequently with increased droughts. In addition, the proposed Project would be designed to provide adequate stormwater facilities in the event of storms, and the increased capacity would allow the WWTP to handle greater influent in the future.

### 4.16.3 Mitigation

Although the effects of climate change on the Project facilities is considered less than significant, the Project would include mitigation measures that would reduce the City's overall contribution to climate change including renewable energy sources and methane harvesting. The PGWWTP also produces recycled water for use in the City's landscaping.

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