



Draft
INITIAL STUDY/ANTICIPATED MITIGATED NEGATIVE DECLARATION
Town of Windsor Wastewater Reclamation Facility Biosolids Treatment and
Disposal Upgrades
November 2022

Prepared for
Town of Windsor
8400 Windsor Road
Windsor, California 95492

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- Appendix A – CalEEMod, 2020.4.0 Air Quality and GHG Modeling Results
- Appendix B – Biological Resource Assessment

Abbreviation List

Abbreviation	Definition
ACS	American Community Survey
AFC	Application for Certification
ADWF	average dry weather flow
ASTM	American Society for Testing and Materials
AQAP	Air Quality Attainment Plan
AQMP	Air Quality Management Plan
AWT	Advanced Wastewater Treatment System
BAAQMD	Bay Area Air Quality Management District
BLM	Bureau of Land Management
BOD5	Biochemical Oxygen Demand
Btu	British Thermal Units
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CAL FIRE	California Department of Forestry and Fire
CalRecycle	California Department of Resources Recycling and Recovery
CARB	California Air Resources Board
CBC	California Building Code
CEC	California Energy Commission
CERS	California Environmental Reporting System
CEQA	California Environmental Quality Act
CHRIS	California Historical Resources Information System
CIWQS	California Integrated Water Quality System
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	carbon monoxide
CSDA	California Special District Association
CWSRF	Clean Water State Revolving Fund
dBA	decibel
DWSRF	Drinking Water State Revolving Fund
E.coli	Escherichia Coli
EDR	Environmental Data Resources
EIR	Environmental Impact Report
EPA	United States Environmental Protection Agency
FEMA	Federal Emergency Management
FINDS	Facility Index System Database
FRAP	Fire and Resource Assessment Program
GHG	greenhouse gases
H ₂ S	hydrogen sulfide
IPaC	Information for Planning and Consultation

Abbreviation	Definition
IS/MND	Initial Study / Mitigated Negative Declaration
LAFCO	Local Agency Formation Commission
LDR	Low Density Residential
LRA	Local Responsibility Area
MBR	Membrane Bio-Reactor
MGD	Million Gallons per Day
MLD	Most Likely Descendant
MMT	million metric tons
MMPs	Mandatory Minimum Penalties
MS4	Municipal Separate Storm Sewer System
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NO ₂	nitrogen dioxide
NO _x	nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
NWIC	Northwest Information Center
O ₃	ozone
OHP BERD	State Office of Historic Preservation Built Environment Resources Directory
OSHA	Occupational Safety and Health Administration
PFAS	per- and polyfluoroalkyl substances
PG&E	Pacific Gas & Electric
PI	Public / Institutional
PM ₁₀	particulate matter (less than 10 microns)
PM _{2.5}	particulate matter (less than 2.5 microns)
PPE	personal protective equipment
PQP	Public/Quasi-Public
PS	Primary or Raw Sludge
QSD	Qualified SWPPP Developer
ROG	Reactive Organic Gases
RWQCB	Regional Water Quality Control Board
SFBAAB	San Francisco Bay Area Air Basin
SFHA	Special Flood Hazard Area
SIP	State Implementation Plan
SO ₂	sulfur dioxide
SRF	State Clean Water Revolving Fund
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminants
Town	Town of Windsor
TSS	Total Suspended Solids
USFWS	United States Fish and Wildlife Service

Abbreviation	Definition
UST	underground storage tank
UV	Ultraviolet
VHFHSZ	Very High Fire Hazard Severity Zone
VLDR	Very Low Density Residential
VMT	vehicle miles traveled
VOC	Volatile Organic Compound
WAS	Waste Activated Sludge
WWRF	Windsor Water Reclamation Facility

1. INTRODUCTION

Project Title:	Wastewater Reclamation Facility Biosolids Treatment and Disposal Upgrades
Lead Agency Name and Address:	Windsor Water District 8400 Windsor Road Windsor, CA 95492
Contact Person and Phone Number:	David Ernst, Wastewater Treatment Superintendent Operations and Maintenance, Windsor Water District 707-838-5328
Project Location:	Project site is bounded to the west by Windsor Road and to the East by Bell Road. The northern terminus of the site is Patrick Lane. The southern terminus is the Water Reclamation Facility fence line, which parallels Trione Court from east to west until Trione Court intersects with Ferrari Way at which point the fence line continues directly west to Windsor Road Town of Windsor, CA 95492
Project Sponsor's Name and Address:	Windsor Water District 8400 Windsor Road Windsor, CA 95492
General Plan / Zoning Designation(s):	Public / Quasi-Public (0.0 – 1.0 FAR) Public / Institutional (PI) (0.0 – 1.0 FAR)
Specific Plan Designation(s):	Project Site: Open Space – Parks Adjacent Area: Medium and Low Density Residential
Date Prepared:	November 15, 2022

1.1 Overview

The Windsor Water District (District) owns and operates the Windsor Water Reclamation Facility (WWRF or Facility) located in Windsor, California, to receive and treat wastewater from an estimated population of 28,000 in and around the Town of Windsor (Town). Wastewater treatment, including the process at the WWRF, produces solids that must then be treated and reused or disposed of offsite (biosolids). Biosolids produced through wastewater treatment processes are usually land applied to condition soils and return nutrients and metals to soils for agricultural, horticultural, or other vegetative processes. Biosolids and their reuse are regulated at the federal level by the United States Environmental Protection Agency (EPA) pursuant to CFR 40 Part 503, which divides biosolids into Class A and Class B according to pollutant limits, pathogen and vector reduction, and biosolids production technologies. Class A biosolids must meet more stringent requirements than Class B and are therefore able to be integrated into a broader diversity of reuse operations. The District currently employs sludge settling ponds at the WWRF to produce Class B biosolids for beneficial reuse.

The District proposes to undertake improvements to the solids treatment process at the WWRF to produce Class A biosolids. When completed, the proposed project would result in a financial savings for the District by reducing operation and maintenance costs, generating a Class A product, eliminating the current reliance on external contractors for biosolids disposal, reducing the volume of biosolids produced,

reducing the number of truck trips needed to handle the biosolids and the associated carbon footprint, and enabling the District to proactively plan for potential costly changes to biosolids disposal and reuse regulations in the future.

The District is planning to submit an application to the California State Water Resources Control Board (SWRCB) to obtain funding from the State's Clean Water State Revolving Fund (CWSRF) to help implement the project. The loan carries certain compliance requirements, including review of the project in accordance with the California Environmental Quality Act (CEQA) and compliance with federal requirements.

This Initial Study analyzes potential environmental impacts associated with the proposed project in accordance with CEQA. Chapter 2 of this study provides a detailed description of the proposed project. An evaluation of potential impacts of the proposed project is presented in Chapter 3.

1.2 Authority

The District is the lead agency for the proposed project. The District undertook a review of the proposed project, and determined that it is a project, as defined by CEQA. The District further determined that the project has the potential to impact the environment, and that an Initial Study should be prepared. This Initial Study has been prepared in accordance with CEQA, Public Resources Code Section 21000 et. seq. Based on the findings contained in this document, a Mitigated Negative Declaration is proposed.

The project is anticipated to be partially financed by CWSRF. The CWSRF program is partially funded by the EPA and is therefore subject to federal environmental review requirements. All applicants seeking CWSRF financing must comply with CEQA and provide sufficient information so that the SWRCB can document compliance with federal environmental laws. The SWRCB calls this federal compliance "CEQA-Plus."

This Initial Study has been prepared to address CEQA-Plus requirements to be eligible for CWSRF loan funds. These requirements include documentation of compliance with applicable federal cross-cutting regulations, including the Endangered Species Act, Bald and Golden Eagle Protection Act, Clean Air Act, Coastal Barriers Resource Act, Coastal Zone Management Act, Environmental Justice, Farmland Protection Policy Act, Floodplain Management, Archaeological and Historic Preservation Act, Fish and Wildlife Coordination Act, Magnuson-Stevens Fishery Conservation and Management Act, Marine Mammal Protection Act, Migratory Bird Treaty Act, National Historic Preservation Act/Historic Sites Act, Protection of Wetlands/Clean Water Act (Section 404), Rivers and Harbors Act (Section 10), Safe Drinking Water Act/Sole Source Aquifer Protection, Wild and Scenic Rivers Act, the Wilderness Act, and an evaluation of whether the project is located on any federally managed land.

1.3 Scope of Environmental Review

Consistent with the requirements of CEQA, this Initial Study addresses the required topics contained in Appendix G, Environmental Checklist of the CEQA Guidelines, as follows:

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

1.4 Impact Assessment Terminology

The CEQA Guidelines identifies impacts using four levels of significance:

- **No Impact:** When the analysis finds that the project would not affect the environment.
- **Less than Significant:** When the analysis finds that a project would not substantially impact the environment and no mitigation is needed to reduce an impact to less than significant levels.
- **Less than Significant with Mitigation Incorporated:** When the analysis finds that a project would result in a substantial impact on the environment, but feasible mitigation measures can be implemented to reduce these impacts to less than significant levels.
- **Potentially Significant:** When the analysis finds that a project would result in a substantial impact on the environment, and no mitigation measures can be feasibly implemented to reduce those impacts to less than significant levels without additional analysis.

1.5 Organization of the Initial Study

This Initial Study has been completed using the following format:

- **Chapter 1 Introduction:** This chapter includes a brief summary of the proposed project and describes the regulatory framework for the preparation of the Initial Study under CEQA.
- **Chapter 2 Project Description:** This chapter includes a comprehensive description of the applicant's proposal, existing conditions, and the general characteristics of the areas surrounding the project site.
- **Chapter 3 Environmental Evaluation:** This chapter contains the analysis of each issue area mandated by the CEQA Guidelines, and includes a discussion of the environmental setting, control measures incorporated into the project, the project's impacts, a determination of the significance of these impacts, and where necessary, mitigation measures.
- **Chapter 4 References:** This chapter identifies the documents used to support preparation of this initial study.

1.6 Documents Incorporated by Reference

In addition to those documents listed in Chapter 4, the Town of Windsor 2040 General Plan (adopted April 4, 2018), Windsor 2040 General Plan EIR and Code of Ordinances were used in the evaluation of the proposed project. These documents are available at the Town of Windsor Planning Division website under its planning documents section at <https://www.townofwindsor.com/843/Planning-Documents>.

2. PROJECT DESCRIPTION

2.1 Background

Solids generated at a wastewater treatment plant are typically comprised of screenings, grit, primary or raw sludge (PS), secondary or waste activated sludge (WAS), and solids from the advanced wastewater treatment system (AWT). The screenings and grit are typically dewatered and disposed to a landfill. The PS and WAS are categorized as sewage sludge or wastewater solids prior to stabilization.

Sludge generated by a wastewater treatment plant is defined as biosolids once beneficial use criteria (determined by compliance with the EPA's Title 40 Code 503 regulations) have been achieved through stabilization processes. Stabilization processes are described as those that help reduce pathogens and reduce vector attraction. Biosolids are defined as treated organic solid residuals resulting from the treatment of municipal sewage at a wastewater treatment facility. Biosolids are a product with a high carbon content and other beneficial use properties.

Biosolids are classified by the EPA's 40 CFR 503 regulations as Class B or Class A, according to the treatment methods; the different classes have specified treatment requirements for pollutants, pathogens, and vector attraction reduction, as well as general requirements and management practices. All biosolids must meet the Ceiling Concentration Limits for pollutants. Land applied biosolids must also meet either the pollutant concentration limits, cumulative pollutant loading rate limits, or annual pollutant loading rate limits. The WWRF typically generates Class B biosolids and land applies their biosolids. A contractor determines the location of land application. Since 2017, the biosolids have been transported to Solano County.

Several federal, state, and local regulations are in place that influence whether biosolids from municipal wastewater treatment plants can be beneficially used or disposed of. Increased concern and debate over biosolids use/disposal and its associated environmental impacts have led to more stringent regulations. Changes in regulations affecting biosolids management are expected in the future and make a flexible management program essential.

The California Department of Resources Recycling and Recovery (CalRecycle) oversees and regulates California's solid waste disposal including co-disposal issues and biosolids used as a daily covering material. Recently enacted regulations, including Senate Bill 1383 (Sep. 2016), Assembly Bill 1594 (Sep. 2014), and Assembly Bill 341 (Oct. 2011), will make it more difficult for the District to continue sending biosolids to landfill for use as alternative daily cover. This will place price and capacity pressures on existing biosolids markets, such as compost and land application, increasing competition among utilities for limited biosolids disposal outlets.

In addition, many counties in California have developed, or are developing, ordinances for biosolids land application. The stringency of these county regulations ranges from requirements for higher standards of permit review to the banning of biosolids land application. Four counties ban all land application and an additional six counties ban Class B land application. Of the remaining counties, twenty-seven require a conditional use permit. Additionally, some of these counties limit biosolids application to only biosolids produced in their county or place limits on where biosolids can be spread (e.g., 100 feet from surface

waters, etc.) and require a corporate surety bond. Only five counties specifically allow Class B biosolids land application: Sonoma, Solano, Sacramento, Glen, and Sierra Counties.

2.2 Purpose and Need

The Town of Windsor’s WRF currently relies on sludge settling ponds to produce a Class B biosolids product. This process requires that the District employ an external provider to assist with sludge dredging, dewatering, and beneficial reuse and disposal. As stated above, reuse options for Class B biosolids are more limited than Class A, and concerns surrounding emerging contaminants may trigger future additional regulatory requirements or limitations on Class B biosolids reuse. The proposed project would allow the District to:

- Produce a Class A biosolids product;
- Eliminate current reliance on outside contractors for biosolids disposal;
- Increase beneficial use of biosolids within the Town of Windsor and surrounding communities;
- Proactively respond to future changes to the biosolids regulatory framework;
- Reduce truck traffic and the associated carbon footprint by increasing the solids content of biosolids; and
- Enhance flexibility to provide the option for future disposal for surrounding municipalities.

2.3 Project Location and Site Characteristics

The Town of Windsor encompasses approximately 7.3 miles within Sonoma County in the northern end of the Sand Rose Plain valley, approximately 20 miles east of the Pacific Ocean, as shown in **Figure 2-1**. The proposed project is located at the Town of Windsor’s Water Reclamation Facility located at 8400 Windsor Road, California 95492 as shown in **Figure 2-2**. The Facility is approximately 78.5 acres, spread across 11 contiguous parcels (WWRF parcel) and is centrally located within the western portion of the Town. The WWRF parcel has been assigned a zoning designation of Public/Institutional and a land use designation of Public/Quasi-Public.

The WWRF parcel is bounded to the east by the Northwestern Pacific Railroad track and Bell Road; to the west, the parcel is bounded by Windsor Road. Access to the WWRF is provided via Plant Road, which intersects Windsor Road. The northern boundary of the WWRF parcel is Patrick Lane. The southern boundary of the site is largely a forested area that follows the fence line north of Trione Circle as it extends westward from Bell Road. Where Trione Circle meets Ferrari Way, the parcel boundary extends directly west to meet Windsor Road.

The area immediately to the south of the WWRF parcel is open space that includes trees, shrubs, and grasses, which obscures views of the WWRF from residences along Trione Circle, a low-density / very-

low density residential housing area¹ (Town of Windsor, 2018). Low-density residential housing is also located to the west of the site, although views of the WWRF along Windsor Road are largely obscured by a sloping vegetated embankment surrounding the site. Windsor High School, a public secondary school for grades 9 – 12 comprising several buildings and facilities across a campus, is located west of the WWRF on the western side of Windsor Road. Low-density residential housing is also located north of the site between Patrick Road and Private Road F. To the east of the railroad tracks and Bell Road are residential areas, open space, and the Windsor Creek Elementary School.

The WWRF parcel is relatively flat and comprises administrative and treatment facilities, including buildings as well as several large ponds for holding liquid and solid wastes. The site's elevation is approximately 100 feet above mean sea level with only minor variations across the site from constructed embankments.

¹ Per the Windsor 2040 General Plan, the low density residential designation has a minimum and maximum density of 5.0 dwelling units per acre (du/ac) and 8.0 du/ac, respectively. The very low density residential designation has a minimum and maximum density of 3.0 du/ac and 5.0 du/ac, respectively.

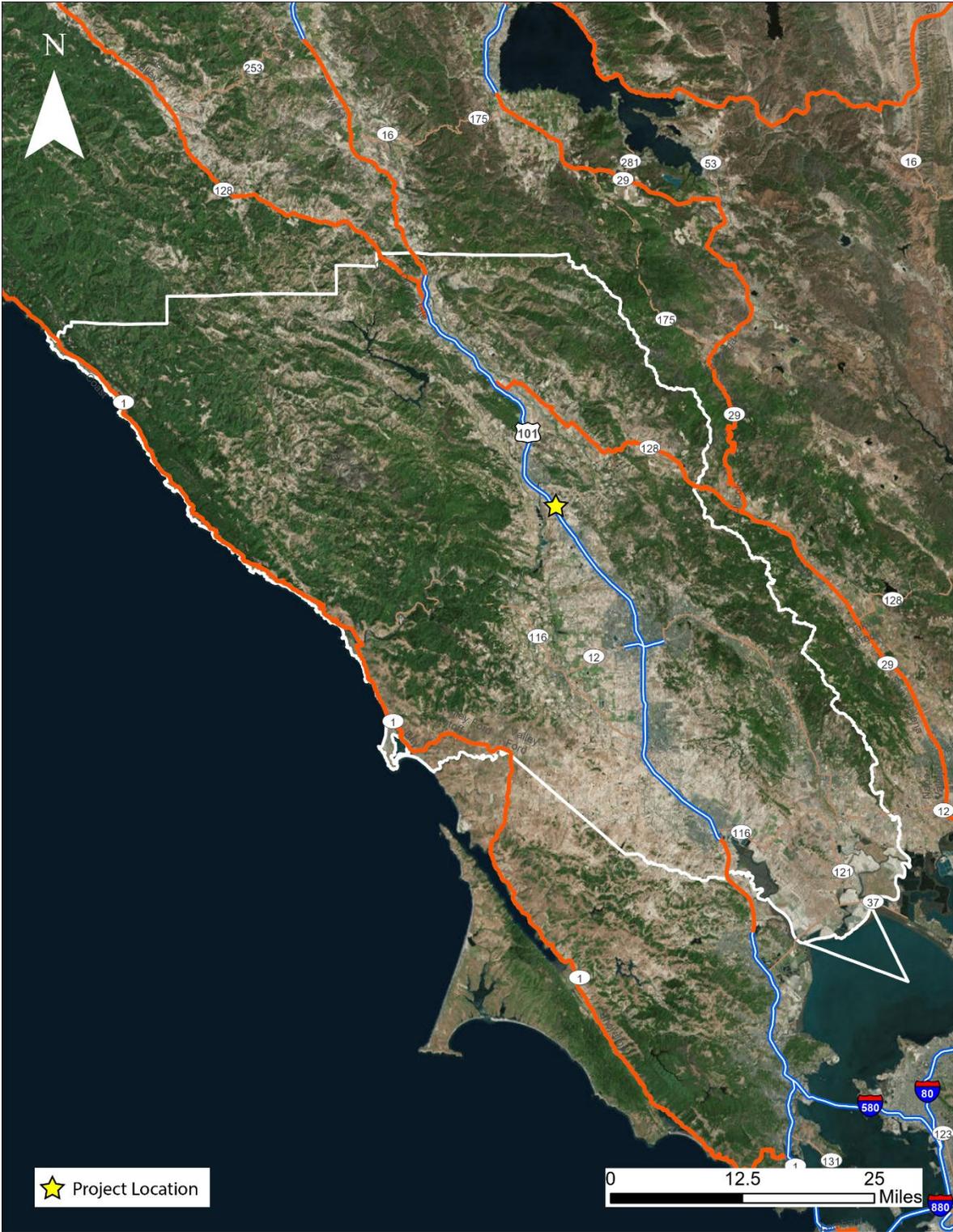


Figure 2-1. Project Location Map



Figure 2-2. Project Site Map

2.4 Summary of Existing Facilities

The District collects, conveys, and treats wastewater from the Town of Windsor (Town) and surrounding areas. The WWRF was originally constructed in 1964 and has been expanded and upgraded several times to serve the current customer base of approximately 28,000 people. The treatment, reclamation and disposal facility is permitted under North Coast RWQCB Order No. R1-2020-0010, National Pollutant Discharge Elimination System (NPDES) Permit No. CA0023345 and WDID No. 1B820370SON.

The WWRF treats an average dry weather flow (ADWF) of approximately 1.3 million gallons per day (mgd). Treatment processes at the WWRF include headworks treatment, extended aeration processes, clarification, advanced water treatment (coagulation, flocculation, clarification, filtration), and ultraviolet (UV) disinfection. Treated effluent is stored in three onsite equalization ponds (5,7, and S2) and three offsite ponds (8,9, and 10) where it is either reclaimed for beneficial use (e.g., urban irrigation, agricultural irrigation, or industrial reuse), including as an injected recycled water input to the Geysers Steam Field dry steam power plant, or discharged to Mark West Creek in accordance with permit conditions. Pond S4 located north of Pond S1, is an auxiliary pond that is rarely used. The sludge ponds are diked systems, stabilized with rock slope protection (riprap). The District recycles almost two-thirds

of its tertiary treated wastewater, with almost half of that amount being used for energy production at the Geysers Steam Field.

Currently the WWRP uses sludge ponds to store and stabilize sludge generated by the wastewater treatment process. On average, the plant produces approximately 670 dry tons of sludge per year that is directed into the ponds. When flow from the treatment process into the ponds exceeds evaporation, the excess effluent is directed back into the sewer system and thus back to the headworks of the Facility. The sludge settles within the ponds, consolidating the solids content and allowing the organic matter to be partially aerobically digested.² Surface aerators within the ponds provide odor abatement. Typically, the District operates two of the three ponds, Ponds S1 and S3. Together, these ponds provide approximately 12.2 million gallons of sludge stabilization and storage capacity. Pond S2, originally designed as a third sludge pond, has been used only for effluent storage since 2002 (**Figure 2-3**).

The District contracts with an outside service provider that specializes in sludge dredging, dewatering, beneficial use and disposal per the State general biosolids order (Water Quality Order No. 2004-12-DWQ). Sludge solids are currently dredged from the bottom of the ponds once a year. The dredged solids are pumped into a large decant tank for storage and equalization prior to conveyance into a mobile dewatering unit. The dewatering process further consolidates the solids. Total dewatered sludge from the storage ponds averages approximately 510 dry tons per year, a reduction of approximately 160 dry tons produced that occurs due to aerobic digestion within the sludge ponds. **Figure 2-4** and **Figure 2-5** show the existing dredging and dewatering operations.

² Aerobic digestion is a bacterial process that occurs in the presence of oxygen in which bacteria consume organic matter and convert it into carbon dioxide, water, and a range of other organic compounds, resulting in the reduction of sludge volume.



Figure 2-3. Existing Sludge Storage Ponds



Figure 2-4. Dredging from Sludge Storage Ponds



Figure 2-5. On-site Mobile Dewatering Unit

2.5 Project Components

After an in-depth alternatives evaluation, the District is proposing to dredge an existing sludge pond, backfill the area with sufficient material to provide structural stability, pave the area, and construct new facilities for handling biosolids. The new facilities would include a combination of processes that could thicken, dewater, and ultimately dry the solids material.

The District is considering two drying technologies: paddle drying and biodrying with pyrolysis. Both technologies eliminate current reliance on outside contractors for biosolids beneficial reuse, produce Class A biosolids and increase the beneficial use of biosolids, proactively respond to future changes to the biosolids regulatory framework, reduce the volume of solids to be hauled offsite, and enhance flexibility to provide additional options for future disposal.

- **Paddle Drying** - Paddle drying is a type of thermal drying that evaporates water from the dewatered sludge and have been successfully used for drying municipal sludge. During the drying process, a temperature gradient develops from the heated surface, causing moisture to migrate from within the wet sludge to its surface. The paddle dryer consists of a stationary vessel that contains agitating shafts with paddles. Heat is transferred through the biosolids by the paddles, evaporating water from the dewatered sludge. This type of thermal dryer operates at a relatively low drying temperature of approximately 350 to 450 degrees Fahrenheit. Thermal dryers are sized based on the evaporative loading rate (i.e., pounds of water evaporated per hour). Based on the thickening and dewatering equipment proposed for this project, the paddle drying system would have a process footprint of approximately 2,500 SF. Paddle drying would result in an estimated 460 tons per year of final biosolids to be hauled offsite.
- **Biodrying and Pyrolysis** - Biodrying uses the metabolic energy of bacteria that naturally occurs in biosolids to reduce its water content instead of an external thermal energy source. These metabolic reactions can substantially increase the temperature inside the unit within a few hours. Biodrying systems optimize temperature and air flow to evaporate water in dewatered sludge, thus leading to a high dry solids concentration. The biodryer operates at temperatures between 160 to 165 degrees Fahrenheit. Following biodrying, biosolids would be subject to pyrolysis. Pyrolysis is an emerging thermochemical decomposition of organic material through the application of intense heat (660 to 1,650 degrees Fahrenheit) in the absence of oxygen. Pyrolysis converts biosolids to biochar, which is a Class A material. The process also shows promising results for per- and polyfluoroalkyl substances (PFAS) removal, and thus could provide a solution if California adopts PFAS regulations for biosolids in the future. Furthermore, producing biochar instead of dried material mitigates the risk to the District from increases in beneficial use or disposal costs. The biochar and pyrolysis system would have a process footprint of approximately 12,000 SF. The drying and pyrolysis process would also result in an estimated 460 tons per year of final product biochar per year and would be managed by a third-party entity, at no cost to the District.

The biodrying and pyrolysis technology has a larger process footprint and associated operational and maintenance requirements of the two biosolids drying technologies being considered by the District. As such, this technology has the potential to result in more environmental impacts and associated required

mitigation of the two drying technologies. In order to consider the reasonable worst-case scenario of the proposed project, biodrying and pyrolysis have been evaluated in this IS.

To accommodate a new biodrying and pyrolysis treatment process, a new single-story building would be constructed within the footprint of the existing S4 sludge pond to house thickening and dewatering equipment, including a polymer system, as well as a separated electrical room. In addition, a separate pump station and wet well would be constructed to receive excess process wastewater, as well as stormwater from the newly paved area, to be directed back to the treatment headworks (**Figure 2-6**). Mechanical thickening and dewatering are both used to reduce moisture content from the sludge. The thickening process would operate continuously while the dewatering process would operate less frequently (approximately 28 hours a week); therefore, thickened sludge storage is necessary. Two new thickened sludge storage tanks approximately 26 feet in diameter would be installed next to the proposed thickening/dewatering/polymer building, which would allow the dewatering and drying processes to be operated continuously as a batch process. Filling and emptying the dryers would be coordinated with the dewatering process. Between the storage tanks would be a concrete pad to house mixing and dewatering pumps for the thickening and dewatering processes.

Adjacent to the proposed thickening/dewatering/polymer building would be eight drying units with space for two additional future units. The biodrying units would operate between 48 to 60 hours to process the thickened and dewatered sludge. East of the biodrying units would be a pyrolysis unit. Pyrolysis is an additional step following biodrying that involves heating dried solids to high temperatures between 660 and 1,650 degrees in an oxygen-free environment to produce biochar. Odor control would be provided by wet scrubbers and fans located north of the pyrolysis unit. The biodrying and pyrolysis units as well as the odor control facilities would be sited on a concrete slab and covered with a canopy structure to protect the equipment from the elements. A conveyor system would be constructed to facilitate collection of dried biosolids cake that is produced as a result of the pyrolysis process. Belowground piping would be installed to connect the proposed structures to the existing WWRF.

Enhancements to the existing electrical system would be necessary to power the proposed processes. These enhancements would include installation of a new below-grade electrical feed duct bank, two new motor control systems (MCCs), programmable logic controller (PLCs) to communicate with the existing supervisory control and data acquisition (SCADA) system, and variable frequency drives (VFDs). In addition, replacement of the existing main switchboard and replacement of the existing service transformer may be completed at the WWRF independent of this project.

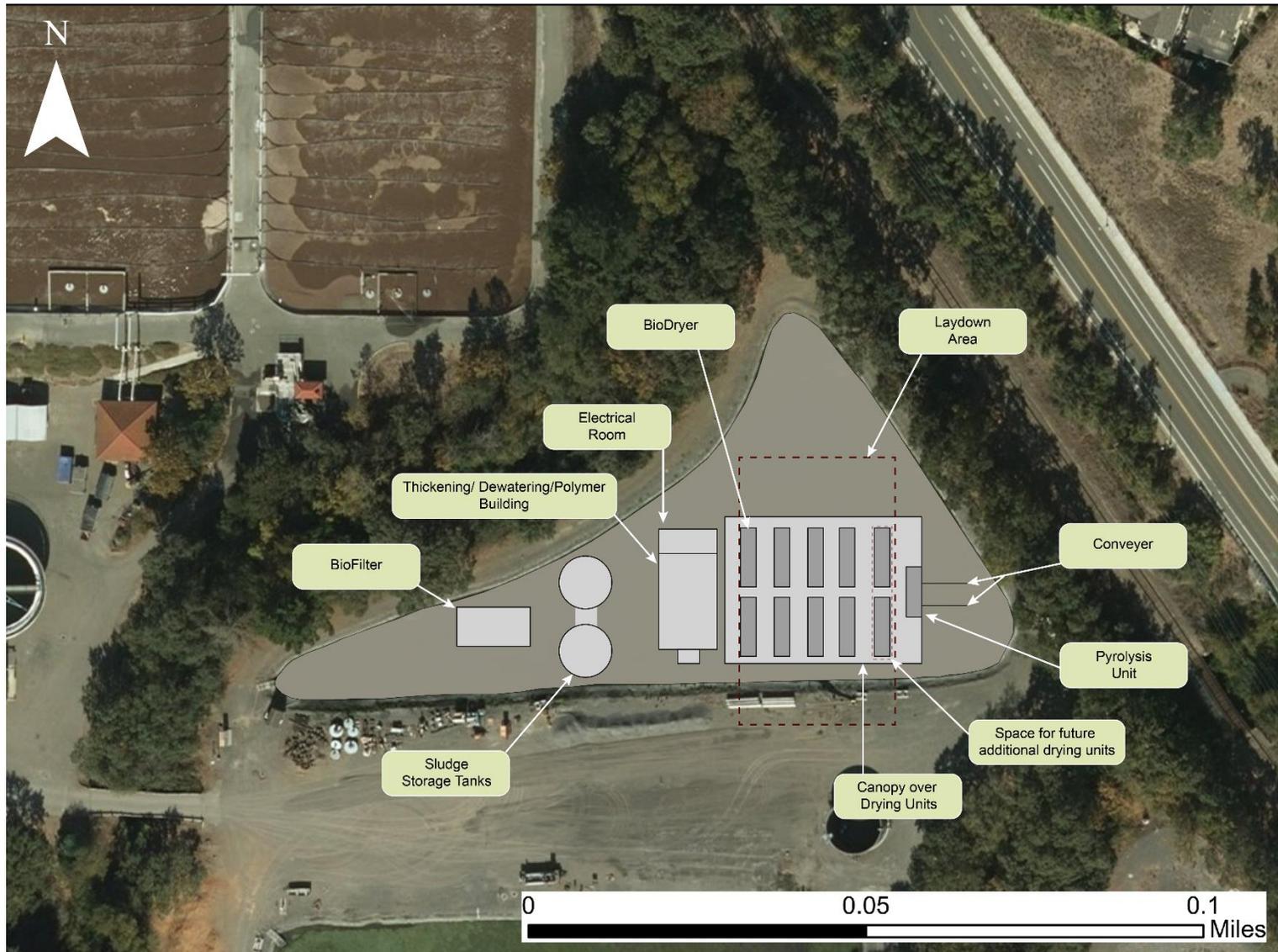


Figure 2-6. Proposed Site Plan

2.6 Project Construction

Construction of the Town of Windsor’s WRF Biosolids Treatment and Disposal Upgrades would occur over the course of approximately 18 months (including approximately three months of mobilization with contractor training, construction permit acquisition, contractor submittals, equipment delivery, material staging, and potential initial exploratory site disturbance). Construction would be completed with a standard 40-hour work week during anticipated typical construction hours of 7:00 am to 3:00 pm. This is in alignment with the Municipal Code of the Town of Windsor (Title VII 7-1-1018) that allows construction activities between 7:00 am – 7:00 pm during the week and from 8:00 am to 7:00 pm on Saturdays. All construction would occur within the current WWRf boundaries and would be largely contained to the area in and around the existing S4 sludge pond.

2.6.1 Construction Sequencing

Construction is anticipated to begin in winter of 2024 and continue through the summer of 2026. Construction activities for the proposed project would be divided into multiple phases, as shown in **Table 2-1**. Some of these construction activities may overlap with one another as contractor means and methods allow.

Table 2-1. Anticipated Construction Schedule

Construction Activities	Anticipated Duration
Submittals and Mobilization	3 months
Site Work	2 months
Facility Construction	11 months
<i>Concrete Structures</i>	<i>6 Months</i>
<i>Install Equipment</i>	<i>3 Months</i>
<i>Install Piping, Appurtenances</i>	<i>2 Months</i>
Paving and Site Restoration	1 month
Start-up and Testing	1 month

Submittals and Mobilization

Prior to construction, approximately three months of construction mobilization are anticipated. This period would include contractor training, construction permit acquisition, contractor submittals, establishing construction access, equipment delivery, material staging, and potential initial exploratory site disturbance.

Construction access would be provided via Windsor Road. Vehicles would generally exit US Highway 101 at Exit 496 and travel along Shiloh Road before turning north onto Windsor Road or would exit Highway 101 at Exit 498 and continue on Windsor River Road before turning south onto Windsor Road.

Vehicles would enter the WWRF via the existing access gate and proceed along Plant Road to the proposed project site. The existing bridge, which provides access to the sludge ponds located on the eastern portion of the facility, may require structural reinforcement during construction to support larger construction vehicles and equipment. Construction workers would utilize the WWRF's existing parking lot. No additional parking or on-street parking is anticipated to be required to facilitate construction of the proposed project.

Equipment and material staging and storage would be located at the existing S4 sludge pond, within the existing confines of the WWRF. The construction site, including equipment and materials staged and stored onsite, would be secured via the existing WWRF fence and the gates limiting access to the site.

Site Work

Site work would include minor tree trimming to prepare the area for construction, as well as sludge pond dewatering and backfill. The existing S4 sludge pond would be dewatered using a mobile dewatering unit, similar to that used during the existing annual dewatering operations. Once dewatered, the sludge material within the existing pond would be dredged, dewatered, and hauled off site. The existing S4 sludge pond would be backfilled with suitable fill and roughly graded.

Facility Construction

Following site work, the new thickening/dewatering/polymer building and concrete slab/equipment pads for the biodrying and pyrolysis units and other process equipment would be constructed. A canopy would also be constructed over the biodrying and pyrolysis area to the east of the building. Yard piping to connect the new structures to the existing WWRF facility as well as excavation and trenching to install below-grade electrical system enhancements and an electrical duct bank may overlap with concrete work as the site is developed.

Following construction of the thickening/dewatering/polymer building and concrete slab/equipment pads, process equipment would be installed. Equipment may be installed using cranes or forklifts, as appropriate. Within the building, thickening, dewatering, and polymer system equipment, as well as electrical equipment and a pump station with wet well would be installed. The two thickened sludge storage tanks, mixing and dewatering equipment would be installed on concrete pads adjacent to the thickening/dewatering/polymer building. Biodrying and pyrolysis equipment as well as odor control equipment would be installed on the concrete slab to the east of the building. A conveyor system would also be constructed to facilitate collection of dried biosolids cake prior to hauling offsite for beneficial reuse.

Paving and Site Restoration

Following construction, any impervious areas would be stabilized or paved. The site would be graded such that stormwater runoff from these new impervious areas is directed to the pump station which would convey the stormwater runoff to the treatment headworks at the existing facility.

Start-up and Testing

Commissioning of the thickening, dewatering, and biodrying/pyrolysis process would include testing each process to ensure all components are operating as intended. Each process, mechanical, and electrical system would be cleaned and undergo a series of tests to ensure that equipment was functioning properly and installed correctly. Process and system startup would include operating the plant as intended under careful monitoring to ensure that all performance metrics are met prior to bringing the process online for full-time operation.

2.6.2 Equipment Use and Construction Trip Generation

The proposed project would involve the following typical construction equipment:

- Excavators
- Bull dozers
- Back hoes
- Dump trucks
- Front end loaders
- Forklifts
- Flatbed trucks
- On road pick-up trucks
- Haul trucks
- Graders
- Rollers
- Water trucks
- Concrete mixers/trucks
- Street sweepers
- Concrete saws
- Cranes

Table 2-2 summarizes the anticipated number of trucks and workers required to construct the project based on anticipated quantities of dredging, excavation, backfill, and concrete/gravel along with the anticipated deliveries required to construct the proposed improvements. While the construction duration is anticipated to be approximately 18 months, construction trip generation would primarily occur during the first 12 months of construction.

Table 2-2. Anticipated Construction Trip Generation

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Anticipated Construction Activities	Site Work	Concrete Structures	Concrete Structures, Install Equipment, Install Piping and Appurtenances	Install Piping and Appurtenances, Paving and Site Restoration
Trucks per Week/month	80 trucks/week	20 trucks/week	20 trucks/week	60 trucks/week
Trucks per quarter	320	120	140	240
Truck Type	End Dump	Concrete	Concrete	End Dump
Workers per day	Average 22	Average 35	Average 40	Average 24
High Level of Trips in a day	40	10	10	30

2.6.3 Construction BMPs

The WWRf operates under an NPDES permit to discharge treated wastewater to the storage ponds and to Mark West Creek at the Trenton-Healdsburg Road Bridge (North Coast RWQCB Order No. R1-2020-

0010, NPDES No. CA0023345). In addition, stormwater regulation is established by the area-wide municipal separate storm sewer system (MS4) permit, administered by the SWRCB. The Town of Windsor is a Co-Permittee, along with other municipalities, counties, and the Sonoma County Water Authority in the Phase I Municipal Separate Storm Sewer Systems (MS4) program. As such, stormwater discharges at the project site are authorized under the NPDES MS4 Storm Water General Permit. The permit governs a variety of activities for Co-Permittees, including construction sites and storm drainage to prevent pollution, improve and protect stormwater quality, reduce stormwater runoff, and enhance local waterways. Project construction would disturb more than one acre of soil so a Stormwater Pollution Prevention Plan (SWPPP) for the site will be developed by a Qualified SWPPP Developer (QSD).

As part of the SWPPP, construction best management practices would be implemented. Prior to any earth disturbance, erosion and sediment control measures would be installed to minimize erosion and sedimentation associated with land disturbing activities during construction. These measures would be maintained throughout construction and removed as appropriate when the project site is stabilized. In addition, fugitive dust control measures would also be implemented to control and mitigate fugitive dust from dust-generating activities. Fugitive dust measures could include minimizing disturbed areas, watering exposed areas and unpaved roads, reducing vehicle speeds on unpaved roads, and replacing ground cover.

2.6.4 Maintenance of WWRF Operations

The WWRF would remain in operation during construction to minimize disruptions to customers while meeting existing permit requirements. While Pond S4 would be repurposed as space for the new buildings and equipment, current operations would be unaffected. Connection of the new facilities and equipment would be independent of the existing system. Therefore, the current biosolids processing train would continue to operate during construction. Commissioning of the proposed solids improvements process, including connections from the existing plant to the proposed facility, would be completed prior to taking the existing process offline.

2.7 Project Operations

After construction of the proposed project, it is anticipated the WWRF would operate as follows:

- Wastewater treatment would continue as currently operated.
- The existing process for generating Class B biosolids would be decommissioned.
- Thickening and dewatering would take place in the new dewatering building.
- The sludge storage tanks would allow biodrying to operate continuously as a batch process.
- Dewatered sludge would be converted to biochar via biodrying and pyrolysis on the concrete slab with canopy structure.
- Filling and emptying the biodryers would be coordinated with the dewatering process.
- Biochar would be temporarily stored on-site prior to distribution to beneficial use applications within the region.
- The new pump station and wet well would receive the excess water waste from the Class A biosolids process as well as sheet flow stormwater from the newly paved area and direct this water back to the treatment headworks.

2.8 Permitting and Regulatory Authorization Requirements

Table 2-3 lists the permits and approvals anticipated to be required to support the project.

Table 2-3.: Anticipated Permits and Approvals

Regulatory/Authorizing Entity	Permit or Approval
State	
State Water Resources Control Board (SWRCB), Division of Drinking Water	National Pollutant Discharge Elimination System Stormwater General Permit and Stormwater Pollution Prevention Plan (SWPPP) Approval
State Historic Preservation Office	National Historic Preservation Act Compliance Consultation
Native American Heritage Commission	AB52 Tribal Resources Consultation
County / Local	
Bay Area Air Quality Management District	Authority to Construct, Permit to Operate
California North Coast Basin Regional Water Quality Control Board	NPDES Permit and SWPPP Approval
Town of Windsor Community Development Department	Building permits, zoning waivers, tree removal permit, site plan approval

3. INITIAL STUDY/MITIGATED NEGATIVE DECLARATION



INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Project Title:	Town of Windsor Water Reclamation Facility Biosolids Treatment and Disposal Upgrades
Case No.	N/A
Assessor's Parcel No.	APN: 164-030-035, 164-130-002
Lead Agency Name and Address:	Windsor Water District 8400 Windsor Road Windsor, CA 95492
Project Location:	Windsor, CA 95492 Sonoma County
Project Sponsor's Name and Address:	Windsor Water District 8400 Windsor Road Windsor, CA 95492
General Plan Designation(s):	PQP (Public/Quasi-Public; 0.0 – 1.0 FAR)
Zoning:	PI (Public/Institutional; 0.0 – 1.0 FAR)
Contact Person:	David Ernst Wastewater Treatment Superintendent
Phone Number:	(707) 838-5328
Date Prepared	November 15, 2022

3.1 Environmental Factors Potentially Affected:

The environmental factors checked below would be potentially affected by this project, as indicated by the checklist and corresponding discussion on the following pages.

- | | | |
|---|---|--|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture and Forestry Resources | <input checked="" type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources | <input checked="" type="checkbox"/> 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 type="checkbox"/> Wildfire | <input type="checkbox"/> Energy |

3.2 Determination

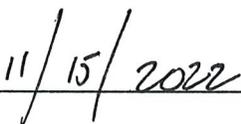
On the basis of this initial evaluation:

- I find that the proposed Project **COULD NOT** have a significant effect on the environment, and a **NEGATIVE DECLARATION** will be prepared.
- 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 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 (1) 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.



David Ernst

Windsor Water District



Date

3.3 Purpose Of This Initial Study

This Initial Study has been prepared in accordance with the CEQA Guidelines Section 15063(c) to provide a preliminary analysis of the proposed project's actions and to determine if the project, as proposed, may have a significant effect upon the environment. The findings determined from the preliminary analysis are presented in the form of the Initial Study, which will be used in support of the preparation of a Mitigated Negative Declaration.

3.4 Evaluation Of Environmental Impacts

A discussion of the environmental checklist is included below. In general, the format followed includes a discussion of the setting and an impact analysis of the proposed project. In some resource categories, control measures are identified to minimize potential impacts. Control measures are procedures that shall be incorporated into the Contract Documents that are known to further reduce the potential for impacts based on regulatory agency requirements, standards in the industry, and construction/operating experience. Reference and information resources for the checklist are included in Chapter 4. As appropriate, mitigation measures are included to reduce impacts to less than significant levels.

I. AESTHETICS

SETTING

The proposed project is located at the Town of Windsor's Water Reclamation Facility (WWRF or Facility) located at 8400 Windsor Road in Windsor, California as shown in **Figure 2-2**. The Facility is approximately 78.5 acres comprising 11 parcels and is centrally located within the western portion of the Town. The WWRF parcel is surrounded by fencing and is inaccessible to the general public. The Facility is relatively flat and comprises administrative and treatment facilities, including buildings as well as several large ponds for holding liquid and solid wastes. The site's elevation is approximately 100 feet above mean sea level with only minor variations across the site from constructed embankments. The parcel has been assigned a zoning designation of Public/Institutional and a land use designation of Public/Quasi-Public per the Town of Windsor General Plan.

The northern boundary of the WWRF parcel is Patrick Lane. Low-density residential housing is located north of the site between Patrick Road and Private Road F. Views of the upper first and second stories of WWRF administrative buildings are visible along Patrick Lane as well as views of the open area between the administrative buildings and the lagoon. The access road surrounding the equalization ponds is also visible to residents and pedestrians along Patrick Lane, although some vegetation dots portions of the equalization pond access road perimeter and the fenceline adjacent to the administrative buildings.

The WWRF parcel is bounded to the east by the Northwestern Pacific Railroad track and Bell Road. To the east of the railroad tracks and Bell Road are residential areas, open space, and Windsor Creek Elementary School. Views of the site along Bell Road are largely obscured by the railroad tracks as well as trees and other vegetation. The water surface of the Pond S4 and Pond S1 is partially visible.

To the west, the parcel is bounded by Windsor Road. Primary access to the WWRF is provided via Plant Road, which intersects Windsor Road. Low-density residential housing is also located to the west of the site, although views of the WWRF along Windsor Road are largely obscured by a sloping vegetated embankment surrounding the site. Windsor High School, a public secondary school for grades 9 – 12 comprising several buildings and facilities across a campus, is located west of the WWRF on the western side of Windsor Road. Views of the WWRF from Windsor Road include portions of Plant Road as it extends onto the site as well as parking facilities and some of the single-story treatment facilities, including buildings, equipment, and canopies. Views of Pond 7 from Windsor Road are obscured by the embankment that contains them.

The southern boundary of the site is largely forested area that follows the fence line north of Trione Circle as it extends westward from Bell Road. Where Trione Circle meets Ferrari Way, the parcel boundary extends directly west to meet Windsor Road. The area immediately to the south of the WWRF parcel is open space that includes trees, shrubs and grasses, which obscures views of the WWRF from residences along Trione Circle, a low-density / very-low density residential housing area, as further described in Section XI., Land Use and Planning (Town of Windsor, 2018).

The Town of Windsor's 2015 General Plan recognized all or portions of 15 scenic corridors within the Town. Of these 15 scenic corridors, only two are proximate to the project site: Highway 101, which is

considered a scenic corridor throughout the planning area, is located 0.3 miles east of the site. Reiman Lane, which runs east-west to connect with Windsor Road just south of the Facility is considered a scenic corridor as well as Windsor Road between Reiman Lane and Sanders Road, to the south of the WWRF. There are no State-designated scenic highways within the Town; the nearest designated scenic highway is Route 116, located approximately 6 miles west of the project site (Caltrans 2018).

The proposed project would take place on the existing WWRF site in the location of the existing S4 Pond to the east of the site, adjacent to the railroad tracks. Following construction, in place of the existing pond would be a new precast dewatering building rising approximately 30 feet high and a structural canopy with approximately 120-foot by 100-foot dimensions.

Implementation of the project is expected to have less than significant impacts on aesthetic resources both during its construction and operation. The potential minor impacts to aesthetic resources are described in detail in the following section.

IMPACT ANALYSIS

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

(Town of Windsor General Plan – 2015; Town of Windsor General Plan 2040; Town of Windsor General Plan Final Environmental Impact Report, California State Scenic Highway System Map, Town of Windsor Zoning Ordinance)

Less Than Significant Impact: Criteria 1a, 1b, 1.c, 1d

The project site is surrounded by fencing and is inaccessible to the public; therefore, this analysis considers only views from beyond the Facility boundaries looking towards the WWRF. The existing S4 pond would be dredged and filled to accommodate the proposed biosolids facilities, which would not substantially damage scenic resources. The Scenic Corridor along Highway 101 is too far to include meaningful viewsheds of the site. The Scenic Corridor along Reiman Lane, at the intersection of Reiman Lane and Windsor Road, and traveling south along Windsor Road to Sanders Road includes only the Facility's vegetated embankment that slopes up to the access road that encircles Pond 7. The proposed project construction is located approximately 0.35 miles northeast of this Scenic Corridor and would not be visible along this corridor. Similarly, as no modifications to the embankment are proposed, views of the project, once completed, would remain obscured.

Following construction, the dewatering building would be partially visible to residents living along Grayson Way and Dalton Court, as well as vehicular passengers or bicyclists traveling along Bell Road. However, as none of the existing tree canopy and vegetation bordering the east and west sides of the railroad are proposed for removal, these views would continue to be obscured by existing vegetation. The extent to which the vegetation would screen these views may vary somewhat depending on the time of year (e.g., leaf on) and climate (e.g., droughts). The project would not modify or conflict with the existing zoning or other regulations governing scenic quality.

Lighting levels would be regulated by Town lighting standards and would be designed according to the Town's Zoning Ordinance. Lighting proposed under the canopy and exterior to the proposed thickening/dewatering/polymer building would comply with local codes and would be shielded so that light is contained within the boundaries of the parcel on which the project site is located, directed away from adjoining properties and public rights-of-way. The impact of the proposed project's exterior lighting is anticipated to be less than significant. The lighting system will be coordinated with operation of the WWRF operating hours, to the extent practicable. Due to the current development surrounding the proposed project site, the additional lighting is not anticipated to adversely affect or constitute a significant impact to the day or nighttime views in the area. In addition, the dewatering building and other applicable structures would be painted with non-reflective or flat finish paint to reduce glare from the site. Therefore, the impact to visual character and visual quality as a result of the proposed project is expected to be less than significant.

MITIGATION MEASURES

None.

II. AGRICULTURAL RESOURCES

SETTING

The proposed project is located within the Town boundaries on the existing WWRF site. According to the Town of Windsor 2040 General Plan, the project area is designated as Public / Institutional (PI). The California Department of Conservation Important Farmland Map identifies the site as Urban and Built-Up Land. No portion of the site is identified as containing farmland of Prime or Statewide importance.

IMPACT ANALYSIS

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
II. AGRICULTURE AND FOREST RESOURCES				
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 in 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"/>

(Sources: "California Important Farmland Finder," accessed August 9, 2022; Town of Windsor 2040 General Plan)

No Impact: Criteria Ila-Ile

The project site is located on the existing WWRF site, which is not designated as Prime Farmland, Unique Farmland or Farmland of Statewide Importance (Farmland). The zoning designation for the project site is Public / Institutional and is not designated as agricultural use. Neither the construction nor the operation of the project would conflict with a Williamson Act contract. The project would not conflict with existing zoning for or cause rezoning of forest land, timberland, or timberland zoned Timberland Production. The project site is not located on or near any areas designated as forest land. Forestry land designations are not present at the project site; therefore, the project would not result in the loss of forest land or conversion of forest land to non-forest use.

MITIGATION MEASURES

None.

III. AIR QUALITY

SETTING

The proposed project is located at the Town of Windsor in Sonoma County, part of the nine-county San Francisco Bay Area Air Basin (Air Basin). The local air quality regulatory agency responsible for the Air Basin is the Bay Area Air Quality Management District (BAAQMD).

CRITERIA AIR POLLUTANTS

The federal and California Clean Air Acts (CAAs) have established ambient air quality standards for common pollutants. The ambient air quality standards are intended to protect human health and welfare. At the federal level, national ambient air quality standards (NAAQS) have been established for carbon monoxide (CO), ozone (O₃), nitrogen dioxide (NO₂), respirable particulate matter with a diameter less than 10 microns (PM₁₀), fine particulate matter with a diameter less than 2.5 microns (PM_{2.5}), sulfur dioxide (SO₂), and lead. California has adopted ambient air quality standards (CAAQS) which are, in general, more stringent than the NAAQS, and include other pollutants not regulated at the federal level [i.e., sulfates, hydrogen sulfide (H₂S), and vinyl chloride]. Pollutants for which ambient air quality standards have been established are called “criteria pollutants”. The NAAQS and CAAQS are shown in **Table 3-1**.

The BAAQMD has been delegated the authority under the federal and California CAAs to implement measures to protect the air quality within its jurisdiction. Ambient concentrations of criteria pollutants are monitored at many monitoring stations in the Air Basin by the BAAQMD. **Table 3-1** includes a summary of the monitored maximum concentrations and the number of occurrences of exceedances of the NAAQS/CAAQS at the nearest site that monitors each pollutant for the 3-year period from 2017 through 2019 (the most recent 3 years for which data are available). Sebastopol Station is the closest station to the Project site that monitors four of the criteria pollutants (O₃, CO, NO₂, and PM_{2.5}). The nearest station that monitors SO₂ is in Vallejo, and the nearest station that monitors PM₁₀ over the entire 2017-2019 period is San Rafael.

Table 3-1 shows that over the last three years, the following standards were exceeded:

- O₃: 8-hour CAAQS and NAAQS;
- PM₁₀: 24-hour NAAQS and CAAQS; and
- PM_{2.5}: 24-hour NAAQS

Table 3-1. National and California Ambient Air Quality Standards (NAAQS / CAAQS) and Summary of Measured Air Quality Exceedances in the Project Area (2017 – 2019)

Pollutant/ Averaging Period	Primary Standard	Year	Maximum Concentration	Days Exceeding State/National Standard	
	State	National			
Ozone 1-hour	0.09 ppm	none	2017 2018 2019	0.087 0.071 0.070	0/0 0/0 0/0
Ozone 8-hour	0.070 ppm	0.070 ppm	2017 2018 2019	0.071 0.053 0.059	1/1 0/0 0/0
Carbon Monoxide 1-hour	20 ppm	35 ppm	2017 2018 2019	2.1 1.4 1.4	0/0 0/0 0/0
Carbon Monoxide 8-hour	9.0 ppm	9 ppm	2017 2018 2019	1.6 1.3 1.0	0/0 0/0 0/0
Nitrogen Dioxide 1-hour	0.18 ppm	0.100 ppm	2017 2018 2019	0.035 0.065 0.032	0/0 0/0 0/0
Nitrogen Dioxide Annual	0.030 ppm	0.053 ppm	2017 2018 2019	0.005 0.004 0.004	N/A ^b
Sulfur Dioxide 1-hour	none	0.075 ppm	2017 2018 2019	0.0059 0.0067 0.0109	0/0 0/0 0/0
Sulfur Dioxide 24-hour	0.04 ppm	none	2017 2018 2019	0.0021 0.0018 0.0019	0/0 0/0 0/0
Respirable Particulate Matter (PM ₁₀) 24-hour	50 µg/m ³	150 µg/m ³	2017 2018 2019	94 166 33	2/0 2/1 0/0
Respirable Particulate Matter (PM ₁₀) Annual	20 µg/m ³	none	2017 2018 2019	17.7 19.0 14.3	N/A ^b
Fine Particulate Matter (PM _{2.5}) 24-hour	none	35 µg/m ³	2017 2018 2019	81.8 175.3 28.0	0/4 0/13 0/0
Fine Particulate Matter (PM _{2.5}) Annual	12 µg/m ³	12.0 µg/m ³	2017 2018 2019	8.1 8.3 5.7	N/A ^b

Source: BAAQMD, see <http://www.baaqmd.gov/about-air-quality/air-quality-summaries>

Notes: ppm = parts per million, µg/m³ = micrograms per cubic meter, ND = No data available, NA = Not applicable

^a Pollutant concentrations were measured at Sebastopol Station (O₃, CO, NO₂, and PM_{2.5}), Vallejo (SO₂), and San Rafael (PM₁₀).

^b Data not reported

TOXIC AIR CONTAMINANTS

In addition to criteria air pollutants, there is another group of substances found in ambient air referred to as toxic air contaminants (TACs). These contaminants tend to be localized and are found in relatively low

concentrations in ambient air. However, they can result in adverse health effects. Sources of TACs include industrial processes such as petroleum refining and manufacturing, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. One of the TACs of greatest concern in California is diesel particulate matter (DPM), which results from using diesel fuel in construction equipment, trucks, engines, etc. TAC emissions are regulated at the local, State, and federal level.

REGULATORY AND PLANNING FRAMEWORK

Federal, State, and regional agencies regulate air quality in the Air Basin. At the federal level, the U.S. Environmental Protection Agency (EPA) is responsible for overseeing implementation of the federal CAA. The California Air Resources Board (CARB) is the State agency that regulates mobile sources throughout the State and oversees implementation of the State air quality laws and regulations, including the California CAA. The primary agency that regulates air quality in the Project area is the BAAQMD. The BAAQMD has permit authority over stationary sources, acts as the primary reviewing agency for environmental documents, and develops regulations that must be consistent with federal and State air quality laws and regulations.

Federal Air Quality Regulations. The federal CAA requires CARB, based on air quality monitoring data, to designate portions of the state where the NAAQS are not met as “nonattainment areas”. Because of the differences between the NAAQS and CAAQS, the designation of nonattainment areas is different under federal and State legislation. Areas that meet the air quality standards are considered to be in attainment of the standards. Areas where there is no monitoring data available or insufficient data to classify are considered unclassified, which for regulatory purposes is treated as an attainment area.

The Bay Area has exceedances of the NAAQS for O₃ and PM_{2.5}. The EPA has classified the region as marginal nonattainment for 8-hour O₃ NAAQS. In October 2009, the EPA designated the Bay Area as moderate nonattainment for 24-hour PM_{2.5} NAAQS. The Bay Area is considered as attainment or unclassifiable with respect to the NAAQS for all other criteria pollutants. The EPA requires states that have areas that are not in compliance with the national standards to prepare and submit air quality plans showing how the standards will be met. If the states cannot show how the standards will be met, then they must show progress toward meeting the standards. These plans are referred to as the State Implementation Plan (SIP). On January 9, 2013, the EPA issued a final rule to determine that the San Francisco Bay Area has attained the 24-hour PM_{2.5} NAAQS. This action suspends federal SIP planning requirements for the Bay Area with respect to PM_{2.5}. However, the region remains designated as nonattainment until the BAAQMD submits a redesignation request.

Projects seeking federal funding must comply with the federal CAA conformity requirements. As part of the SIP, California has incorporated the federal General Conformity Rule. The EPA’s Conformity Rule, as promulgated in 40 CFR Part 93 Subpart B, and 40 CFR Part 51, Subpart W, implements the conformity requirements of Section 176(c) of the 1990 Amendments to the federal CAA. Conformity to the SIP is defined in the federal CAA as requiring all federal agencies to ensure that any agency activity conforms with an approved SIP in nonattainment or maintenance areas. Compliance with the SIP assists in eliminating or reducing the number of violations of the NAAQS, which expedites attainment of the standards. The General Conformity Rule requires that the total of direct and indirect emissions of nonattainment or maintenance area criteria pollutants, including ozone precursors [reactive organic gases

(ROGs) and nitrogen oxides (NO_x) and PM_{2.5} precursors (SO₂, NO₂, and ROG or ammonia) be considered in determining conformity.

If a federal action, such as Clean Water State Revolving Fund (CWSRF)-funded projects, is to take place in a nonattainment or maintenance area, it is subject to a General Conformity evaluation. This determination can take one of three forms: (1) If the action meets certain criteria, it may be specifically exempted, regardless of whether the action would emit pollutants of concern; (2) if the action is determined to emit pollutants below specified de minimis thresholds and the potential emission levels are not regionally significant (less than 10% of the region's emissions for a particular pollutant), the action can be assumed to conform with the SIP; and (3) for actions that do not fall under either of these two categories, a complete conformity determination must be made. Specifics of this process are listed in 40 CFR Part 93, Subpart B. For CWSRF-funded projects, a General Conformity analysis applies only to projects in a federal nonattainment area or an attainment area subject to a maintenance plan and applies to those pollutants that the area has been designated as nonattainment or maintenance. As described above, the Bay Area has been designated nonattainment for O₃ and PM_{2.5}.

California Air Quality Regulations. The California CAA outlines a program for areas in the State to attain the CAAQS by the earliest practical date. The California CAA sets more stringent air quality standards for most of the pollutants covered under national standards, and additionally regulates other pollutants. If an area does not meet the CAAQS, CARB designates the area as a nonattainment area. With respect to the CAAQS, the Bay Area is a nonattainment area for ozone and particulate matter (PM₁₀ and PM_{2.5}), and either attainment or unclassified for other pollutants. The California CAA requires local air pollution control districts to prepare air quality attainment plans for pollutants, except for particulate matter, that are not in attainment with the State standards. These plans must provide for district-wide emission reductions of 5% per year averaged over consecutive 3-year periods or, if not, provide for adoption of "all feasible measures on an expeditious schedule".

Regional Air Quality Regulations and Planning. Air quality in the Project region is regulated by the BAAQMD. The BAAQMD regulates stationary sources (with respect to federal, State, and local regulations), monitors regional air pollutant levels (including measurement of TACs), develops air quality control strategies, and conducts public awareness programs.

The most recent air quality plan developed by the BAAQMD is the 2017 Clean Air Plan (CAP) that was adopted by BAAQMD in April 2017. The 2017 CAP provides a regional strategy to protect public health and the climate. To protect public health, the plan describes how the Air District will continue making progress toward attaining all NAAQS and CAAQS and eliminating exposure to air pollution among Bay Area communities. The 2017 CAP includes a wide range of control measures designed to decrease emissions of the air pollutants that are most harmful, such as particulate matter, ozone, and TACs, and to decrease emissions of carbon dioxide by reducing fossil fuel combustion. The 2017 CAP represents the Bay Area's most recent assessment of the region's strategy to attain the State and national ozone and PM_{2.5} standards.

The BAAQMD has also developed CEQA Air Quality Guidelines that establish significance thresholds for evaluating new projects and provide guidance for evaluating air quality impacts of projects and plans. The Air Quality Guidelines provide procedures and significance thresholds for evaluating potential construction and operational-related impacts during the environmental review process consistent with CEQA requirements. The BAAQMD thresholds of significance are designed to establish the level at

which BAAQMD believes air pollution emissions would cause significant environmental impacts under CEQA. The BAAQMD’s most recent CEQA Air Quality Guidelines were updated in May 2017.

IMPACT ANALYSIS

RESOURCE CATEGORY/ SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
III. AIR QUALITY				
Would the Project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

(Sources: Yorke Engineering, LLC, 2022; BAAQMD, Final 2017 Clean Air Plan: Spare the Air, Cool the Climate, 2017; BAAQMD, CEQA Air Quality Guidelines, 2017; CARB Overview: Diesel Exhaust & Health, 2021; CARB Tier 4 Off-Road Compression-Ignition Engines, 2012; EPA, Air Pollution Control Technology Fact Sheet Spray-Chamber/Spray-Tower Wet Scrubber, 2022)

Less Than Significant Impact: Criterion IIIa

The BAAQMD CEQA Guidelines recommend that a project’s consistency with the current CAP be evaluated using the following three criteria:

1. The project supports the goals of the CAP;
2. The project includes applicable control measures from the CAP; and
3. The project does not disrupt or hinder implementation of any control measures from the CAP.

If it can be concluded with substantial evidence that a project would be consistent with the above three criteria, then the BAAQMD considers it to be consistent with the air quality plan prepared for the Bay Area.

The primary goals of the 2017 CAP are to attain air quality standards, reduce population exposure to unhealthful air, and protect public health in the Bay Area. The BAAQMD-recommended guidance for determining if a project supports the goals in the current CAP is to compare project estimated emissions with BAAQMD thresholds of significance. If project emissions would not exceed the thresholds of significance after the application of feasible mitigation measures, the project would be consistent with the

goals of the 2017 CAP. As indicated in the following discussion with regard to air quality Criterion IIIb, the Project would result in a less than significant impact related to construction emissions with the implementation of the BAAQMD's applicable recommended fugitive dust control measures, which will be included in the Contract Documents. In addition, operational emissions would also not exceed the thresholds. Therefore, the Project would be consistent with the primary goals of the 2017 CAP.

The 2017 CAP contains 85 control measures aimed at reducing air pollution in the Bay Area. Projects that incorporate all feasible air quality plan control measures are considered consistent with the CAP. Two of the stationary source control measures are applicable to operation of wastewater treatment plants: WR1 [Limit greenhouse gases (GHGs) from Publicly Owned Treatment Works (POTWs)] and WR2 (Support Water Conservation). The proposed Project will implement upgrades to the biosolids treatment process at the plant, which will enhance the plant's ability to meet future biosolids regulatory requirements. While both of these measures do not contain specific emissions control strategies, the Project would be consistent with WR1 as there are less than significant operational emissions, as discussed further below under Criterion IIIb, and would not affect production of recycled water at the facility. Additionally, the Project provides for beneficial use of the biosolids in the wastewater (as fertilizer) while diverting these biosolids from other disposal, which provides GHG benefits. For these reasons, the Project would be consistent with and would not hinder implementation of the 2017 CAP control measures.

Less Than Significant Impact: Criterion IIIb

The federal CAA and the California CAA both require the establishment of standards for ambient concentrations of air pollutants, the NAAQS/CAAQS. The Bay Area Air Basin experiences occasional violations of ozone and particulate matter (PM10 and PM2.5) standards. Therefore, the Project area currently is designated as a nonattainment area for exceedance of the State 1-hour and 8-hour ozone standards, the national ozone 8-hour standard, the State PM10 24-hour and annual average standards, the State PM2.5 annual average standard, and the national PM2.5 24-hour standard. The Project area is designated as attainment for all other State and national standards. An analysis was performed to determine if the proposed Project emissions during construction and operation would contribute to the existing exceedances of the ambient air quality standards.

PROJECT CONSTRUCTION

Construction Emissions. Construction activities associated with the Project would involve the use of equipment that has exhaust gases containing ozone precursors (ROG and NOx). On-site and off-site vehicle activity associated with material transport and construction worker commutes would also generate emissions. Emission levels for these activities would vary depending on the number and types of equipment used, duration of use, operation schedules, and the number of construction workers. Criteria pollutant emissions of ROG and NOx from these emissions sources would incrementally add to the regional atmospheric loading of ozone precursors during Project construction. Particulate matter in the exhaust and fugitive dust from ground disturbance would also contribute to regional levels of PM10 and PM2.5. All assumptions and calculations used to estimate the Project-related construction emissions are provided in Appendix A.

The proposed project is expected to take approximately 18 months to construct. The average daily emissions over the course of the Project are presented in **Table 3-2**.

Table 3-2. Comparison of Maximum Construction Emissions to BAAQMD Significance Thresholds for Nonattainment Pollutants

Criteria Pollutant	Average Daily Emissions (lbs/day)	Daily Threshold (lbs/day)	Maximum Annual Emissions (tons/year)	Annual Threshold (tons/year)	Significant?
ROG	1.64	54	0.30	10	No
NO _x	5.95	54	1.09	10	No
Exhaust PM ₁₀	0.05	82	0.01	15	No
Exhaust PM _{2.5}	0.05	54	0.01	10	No

The results shown in **Table 3-2** of the maximum construction period scenario indicate that daily and annual construction emissions of nonattainment pollutants will be below applicable BAAQMD thresholds, and hence, the impact is Less Than Significant.

In addition to exhaust emissions from combustion equipment, emissions of fugitive dust would also be generated by construction activities associated with grading and earth disturbance, travel on paved and unpaved roads, etc. Such emissions could result in a potentially significant impact since the area is nonattainment for PM₁₀ and PM_{2.5}. For fugitive dust emissions, the BAAQMD Guidelines focus on implementation of recommended dust control measures rather than a quantitative comparison of estimated emissions to a significance threshold. For all projects, the BAAQMD recommends the implementation of its Basic Control Mitigation Measures, which are included as Control Measures 1 through 8, below. These measures would be incorporated into the contract documents for the construction contractor. Therefore, the proposed project would not cause violations of the air quality standards due to fugitive dust, and the impact is Less Than Significant.

Cumulative Construction Impacts. There are no additional projects currently planned by the Town of Windsor and the Town is unaware of any other major planned projects in the area. The BAAQMD determines their CEQA thresholds to avoid regional cumulative impacts, and construction emissions are temporary. Therefore, the cumulative impacts during the construction phase of these projects should be considered Less Than Significant.

General Conformity During Construction. With respect to the General Conformity requirements, emissions thresholds in the BAAQMD are 50 tons/year of ROG and 100 tons/year of other criteria pollutants. The emissions in **Table 3-2** and Appendix A show that emissions will be considerably less than the applicable General Conformity de minimis thresholds and further conformity evaluation is not required. Thus, the proposed Project will be compliant with the federal CAA.

PROJECT OPERATION

Operations Emissions. Operational emissions for the proposed Project are associated with a new rotary drum thickener, thickened sludge storage, centrifugal sludge dewatering, biodryer, sludge cake handling, sludge cake storage, biochar handling and loading, and combustion of pyrolysis gases and natural gas. Emissions can also be estimated with the California Emissions Estimator Model® (CalEEMod) for consumer products, energy usage, and mobile sources. This project will decrease operational mobile source emissions by significantly reducing hauling trips of sludge. Once the new solids handling processes are operational, hauled materials are proposed to consist of approximately 10% water compared to 86% water currently. This reduction is not accounted for in the emissions analyses. The criteria pollutant emissions from the natural gas and pyrolysis gases combustion are omitted from this analysis because they are expected to be negligible compared to the significance thresholds. The natural gas and pyrolysis gases combustion will be less than 1 million British thermal units (MMBtu) per hour, and therefore, the units are small enough to meet a permitting exemption (BAAQMD Regulation 2 Rule 1 Section 114.1.1). As such, it is assumed units exempt from permitting will not have a significant impact in a CEQA analysis. **Table 3-3** compares the total operational emissions (except for the negligible criteria pollutants from gas combustion) to the BAAQMD significance thresholds. Emissions are well below the thresholds, resulting in a Less Than Significant impact determination. Appendix A provides the assumptions used in the emission calculations.

Table 3-3. Comparison of Maximum Operations Emissions To BAAQMD Significance Thresholds for Nonattainment Pollutants

Criteria Pollutant	Average Daily Emissions (lbs/day)	Daily Threshold (lbs/day)	Maximum Annual Emissions (tons/year)	Annual Threshold (tons/year)	Significant?
ROG	1.60	54	0.29	10	No
NO _x	0.32	54	0.06	10	No
PM ₁₀	0.03	82	0.005	15	No
PM _{2.5}	0.03	54	0.005	10	No

Cumulative Operations Impacts. According to the BAAQMD, no single project will, 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 addition, according to the BAAQMD CEQA Air Quality Guidelines, if a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. Alternatively, if a project does not exceed the identified significance thresholds, then the project would not be considered cumulatively considerable and would result in less than significant air quality impacts. Based on **Table 3-3**, the Project would not result in a significant cumulative impact.

General Conformity During Operation. Similar to the construction phase, operational emissions in **Table 3-4** are well below the conformity thresholds given above. Therefore, pursuant to CEQA-Plus requirements, the Program will be in compliance with the federal CAA.

Less Than Significant Impact with Mitigation: Criterion IIIc

Based on the discussion above related to Criterion IIIb, it can be concluded that the Project's construction and operation emissions of criteria pollutants would be unlikely to expose sensitive receptors to substantial criteria pollutant concentrations. Therefore, the following Criterion IIIc discussion addresses the potential health risks from exposure of sensitive receptors to TAC emissions.

Per the BAAQMD CEQA Guidelines, sensitive receptors are facilities or land uses such as schools, hospitals, and residential areas that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. The BAAQMD has identified a distance of 1,000 feet from the source to the closest sensitive receptor locations within which community impacts are possible. The nearest sensitive receptor is a group of houses, the closest of which is located approximately 190 feet to the northeast from the boundary of the proposed construction site. Windsor Creek Elementary School is nearby but is expected to be more than 1,000 feet away from any stationary source emission points. No other sensitive receptors were noted within 1,000 feet of the Project.

Construction. Construction activities associated with the Project would result in the generation of exhaust emissions that contain air pollutants, including particulate matter (PM₁₀ and PM_{2.5}), the majority of which would be DPM. As discussed on CARB's website under "Overview: Diesel Exhaust & Health", DPM is used as a surrogate measure of exposure for the mix of chemicals that make up diesel exhaust as a whole. DPM is a carcinogen (i.e., it causes cancer), so the effects of DPM are more pronounced if the exposure is over long periods of time. Although other TACs are emitted from construction equipment and vehicles, TACs other than DPM from construction equipment rarely contribute significantly to health risks in comparison to DPM. Therefore, only DPM is discussed in this analysis.

As discussed under Criterion IIIb above, construction PM_{2.5} emissions were calculated using CalEEMod and the PM_{2.5} exhaust emissions were assumed to all be DPM. A simplified Health Risk Assessment (HRA), which typically conservatively overestimates risks, was completed to determine potential health risks from construction of the Project.

An initial run was completed with default construction equipment in CalEEMod, resulting in cancer risks greater than 10 in one million. As a result, mitigation was applied. Rather than assuming an older mix of construction equipment, emissions were calculated for on-site construction equipment that would meet the CARB Tier 4 interim standards. Under this scenario, the DPM emissions were reduced to an average of 0.049 pounds per day. With this emission rate, a revised HRA estimated risks below the BAAQMD CEQA thresholds (**Table 3-3**). The cancer risks were predicted to be 4.23 in one million for the maximally exposed individual resident (MEIR) and 0.41 in one million for the maximally exposed individual worker (MEIW). The chronic risks at the MEIR and MEIW were both well below 1.0.

Table 3-4. Comparison of Construction Health Risks To BAAQMD Thresholds

Health Risk	PMI	MEIR	Maximum Sensitive Receptor	MEIW	BAAQMD CEQA Threshold	Significant?
Cancer Risk (In One Million)	17.20	4.23	0.96	0.41	10	No
HIC	0.023	0.00019	0.0012	0.00012	1	No
HIA ¹	N/A	N/A	N/A	N/A	1	No

1. There is no acute REL for DPM so an acute health risk analysis is not required for construction in the BAAQMD.

Therefore, with mitigation applied, the impact of exposure of sensitive receptors to TAC emissions from construction can be considered Less Than Significant.

Operation. The new stationary equipment will have toxic emissions. Toxic emissions were calculated for all equipment as shown in Appendix A. The following is a list of all TAC emissions sources and their abatement devices:

- Rotary Drum Thickener – Abated by the Biofilter;
- Sludge Storage Tank – Abated by the Biofilter;
- Dewatering centrifuge – Abated by the Biofilter;
- BioDryer – Abated by Wet Scrubbers (2) and the Biofilter;
- Dried sludge storage – Abated by the Biofilter; and
- Combustion gases – Abated by a Wet Scrubber, Carbon Adsorption, and Cyclones (2).

Since all the new stationary sources have ROG abatement devices (either a biofilter or carbon adsorption), it is assumed that ROG emissions will be abated by at least 75%. Particulate TACs only occur from the combustion sources (not from sludge handling or processing), and the combustion sources have cyclones to abate particulate emissions. Additionally, although wet scrubbers are not designed to abate particulate matter, wet scrubbers are well understood to partially abate particulates. It is assumed that particulate matter emissions will be abated by at least 50% by the cyclones and/or wet scrubbers. After abatement, TAC emissions would not exceed BAAQMD Rule 2-5 thresholds, which indicates that health risks should be considered less than significant and an HRA should not be required. **Table 3-5** contains a summary of the TAC emissions associated with the Project compared to the BAAQMD Rule 2-5 thresholds.

For any project involving sludge handling, it is also important to consider H₂S, as it is a common occurrence at wastewater treatment plants (WWTPs). H₂S is not expected to result in a substantial pollutant exposure because all of the emission units associated with the proposed project are exhausted to the biofilter, which controls H₂S emissions and will be required to obtain a permit from the BAAQMD. A demonstration of BAAQMD Rule 9-2 compliance will be required as part of the permitting process. BAAQMD Rule 9-2 limits concentrations of H₂S at the facility fence line to levels at or below the CAAQS and is confirmed by modeling completed by the BAAQMD. Compliance with BAAQMD Rule 9-2 will ensure exposures to H₂S are less than significant.

Table 3-5. Comparison of Operations Toxic Emissions To BAAQMD Rule 2-5 Thresholds

Mitigated TAC Emissions Summary							
CAS	TAC	Hourly Emissions (lbs/hr)	BAAQMD 2-5 trigger level (lbs/hr)	Hourly Trigger Level Exceeded?	Annual Emissions (lbs/yr)	BAAQMD 2-5 trigger level (lbs/yr)	Annual Trigger Level Exceeded?
71-43-2	Benzene	1.28E-05	1.20E-02	No	8.24E-02	2.90E+00	No
67-66-3	Chloroform	3.95E-04	6.60E-02	No	3.32E+00	1.50E+01	No
50-00-0	Formaldehyde	6.61E-04	2.40E-02	No	5.70E+00	1.40E+01	No
127-18-4	Perchloroethylene	1.29E-04	8.80E+00	No	1.08E+00	1.40E+01	No
100-42-5	Styrene	3.86E-06	9.30E+00	No	1.06E-02	3.50E+04	No
108-88-3	Toluene	2.12E-03	2.20E+00	No	5.21E+00	1.60E+04	No
71-55-6	1,1,1-Trichloroethane	8.01E-05	3.00E+01	No	6.44E-01	3.90E+04	No
79-01-6	Trichloroethylene	1.01E-04	-	No	8.50E-01	4.10E+01	No
75-35-4	Vinylidene chloride	2.96E-05	-	No	2.00E-01	2.70E+03	No
56-23-5	Carbon tetrachloride	1.82E-06	8.40E-01	No	3.96E-03	1.90E+00	No
1330-20-7	Xylenes	8.84E-05	9.70E+00	No	6.12E-01	2.70E+04	No
75-01-4	Vinyl chloride	5.84E-06	8.00E+01	No	1.63E-02	1.10E+00	No
75-07-0	Acetaldehyde	1.07E-02	2.10E-01	No	2.65E+01	2.90E+01	No
7664-41-7	Ammonia	1.51E-06	1.40E+00	No	1.32E-02	7.70E+03	No
108-90-7	Chlorobenzene	1.25E-07	-	No	1.09E-03	3.90E+04	No
100-41-4	Ethyl Benzene	1.29E-05	-	No	1.13E-01	3.30E+01	No
7783-06-4	Hydrogen Sulfide	4.75E-04	1.90E-02	No	4.16E+00	3.90E+02	No
75-09-2	Methylene Chloride	4.18E-04	6.20E+00	No	3.50E+00	8.20E+01	No
107-02-8	Acrolein	6.56E-07	1.10E-03	No	5.75E-03	1.40E+01	No
7440-38-2	Arsenic	9.70E-08	8.80E-05	No	8.50E-04	1.60E-03	No
7440-41-7	Beryllium	2.91E-09	-	No	2.55E-05	3.40E-02	No
7440-43-9	Cadmium	5.35E-07	-	No	4.68E-03	1.90E-02	No
7440-50-8	Copper	4.12E-07	4.40E-02	No	3.61E-03	-	No
110-54-3	n-Hexane	1.53E-06	-	No	1.34E-02	2.70E+05	No
7439-92-1	Lead	2.43E-07	-	No	2.12E-03	2.90E-01	No
7439-96-5	Manganese	1.85E-07	-	No	1.62E-03	3.50E+00	No
7439-97-6	Mercury	1.26E-07	2.70E-04	No	1.11E-03	2.10E-01	No
91-20-3	Naphthalene	1.48E-07	-	No	1.30E-03	3.30E-03	No
7440-02-0	Nickel	1.02E-06	8.80E-05	No	8.93E-03	3.10E-01	No
1150/1151	PAH (as benzo(a)pyrene-equiv.)	1.63E-09	-	No	1.43E-05	3.30E-03	No

Mitigated TAC Emissions Summary							
CAS	TAC	Hourly Emissions (lbs/hr)	BAAQMD 2-5 trigger level (lbs/hr)	Hourly Trigger Level Exceeded?	Annual Emissions (lbs/yr)	BAAQMD 2-5 trigger level (lbs/yr)	Annual Trigger Level Exceeded?
115-07-1	Propylene	1.77E-04	-	No	1.55E+00	1.20E+05	No
7782-49-2	Selenium	5.84E-09	-	No	5.12E-05	8.00E+00	No
7440-62-2	Vanadium	1.11E-06	1.30E-02	No	9.76E-03	-	No

Control Measures

The BAAQMD CEQA Guidelines contain the following list of basic construction control measures that are recommended for all projects:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered as needed to control dust emissions.
2. All haul trucks transporting soil, sand, or other loose materials off-site shall be covered.
3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).
5. All areas to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
7. All construction equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
8. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

The following measures related to facility operation will also be implemented:

9. For sources subject to permitting requirements, obtain an Authority to Construct and Permit to Operate from the BAAQMD and comply with permit conditions, imposed by the BAAQMD. (With respect to the standby generator proposed as part of this project, an application for permit has not been submitted, hence the BAAQMD has not yet performed their evaluation, nor have they defined conditions that would be imposed.)

No Impacts: Criterion III d

The BAAQMD CEQA Air Quality Guidelines include a significance threshold for odors as “5 confirmed complaints per year averaged over three years.” A significant increase in odors is not anticipated from the proposed project. Additionally, odors from all the sources associated with the proposed project are abated by scrubbers, carbon adsorption and/or the biofilter. Finally, H₂S is the primary concern for odors from WWTPs. H₂S will be controlled, and compliance with BAAQMD Rule 9-2 will be a requirement of permitting, which will limit the potential for odors from the proposed Project. If additional odors occur that result in odor complaints, the odors will be dealt with through the nuisance odor process with the BAAQMD.

Therefore, for this criterion, the proposed project will have a less than significant impact.

MITIGATION MEASURES

The health risk screening was initially done assuming that the on-site construction equipment would have a default mix of engines based on CARB regulations (this appears to be primarily Tier 3 engines), but the potential cancer risk predicted for that level of DPM was well over the BAAQMD significance threshold of 10 in one million excess cancer cases. Therefore, the analyses were redone assuming that the on-site construction equipment would meet CARB’s Tier 4 interim standards (per CARB Tier 4 Off-Road Compression-Ignition Engines regulation, December 2012) to obtain the mitigated results discussed above. Based on this analysis, the following mitigation measure is proposed:

AQ 1: On-site construction equipment engines will meet a minimum of Tier 4 interim emissions standards to the extent feasible.

IV. BIOLOGICAL RESOURCES

SETTING

The proposed project will improve the solid treatment process at the existing WWRP to produce Class A biosolids. The proposed project is an existing operational water reclamation facility located in Windsor, California. The Town of Windsor is located within the northern end of San Rose Plain valley and is approximately 20 miles east of the Pacific Ocean. It is centrally located within the western portion of the Town where the surrounding land uses consist of very low to low density residential with some open space (see Section XI, Land Use and Planning). The site has been disturbed by past construction and needing maintenance for the sludge pond and levee system. The sludge pond is a man-made feature excavated in uplands as part of the Town’s Wastewater Treatment Plant operations and is therefore not a regulated State or federal water. The developed areas of the project site have low wildlife habitat values due to the absence of cover and foraging opportunities. Despite the habitat conditions on the site, the Windsor Creek corridor, which forms the northwestern edge of the sludge pond, provides important habitat to wildlife.

IMPACT ANALYSIS

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<p>IV. BIOLOGICAL RESOURCES</p> <p>Would the Project:</p> <p>a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Services?</p> <p>b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?</p> <p>c) Have a substantial adverse effect on federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?</p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p><input checked="" type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input checked="" type="checkbox"/></p>	<p><input type="checkbox"/></p> <p><input checked="" type="checkbox"/></p> <p><input type="checkbox"/></p>

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Conflict with 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"/>

(Sources: USFWS, 2005, Santa Rosa Plain Conservation Strategy; California Native Plant Society, Rare Plant Program, 2021, Inventory of Rare and Endangered Plants of California (online edition, v9-01 0.0); USFWS Information for Planning and Consultation (IPaC), 2022; Town of Windsor 2040 General Plan, 2018; Environmental Collaborative, Biological Resource Assessment, 2022)

Less than Significant Impact with Mitigation Incorporated: Criterion IVa

As previously described, the proposed project consists of improvements to the solids treatment process at WWRF. A desktop review included compilation and review of occurrence records of special-status species and sensitive natural communities maintained by the California Natural Diversity Data Base (CNDDB) of the California Department of Fish and Wildlife (CDFW), mapping of critical habitat for federally-listed species designated by the U.S. Fish and Wildlife (USFWS), mapping of wetlands as part of the National Wetland Inventory prepared by the USFWS, and data available from the Santa Rosa Plain Conservation Strategy,³ among other sources. This desktop review identified special-status animal species that are protected under state and/or Federal Endangered Species Acts or other regulations, as well as other species that are considered rare enough to warrant special consideration, particularly with regard to the protection of isolated populations, nesting or denning locations, communal roosts and other essential habits. These special-status species are listed in **Table 3-6** and the distribution of known occurrences of these species reported from about a five-mile radius of the site are shown in Figure 3-1.

In addition, a habitat suitability assessment was conducted as part of the field reconnaissance survey to determine whether suitable habitat for any special-status species occurs within the study area. Based on observed conditions on the site and absence of suitable habitat, no special-status plant species are suspected to occur on the site due to the extent of past and on-going disturbance, as shown in **Figure 3-2**. Further, essential habitat for special-status animal species is absent. This includes absence of breeding, dispersal, or aestivation habitat for California Tiger Salamander, California red-legged frog, steelhead, California freshwater shrimp, and western pond turtle. No western pond turtles were observed at the site

³ U.S. Fish and Wildlife Service, 2005. Santa Rosa Plain Conservation Strategy, Final. December 1.

during the field reconnaissance survey or have been reported from the sludge pond by workers at the WWRF, other than the 2003 record from a different tertiary treatment pond on the north side of Windsor Creek. There is a remote possibility that western pond turtle could move into the sludge pond in advance of construction if enough water were to pond to allow for temporary aquatic habitat. But suitable nesting habitat and permanent aquatic habitat is on the site and if an individual turtle were to occupy the pond before construction starts it could be relocated to nearby habitat, as recommended below in mitigation measure BIO 2. Foraging by bats, including a number of special-status bat species is not expected to be significantly disrupted as construction activities would take place during the day and no roosting substrate would be affected. No significant impacts on special-status species are anticipated as a result of the project.

Grading and construction for the proposed project would be limited to the highly disturbed area of the sludge pond and surrounding maintenance roads. No trees or other suitable bird nesting substrate would be affected. However, there is a remote possibility that active bird nests protected under the Migratory Bird Treaty Act (MBTA) and State Fish and Game Code could be disturbed during construction if adequate controls are not taken. Adequate measures shall be taken to avoid inadvertent take of bird nests of native species protected under the federal Migratory Bird Treaty Act and State Fish and Game Code when in active use.

Table 3-6. Special-Status Animal Species with the Potential to Occur in the Project Site Vicinity

Species Name	Status (federal/State) ^a	Habitat Characteristics (Occurrence within the Project Site Vicinity)
Fish/Amphibians/Reptiles		
California tiger salamander	FT/ST, SSC	Grassland and open woodlands with temporary or permanent (unlikely)
Western pond turtle	-/SSC	Ponds, marshes, rivers and streams (unlikely)
California red-legged frog	FT/SSC	Permanent ponds, pools, and streams (unlikely)
Foothill yellow-legged frog	-/SSC	Perennial streams (unlikely)
Steelhead Trout	FT/	Perennial and intermittent streams (unlikely)
Birds		
Golden eagle	-/SSC, CP	Open mountains, foothills, and canyons (unlikely)
Burrowing owl	-/SSC	Open grassland and fields, farms, and ruderal areas (unlikely)
Cooper's hawk	-/-	Riparian and woodland habitat (possible)
Sharp-shinned hawk	-/-	Riparian and woodland habitat (possible)
Northern harrier	-/SSC	Marshes, fields, and grassland (possible)
White-tailed kite	-/CP	Open foothills, marshes, and grassland (possible)
California horned lark	-/-	Open habitat with sparse cover (unlikely)
Prairie falcon	-/-	Canyons, mountains, open grassland (foraging possible)
Peregrine falcon	Delisted/ Delisted, CP	Canyons, mountains, open grassland (foraging possible)
Loggerhead strike	-/SSC	Open habitat with scattered trees, shrubs, and other perches (unlikely)
Mammals		
American badger	-/SSC	Open grassland, scrub and savanna (unlikely)
Pallid bat	-/SSC	Roosts in tree hollows, crevices, unused structures (foraging possible)

Table 3-6. Special-Status Animal Species with the Potential to Occur in the Project Site Vicinity

Species Name	Status (federal/State) ^a	Habitat Characteristics (Occurrence within the Project Site Vicinity)
Townsend western big-eared bat	-/C, SSC	Roosts in caves, mines, and unused buildings (foraging possible)
Western red bat	-/SSC	Roosts in trees (foraging possible)
Western yellow bat	-/SSC	Roosts in trees (foraging possible)
Little brown bat	-/-	Roosts in caves and buildings (foraging possible)
Yuma bat	-/-	Roosts in caves, mines and buildings (foraging possible)

a: Status Designations:

Federal:

FE = Listed as Endangered under federal Endangered Species Act

FT = Listed as Threatened under federal Endangered Species Act

PE = Proposed for federal listing as "endangered"

PT = Proposed for federal listing as "threatened"

State:

SE = Listed as Endangered under the California Endangered

Species Act

ST = Listed as Threatened under the California Endangered

Species Act

C = Candidate species under review for listing, includes taxa for which the CDFW has sufficient biological information to support a proposal to list as endangered or threatened

CP = California fully protected species; individuals may not be possessed or taken at any time

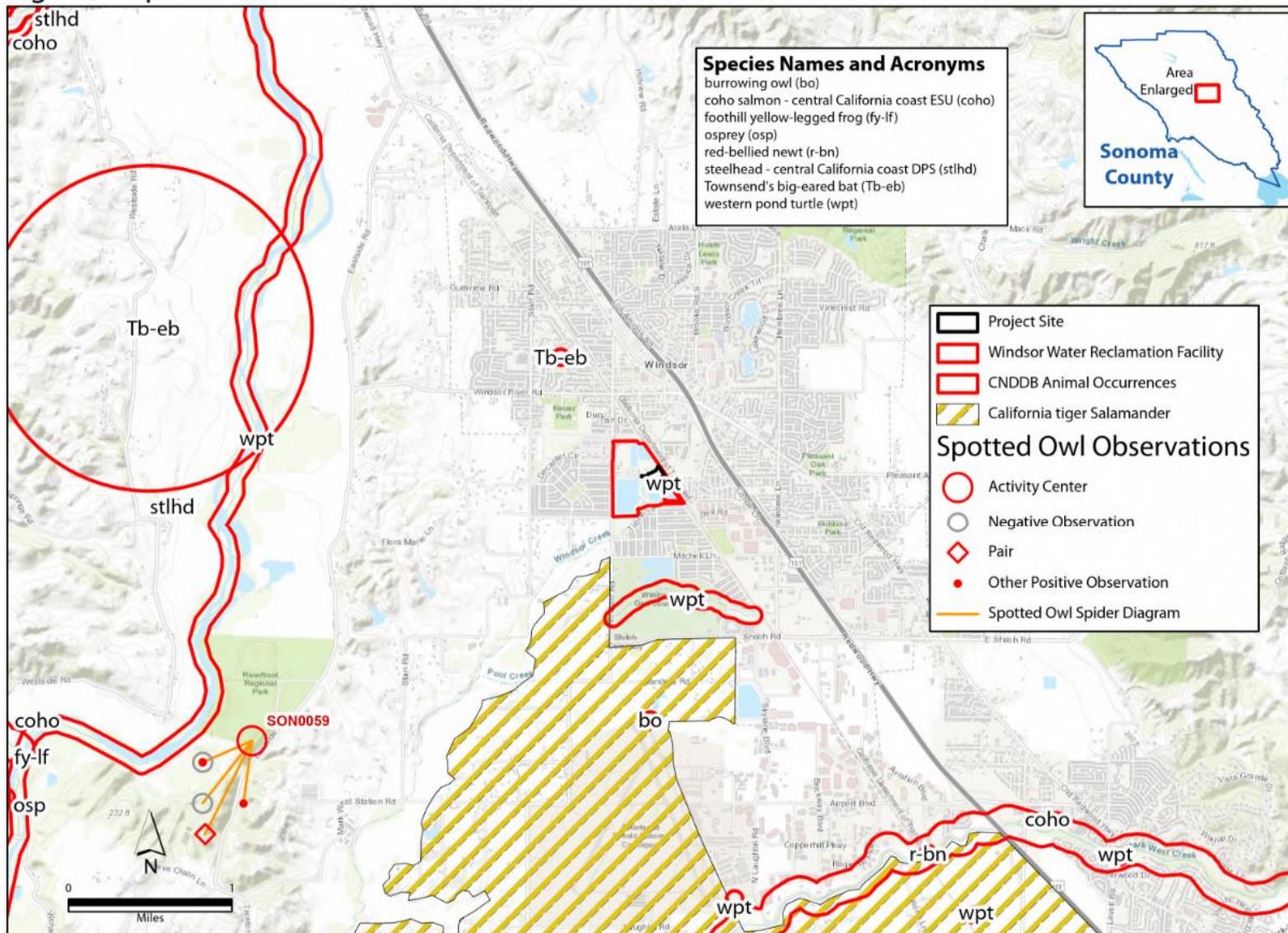


Figure 3-1. Special-Species Animals and Critical Habitat

No Impact: Criterion IVb

The proposed project would have no impacts that would adversely affect any sensitive natural communities. There are no sensitive natural communities such as riparian woodland or vernal pools, occurring on the site. The adjacent riparian woodland along the Windsor Creek corridor qualifies as a sensitive natural community type, but no incursion into the woodland is proposed as part of the project and no oaks or other trees are proposed for removal; therefore, no sensitive natural communities would be affected.

Less than Significant Impact: Criteria IVc, IVd

The proposed project would dewater and backfill the existing sludge pond and construct thickening, dewatering, and drying facilities for the proposed biodrying and pyrolysis process. However, no modifications to the adjacent Windsor Creek corridor are proposed. This would not adversely affect any particularly sensitive wildlife habitat, nursery areas, or important movement corridors. No trees are proposed for removal and the Windsor Creek corridor would remain undisturbed and available for wildlife movement. Construction would temporarily disrupt wildlife activities in the vicinity during daylight hours, but these would be temporary, and the area would remain accessible for foraging by birds and other wildlife common in the area.

A Stormwater Pollution Prevention Plan (SWPPP) will be prepared addressing all water-quality, sedimentation, and erosion aspects of the proposed project, including adequate controls to address any potential direct and indirect impacts on nearby Windsor Creek. Therefore, the project will have a less than significant impact on wetlands and wildlife habitat and movement opportunities in the vicinity of the project site. Mitigation measure BIO 1 would ensure that any active nests for native birds are protected during the nesting season.

Less than Significant Impact: Criterion IVe

The proposed project would not interfere nor conflict with any goals or policies discussed within the Town of Windsor's 2040 General Plan. No sensitive resources occur on the site and the nearby Windsor Creek corridor would be avoided. As discussed above, no native trees would be removed, and the mitigation measures would support compliance with MBTA and State Fish and Game Code. This will ensure adequate controls would be implemented to avoid Windsor Creek and ensure avoidance of any active bird nests. Therefore, the proposed project would have less than significant impacts on local policies or ordinances protecting biological resources.

No Impact: Criterion IVf

The proposed project would not conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved conservation plan. The Santa Rosa Plain Conservation Strategy established long-term conservation programs to mitigate potential adverse effects on listed species in cause of future development on the Santa Rosa Plain. The Conservation Strategy identified ten Conservation and Preserve Areas, one which is centered in the Windsor area. The proposed project and its

improvements would not conflict with any resources identified within the Conservation Strategy. Therefore, no significant impacts are occurring nor anticipated with the proposed project that would interfere with current habitat conservation plans.

MITIGATION MEASURES

BIO 1: If construction is proposed during the nesting season (February 1 to August 31), a focused survey for nesting raptors and other migratory birds shall be conducted by a qualified biologist within 7 days prior to the onset of tree and vegetation removal in order to identify any active nests on the site and surrounding area within 100 feet of proposed construction. The proposed development area of the project site shall be resurveyed to confirm that no new nests have been established if construction has been delayed or curtailed for more than 7 days during the nesting season.

If no active nests are identified during the construction survey period, or development is initiated during the non-breeding season (September 1 to January 31), project construction may proceed with no restrictions.

If bird nests are found, an adequate setback shall be established around the nest location and construction activities restricted within this no-disturbance zone until the qualified biologist has confirmed that any young birds have fledged and are able to function outside the nest location. Required setback distances for the no-disturbance zone shall be based on input received from the CDFW, and may vary depending on nest location, species, and sensitivity to disturbance. As necessary, the no-disturbance zone shall be fenced with temporary orange construction fencing if construction is to be initiated on the remainder of the proposed development area on the project site.

A report of findings shall be prepared by the qualified biologist and submitted for review and approval by the Town prior to initiation of construction during the nesting season (February 1 to August 31). The report shall either confirm absence of any active nests or should confirm that any young are located within a designated no-disturbance zone and construction can proceed. Following approval by the Town, tree removal, building demolition, and construction within the nest buffer zone may proceed. No report of findings is required if vegetation removal and other construction is initiated during the non-nesting season (September 1 to January 31) and continues uninterrupted according to the above criteria.

BIO 2: Adequate measures shall be prevent inadvertent take of western pond turtles if any individual(s) were to move into the sludge pond on the site before construction proceeds. This shall be accomplished by taking the following steps:

If water is present in the sludge pond when construction is to proceed, a focused survey for western pond turtle shall be conducted by a qualified biologist within 7 days prior to any dewatering or grading of the pond.

If turtles are found to be present in the pond, a dewatering plan shall be implemented under the supervision of the qualified biologist and the turtles captured and relocated to secure habitat in the nearby area.

All construction crew involved in the initial dewatering and grading for the project shall be trained by the qualified biologist over the remote potential for presence of western pond turtle in the sludge pond. These individuals would be trained that if any turtles are observed, all work would stop until the turtles have been safely relocated to nearby secure habitat as required above.

V. CULTURAL RESOURCES

SETTING

According to the Town of Windsor 2040 General Plan: Environmental Resources element, “Cultural resources are prehistoric and historic elements or features of the environment that have been manufactured, affected, or altered by human forces.” Per Policy ER-7.10, the Town requires “all discretionary proposals to consider the potential to disturb significant prehistoric and historic resources.”

To investigate the potential for cultural resources to exist onsite, a cultural resources record search of the entire WWRF property was conducted by the Northwest Information Center (NWIC) at Sonoma State University in July 2022 on behalf of the California Historical Resources Information System (CHRIS). According to the rapid response records search performed by NWIC, approximately half of the project area has been subject to formal archaeological investigation; though no archaeological resources have been recorded in those previously investigated areas. The NWIC base maps show two recorded buildings within and partially adjacent to the proposed project area, both former houses that no longer exist. In addition, given the environmental factors at the site (e.g., proximity to waterways and suitable topography), there is a “moderately high potential” of encountering cultural resources during project construction. Therefore, NWIC recommended that “a qualified archaeologist conduct further archival and field study of any unsurveyed areas to identify cultural resources and provide project specific recommendations.”

Per NWIC’s recommendation, further archival and field study of the project area, including the unsurveyed area, was conducted by Archeo-Tec in October 2022. The evaluation included a systematic review of relevant archival and historical documents, including maps, newspaper articles, historic photographs, and records on file at NWIC, as well as archaeological monitoring of excavation conducted to support geotechnical studies necessary to facilitate design of the proposed project. The historical and environmental research informed a determination that the Project site is sensitive for buried, Native cultural resources. Archeo-Tec conducted a systematic on-site archaeological surface reconnaissance of the project site to determine whether any resources of potential historic significance could be identified; none were found during the investigation, and it was noted that the ground surface has been greatly altered by development. No significant or potentially significant archaeological resources were observed during the archaeological surface survey or during monitoring of the geotechnical investigations. However, limited testing is not exhaustive in determining negative results. Undisturbed, native soils within the project site are culturally sensitive; of notable interest are potentially intact soils underlying the berms surrounding Pond S4.

In addition to the NWIC, the Native American Heritage Commission (NAHC) was contacted on July 8, 2022, to determine the potential for cultural resource that may be of interest to any Native American groups. NAHC provided a response and a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the project on August 15, 2022. The Town of Windsor sent letters to the tribal contacts on September 9, 2022 to notify the tribes of the project and request consultation pursuant to AB52. On October 3, 2022, the Town received one response from Lytton Rancheria noting that no further consultation is needed. To date, no additional responses have been received. The Town has sent additional letters to the tribes that have not yet provided responses and to additional contacts

provided by NAHC on November 14, 2022. Additional details on the outreach to tribes is provided in Section XVIII, Tribal and Cultural Resources.

IMPACT ANALYSIS

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES				
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(Sources: Northwest Information Center, Cultural Resources Records Search, 2022; Native American Heritage Commission Correspondence, 2022; Town of Windsor 2040 General Plan, 2018; Archeo-Tec, Inc., 2022 Phase I Cultural Resources Evaluation for the Town of Windsor Wastewater Reclamation Facility (WRF): Biosolids Treatment and Disposal Project).

Less Than Significant Impact with Mitigation Incorporated: Criteria Va-Vc

According to the cultural records search conducted by NWIC in July 2022, no previously recorded archaeological resources were located at previously investigated areas; two historic properties that were located at the Project site no longer exist. Per NWIC recommendations, an additional archival and field study was completed at the project site. The review of archival material, observation of the geotechnical investigation, and on-site archaeological ground surface reconnaissance at the Project site did not find any significant or potentially significant archaeological resources. However, as described above, it was determined that undisturbed native soils within the Project site are culturally sensitive; of notable importance are potentially intact soils underlying the berms surrounding the park. As such, mitigation measures are provided below (see CUL 1 and CUL 2) in the event of accidental discovery of cultural resources.

Regarding tribal resources, one response to the letter regarding the potential for the project to impact resources in the vicinity of the project site has been received. This response from the Lytton Rancheria noted that no additional consultation would be required. As noted above, letters to additional contacts provided by NAHC and a second inquiry to tribes that have not yet responded was sent on November 14, 2022. Pending any additional responses, a mitigation measure is provided below (see CUL 3) in the event resources are encountered. The monitor will be qualified to identify a resource and recommend how it is to be handled, whether through excavation and curation, or preservation in place.

The proposed project site is not located on any known cemetery and construction activities are not likely to impact any human remains since cultural resource surveys showed no recorded sites with human remains on the project site. A mitigation measure is provided below (see CUL 4) should any remains be encountered on the project site. With the mitigation measures in place, it is anticipated the project will have a less than significant impact on cultural resources.

MITIGATION MEASURES

- CUL 1:** Cultural resource training will be provided by a qualified archaeologist for all construction crew members prior to any ground disturbing activities. This training will ensure that construction workers are prepared for discovery during ground-disturbing activities. This training will also include a handout “Alert Sheet”, which will include photos and descriptions of the property, potential resources, and protocol for stopping work and notification in the event of a discovery.
- CUL 2:** A qualified archaeologist shall conduct a limited program of targeted archaeological monitoring of ground disturbance to mitigate impacts from the accidental discovery of cultural resources. The qualified archaeologist shall be empowered to determine the extent and duration of monitoring based on observations during ground disturbing activities.
- CUL 3:** A Tribal monitor shall be present during ground disturbing activities. Should a resource be uncovered by these activities, all work in that area shall be halted or diverted until the monitor can evaluate the nature and significance of the find and provide written recommendations. Monitors shall be empowered to redirect work activities, to inspect identified resources, and to direct their ultimate disposal, whether through documentation and curation, or preservation in situ.
- CUL 4:** If human remains are encountered during construction, the steps and procedures specified in the California Health and Safety Code §7050.5 (HSC 7050.5), State CEQA Guidelines 15064.5(d), and the California Public Resource Code §5097.98 (PRC 5097.98), in accordance with PRC 5097.98, would be implemented. In accordance with PRC 5097.98, the Town of Windsor Coroner must be notified within 24 hours of the discovery of potential human remains. The Coroner must then determine within two working days of being notified if the remains are subject to his or her authority. If the Coroner recognizes the remains to be Native American, he or she must contract the NAHC by phone within 24 hours, in accordance with PRC 5097.98. The NAHC then designates a Most Likely Descendant (MLD) with respect to the human remains within 48 hours of notification. The MDL will then have the opportunity to recommend means for treating or disposing of, with appropriate dignity, the human remains and associated grave goods within 24 hours of notification.

VI. ENERGY

SETTING

California is one of the lowest per capita energy states within the United States, ranked 47th out of 51 states (including the District of Columbia) for total consumption, which sums to 175.3 million British Thermal Units (Btu) as of 2020 (U.S. Energy Information Administration, 2020). The single largest end user for Californians is transportation, with approximately 59.6 million Btu of energy used per capita.

Electricity and natural gas service for the Town is provided by Pacific Gas & Electric (PG&E), which was incorporated in California in 1905. PG&E services approximately 16 million people throughout northern and central California (Pacific Gas & Electric, 2022). The WWRF receives 480V power from PG&E via a 1500 kVA utility transformer.

IMPACT ANALYSIS

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. ENERGY				
Would the Project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

(Sources: U.S. Energy Information Administration, Pacific Gas & Electric)

Less Than Significant Impact: Criterion Via

The proposed project consists of construction of new facilities with electrical improvements. Specifically, electrical improvements would include the installation of a new below-grade electrical feed duct bank, two new MCCs, PLCs to communicate with the existing SCADA system, and VFDs in both the electrical room and near the drying units. In addition, replacement of the existing main switchboard and replacement of the existing service transformer, which may include provisions for the new biodrying processes, may be completed at the WWRF independent of this project

Construction of the proposed project would require the use of fossil fuels primarily in the form of gas, diesel, and motor oil for equipment, material hauling, and delivery and worker vehicles. Construction vehicle traffic is described in Section XVII, Transportation/Traffic. Direct energy use would include electricity needed to power construction equipment such as power tools. In the event temporary power

may not be available, the contractor would coordinate with the utility provider for temporary power or the use of portable power.

All construction vehicles and equipment would be required to comply with the federal and state regulations guiding the use of construction vehicles and equipment, including the California Air Resources Board (CARB) Off-Road Zone Regulation.

The proposed project would not require any unusual or excessive construction equipment or practices that would result in wasteful, inefficient, or unnecessary consumption of energy. Due to the temporary nature of the construction activities and compliance with applicable energy regulations, construction-related energy use is expected to have a less than significant impact on energy resources.

The operational energy use of the proposed project would include everyday maintenance of and operation of biodrying components, including thickening and dewatering, biodrying and pyrolysis, and the new pump station and wet well. It is anticipated that the number of trucks associated with hauling biochar offsite would be approximately 15 percent of truck traffic currently associated with sludge removal.

Electrical service would be provided by connections to the main switchboard served by PG&E and new power to the site would not be required. Therefore, it's anticipated there would be a less than significant impact on energy resources associated with operation of the project.

No Impact: Criterion VIb

The proposed project would be required to comply with state and federal energy conservation measures related to construction and operations, including CARB Off-Road Zone Regulation and the Rule for On-Road Heavy-Duty Diesel-Fueled Public and Utility Fleets. Thus, the proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency during construction or operation; no impact would occur.

MITIGATION MEASURES

None.

VII. GEOLOGY AND SOILS

SETTING

According to the Town of Windsor 2040 General Plan EIR, the Town of Windsor is located in the Russian River Valley approximately equidistant between the City of Santa Rosa to the south and the City of Healdsburg to the north. The Town lies within the Coast Range Geomorphic Province, which is characterized by parallel northwest trending mountain range formed by active uplift due to the tectonics of the San Andreas fault and plate boundary system. The Coast Ranges are composed of Mesozoic and Cenozoic sedimentary strata, and north of the San Francisco Bay are dominated by the Franciscan Complex. The Town is located on the northern boundary of the Santa Rosa Plain, which is generally flat with a gentle slope to the southwest, and composed of Mesozoic basement rocks of the Franciscan Complex, Coast Range ophiolite, and Great Valley Sequence. These are overlain by volcanics and Miocene fluvial and estuarine sedimentary rocks, Pliocene fluvial, estuarine, and marine littoral and shelf sediments, and Quaternary and Late Pliocene alluvial fan and basin deposits. The majority of surficial sediments in the Town consist of Pleistocene to recent alluvium and alluvial fan deposits.

The Town is located approximately one mile west of the Alquist Priolo Fault Zone within the Healdsburg-Rogers Creek Fault Zone, designated as an Alquist-Priolo Special Study Zone. Due to the Town's location and geologic setting in a seismically active region, the Town can experience seismic and geologic hazards, including surface rupture, ground shaking and liquefaction. **Figure 3-3** shows the faults within the vicinity of the project site. The Town has experienced four major earthquake events since 1906, none of which culminated in a loss of life within the Town although the 1906 San Francisco earthquake damaged several buildings as did the 1969 Santa Rosa earthquake.

The project site is largely comprised of Huichica loam with some riverwash identified adjacent to Windsor Creek that bounds the pond to the northwest. Huichica loam is moderately well drained with a moderate potential for erosion, a high to very high runoff classification, and is typically found on hills and terraces. Riverwash soils are found on floodplains and are generally comprised of sandy and gravelly alluvium. These soils tend to be excessively drained, with a negligible runoff classification.

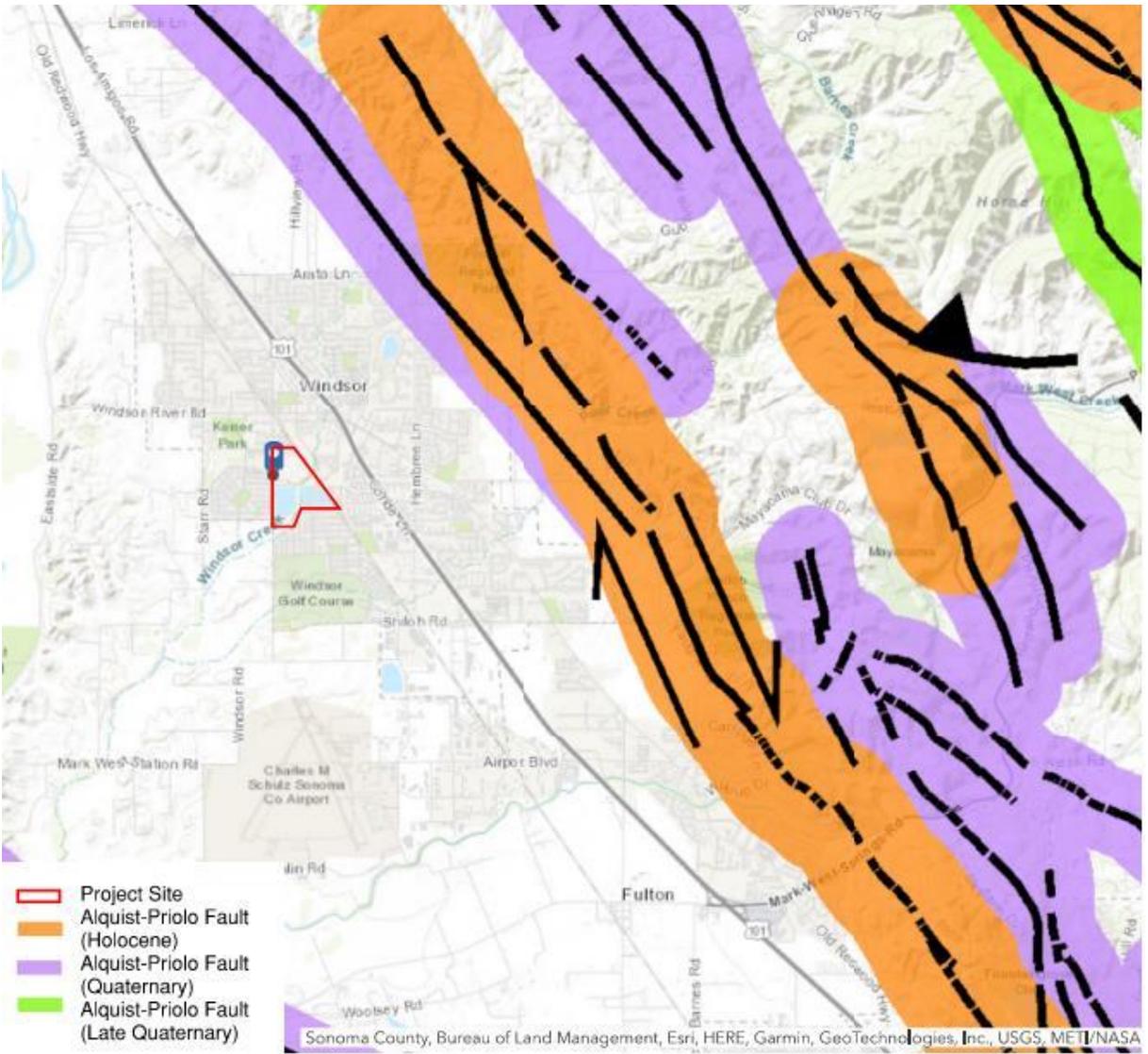


Figure 3-3: Location of Project Site Relative to Alquist-Priolo Fault Zones

Less than Significant Impact: Criterion VIIa

As discussed in the Town of Windsor 2040 General Plan EIR, while the Town boundaries include areas of moderate to high risk of liquefaction, the WWRP is in a portion of the Town with low susceptibility to liquefaction.

The primary seismic hazard at the project site is the potential for strong ground shaking during earthquakes along the Rodgers Creek Fault. However, the project would not exacerbate ground shaking during construction or operation because construction will not require deep excavation, fracking, or construction in bedrock. The project would be designed to comply with the latest edition of the California Building Code for Site Class D using the seismic coefficients developed as part of the geotechnical investigation to reduce the potential for impact to structures from ground shaking associated with earthquakes.

Design and construction of the proposed facilities would comply with applicable policies and appropriate engineering practices to minimize potential substantial adverse effects involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, and landslides.

Less than Significant Impact: Criterion VIIb

The project site is relatively flat, and construction would not require significant excavation. Where practicable, excavated soils would be reused onsite for grading purposes and would not represent a loss of topsoil from the site. Appropriate stormwater controls would be in place during construction and would be reflected in an SWPPP developed by a QSD. Following construction, stormwater would be redirected via grading from impervious areas to a pump station, which would direct flow into the treatment process. Pond S4 would be paved; however, the area is currently used infrequently as a sludge storage pond and is not part of a geologic or ecological system; thus, paving the area would not contribute to increased erosion. Therefore, the project would have a less than significant impact on soil erosion or topsoil.

No Impact: Criterion VIIc

The project site is not located on a geologic unit that is unstable. As discussed above, the proposed project would not cause destabilization of a geologic unit as a result of an on-or-off-site landslide, lateral spreading, subsidence, liquefaction or collapse. The project site is generally flat and not subject to substantial risk from landslides. Therefore, no impact to geologic units would occur.

Less than Significant Impact: Criterion VIId

The Town contains clays and loams that represent expansive soil conditions. To reduce the risk to life or property due to the presence of expansive soil conditions, the proposed facilities have been designed to include over-excavation of no more than 10 feet beneath the new foundation. The excavated soils would be replaced with granular engineered fill which would be compacted to a minimum of 90% of American Society for Testing and Materials (ASTM) D1557 maximum density. Therefore, it is anticipated there would be a less than significant impact with respect to construction on expansive soils.

No Impact: Criterion VIIe

Construction activities would include draining and dredging the existing pond followed by excavation, which is not anticipated to exceed 10 feet. The excavation would be only as deep as determined necessary to provide suitable structural stability for the proposed structures and would not displace soil or use soil that is inadequate to support proposed facilities. In addition, sewers are available for the disposal of wastewater and septic facilities are not located on or planned for the project site. No impact would occur.

Less than Significant Impact with Mitigation: Criterion VIIf

The proposed project area has been previously disturbed during the initial construction of the WWRF and subsequent upgrades. The site largely includes non-native fill indicating a low probability for unrecorded and undisturbed paleontological resources.

Nonetheless, to ensure that the proposed project would not result in impacts to previously unrecorded paleontological resources, mitigation measures will be implemented to ensure a less than significant impact (see GEO 1).

Mitigation Measure GEO 1 would reduce the impact of construction activities on potentially unknown paleontological resources to a less-than-significant level by addressing discovery of unanticipated buried resources and preserving and/or recording those resources consistent with appropriate laws and requirements. With the mitigation measures in place, it is anticipated the project will have a less than significant impact on cultural resources.

MITIGATION MEASURES

GEO 1: Prior to ground disturbance, a qualified paleontologist would be retained to monitor all excavation below three feet and inform construction personnel on what paleontological resources may look like. In the event that any vertebrate fossils are encountered during construction, all ground disturbing activities within 50 feet of the find shall be temporarily halted, and a qualified paleontologist shall document the discovery as needed, to evaluate the potential resource, and to assess the nature and significance of the find. Based on the scientific value or uniqueness of the find, the paleontologist may record the find and allow work to continue, or recommend salvage and recovery of the material, if it is determined that the find cannot be avoided. The paleontologist shall make recommendations for any necessary treatment that is consistent with currently accepted scientific practices. Any fossils collected from the area shall then be deposited in an accredited and permanent scientific institution where they will be properly curated and preserved.

VIII. GREENHOUSE GAS EMISSIONS

SETTING

The generation of greenhouse gas emissions is produced by both moving and stationary sources, including motor vehicles, the production of electricity and natural gas, and other similar processes. Carbon dioxide is the primary greenhouse gas that has raised the most concern of atmospheric scientists due to current atmospheric levels, current and projected emission levels, and the highly correlated temperature regression curve that has been observed, predicting a future path of rising carbon dioxide levels.

For this resource area, an investigation of the Project's potential impact on climate change related to emissions of greenhouse gases (GHGs) was conducted. According to the Bay Area Air Quality Management District's (BAAQMD's) Final 2017 Clean Air Plan (CAP), there is a strong scientific consensus that the increased rate of heating across the planet in recent decades is primarily caused by GHG emissions from human activities. Atmospheric concentrations of carbon dioxide (CO₂), the main GHG, have been increasing rapidly in recent decades, with current levels representing an increase of nearly 45% over pre-industrial levels. The BAAQMD CAP indicates that a hotter climate is expected to complicate the BAAQMD's efforts to improve air quality and protect public health in the Bay Area. Climate change could also have major impacts on the region's natural systems, water supply, economy, and infrastructure.

REGULATORY AND PLANNING FRAMEWORK

Assembly Bill (AB) 32, also known as the California Global Warming Solutions Act of 2006, was established to mandate the quantification and reduction of GHGs to 1990 levels by 2020. The law establishes periodic targets for reductions and requires certain facilities to report GHG emissions on an annual basis. The 2017 Climate Change Scoping Plan (and the Draft 2022 Climate Change Scoping Plan Update) prepared by the California Air Resources Board (CARB) outlines the main strategies California will implement to achieve the legislated GHG emission reduction targets needed by key sectors (e.g., transportation, industry, electricity generation, agriculture, waste management, and water).

To implement market-based incentive provisions of AB 32, CARB approved a carbon Cap-and-Trade Program to establish a system of market-based declining annual aggregate emission limits for GHG emissions sources, applicable from January 1, 2013, to December 31, 2020. The overall GHG emissions cap under the program declines by 3% each year from 2015 through 2020. In September 2016, Governor Jerry Brown signed Senate Bill (SB) 32, which mandated a GHG emissions reduction target of 40% below 1990 emission levels by 2030. This bill effectively extended the efforts already in effect associated with AB 32 implementation.

Applicable Plans. In addition to CARB's California 2017 Climate Change Scoping Plan and proposed 2022 updates, local efforts to track and reduce GHG emissions include the BAAQMD "Spare the Air, Cool the Climate" 2017 CAP, the Town of Windsor Greenhouse Gas Emissions Reduction Action Plan Update adopted by the Town in 2012, and the Climate Resilience Plan adopted by the Town of Windsor in 2022. These plans are described below:

- The BAAQMD’s 2017 CAP defines an integrated, multipollutant control strategy to reduce interrelated emissions of criteria pollutants and GHGs. The control strategy is designed to complement efforts to improve air quality and protect the climate which are being implemented by partner agencies at the State, regional, and local levels. The strategy encompasses 85 control measures that define specific actions to reduce emissions of pollutants from the full range of emissions sources.
- The stated goal of the Town of Windsor Greenhouse Gas Emissions Reduction Action Plan Update, adopted in July 2012, is to reduce the GHG emissions from Town-controlled sources (including the water reclamation facility) by 26.2% below 2000 levels by the year 2020. Much of the plan is designed to limit energy use or replace energy with lower carbon emission energy sources. Most projects outlined in the plan revolve around lighting, replacing equipment with more efficient new units, or installing photovoltaic power generation. The plan specifically calls for photovoltaic installation at the WWRF but does not seek GHG reductions from changes to wastewater treatment, use of digester or pyrolysis gases, or the diversion of biosolids from wastewater treatment.
- The Town of Windsor’s adoption of its Climate Resilience Plan was the result of 18 months of work on environmental sustainability in the Town of Windsor. The Climate Resilience Plan presents a strategy to achieve the City Council’s goal of creating a resilient community, environment, and economy, as well as installing resilient infrastructure and buildings. However, this plan does not specifically seek to reduce GHG emissions and does not outline any specifics for the WWRF.

These statewide and local plans outline policies and actions to meet specified emission targets.

IMPACT ANALYSIS

RESOURCE CATEGORY/ SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII. GREENHOUSE GAS EMISSIONS Would the Project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than Significant Impact: Criterion VIIIa

Sources of GHG emissions include exhaust from motor vehicles and trucks, as well as the combustion of fuels such as gasoline, diesel, and natural gas in industrial engines and other sources. GHGs emitted from the combustion of fuels include carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). For assessment of GHG emissions, emissions of these gases are quantified and multiplied by their global warming potential and totaled to provide emissions in terms of metric tons (MT) of carbon dioxide equivalent (CO₂e) emissions.

Construction Emissions. GHGs are emitted by construction equipment and vehicles/trucks used during the construction. Construction of the Project is expected to occur over an approximately 1-year period of construction activity. GHG emissions associated with Project construction activities were estimated using the California Emissions Estimator Model® (CalEEMod). In addition to direct emissions of GHGs, CalEEMod also calculates indirect GHG emissions associated with electricity consumption, waste disposal, etc. This methodology, information related to the analysis, and the results of the GHG emission calculations are provided in Appendix A.

The CalEEMod construction GHG analyses resulted in approximately 282 MT CO₂e emissions from construction. These GHG emissions would cease once construction is complete. The BAAQMD has no emissions threshold for significance of construction-related GHG emissions, but recommends they be quantified and disclosed and that BMPs be incorporated to reduce GHG emissions during construction, as feasible and applicable.

As listed above, feasible BMPs will be implemented to minimize GHG emissions during construction. In addition to implementing Control Measure 1 (the BAAQMD basic construction control measures), the Town of Windsor will employ Control Measures 2 through 4 to maximize recycling and use of local building materials during construction and alternative fuels in construction equipment to the extent practicable and available. As such, construction-related emissions will have a less than significant impact on the environment (Criterion VIIIa).

Operation Emissions. During operation of the Project, sources of GHG emissions will include combustion of pyrolysis gases or natural gas, ongoing energy usage associated with the equipment (pumps, blowers, lighting, etc.) and vehicle emissions associated with equipment maintenance or hauling of wastes associated with the Project. As shown in Appendix A, operational GHG emissions were estimated to be about 103 MT CO₂e per year.

Using EPA Mandatory Greenhouse Gas Reporting emission calculation methodologies and global warming potentials:

- The combustion of 0.99 MMBtu per hour of pyrolysis gas results in 454 MT CO₂e per year; and
- The combustion of 0.99 MMBtu per hour of natural gas results in 461 MT CO₂e per year.

The impact of construction and operation GHG emissions can also be estimated by amortizing the construction emissions over the life of the Project, i.e., typically 30 years, and adding it to the operational GHG emissions. In this case, the total GHG emissions from construction of 281 MT CO₂e would be divided by 30 years, or approximately 10 MT per year, and then added to the 1,017 MT CO₂e per year operational emissions (from vehicles, energy use, and combustion) for an estimate of 1,027 MT CO₂e per

year as the maximum operational GHG emissions. For industrial projects, the BAAQMD has established a significance threshold of 10,000 MT per year of CO₂e, so 1,027 MT CO₂e per year is less than significant. However, with organic diversion benefits, operational GHG emissions may decrease, and represent a net benefit of emissions (Criterion VIIIa).

Additionally, the project would divert organic wastes from going to landfill (which would typically occur with wastewater treatment biosolids) and use those organics as fertilizer. Diverting the waste has several benefits including reduced flaring of landfill gas, reduced reliance on commercial fertilizers, decreased soil erosion, and reduced landfill methane. In addition, as mentioned in Section III (Air Quality), due to the reduced hauling trips a reduction of transportation GHG emissions is also expected, but not calculated in this reduction. As such, landfill diversion of organic waste associated with this project would reduce GHG emissions below the estimated operational GHG emission of 1,027 MT CO₂e per year. The diversion of organics could be enough that the project represents a real net benefit of GHG emissions, depending on actual natural gas usage (maximum natural gas usage is 0.99 MMBtu per hour, but actual usage is expected to be much less).

Less than Significant Impact: Criterion VIIIb

The proposed Project includes the construction of a new building, which would be required to comply with all building codes in effect at the time of construction, such as energy conservation measures mandated by Title 24 of the California Building Standards Code – Energy Efficiency Standards. Since the Title 24 standards require energy conservation features in new construction [e.g., high-efficiency lighting, high-efficiency heating, ventilation, and air conditioning (HVAC) systems, thermal insulation, double-glazed windows, water conserving plumbing fixtures, etc.], these codes indirectly regulate and reduce GHG emissions. Energy conservation is included in the measures promoted by the California 2017 Climate Change Scoping Plan (and draft 2022 update), the BAAQMD 2017 CAP, and the Town of Windsor Greenhouse Gas Emissions Reduction Action Plan Update.

Additionally, as discussed above, Project GHG emissions during operations are less than significant, since operational GHG emissions of 1,027 MT CO₂e per year, or less when including organic diversion benefits, are well below the significance threshold of 10,000 MT CO₂e per year. Therefore, the Project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs. Because the Project will not conflict with these plans, the projected GHG emissions impact would be Less Than Significant (Criterion VIIIb).

Control Measures

1. Implement BAAQMD basic construction control measures (Control Measures 1 through 8).

In addition, the following best management practices (BMPs) encouraged in the BAAQMD CEQA Guidelines will be implemented to the extent practicable:

2. Require the Contractor to recycle at least 50% of construction waste or demolition materials, to the extent practicable.
3. Use alternative-fueled (e.g., biodiesel, electric) construction vehicles/equipment in at least 15% of the fleet.

4. Use at least 10% local building materials

MITIGATION MEASURES

None.

IX. HAZARDS AND HAZARDOUS MATERIALS

SETTING

The project is located at the existing Windsor WRF in the central portion of the Town. The WWRF site is relatively flat and developed only with the infrastructure necessary to operate the WWRF and support Town operations. The proposed project area is located approximately 1.9 miles northwest of the Charles M. Schultz-Sonoma County Airport.

Hazardous materials used onsite include alum and polymer, which are used to consolidate wastewater material as part of the treatment process, as well as fuel stored on-site to power emergency generators. All solids collected at the WWRF meet Class B requirements for solid waste and are periodically disposed at a solids handling facility capable of accepting the waste. Treated wastewater effluent is disposed in accordance with the Town's NPDES permit and is not anticipated to contain hazardous waste. Fuel is properly stored on-site in spill-proof containers at designated locations.

As part of the project, a review of an environmental database purchased from Environmental Data Resources (EDR) was completed to evaluate the potential presence of hazardous materials at the project area. The review included both the project area and surrounding properties. The review found that the WWRF is identified on the Facility Index System (FINDS) database listing, an inventory of facilities monitored or regulated by the EPA; however, no violations were indicated within the FINDS database. Violations were indicated within the Integrated Compliance Information System related to WWRF's NPDES permit but supporting documentation did not find the violations to be significant, meaning the violations were transient and most likely immediately rectified once reported.

The project site is also identified on the California Integrated Water Quality System (CIWQS) database listing. Although violations and spills were reported, most events were related to the accidental discharge of pre-treated effluents or slight exceedances within fecal coliform effluent. These accidental discharges were reported to appropriate managing agencies and rectifications were facilitated as needed. There were no reports of chemical spills of concern within the WWRF complex.

There were reports within the CIWQS and underground storage tank (UST) databases showing contamination from petroleum fill stations located within ¼ mile of the WWRF complex. However, all reported spills and leaking underground storage tanks within those stations are currently managed under state mandated remediation plans thus do not indicate any potential associated contamination within the proposed project area.

IMPACT ANALYSIS

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<p>IX. HAZARDS AND HAZARDOUS MATERIALS</p> <p>Would the Project:</p> <p>a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?</p> <p>b) Create a significant hazard to the public, or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?</p> <p>c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?</p> <p>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?</p> <p>e) For a project located within an noi land use plan or, where such a plan has not been adopted, within 2 miles of a public airport, would the project result in a safety hazard for people residing or working in the project area?</p> <p>f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation?</p> <p>g) Expose people or structures either directly or indirectly to significant risk of loss, injury or death involving wildland fires?</p>	<p><input type="checkbox"/></p>	<p><input type="checkbox"/></p>	<p><input checked="" type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input checked="" type="checkbox"/></p> <p><input checked="" type="checkbox"/></p>

(Sources: Environmental Data Resources, LLC: EDR Lightbox Standard, 2021, Department of Toxic Substances Control, 2022).

Less Than Significant Impact: Criteria IXa and IXb

The use of hazardous materials would be limited during construction and would include such materials as gasoline, diesel, oil, and paint (Control Measures 4 and 5). Construction of the proposed project would

include temporary storage and use of a variety of petroleum and other chemical products in accordance with applicable regulatory requirements and guidelines, including those related to: California Environmental Reporting System (CERS) permitted underground storage, chemical bulk storage and spill reporting requirements; and federal Spill Prevention, Control and Countermeasures requirements.

During operation, diesel fuel would be stored onsite and used to power the emergency generators which would be operated every six months for testing and maintenance by an outside contractor similar to current operations. Polymer would continue to be stored onsite in 275-gallon totes, and there would be no change to alum storage or use.

All sludge would meet Class A disposal requirements and be periodically collected, dried and hauled to a solid waste facility capable of accepting the waste. No other changes to the use and storage of hazardous materials would occur as part of the project.

Control measures are incorporated into the project to prevent the accidental spill or release of hazardous materials into the environment. Control Measure 1 requires the storage and handling of these materials to be in strict accordance with the Material Safety Data Sheets for the products and adherence to all local, State, and federal requirements. Control Measures 2 and 3 address sandblasting, painting, concrete cuttings, and other similar activities with risk to employees or the public, and construction worker safety.

1. All hazardous materials would be stored or handled in strict accordance with the Material Safety Data Sheets for the products. The storage and handling of potential pollution causing and hazardous materials, including but not limited to gasoline, fuel oil, and paint, would be in accordance with all local, State, and federal requirements. All hazardous materials would be stored or handled in strict accordance with the Material Safety Data Sheets for the products. The storage and handling of potential pollution causing and hazardous materials, including but not limited to gasoline, fuel oil, and paint, would be in accordance with all local, State, and federal requirements.
2. During construction or demolition activities, all areas where sandblasting, painting, spraying insulation or other activities that would occur or create inconvenience or be dangerous to property or the health of employees or workers or the public shall be enclosed adequately to contain the dust, overspray, or other hazards. In the event there are no permanent enclosures at the area, or such enclosures are incomplete or inadequate, the Contractor shall be required to provide suitable temporary enclosures. When sawing, cutting, or grinding concrete or other materials that produce silica dust, water shall be used to prevent the dust from becoming airborne. Personal protective equipment (PPE) including respiratory protective equipment shall be worn during activities described above.
3. Safety provisions conforming to the U.S. Department of Labor (OSHA), Cal/OSHA, and all other applicable federal, State, county and local laws, ordinances, and codes shall be implemented. The completed work shall include all necessary permanent safety devices, such as machinery guards and similar ordinary safety items, required by the State and federal industrial authorities and applicable local and national codes. The Contractor shall prepare and submit a Health and Safety Plan to the Town for approval. The Health and Safety Plan that defines proposed site safety measures, and which notifies workers of the presence of detected concentrations of chemicals at the site shall be reviewed by a certified industrial hygienist prior to submittal. Safety provisions

conforming to the U.S. Department of Labor (OSHA), Cal/OSHA, and all other applicable federal, State, county and local laws, ordinances, and codes shall be implemented. The completed work shall include all necessary permanent safety devices, such as machinery guards and similar ordinary safety items, required by the State and federal industrial authorities and applicable local and national codes.

4. A safety supervisor who is qualified and authorized to supervise and enforce compliance with the Health and Safety Plan shall be appointed to oversee the implementation of the Safety Plan at the project area. The Safety Plan would include an operation plan with emergency contacts. A safety supervisor who is qualified and authorized to supervise and enforce compliance with the Safety Plan shall be appointed to oversee the implementation of the Safety Plan at the project area. The Safety Plan would include an operation plan with emergency contacts.

In addition, a review of an environmental database purchased from Environmental Data Resources (EDR) was completed to evaluate the potential presence of hazardous materials at the project area. The review included both the project area and surrounding properties. The review found that the WWRF is identified on the Facility Index System (FINDS) database listing, an inventory of facilities monitored or regulated by the USEPA; however, no violations were indicated within the FINDS database. Violations were indicated within the Integrated Compliance Information System related to WWRF's NPDES permit but supporting documentation did not find the violations to be significant, meaning the violations were transient and most likely immediately rectified once reported.

The project site is also identified on the California Integrated Water Quality System (CIWQS) database listing. Although violations and spills were reported, most events were related to the accidental discharge of pre-treated effluents or slight exceedances within fecal coliform effluent. These accidental discharges were reported to appropriate managing agencies and rectifications were facilitated as needed. There were no reports of chemical spills of concern within the WWRF complex.

There were reports within the CIWQS and UST databases showing contamination from petroleum fill stations located within ¼ mile of the WWRF complex. However, all reported spills and leaking underground storage tanks within those stations are currently managed under state mandated remediation plans thus do not indicate any potential associated contamination within the proposed project area.

The WWRF is required to conform to regulations governing the discharge of effluent to the Mark West Creek and disposal of solids. During construction and operation, the use of hazardous materials would be governed by control measures established to limit the risk of exposure to humans and the environment. No existing spills or hazardous materials violations have been identified onsite. Therefore, the proposed project would have a less than significant impact on the use, transport, or release of hazardous materials into the environment.

Less Than Significant Impact: Criterion IXc

Windsor High School and Windsor Creek Elementary School are located within one-quarter mile of the WWRF. Hazardous materials would be transported, used, and disposed in accordance with standard required regulations and standard best management practices to avoid a significant hazard to the public or the environment, including reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. In addition, construction air emissions are below SCAQMD

significance thresholds. Therefore, construction of the proposed project would result in less than significant impacts related to the emission of hazardous emissions or the handling of hazardous materials within 0.25 mile of an existing or proposed school.

The operation of the proposed project would be similar to the existing WWRf operations. As evaluated above, operation of the proposed project would not result in significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, including reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. In addition, operation of the proposed project would not result in a new source of hazardous emissions. Therefore, operation of the proposed project would result in less than significant impacts related to the emission of hazardous emissions or the handling of hazardous materials within 0.25 mile of an existing or proposed school and no mitigation is required.

Less Than Significant Impact: Criterion IXd

The project site is not listed in the SWRCB GeoTracker system, which includes leaking underground fuel tank sites and the spills, leaks, and investigations category. The project site is not listed on the California Department of Toxic Substances Control's EnviroStor Data Management System, which includes Cortese List sites (DTSC, 2022). A review of an environmental database purchased from EDR found that the WWRf is identified on the FINDS database listing, an inventory of facilities monitored or regulated by the USEPA; however, no violations were indicated within the FINDS database. Violations were indicated within the Integrated Compliance Information System related to WWRf's NPDES permit but supporting documentation did not find the violations to be significant, meaning the violations were transient and most likely immediately rectified once reported

Less Than Significant Impact: Criterion IXe

The proposed project would not construct tall buildings or structures that would interfere with local airport operations, resulting in a safety hazard. Therefore, the proposed project would result in no impacts related to airport safety hazards.

No Impact: Criterion IXf

Construction of the project would not physically interfere with an adopted emergency response plan since the proposed project would not result in street closures or detours. Existing streets would not be modified to construct or operate the WWRf. No impact would occur.

No Impact: Criterion IXg

As discussed in Section XX, Wildfire, the proposed project is located within a Local Responsibility Area (LRA) designated as non-very high fire hazard severity zone (VHFHSZ). Thus, the project would not exacerbate wildfire risks nor expose project occupants to pollutant concentrations from a wildfire or uncontrolled spread of a wildfire and would not expose people or structures to significant risk of loss, injury, or death involving wildland fires. No impact would occur.

MITIGATION MEASURES

None.

X. HYDROLOGY AND WATER QUALITY

SETTING

The project lies within the jurisdiction of the North Coast Regional Water Quality Control Board (RWQCB). Windsor Creek and East Windsor Creek run along the northwest and southeast of the storage ponds before merging as Windsor Creek at the southwest corner of the storage ponds and then exiting the WWRF to the southwest. Windsor Creek then runs southwest for approximately four miles before merging with Mark West Creek, which then runs west for approximately three miles before merging with the Russian River. The National Wetlands Inventory classifies Windsor Creek and East Windsor Creek as R4SBC, which signifies the following:

- “System **Riverine (R)**: The Riverine System includes all wetlands and deepwater habitats contained within a channel, with two exceptions: (1) wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens, and (2) habitats with water containing ocean-derived salts of 0.5 ppt or greater. A channel is an open conduit either naturally or artificially created which periodically or continuously contains moving water, or which forms a connecting link between two bodies of standing water.
- “Subsystem **Intermittent (4)**: This Subsystem includes channels that contain flowing water only part of the year. When the water is not flowing, it may remain in isolated pools or surface water may be absent.
- “Class **Streambed (SB)**: Includes all wetlands contained within the Intermittent Subsystem of the Riverine System and all channels of the Estuarine System or of the Tidal Subsystem of the Riverine System that are completely dewatered at low tide.
- “Water Regime **Seasonally Flooded (C)**: Surface water is present for extended periods especially early in the growing season, but is absent by the end of the growing season in most years. The water table after flooding ceases is variable, extending from saturated to the surface to a water table well below the ground surface.”

The project site is near the northern end of the Santa Rosa Plain Subbasin of the Santa Rosa Valley Groundwater Basin. Two main groundwater subbasins lie beneath the Santa Rosa Plain; the basins are as deep as 4,500 feet below the Town. According to the Santa Rosa Plain Groundwater Sustainability Agency, “water levels range from close to the ground surface near Laguna de Santa Rosa to about 15 to 30 feet below the ground surface along the eastern basin boundary, and 50 feet below the surface near the southern end of the Santa Rosa Plain.” At the project site, groundwater was encountered between 21 to 25 feet below the ground surface during the project’s geotechnical investigation. According to the Windsor 2040 General Plan Environmental Impact Report (2018), the water quality in the subbasin is considered good and generally acceptable for beneficial uses. Several constituents of potential concern, including iron, manganese, boron, and arsenic, present localized challenges. Calcium carbonate, which has been identified within the basins, results in water hardness but is not a health hazard.

The WWRF operates under a NPDES permit that permits discharge to the storage ponds and to Mark West Creek at the Trenton-Healdsburg Road Bridge (North Coast RWQCB Order No. R1-2020-0010, NPDES No. CA0023345). Violations were indicated within the Integrated Compliance Information System related to WWRF’s NPDES permit. This violation was related to an effluent sample collected in March 2022 with an unusually high biological oxygen demand (BOD) of 40 mg/L, above the permit limit

Less than Significant Impact: Criteria Xa, Xci, Xcii

The WWRF operates under a NPDES permit to discharge to the storage ponds and to Mark West Creek at the Trenton-Healdsburg Road Bridge (North Coast RWQCB Order No. R1-2020-0010, NPDES No. CA0023345). The proposed project would convert the existing sludge storage pond to a paved area, increasing the overall impervious area by approximately 1.14 acres. However, the area is currently used infrequently as a sludge storage pond and is not part of a geologic or ecological system; thus, paving the area would not contribute to increased erosion. As part of construction, it is anticipated that the site would be graded to allow stormwater to discharge via overland flow to a pump station, which would pump flow into the treatment process. No new storm sewers are proposed as part of the project. As described in Section IX – Hazards and Hazardous Materials, all chemicals stored onsite would have secondary containment to prevent the release of chemicals into the environment. Stormwater quantity and quality would be similar to existing conditions. It is not anticipated that stormwater would have the potential to contaminate any localized groundwater resources. Therefore, it is anticipated the project would have a less than significant impact on the quality of surface water or groundwater.

No Impact: Criteria Xb, Xciii, Xciv, Xd, Xe

Construction and operation of the project would not use or pump groundwater. Minor excavation up to a depth of 10 feet associated with construction would not require groundwater dewatering. The only potential discharge to groundwater would be through the infiltration of stormwater as currently occurs onsite. The increase in impervious surface associated with the proposed project is approximately 1.14 acres and is not anticipated to generate large quantities of additional stormwater that have the potential to interfere with groundwater recharge. Only minor site grading is proposed that would not have the ability to impede or redirect flood flows or trigger substantial erosion. Onsite drainage characteristics would be similar to existing conditions. In addition, while the project site is located adjacent to a mapped Special Flood Hazard Area, the proposed project would not encroach on the Special Flood Hazard Area (SFHA) (**Figure 3-4**). The project would neither impede implementation of the Water Quality Control Plan for the North Coast Region, nor the Santa Rosa Plain Watershed Groundwater Management Plan. No impact would occur.

MITIGATION MEASURES

None.

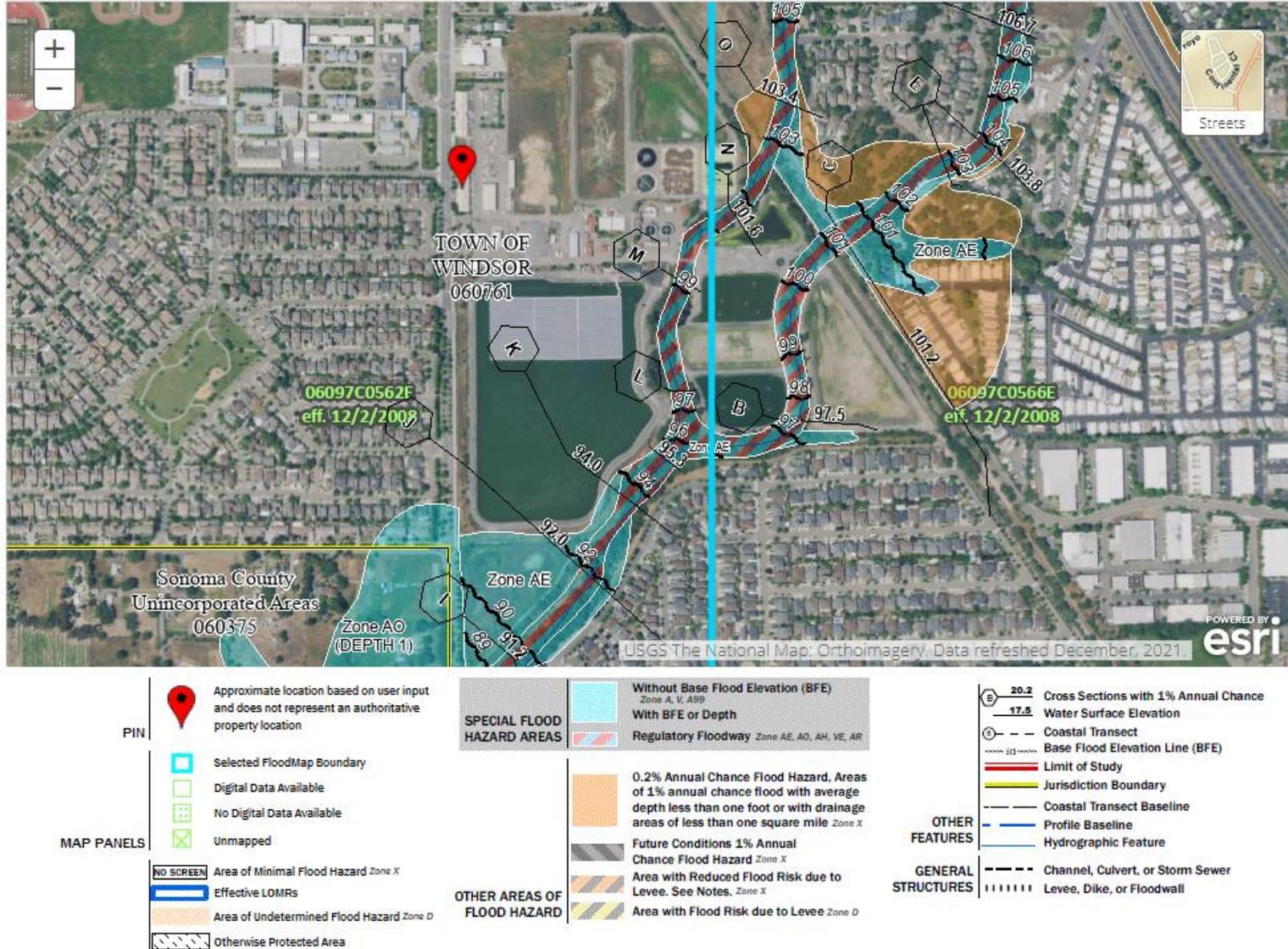


Figure 3-4: FEMA Special Flood Hazard Areas

XI. LAND USE AND PLANNING

SETTING

The public policy plan in the area is the Town of Windsor 2040 General Plan. The plan provides guidance around development activities within Windsor related to seven separate elements: Land Use and Community Design, Economic Development, Transportation and Mobility, Public Facilities and Services, Environmental Resources, Public Health and Safety, and Housing. According to the Town of Windsor 2040 General Plan (2018), the District's service area contains residential, industrial, commercial, open space, and mixed use land (**Figure 3-5**). Most residential area is Very Low Density Residential (VLDR), with 3 to 6 dwelling units per acre. It is bordered to the north by Low Density Residential land (LDR, 5 to 8 du/ac). It is bordered the east by a railroad, across which lies LDR, open space, Medium Density Residential land (MDR, 8 to 16 du/ac), and a mobile home park. To the south of the WWRF is an approximately 75-ft wide section of open space, with VLDR and LDR beyond that. To the west, across Windsor Road, is LDR and Windsor High School.

Land use within the District is governed by the Windsor Zoning Ordinance, which is guided by the goals and policies established under the Town of Windsor 2040 General Plan (2018). The WWRF is designated Public/Quasi-Public land (PQP) per the Town's zoning map (**Figure 3-6**).

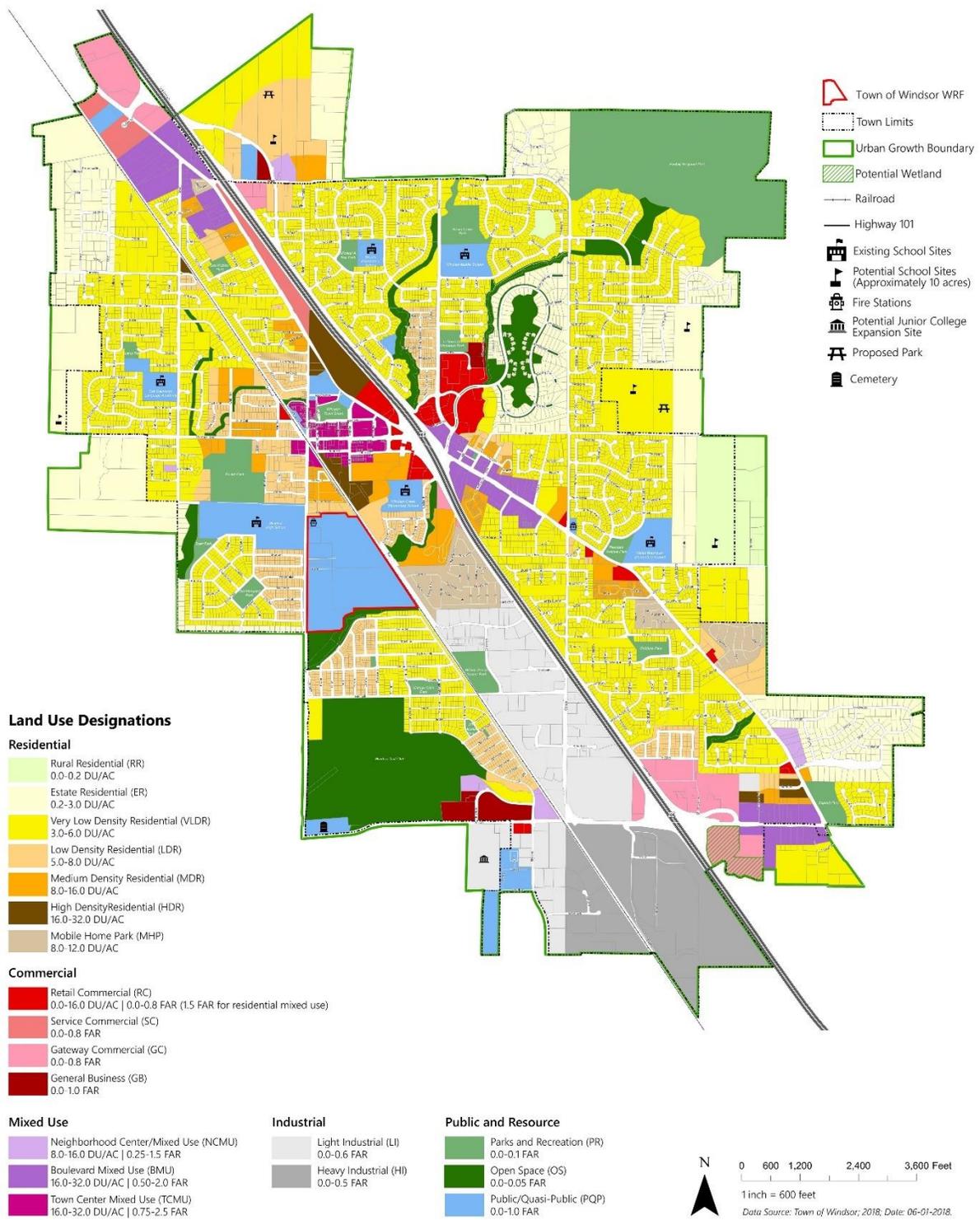


Figure 3-5: Land Use

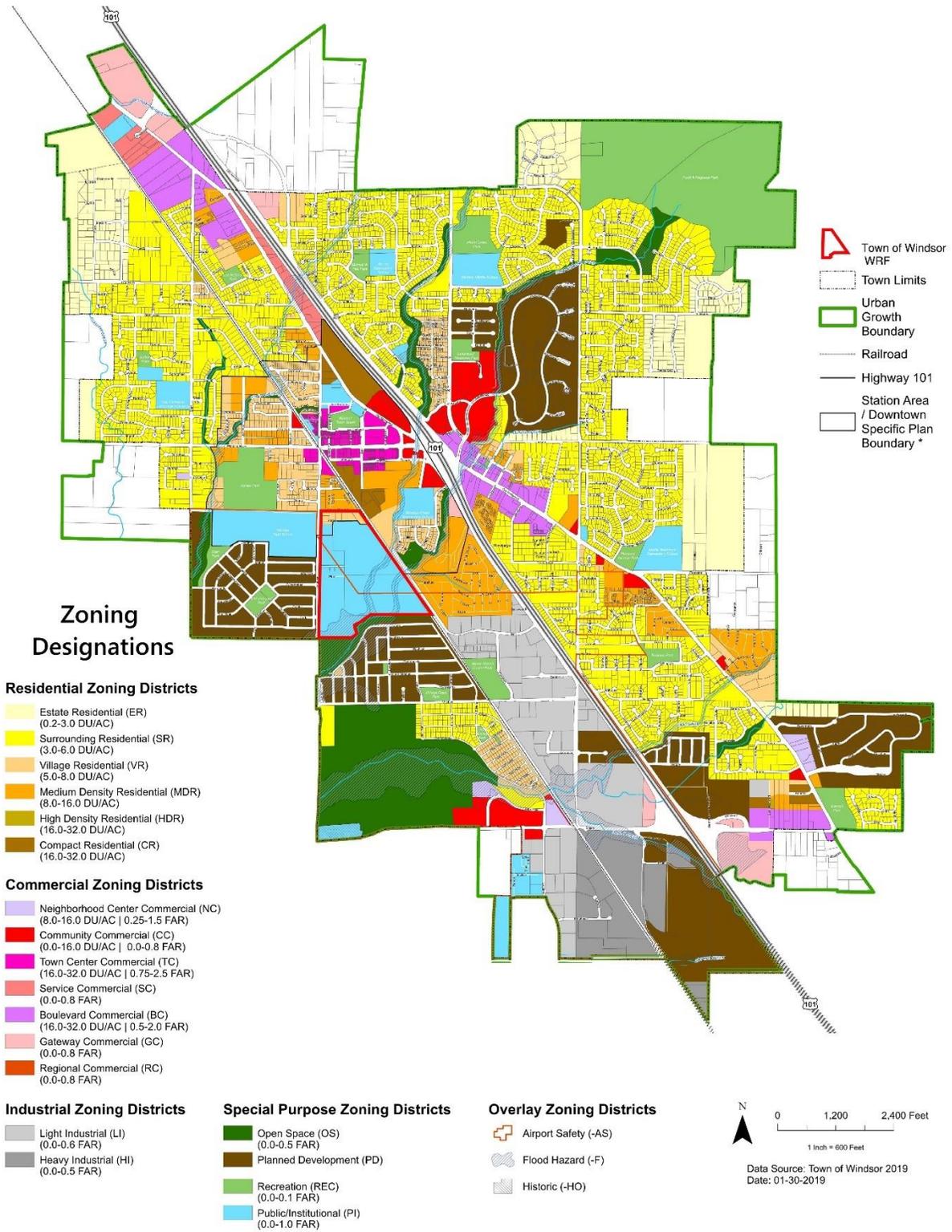


Figure 3-6: Zoning

IMPACT ANALYSIS

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XI. LAND USE AND PLANNING				
Would the Project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

(Sources: Town of Windsor 2040 General Plan (2018), Town of Windsor Zoning Ordinance (2000))

No Impact: Criterion XIa

The proposed project is located on the existing WWRF parcel and no changes to the existing land use or zoning for that parcel is proposed. Therefore, the proposed project would not physically divide an established community.

Less Than Significant: Criterion XIb

The proposed project would not conflict with the Town of Windsor’s adopted general plan as demonstrated in **Table 3-7**. There would be no change to the WWRF’s existing land use and zoning designations, and the facility would continue to operate in accordance with its PQP zoning designation.

Table 3-7: Public Policy Analysis – Town of Windsor 2040 General Plan

Goal	Policy	Analysis
PFS-1: General Public Facilities and Services	PFS-1.2: High-Quality Service	The project would upgrade the WWRF to ensure continued high-quality service.
	PFS-1.3: New Technology in Town Facilities	The project would incorporate new technology into the WWRF to enhance the quality of the biosolids produced.
	PFS-1.4: Efficient, Cost Effective Operations	The project would enable the District to provide a financial savings to the Town’s operations and maintenance requirements and eliminate the current reliance on external contractors for biosolids disposal. The project would also position the District to be able to proactively plan for potential costly changes to biosolids disposal and reuse regulations.
	PFS-1.5: Sustainable Practices	The proposed project would reduce the volume of biosolids produce, reducing truck trips and the associated carbon footprint.
PFS-5: Solid Waste and Recycling	PFS-5.1: Waste Management	The project would improve the Town’s solid waste management system by producing Class A biosolids.

MITIGATION MEASURES

None.

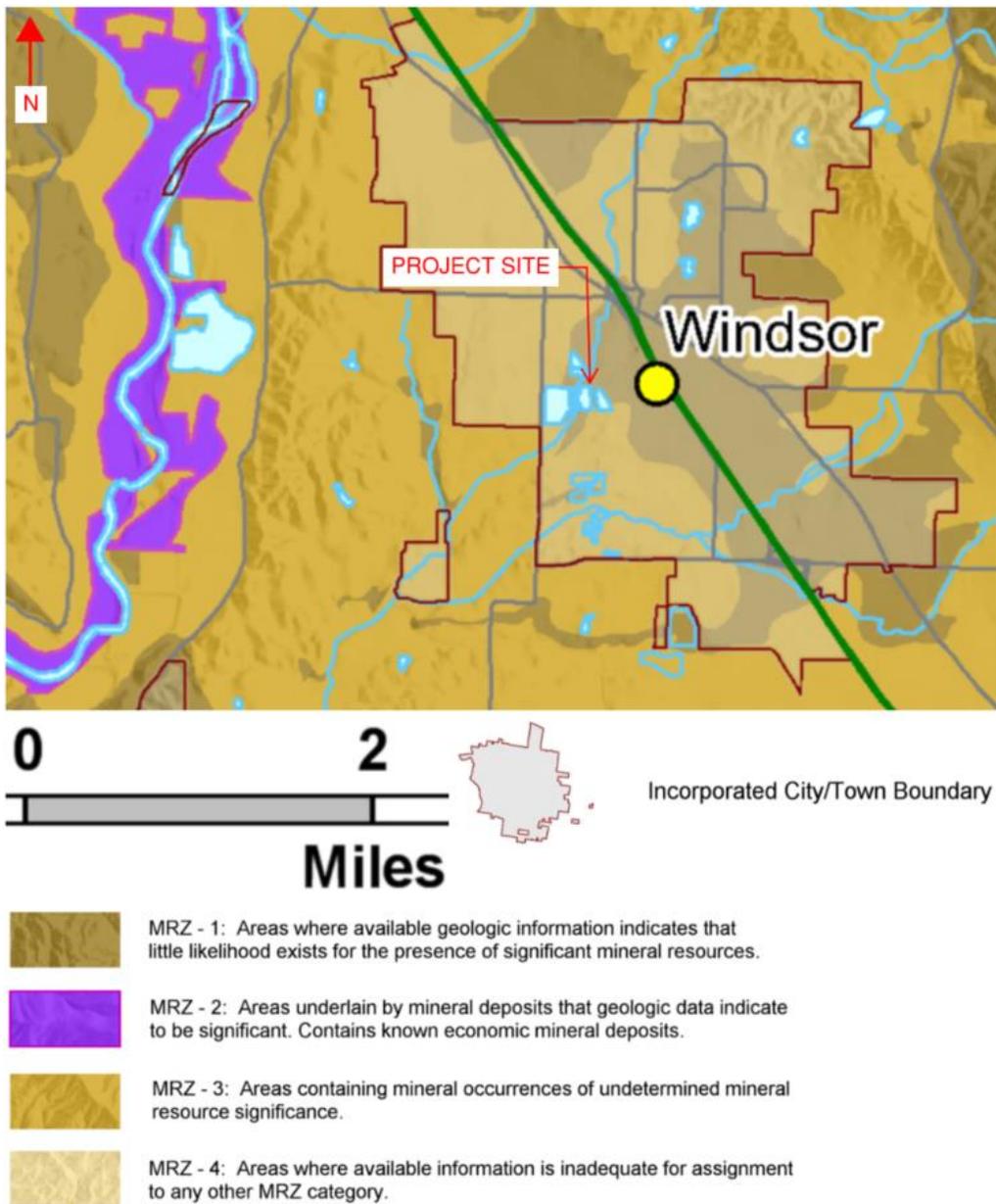


Figure 3-7: Mineral Resources

XIII. NOISE

SETTING

The proposed project is located at the Town of Windsor’s Water Reclamation Facility. The Facility is approximately 78.5 acres and is centrally located within the western portion of the Town. The WWRF parcel is surrounded by fencing and is inaccessible to the general public. The Town of Windsor 2040 General Plan land use designation for the project site is Public/Quasi-Public; the zoning designation is Public / Industrial. The immediate vicinity of the project site land uses includes both very low and low-density residential designations, as well as open space. The WWRF is bounded to the east by the Northwestern Pacific Railroad track and Bell Road; to the west, the parcel is bounded by Windsor Road. Sensitive receptors (i.e., residential homes) are approximately 50 feet from the eastern property line, opposite of the railroad track and Bell Road.

Construction noise varies depending on construction activities and duration, type of equipment involved, proximity to sensitive receptors, and the duration of the construction activities. Construction equipment used on the site may be mobile (e.g., loaders, graders, dozers) or stationary (e.g., air compressor, generator, concrete saw). Heavy construction equipment typically operates for short periods at full power followed by extended periods of operation at lower power, idling, or powered-off conditions.

Construction equipment with diesel engines typically generate maximum noise levels from 80 to 90 dB(A) Leq at a distance of 50 feet (Federal Highway Administration [FHWA] 2006). During excavation, grading, and paving operations, equipment moves to different locations and goes through varying load cycles, and there are breaks for the operators and for non-equipment tasks, such as measurement. Thus, average hourly noise levels would be less than maximum noise levels.

IMPACT ANALYSIS

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII. NOISE Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Generation of excessive ground-borne vibration or ground-borne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

(Sources: Town of Windsor 2040 General Plan, 2018; Town of Windsor Zoning Ordinance, 2000)

Less Than Significant Impact: Criteria XIIIa – XIIIb

Construction activities are expected to cause temporary increases in ambient noise levels at nearby residential receivers along Bell Road along the eastern boundary of the WWRF property. Construction equipment that are anticipated to be used onsite during construction of the project are shown in **Table 3-8** below.

Noise impacts resulting from construction depend upon the noise generated by various pieces of construction equipment, the timing and duration of noise-generating activities, and the distance between construction noise sources and noise-sensitive areas. Construction noise impacts primarily result when construction activities occur during noise-sensitive times of the day (e.g., early morning, evening, or nighttime hours), the construction occurs in areas immediately adjoining noise-sensitive land uses, or when construction lasts over extended periods of time. The Town of Windsor does not have a noise ordinance in place. Sonoma County provides a policy framework for addressing potential noise impacts in its Noise Element of the Sonoma County General Plan 2020. The Noise Element does not discuss construction activities but does provide guidelines for maximum allowable exterior noise Exposures for Non-transportation Noise Sources, as shown in **Table 3-9**. Policy NE-1h encourages municipalities to prepare a noise control ordinance to regulated noise sources, but does note that noise ordinances may exempt or modify noise requirements for construction activities.

Table 3-8. Noise Emission Limits for the Project’s Anticipated Construction Equipment at 50 ft

Construction Equipment	Lmax Level (dBA) ^{1,2}
Arc Welder	73
Backhoe	80
Dump Truck	84
Compressor (air)	70
Concrete Mixer	85
Concrete Pumps	82
Vibratory Compactor	80
Concrete Vibrator	80
Paver	85
Grader	85
Paver	85
Vibratory Concrete Mixer	80
Concrete Pump	82

Source: Mitigation of Nighttime Construction Noise, Vibrations and Other Nuisances, National Cooperative Highway Research Program, 1999.

1. Measured at 50 feet from the construction equipment, with a “slow” (1 sec.) time constant
2. Noise limits apply to total noise emitted from equipment and associated components operating at full power while engaged in its intended operation

Table 3-9 Maximum Allowable Exterior Noise Exposures for Non-transportation Noise Sources

Hourly Noise Metric ¹ , dBA	Daytime (7am to 10pm)	Nighttime (10pm to 7am)
L5 (30 minutes in any hour)	50	45
L25 (15 minutes in any hour)	55	50
LD8 (4 minutes, 48 seconds in any hour)	60	55
LD2 (72 seconds in any hour)	65	60

¹ The sound level exceeded n% of the time in any hour. For example, the L50 is the value exceeded 50% of the time or 30 minutes in any hour; this is the median noise level.

Source: Table NE-2 from Sonoma County General Plan 2020, Noise Element, 2012.

The project is anticipated to be constructed over an approximate period of 18 months, and would include phases such as mobilization, minor clearing, sludge pond dewatering and backfilling, excavation and fill, grading, trenching, construction of concrete slabs and prefabricated structures, installation of equipment, piping, and appurtenances, paving and site restoration, and startup and testing, which will require temporary use of some heavy construction equipment (e.g., backhoes and dump trucks). Construction activities will be carried out in phases, with some overlap of activities, as described in Section 2.6. During each stage of construction, there would be a different mix of equipment operating, and noise levels would vary based on the amount of equipment in operation and the location at which the equipment is operating.

Hourly average noise levels due to construction activities during busy construction periods for projects involving these stages typically range from about 75 to 87 dBA Leq at a distance of 50 feet. However, construction generated noise levels drop off at a rate of about 6dBA per doubling of the distance between the source and the receptor. Noise sources will not be located at the property line and equipment location within the project site would vary by construction phase. The Project site and the area surrounding the site are relatively flat. However, there is a small berm that runs underneath the railroad track and a buffer of trees at the eastern boundary of the project site. Therefore, some attenuation from barriers and vegetative screening are assumed.

Data for existing ambient 24-hour ambient noise levels at the project site were not collected. Due to the size of the project, types of proposed activities and equipment, as well as the temporary duration of construction, it is anticipated that construction noise levels would comply with the County Noise Element. However, due to the short distance between the site and sensitive receptors, and absent noise data or noise modeling, it is possible that during some construction phases, residences in the project vicinity would be exposed to construction noise levels above the hourly noise levels suggested in the County Noise Element. This could occur during dredging, dewatering, excavation, and grading activities for an approximate duration of weeks. Noise levels during dredging and dewatering would be similar to annual dredging and dewatering activities performed during current operations.

To avoid potentially significant impacts, the following control measures would reduce construction noise levels emanating from the site and minimize disruption and annoyance at existing noise-sensitive receptors in the project vicinity:

1. Construct temporary noise barriers, where feasible, to screen stationary noise-generating equipment. Temporary noise barrier fences would provide a 5 dBA noise reduction if the noise barrier interrupts the line-of-sight between the noise source and receiver and if the barrier is constructed in a manner that eliminates any cracks or gaps
2. Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
3. Strictly prohibit unnecessary idling of internal combustion engines
4. Locate stationary noise-generating equipment, such as air compressors or portable power generators, as far as possible from sensitive receptors. If they must be located near receptors, adequate muffling (with enclosures where feasible and appropriate) shall be used reduce noise levels at the adjacent sensitive receptors. Any enclosure openings or venting shall face away from sensitive receptors.
5. Utilize "quiet" air compressors and other stationary noise sources where technology exists.
6. Construction staging areas shall be established at locations that will create the greatest distance between the construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.
7. Locate material stockpiles, as well as maintenance/equipment staging and parking areas, as far as feasible from receptors.

8. The contractor shall prepare a detailed construction plan identifying the schedule for major noise-generating construction activities. The construction plan shall identify a procedure for coordination with adjacent residential land uses so that construction activities can be scheduled to minimize noise disturbance.
9. Designate a "disturbance coordinator" who would be responsible for responding to any complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., bad muffler, etc.) and will require that reasonable measures be implemented to correct the problem. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include in it the notice sent to neighbors regarding the construction schedule.

With implementation of the above noise control measures, impacts are anticipated to be less than significant.

Any increases in noise during operation of the proposed project would be minimal. Current operations at the site do not generate any noise, with the exception of annual dredging, dewatering and hauling away of biosolids. The proposed project would include operation of new facilities for handling biosolids, including mechanical thickening, dewatering, and drying and pyrolysis. The equipment associated with these new processes would generate noise. Thickening and dewatering would occur within an enclosed building, and it is not anticipated that noise from these new processes would exceed the hourly noise levels suggested in the County Noise Element. Biodrying units, the pyrolysis unit, odor control equipment, and conveyor belts for loadout of dried cake would be located underneath a canopy. It is not anticipated that this equipment would exceed the hourly noise levels described in the County Noise Element. However, due to the proximity of receptors and that this equipment is not enclosed within a building, residences in the project vicinity could be exposed to operational noise levels above hourly noise levels. To avoid potentially significant impacts, the following operational control measures would reduce noise levels emanating from the site to minimize disruption and annoyance at existing noise-sensitive receptors in the project vicinity:

10. Equipment housed under the open canopy is anticipated to operate on a batch basis and would not run continuously. If needed, noise barriers may be constructed, where feasible, to screen noise generating equipment during operation.
11. Designate a "disturbance coordinator" who would be responsible for responding to any complaints about operational noise. The disturbance coordinator will determine the cause of the noise complaint and will require that reasonable measure be implemented to correct the problem. Contact information for the disturbance coordinator would be provided to neighbors.

With implementation of the above noise control measures, impacts are anticipated to be less than significant.

Table 3-10 presents typical vibration levels that could be expected from construction equipment at distances of 20 feet under a wide range of soil conditions. Some vibratory equipment and rolling stock equipment (tracked vehicles, compactors, etc.) may also potentially generate substantial vibration in the immediate vicinity. Erection of the building structure is not anticipated to be a source of substantial

vibration with the exception of sporadic events such as dropping of heavy objects, which should be avoided to the extent possible.

Table 3-10 Representative Vibration Source Levels for Construction Equipment

Equipment Type	Peak Particle Velocity (PPV) at 25 Feet (inches per second)
Vibratory Roller	0.21
Large Bulldozer	0.089
Loaded Trucks	0.076
Jackhammer	0.035
Small Bulldozer/Tractor	0.003

Source: Transit Noise and Vibration Impact Assessment Manual, USDOT Federal Transit Administration, 2018

Potential increases in groundborne vibration levels attributable to the proposed project would primarily be associated with short-term construction-related activities. Project construction would have the potential to result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used and the operations involved. Vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance.

The Caltrans recommended standard with respect to the prevention of structural damage for residential structures is between 0.3 and 0.5 inches per second maximum particle velocity (PPV) for continuous/frequent intermittent equipment that may be used during construction of the proposed project (**Table 3-11**). This is also the range at which vibrations may begin to annoy people in buildings. Therefore, groundborne vibration levels would be considered significant if predicted short-term construction or long-term operational groundborne vibration levels attributable to the proposed Project would exceed 0.3 inches per second PPV at the nearest offsite existing structure.

Table 3-11 Guideline Vibration damage Potential Threshold Criteria

Structure and Condition	Maximum PPV (inches/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Source: Transportation and Construction Vibration Guidance Manual, Caltrans, 2020

The property boundary of the residential homes closest to the project site is approximately 50 feet from the proposed project site. As shown in **Table 3-11**, vibration levels for are not expected to exceed the human perception threshold. While vibration is not expected to generate significant impacts, the best practices (such as scheduling construction activities with the highest potential to produce vibration to less-sensitive daytime hours) would be implemented to minimize any vibrations.

No Impact: Criterion XIIIc

The project is not located within the vicinity of a private airstrip or an airport land use plan or within two miles of a public airport or public use airport.

MITIGATION MEASURES

None.

XV. PUBLIC SERVICES

SETTING

As described in Section XI – Land Use and Planning, according to the Town of Windsor 2040 General Plan (2018), the WWRF is designated Public/Quasi-Public land (PQP). It is bordered to the north by Low Density Residential land (LDR, 5 to 8 du/ac). It is bordered the east by a railroad, across which lies LDR, open space, Medium Density Residential land (MDR, 8 to 16 du/ac), and a mobile home park. To the south of the WWRF is an approximately 75-ft wide section of open space, with VLDR and LDR beyond that. To the west, across Windsor Road, is LDR and Windsor High School.

The WWRF is served by Sonoma County Fire District Station 3. The Windsor Police Department is staffed by Sonoma County Sheriff’s Office employees under a negotiated contract between the County and the Town of Windsor, and one police station is located within the Town. No agricultural lands, wilderness areas, or recreational areas occur on the project site and there are no recreational areas located within 1,000 feet of the project site.

IMPACT ANALYSIS

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. PUBLIC SERVICES				
Would the Project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which would cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
i) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
v) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

(Sources: Town of Windsor 2040 General Plan, 2018; Windsor 2040 General Plan Final Environmental Impact Report, 2018)

No Impact: Criterion XVai, XVaii, XVaiii, XVaiv, XVv

Construction activities would not impact recreational areas including but not limited to neighborhoods, regional parks, and other recreational suburban and urban areas. All construction and operational activities would occur entirely within the boundaries of the WWRF. Established community facilities and services such as fire services, police departments, schools, parks, and other facilities would not be physically affected or need to increase the level of service provided. No growth would be generated as a result of the project and there would be no conflicts with any land use plans or policies, as discussed in Section XI. In addition, all staging areas would be located at the project site and all construction activities would comply with Policy M-3.21 within the Town of Windsor 2040 General Plan: Transportation and Mobility element to ensure that all road systems are adequate to accommodate emergency situations and evacuation plans. Operation of the project would not result in any interference with emergency response plans or evacuation plans. Therefore, no impact would occur.

MITIGATION MEASURES

None.

XVII. TRANSPORTATION AND TRAFFIC

SETTING

The WWRF is located at 8400 Windsor Road in Windsor, California. Windsor Road is accessed via Windsor River Road, which is accessed via US Highway 101. Per the Town of Windsor 2040 General Plan, “Rather than follow a conventional street hierarchy (i.e., arterials, collectors, and local streets), the Complete Street Design Guidelines establish multimodal roadway design criteria according to the context of the surrounding area.” Following these Guidelines, the project site is served by a three-lane crosstown street (Windsor Road) and is otherwise surrounded by local streets and a railroad running parallel to the eastern boundary of the site. The project site is in a low vehicle travel area, within 0.5 miles of a rail transit station and within 0.25 miles of a planned high-quality transit corridor. Access to the project site, including emergency access, is provided via Plant Road, a local roadway. A gated entrance restricts access to the WWRF facility.

IMPACT ANALYSIS

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

(Sources: Town of Windsor 2040 General Plan, 2018; Site Check Conducted August 25, 2022).

No Impact: Criterion XVIIa

While there would be a temporary increase in vehicle trips during construction, the proposed project would result in an overall reduction in truck trips once completed due to the substantial decrease in biosolids material to be removed from the site (~15% reduction). Vehicles accessing the site would continue to do so using the existing road network, and no changes to the existing or planned bicycle or transit facilities located along Windsor Road would occur.

The Town of Windsor General Plan includes a Transportation and Mobility Element. The goals of this element are to: address a balanced transportation network that will support and encourage walking, bicycling, and transit ridership; conserve energy resources; and reduce greenhouse gas emissions, while continuing to accommodate automobile travel. The element also seeks to consider the effect of emerging technologies and their impact on travel behaviors and the design and use of the transportation network. The project will not impact the ability of the Town to meet these goals. No impact would occur.

Less than Significant Impact: Criterion XVIIIb

CEQA Guidelines Section 15064.3 subdivision (b) stipulates criteria for analyzing transportation impacts in terms of “vehicle miles traveled” (VMT) for land use projects and transportation projects. VMT refers to the amount and distance of automobile travel attributable to a project.

Once construction is complete and the project is operational, truck traffic to and from the site would be substantially less due to the decrease in biosolids to be hauled offsite. Removal of biosolids would be approximately 15 percent of the truck traffic currently associated with sludge removal. The addition of approximately 1.5 full-time employees to operate the biosolids treatment equipment, maintenance of the biosolids treatment equipment, associated with chemical (polymer) delivery and regular maintenance of the thickening, dewatering, biodrying, pyrolysis, and odor control equipment, is anticipated to result in a minor increase in yearly traffic and would be similar to existing conditions.

During construction, the number of trucks and workers would vary onsite over the 18-month construction period. As noted in Section 2.6, construction trip generation would primarily occur during the first 12 months of construction. As shown in **Table 3-12**, up to 40 trucks may visit the site per day on the max day during the most intensive quarter of the construction work along with an average of 22 construction workers. The primary roadways used to access the site would be a three-lane boulevard with some connecting travel along two-lane boulevards. Three-lane boulevards and two-lane boulevards are designed to carry mid-range traffic volumes and would be anticipated to be able to accommodate temporary increases in truck traffic. Following construction, truck traffic to the site would be reduced.

This temporary increase in traffic during construction of the proposed project is consistent with use as a PQP site, would not interfere with the surrounding residential land use, and would not result in an increase in VMT that would exceed thresholds of significance. The increase in VMT generated during operation of the project would be minimal. Therefore, the project would have a less than significant impact on the CEQA Guidelines 15064.3, subdivision (b).

Table 3-12: Anticipated Construction Trip Generation

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Anticipated Construction Activities	Site Work	Concrete Structures	Concrete Structures, Install Equipment, Install Piping and Appurtenances	Install Piping and Appurtenances, Paving and Site Restoration
Trucks per Week/month	80 trucks/week	20 trucks/week	20 trucks/week	60 trucks/week
Trucks per quarter	320	120	140	240
Truck Type	End Dump	Concrete	Concrete	End Dump
Workers per day	Average 22	Average 35	Average 40	Average 24
High Level of Trips in a day	40	10	10	30

No Impact: Criteria XVIIc, XVIIId

The project will not involve construction of or on public roadways or the use of oversized equipment that would travel roadways not compatible with such equipment. Emergency access will continue to be provided via Windsor Road. The project is not anticipated to create emergency access issues. No impact would occur.

MITIGATION MEASURES

None.

XVIII. TRIBAL AND CULTURAL RESOURCES

SETTING

The WWRP is located at the USGS Healdsburg 7.5 Minute Quadrangle as shown in **Figure 3-8**. According to the NWIC, the project area contains no recorded archaeological resources. The State Office of Historic Preservation Built Environment Resources Directory (OHP BERD), which includes listings of the California Register of Historical Resources, California State Historical Landmarks, California State Points of Historical Interest, and the National Register of Historic Places, lists no recorded buildings or structures within or adjacent to the proposed project area. In addition to these inventories, the NWIC base maps show two recorded buildings within and partially adjacent to the proposed project area, both former houses that no longer exist.

According to the Town of Windsor General Plan 2040 Final EIR, the area was traditionally occupied by the Pomo-affiliated tribes. In accordance with AB52, the Town notified California Native American tribes of the proposed project and invited them to participate in consultation. Consultation letters were mailed to Native American tribal contacts on September 9, 2022. These initial consultation letters were mailed to Native American tribal contacts that the Town has historically consulted with on prior proposed projects. On October 3, 2022, the Town received one response from Lytton Rancheria noting that no further consultation is needed.

The Town also contacted NAHC on July 8, 2022 to determine the potential for cultural resources that may be of interest to any Native American groups. NAHC provided a response and consultation list of tribes that are traditionally and culturally affiliated with the geographic area near the project on August 15, 2022. Consultation letters to additional contacts based on the Tribal Consultation list provided by NAHC, and secondary notifications to Tribes that have not responded were mailed on November 14, 2022. To date, no additional responses have been received. A summary of the Native American Tribes invited to consult is provided in **Table 3-13**.

Table 3-13: Native American Tribes Invited to Consult

Tribal Contact	Responded?
Cloverdale Rancheria of Pomo Indians of California	No
Dry Creek Rancheria Band of Pomo Indians	No
Federated Indians of Graton Rancheria	No
Kashia Band of Stewarts Point	No
Lytton Rancheria of California	Yes; No further consultation required
Mishwal-Wappo Tribe of Alexander Valley	No
Guideville Indian Rancheria	No
Middletown Rancheria of Pomo Indians	No
Pinoleville Pomo Nation	No
Robinson Rancheria of Pomo Indians	No



Figure 3-8: USGS 7.5-Minute Quad Map

encountered. With the AB52 Consultation and the CUL 3 mitigation measure in place, impacts to tribal resources as a result of the project will be less than significant.

MITIGATION MEASURES

See Section V, Cultural Resources (CUL-3)

XIX. UTILITIES AND SERVICE SYSTEMS

SETTING

The WWRF is located at 8400 Windsor Road in Windsor, California. The WWRF was constructed in 1964 and has been expanded and upgraded several times since to be able to serve the current customer base of approximately 28,000 people spread over approximately 7.5 square miles. The current permitted ADWF is 1.9 MGD, however the design capacity of the treatment facility is 2.25 MGD. The permitted capacity of the WRF is constrained by the current reclamation system reuse and disposal capacity.

The project area is served by existing water, natural gas, and telecommunication facilities. Water is supplied by the District. According to the Town of Windsor Water Master Plan (2011), the Town currently sources its water supply from four primary sources: the Russian River Well Field (also known as the Town’s riverbank wells), a local (off-river) groundwater well, surface water (Russian River) delivered via the Santa Rosa Aqueduct, and recycled water. The majority of demands are met by Russian River water diverted either by the Sonoma County Water Authority (SCWA) and transported via the aqueduct or extracted from the Town’s riverbank wells. Power to the site is provided by Pacific Gas & Electric.

Water quality is regulated by the USEPA and SWRCB. Stormwater onsite infiltrates into the clay-enriched, moderately well-drained soils onsite. Solid waste generated at the site (both employee refuse and solids generated by the treatment process) is hauled offsite for disposal in accordance with applicable regulations.

IMPACT ANALYSIS

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIX. UTILITIES AND SERVICE SYSTEMS				
Would the Project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

(Sources: Town of Windsor Water Master Plan Update (2011), Sonoma County Soils GIS Layer (posted by cfacendini1, 2017); Water Reclamation Facility Modernization Study, 2019)

Less than Significant Impact: Criterion XIXa

The proposed project would construct and operate improvements to the solids treatment process at the WWRF to produce Class A biosolids. These improvements would not result in the relocation or construction of new or expanded natural gas or telecommunications utilities. The project would construct a new biosolids handling process; this would allow for the beneficial use of biosolids within the Town of Windsor and surrounding communities, proactively respond to future changes in the biosolids regulatory framework, reduce truck traffic and the associated carbon footprint by increasing the solids content of biosolids, and enhance flexibility to provide the option for future disposal of surrounding municipalities. Therefore, the project would provide a benefit and would not cause significant environmental effect. The project would also construct additional impervious areas, but the additional runoff would be conveyed to the new pump station, which would direct flow to the treatment process and would not result in new or expanded facilities that would cause significant environmental effects on stormwater management. Similarly, the project would include enhancements to the existing electrical system to power the proposed biosolids handling processes. However, as discussed in Section VI, Energy, these enhancements would tie into the existing power service provided by PG&E to the WWRF. Therefore, the project would not result in relocation or construction of new or expanded utilities that would cause significant environmental effects.

No Impact: Criterion XIXb

Implementation of the project would not result in new or expanded water supply sources or in changes to water supplied to the District service area. The number of staff onsite would be similar to existing conditions (approximately 1.5 additional full-time employees). Once the project is complete and the project is operational, there would not be an increased demand for water at the project site. In addition, the project is consistent with existing demand projections contained in the District's service area plan (which are based on the allowed land uses for the project site). No impact would occur.

No Impact: Criterion XIXc

The proposed project would improve the biosolids handling process at the existing WWRF and would not alter its capacity to serve the existing and projected demand. No significant increase in demand for wastewater disposal or treatment would be created by the project compared to current conditions. Construction of the project would not interrupt existing sewer service or other surrounding uses since operation of the WWRF would continue through construction.

The annual average flow at WWRF is 2.26 MGD; standard operating procedure at the WWRF limits influent flows to a maximum of 5 MGD. Therefore, only approximately 45% of the capacity at the WWRF is currently used. As the project would only provide improvements to biosolids handling and would not result in changes to the capacity of the plant, it is anticipated the project would have no impact on the District's ability to treat wastewater from its collection system and septage deliveries.

Less than Significant Impact: Criteria XIII d, XIII e

Solid waste would be generated during project construction and operation. Construction of the solids treatment process, including the new dewatering building, biodrying units, pyrolysis unit, odor control equipment, concrete slab, canopy structure, piping, and electrical feed, would require dredging of the existing pond, excavation, paving, and grading, but would not generate large quantities of solid waste. Spoils from excavation would be re-used on-site, if appropriate. Construction debris and waste generated at the project site would be transported to an appropriate facility, which would have sufficient permitted capacity to accept construction waste generated by the project.

Long-term operation of the WWRF includes improvements to the solids treatment process at the WWRF to produce Class A biosolids. This process would result in biochar, which would be hauled away for reuse by a third part contractor. Therefore, no additional solid waste would be generated during operation due to the proposed project.

The project would comply with all federal, state, and local statutes and regulations related to solid waste. The project would not result in generation of significant solid waste streams, nor would it generate or require the transportation of hazardous waste materials. All demolition activities would comply with any District requirements for diversion of both construction waste during the demolition phase and solid waste during operation. No activities that would violate solid waste regulations are proposed or expected to occur. Therefore, the project would have a less than significant impact on solid waste.

MITIGATION MEASURES

None.

XX. WILDFIRE

SETTING

The project site is located within Sonoma County’s Local Responsibility Area (LRA) – Incorporated, indicating that the area must be reviewed by Sonoma County to determine its fire hazard severity zone as defined by the California Department of Forestry and Fire Protection (CAL FIRE) Fire and Resource Assessment Program (FRAP). As shown in **Figure 3-9**, the project site is designated as a non- Very High Fire Hazard Severity Zone (VHFHSZ).

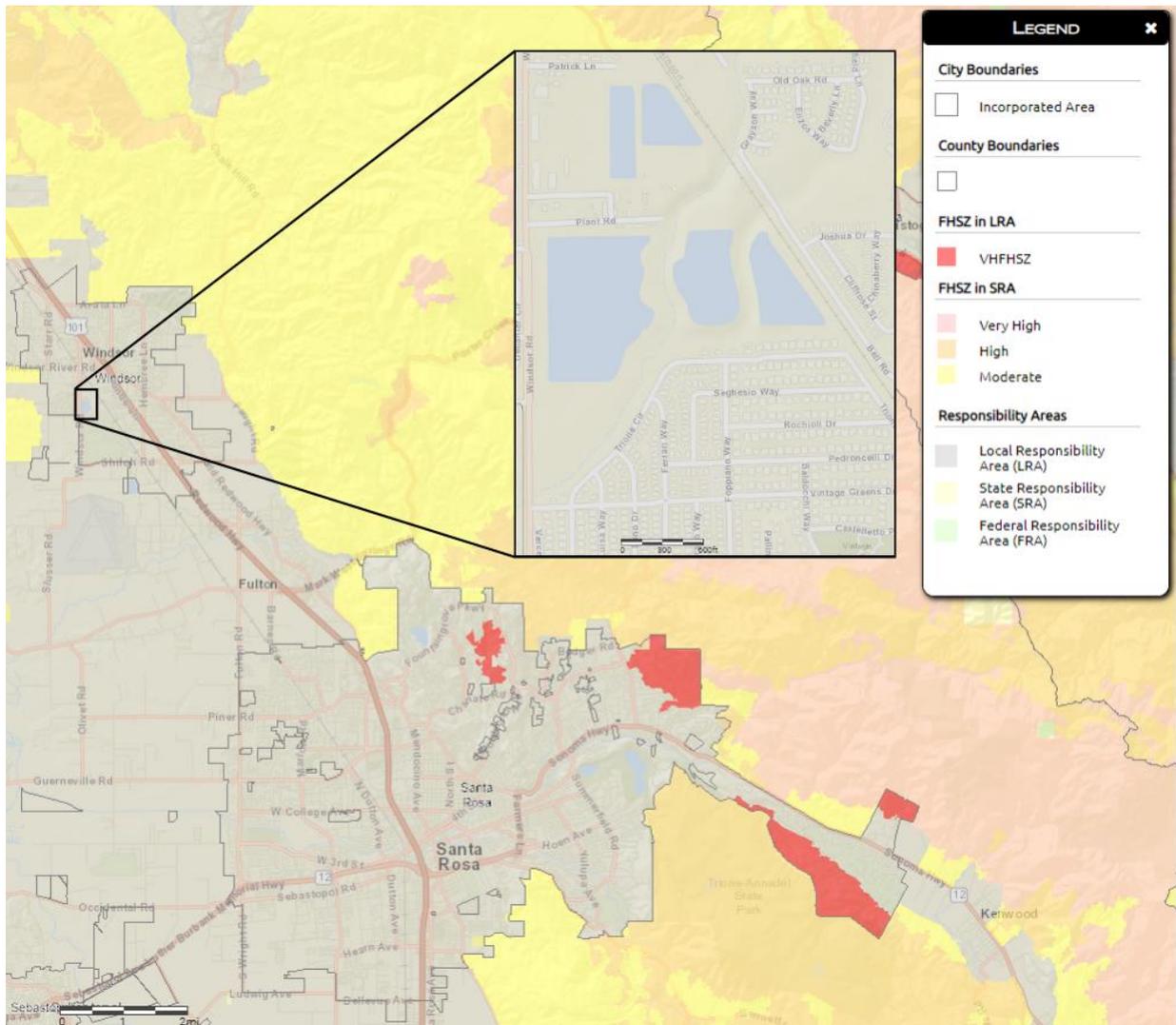


Figure 3-9: Fire Hazard Severity Zones

IMPACT ANALYSIS

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

(Source: California Department of Forestry and Fire Protection (CAL FIRE) Fire and Resource Assessment Program (FRAP) Fire Hazard Severity Zone Viewer, accessed August 17, 2022)

No Impact: Criteria XXa, XXb, XXd

Construction activities for the project would not impact any emergency response plan or emergency evacuation plans set forth by the Town of Windsor or by Sonoma County. All staging areas would be located at the project site and all construction activities would comply with Policy M-3.21 within the Town of Windsor 2040 General Plan: Transportation and Mobility element to ensure that all road systems are adequate to accommodate emergency situations and evacuation plans. Operation of the project would not result in any interference with emergency response plans or evacuation plans.

The project is located within an LRA designated as non-VHFHSZ. Thus, the project would not exacerbate wildfire risks nor expose project occupants to pollutant concentrations from a wildfire or uncontrolled spread of a wildfire.

Proposed grading at the site would be minimal and is anticipated to be limited to the existing S4 pond area. The project site is relatively flat and there is limited vegetation. Pond S4 would be paved; however, the area is currently used infrequently as a sludge storage pond and is not part of a geologic or ecological

system. Following construction, stormwater would be redirected via grading from impervious areas to a pump station, which would direct flow into the treatment process. General drainage patterns would comply with local, regional, and state regulations. Therefore, paving the area would not contribute to increased erosion. The proposed project would not expose people or structures to significant risks as a result of post-fire slope instability or drainage changes. No impact would occur.

Less than Significant Impact: Criterion XXc

The project would involve the construction of new facilities on-site including a new Dewatering Building, which would be a single-story facility comprised of precast walls and a metal roof; and a thickening area on a concrete pad with a structural canopy. No changes to on-site flammable chemicals is proposed as part of this project. Installation, maintenance, and operation of this proposed infrastructure would not exacerbate fire risk. No impact would occur.

MITIGATION MEASURES

None.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE

IMPACT ANALYSIS

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XXI. MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less Than Significant: Criterion XXIa

AIR QUALITY

A health risk screening was initially completed assuming that on-site construction equipment would have a default mix of engines based on CARB regulations (primarily Tier 3 engines). However, modeling results predicted that this scenario would exceed BAAQMD significance thresholds. The project was modeled again using a minimum of Tier 4 interim emissions standards (per CARB Tier 4 Off-Road Compression-Ignition Engines regulation, December 12); results predicted that this scenario would not exceed BAAQMD significance thresholds. Mitigation measure AQ 1, requiring that all on-site construction equipment engines will meet a minimum of Tier 4 interim emissions standards, has been included to reduce emissions to less than significant levels.

BIOLOGICAL RESOURCES

As described in Section IV, there is no suitable habitat at the project site and no special species plants or animals are suspected to occur at the project site. However, there is the remote possibility that active bird nests protected under the MBTA and State Fish and Game code could be disturbed during construction if adequate controls are not taken. Similarly, there is a remote possibility that western pond turtle could move into the sludge pond prior to construction. Therefore, mitigation measures BIO 1 and BIO 2 have been included to reduce potential impacts to migratory or native birds and the western pond turtle to less than significant levels.

CULTURAL RESOURCES

As described in Section V, impacts to cultural resources could be significant but mitigation measures have been included in consideration of the findings from the archival research and field study conducted by a qualified archaeologist. Mitigation measures CUL 1 and CUL 2 have been included in the event of an accidental discovery. The project also requires tribal monitoring (CUL 3) to be present during ground disturbing activities, pending additional responses from affected tribes. Further, mitigation measure CUL 4 is included should any remains be encountered on the project site.

GEOLOGY/SOILS

The paleontological impacts from the proposed project could be significant, if encountered during construction. Mitigation measure GEO1 has been included to ensure that any paleontological resources located during excavation are properly removed and documented to conform to local guidelines. With the proposed mitigation measure GEO1, impacts to geology and soils will be reduced to less than significant levels.

Less Than Significant Impact: Criterion XXIIb

The proposed project would result in the construction and operation of an improved solids handling and treatment process at the WWRF. The proposed project would allow the District to eliminate reliance on outside contractors for outside disposal; increase beneficial use of biosolids within the Town of Windsor and surrounding communities; proactively respond to future changes in the biosolids regulatory framework; reduce truck traffic associated with removal of solids; and enhance flexibility to provide the option for future disposal for surrounding municipalities.

Public utility providers will be capable of serving the project with existing and/or planned facilities. The proposed improvements are also consistent with existing land uses, as it is located within the WWRF property. The incremental effects of the proposed project (inclusive of the mitigation measures described in this initial study) when considered along with past projects and the absence of probable future projects in the vicinity would not result in cumulatively considerable impacts. Potential environmental impacts are expected to remain at, or be mitigated to, levels below significance and the project would advance long-term environmental goals.

Less Than Significant Impact: Criterion XXIc

The proposed project will increase beneficial use of biosolids within the Town and surrounding communities, proactively respond to future changes in biosolids regulatory framework; reduce truck traffic associated with hauling solids offsite; and enhance flexibility for future disposal of biosolids for surrounding municipalities. The project will have a beneficial impact on human beings. Impacts associated with construction or operation of the project will be mitigated (as set forth in this document) to less than significant levels and will not significantly impact human beings, either directly or indirectly. Therefore, project related impacts would be less than significant.

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Draft
INITIAL STUDY/ANTICIPATED MITIGATED NEGATIVE DECLARATION
Town of Windsor Wastewater Reclamation Facility Biosolids Treatment and
Disposal Upgrades
November 2022

**Appendix A: CalEEMod 2020.4.0 Air Quality and GHG Modeling
Results**

CalEEMod Inputs

CalEEMod Land Use Inputs



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Project Element	Land Use Type	Land Use Subtype	Unit Amount	Size Metric	Lot Acreage (footprint)	Square Feet (est.)
Phase 1A Campus						
New Solids Handling, Drying and Pyrolysis Facilities	Industrial	General Light Industrial	46.0	1000	2.90	46,000

Source: Applicant 2020, CalEEMod version 2016.3.1

- Notes:
 Utility PG&E
 Climate Zone 4
 1 acre = 43,560 sf

CalEEMod Project Considerations and Mitigation Measures



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Mitigation Measures Assumptions Summary

Source	Mitigation Measure	Default Value	New Value	Amount/Reduction	Comments
Construction	Water Exposed Dust 2x daily			55%	
Construction	All T4I or T4F engines on construction equipment.	Per CalEEMod based on Construction Years	T4I	Per CalEEMod	
Water Usage	~1/5 the water usage of a general light industrial facility	~10MMGal	2MMGal	80%	This is a WW facility that is dewatering and drying sludge. This process is not expected to use much, if any additional water. 2MMGal should be sufficient to account for additional new water usage.
Solid Waste	No additional Waste Generation	57.04 tons/year/1000sqft	0	100%	This is a WW facility that is dewatering and drying sludge. This process is expected to reduce waste generation overall (especially organic wastes), as the sludge will be dried, gassified, and used as fuel or biochar fertilizer.

CalEEMod Results

Windsor - Sonoma-San Francisco County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Windsor

Sonoma-San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	46.00	1000sqft	2.90	46,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	75
Climate Zone	4			Operational Year	2025
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

- Project Characteristics -
- Land Use - Per Applicant
- Construction Phase - Per Applicant
- Trips and VMT - Per Applicant
- Grading - Per Applicant
- Vehicle Trips - Per Applicant
- Construction Off-road Equipment Mitigation - Per Applicant
- Water And Wastewater - Per Applicant
- Solid Waste - Per Applicant
- Operational Off-Road Equipment -

Windsor - Sonoma-San Francisco County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstructionPhase	NumDays	3.00	30.00
tblConstructionPhase	NumDays	6.00	30.00
tblConstructionPhase	NumDays	10.00	120.00
tblConstructionPhase	NumDays	220.00	60.00
tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	NumDays	20.00	0.00
tblGrading	AcresOfGrading	30.00	2.90
tblGrading	AcresOfGrading	45.00	2.90
tblLandUse	LotAcreage	1.06	2.90
tblSolidWaste	SolidWasteGenerationRate	57.04	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	200.00
tblTripsAndVMT	HaulingTripNumber	0.00	120.00
tblTripsAndVMT	HaulingTripNumber	0.00	480.00
tblTripsAndVMT	HaulingTripNumber	0.00	200.00
tblTripsAndVMT	HaulingTripNumber	0.00	20.00
tblTripsAndVMT	HaulingTripNumber	0.00	20.00
tblTripsAndVMT	WorkerTripNumber	8.00	22.00
tblTripsAndVMT	WorkerTripNumber	10.00	22.00
tblTripsAndVMT	WorkerTripNumber	15.00	35.00
tblTripsAndVMT	WorkerTripNumber	19.00	40.00
tblTripsAndVMT	WorkerTripNumber	4.00	24.00
tblTripsAndVMT	WorkerTripNumber	13.00	24.00
tblVehicleTrips	ST_TR	1.99	0.00
tblVehicleTrips	SU_TR	5.00	0.00
tblVehicleTrips	WD_TR	4.96	0.00
tblWater	IndoorWaterUseRate	10,637,500.00	2,000,000.00

2.0 Emissions Summary

Windsor - Sonoma-San Francisco County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
5	10-3-2023	1-2-2024	0.0111	0.0061
6	1-3-2024	4-2-2024	0.4860	0.2607
7	4-3-2024	7-2-2024	0.3152	0.2785
8	7-3-2024	9-30-2024	0.3557	0.3052
		Highest	0.4860	0.3052

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2037	0.0000	4.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.2000e-004	8.2000e-004	0.0000	0.0000	8.8000e-004
Energy	6.4900e-003	0.0590	0.0496	3.5000e-004		4.4900e-003	4.4900e-003		4.4900e-003	4.4900e-003	0.0000	98.7393	98.7393	6.8100e-003	1.8500e-003	99.4621
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.6345	1.0013	1.6358	0.0653	1.5600e-003	3.7335
Total	0.2102	0.0590	0.0500	3.5000e-004	0.0000	4.4900e-003	4.4900e-003	0.0000	4.4900e-003	4.4900e-003	0.6345	99.7414	100.3759	0.0721	3.4100e-003	103.1965

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2037	0.0000	4.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.2000e-004	8.2000e-004	0.0000	0.0000	8.8000e-004
Energy	6.4900e-003	0.0590	0.0496	3.5000e-004		4.4900e-003	4.4900e-003		4.4900e-003	4.4900e-003	0.0000	98.7393	98.7393	6.8100e-003	1.8500e-003	99.4621
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.6345	1.0013	1.6358	0.0653	1.5600e-003	3.7335
Total	0.2102	0.0590	0.0500	3.5000e-004	0.0000	4.4900e-003	4.4900e-003	0.0000	4.4900e-003	4.4900e-003	0.6345	99.7414	100.3759	0.0721	3.4100e-003	103.1965

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2024	2/9/2024	5	30	
2	Grading	Grading	2/10/2024	3/22/2024	5	30	
3	Paving	Paving	3/23/2024	9/6/2024	5	120	

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4	Building Construction	Building Construction	9/8/2024	11/29/2024	5	60
5	Demolition	Demolition	11/30/2024	11/29/2024	5	0
6	Architectural Coating	Architectural Coating	11/30/2024	12/27/2024	5	20

Acres of Grading (Site Preparation Phase): 2.9

Acres of Grading (Grading Phase): 2.9

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 69,000; Non-Residential Outdoor: 23,000; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	22.00	0.00	200.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	22.00	0.00	120.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	35.00	0.00	480.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	40.00	8.00	200.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	24.00	0.00	20.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	5	24.00	0.00	20.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.5400e-003	0.0000	1.5400e-003	1.7000e-004	0.0000	1.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0186	0.1968	0.1437	3.7000e-004		7.4600e-003	7.4600e-003		6.8600e-003	6.8600e-003	0.0000	32.3001	32.3001	0.0105	0.0000	32.5613
Total	0.0186	0.1968	0.1437	3.7000e-004	1.5400e-003	7.4600e-003	9.0000e-003	1.7000e-004	6.8600e-003	7.0300e-003	0.0000	32.3001	32.3001	0.0105	0.0000	32.5613

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.1000e-004	0.0144	3.1500e-003	6.0000e-005	1.6600e-003	1.0000e-004	1.7600e-003	4.6000e-004	1.0000e-004	5.5000e-004	0.0000	5.9962	5.9962	1.8000e-004	9.5000e-004	6.2832
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0900e-003	7.1000e-004	8.3400e-003	2.0000e-005	2.5900e-003	1.0000e-005	2.6000e-003	6.9000e-004	1.0000e-005	7.0000e-004	0.0000	2.0288	2.0288	7.0000e-005	6.0000e-005	2.0491
Total	1.3000e-003	0.0151	0.0115	8.0000e-005	4.2500e-003	1.1000e-004	4.3600e-003	1.1500e-003	1.1000e-004	1.2500e-003	0.0000	8.0249	8.0249	2.5000e-004	1.0100e-003	8.3323

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.9000e-004	0.0000	6.9000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.2600e-003	0.1041	0.2047	3.7000e-004		6.0000e-004	6.0000e-004		6.0000e-004	6.0000e-004	0.0000	32.3001	32.3001	0.0105	0.0000	32.5612
Total	6.2600e-003	0.1041	0.2047	3.7000e-004	6.9000e-004	6.0000e-004	1.2900e-003	7.0000e-005	6.0000e-004	6.7000e-004	0.0000	32.3001	32.3001	0.0105	0.0000	32.5612

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.1000e-004	0.0144	3.1500e-003	6.0000e-005	1.6600e-003	1.0000e-004	1.7600e-003	4.6000e-004	1.0000e-004	5.5000e-004	0.0000	5.9962	5.9962	1.8000e-004	9.5000e-004	6.2832
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0900e-003	7.1000e-004	8.3400e-003	2.0000e-005	2.5900e-003	1.0000e-005	2.6000e-003	6.9000e-004	1.0000e-005	7.0000e-004	0.0000	2.0288	2.0288	7.0000e-005	6.0000e-005	2.0491
Total	1.3000e-003	0.0151	0.0115	8.0000e-005	4.2500e-003	1.1000e-004	4.3600e-003	1.1500e-003	1.1000e-004	1.2500e-003	0.0000	8.0249	8.0249	2.5000e-004	1.0100e-003	8.3323

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0919	0.0000	0.0919	0.0498	0.0000	0.0498	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0195	0.2073	0.1305	3.1000e-004		8.5800e-003	8.5800e-003		7.9000e-003	7.9000e-003	0.0000	27.1554	27.1554	8.7800e-003	0.0000	27.3750
Total	0.0195	0.2073	0.1305	3.1000e-004	0.0919	8.5800e-003	0.1005	0.0498	7.9000e-003	0.0577	0.0000	27.1554	27.1554	8.7800e-003	0.0000	27.3750

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2000e-004	8.6200e-003	1.8900e-003	4.0000e-005	1.0000e-003	6.0000e-005	1.0600e-003	2.7000e-004	6.0000e-005	3.3000e-004	0.0000	3.5977	3.5977	1.1000e-004	5.7000e-004	3.7699
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0900e-003	7.1000e-004	8.3400e-003	2.0000e-005	2.5900e-003	1.0000e-005	2.6000e-003	6.9000e-004	1.0000e-005	7.0000e-004	0.0000	2.0288	2.0288	7.0000e-005	6.0000e-005	2.0491
Total	1.2100e-003	9.3300e-003	0.0102	6.0000e-005	3.5900e-003	7.0000e-005	3.6600e-003	9.6000e-004	7.0000e-005	1.0300e-003	0.0000	5.6265	5.6265	1.8000e-004	6.3000e-004	5.8190

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0413	0.0000	0.0413	0.0224	0.0000	0.0224	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.5400e-003	0.0954	0.1822	3.1000e-004		5.0000e-004	5.0000e-004		5.0000e-004	5.0000e-004	0.0000	27.1554	27.1554	8.7800e-003	0.0000	27.3749
Total	5.5400e-003	0.0954	0.1822	3.1000e-004	0.0413	5.0000e-004	0.0418	0.0224	5.0000e-004	0.0229	0.0000	27.1554	27.1554	8.7800e-003	0.0000	27.3749

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2000e-004	8.6200e-003	1.8900e-003	4.0000e-005	1.0000e-003	6.0000e-005	1.0600e-003	2.7000e-004	6.0000e-005	3.3000e-004	0.0000	3.5977	3.5977	1.1000e-004	5.7000e-004	3.7699
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0900e-003	7.1000e-004	8.3400e-003	2.0000e-005	2.5900e-003	1.0000e-005	2.6000e-003	6.9000e-004	1.0000e-005	7.0000e-004	0.0000	2.0288	2.0288	7.0000e-005	6.0000e-005	2.0491
Total	1.2100e-003	9.3300e-003	0.0102	6.0000e-005	3.5900e-003	7.0000e-005	3.6600e-003	9.6000e-004	7.0000e-005	1.0300e-003	0.0000	5.6265	5.6265	1.8000e-004	6.3000e-004	5.8190

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0506	0.4862	0.7024	1.0700e-003		0.0237	0.0237		0.0219	0.0219	0.0000	93.0882	93.0882	0.0295	0.0000	93.8257
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0506	0.4862	0.7024	1.0700e-003		0.0237	0.0237		0.0219	0.0219	0.0000	93.0882	93.0882	0.0295	0.0000	93.8257

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.0000e-004	0.0345	7.5700e-003	1.5000e-004	3.9900e-003	2.4000e-004	4.2300e-003	1.0900e-003	2.3000e-004	1.3300e-003	0.0000	14.3908	14.3908	4.3000e-004	2.2800e-003	15.0797
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9100e-003	4.5100e-003	0.0531	1.4000e-004	0.0165	9.0000e-005	0.0166	4.3900e-003	9.0000e-005	4.4700e-003	0.0000	12.9103	12.9103	4.3000e-004	4.0000e-004	13.0397
Total	7.4100e-003	0.0390	0.0606	2.9000e-004	0.0205	3.3000e-004	0.0208	5.4800e-003	3.2000e-004	5.8000e-003	0.0000	27.3011	27.3011	8.6000e-004	2.6800e-003	28.1194

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Paving - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0177	0.4513	0.7784	1.0700e-003		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003	0.0000	93.0881	93.0881	0.0295	0.0000	93.8256
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0177	0.4513	0.7784	1.0700e-003		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003	0.0000	93.0881	93.0881	0.0295	0.0000	93.8256

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.0000e-004	0.0345	7.5700e-003	1.5000e-004	3.9900e-003	2.4000e-004	4.2300e-003	1.0900e-003	2.3000e-004	1.3300e-003	0.0000	14.3908	14.3908	4.3000e-004	2.2800e-003	15.0797
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9100e-003	4.5100e-003	0.0531	1.4000e-004	0.0165	9.0000e-005	0.0166	4.3900e-003	9.0000e-005	4.4700e-003	0.0000	12.9103	12.9103	4.3000e-004	4.0000e-004	13.0397
Total	7.4100e-003	0.0390	0.0606	2.9000e-004	0.0205	3.3000e-004	0.0208	5.4800e-003	3.2000e-004	5.8000e-003	0.0000	27.3011	27.3011	8.6000e-004	2.6800e-003	28.1194

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3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0479	0.3847	0.4230	7.5000e-004		0.0161	0.0161		0.0155	0.0155	0.0000	62.3142	62.3142	0.0116	0.0000	62.6043
Total	0.0479	0.3847	0.4230	7.5000e-004		0.0161	0.0161		0.0155	0.0155	0.0000	62.3142	62.3142	0.0116	0.0000	62.6043

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.1000e-004	0.0144	3.1500e-003	6.0000e-005	1.6600e-003	1.0000e-004	1.7600e-003	4.6000e-004	1.0000e-004	5.5000e-004	0.0000	5.9962	5.9962	1.8000e-004	9.5000e-004	6.2832
Vendor	2.5000e-004	0.0113	3.1000e-003	5.0000e-005	1.5600e-003	6.0000e-005	1.6200e-003	4.5000e-004	6.0000e-005	5.1000e-004	0.0000	4.6564	4.6564	9.0000e-005	7.0000e-004	4.8685
Worker	3.9500e-003	2.5800e-003	0.0303	8.0000e-005	9.4200e-003	5.0000e-005	9.4700e-003	2.5100e-003	5.0000e-005	2.5600e-003	0.0000	7.3773	7.3773	2.5000e-004	2.3000e-004	7.4513
Total	4.4100e-003	0.0282	0.0366	1.9000e-004	0.0126	2.1000e-004	0.0129	3.4200e-003	2.1000e-004	3.6200e-003	0.0000	18.0299	18.0299	5.2000e-004	1.8800e-003	18.6030

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3.5 Building Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0138	0.3314	0.4622	7.5000e-004		5.0000e-003	5.0000e-003		5.0000e-003	5.0000e-003	0.0000	62.3141	62.3141	0.0116	0.0000	62.6043
Total	0.0138	0.3314	0.4622	7.5000e-004		5.0000e-003	5.0000e-003		5.0000e-003	5.0000e-003	0.0000	62.3141	62.3141	0.0116	0.0000	62.6043

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.1000e-004	0.0144	3.1500e-003	6.0000e-005	1.6600e-003	1.0000e-004	1.7600e-003	4.6000e-004	1.0000e-004	5.5000e-004	0.0000	5.9962	5.9962	1.8000e-004	9.5000e-004	6.2832
Vendor	2.5000e-004	0.0113	3.1000e-003	5.0000e-005	1.5600e-003	6.0000e-005	1.6200e-003	4.5000e-004	6.0000e-005	5.1000e-004	0.0000	4.6564	4.6564	9.0000e-005	7.0000e-004	4.8685
Worker	3.9500e-003	2.5800e-003	0.0303	8.0000e-005	9.4200e-003	5.0000e-005	9.4700e-003	2.5100e-003	5.0000e-005	2.5600e-003	0.0000	7.3773	7.3773	2.5000e-004	2.3000e-004	7.4513
Total	4.4100e-003	0.0282	0.0366	1.9000e-004	0.0126	2.1000e-004	0.0129	3.4200e-003	2.1000e-004	3.6200e-003	0.0000	18.0299	18.0299	5.2000e-004	1.8800e-003	18.6030

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3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2399					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8100e-003	0.0122	0.0181	3.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	2.5533	2.5533	1.4000e-004	0.0000	2.5569
Total	0.2417	0.0122	0.0181	3.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	2.5533	2.5533	1.4000e-004	0.0000	2.5569

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	1.4400e-003	3.2000e-004	1.0000e-005	1.7000e-004	1.0000e-005	1.8000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.5996	0.5996	2.0000e-005	9.0000e-005	0.6283
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.9000e-004	5.2000e-004	6.0600e-003	2.0000e-005	1.8800e-003	1.0000e-005	1.8900e-003	5.0000e-004	1.0000e-005	5.1000e-004	0.0000	1.4755	1.4755	5.0000e-005	5.0000e-005	1.4903
Total	8.1000e-004	1.9600e-003	6.3800e-003	3.0000e-005	2.0500e-003	2.0000e-005	2.0700e-003	5.5000e-004	2.0000e-005	5.7000e-004	0.0000	2.0751	2.0751	7.0000e-005	1.4000e-004	2.1186

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3.7 Architectural Coating - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2399					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.4000e-004	0.0106	0.0183	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.5533	2.5533	1.4000e-004	0.0000	2.5568
Total	0.2404	0.0106	0.0183	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.5533	2.5533	1.4000e-004	0.0000	2.5568

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	1.4400e-003	3.2000e-004	1.0000e-005	1.7000e-004	1.0000e-005	1.8000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.5996	0.5996	2.0000e-005	9.0000e-005	0.6283
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.9000e-004	5.2000e-004	6.0600e-003	2.0000e-005	1.8800e-003	1.0000e-005	1.8900e-003	5.0000e-004	1.0000e-005	5.1000e-004	0.0000	1.4755	1.4755	5.0000e-005	5.0000e-005	1.4903
Total	8.1000e-004	1.9600e-003	6.3800e-003	3.0000e-005	2.0500e-003	2.0000e-005	2.0700e-003	5.5000e-004	2.0000e-005	5.7000e-004	0.0000	2.0751	2.0751	7.0000e-005	1.4000e-004	2.1186

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4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.545153	0.057779	0.171448	0.124342	0.034691	0.008619	0.014761	0.006626	0.001095	0.000293	0.029514	0.001540	0.004140

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5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	34.4744	34.4744	5.5800e-003	6.8000e-004	34.8153
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	34.4744	34.4744	5.5800e-003	6.8000e-004	34.8153
NaturalGas Mitigated	6.4900e-003	0.0590	0.0496	3.5000e-004		4.4900e-003	4.4900e-003		4.4900e-003	4.4900e-003	0.0000	64.2650	64.2650	1.2300e-003	1.1800e-003	64.6469
NaturalGas Unmitigated	6.4900e-003	0.0590	0.0496	3.5000e-004		4.4900e-003	4.4900e-003		4.4900e-003	4.4900e-003	0.0000	64.2650	64.2650	1.2300e-003	1.1800e-003	64.6469

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5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	1.20428e+006	6.4900e-003	0.0590	0.0496	3.5000e-004		4.4900e-003	4.4900e-003		4.4900e-003	4.4900e-003	0.0000	64.2650	64.2650	1.2300e-003	1.1800e-003	64.6469
Total		6.4900e-003	0.0590	0.0496	3.5000e-004		4.4900e-003	4.4900e-003		4.4900e-003	4.4900e-003	0.0000	64.2650	64.2650	1.2300e-003	1.1800e-003	64.6469

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	1.20428e+006	6.4900e-003	0.0590	0.0496	3.5000e-004		4.4900e-003	4.4900e-003		4.4900e-003	4.4900e-003	0.0000	64.2650	64.2650	1.2300e-003	1.1800e-003	64.6469
Total		6.4900e-003	0.0590	0.0496	3.5000e-004		4.4900e-003	4.4900e-003		4.4900e-003	4.4900e-003	0.0000	64.2650	64.2650	1.2300e-003	1.1800e-003	64.6469

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5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	372600	34.4744	5.5800e-003	6.8000e-004	34.8153
Total		34.4744	5.5800e-003	6.8000e-004	34.8153

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	372600	34.4744	5.5800e-003	6.8000e-004	34.8153
Total		34.4744	5.5800e-003	6.8000e-004	34.8153

6.0 Area Detail

6.1 Mitigation Measures Area

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2037	0.0000	4.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.2000e-004	8.2000e-004	0.0000	0.0000	8.8000e-004
Unmitigated	0.2037	0.0000	4.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.2000e-004	8.2000e-004	0.0000	0.0000	8.8000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0240					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1797					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.2000e-004	8.2000e-004	0.0000	0.0000	8.8000e-004
Total	0.2037	0.0000	4.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.2000e-004	8.2000e-004	0.0000	0.0000	8.8000e-004

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6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0240					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1797					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.2000e-004	8.2000e-004	0.0000	0.0000	8.8000e-004
Total	0.2037	0.0000	4.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.2000e-004	8.2000e-004	0.0000	0.0000	8.8000e-004

7.0 Water Detail

7.1 Mitigation Measures Water

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.6358	0.0653	1.5600e-003	3.7335
Unmitigated	1.6358	0.0653	1.5600e-003	3.7335

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	2 / 0	1.6358	0.0653	1.5600e-003	3.7335
Total		1.6358	0.0653	1.5600e-003	3.7335

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	2 / 0	1.6358	0.0653	1.5600e-003	3.7335
Total		1.6358	0.0653	1.5600e-003	3.7335

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Project Emissions

Sludge Criteria Pollutant Emissions

Equipment	Emission Factor (lbs/yr/MGD) ¹	Throughput (MGD) ²	Unabated POC Emissions (lbs/yr) ⁵	Unabated POC Emissions (lbs/day)
Rotary Drum Thickener ³	0.14	2.74	0.383561644	0.001
Thickened Sludge Storage ⁴	14.77	2.74	40.46575342	0.11
Centrifugal Sludge Dewatering	6.65	2.74	18.21917808	0.05
Biodryer ⁵	32.69	2.74	89.56164384	0.25
Sludge Cake Handling	0.03	2.74	0.082191781	0.00
Sludge Cake Storage	6.1	2.74	16.71232877	0.05
Total	60.38	16.44	165.42	0.45

1. Joint Emissions Inventory Program (JEIP) Table 1-7.
2. Current BAAQMD permitted throughput for Windsor is 1,000,000,000 gallons per year. Or 2.74 MGD average dry weather flow.
3. This uses the JEIP emission factor for "Primary Sludge Thickening - Gravity", because it appears to be the closest match for a rotary drum thickener.
4. This uses the JEIP emission factor for "Digested Sludge Storage", because it appears to be the closest match for the storage of sludge after thickening.
5. This uses the JEIP emission factor for "Sludge Drying Bed - Mechanically Mixed", because it appears to be the closest match for the biodryer.

Equipment	PM10 Emission Factor (kg/Mg) ^{1,2,3}	Throughput (Mg/day) ⁴	Unabated PM Emissions (lbs/yr)	Unabated POC Emissions (lbs/day)
Sludge Cake Handling ⁵	0.000164396	1.95	0.26	7.07E-04
Sludge Cake Storage	0.000164396	1.95	0.26	7.07E-04
Biochar Handling	0.000164396	1.61	0.21	5.84E-04
Biochar Loading	0.000164396	1.61	0.21	5.84E-04
Total	0.000328793	3.90	9.43E-01	2.58E-03

1. Emission Factors are from AP-42 13.2.4. https://www.epa.gov/sites/default/files/2020-10/documents/13.2.4_aggregate_handling_and_storage_piles.pdf
2. Average Wind Speed in Windsor is 2.2 m/s (per CalEEMod).
3. For the purposes of calculating emissions, we assume a moisture content of 4.8% as that is the highest value for which AP-42 recommends using the Equation in 13.2.4
4. Throughput of biochar after pyrolysis is 3,550 pounds per day (10% moisture), before pyrolysis we assume ~30% moisture, which is a total weight of ~4,300 pounds.
3. Moisture content before and during drying dictates that PM emissions would be negligible until the Sludge has been turned to a cake (and then handled and stored).

Operational Emissions Summary and Significance Evaluation					
Criteria Pollutants	Average Emissions	Threshold	Emissions	Threshold	Significance
	lbs/day	lbs/day	tons/year	tons/year	
ROG (VOC)	1.60	54	0.29	10	LTS
NO _x	0.32	54	0.06	10	LTS
CO	0.27	-	0.05	-	LTS
SO _x	0.00	-	0.00	-	LTS
PM ₁₀	0.03	82	0.005	15	LTS
PM _{2.5}	0.03	54	0.005	10	LTS

Sources: BAAQMD 2017, CalEEMod version 2020.4.0

Notes:

Emissions include operational emissions from CalEEMod as well as criteria pollutant emissions associated with sludge handling and drying. Emissions from the combustion sources are excluded as the heat input rating is not large enough to trigger permitting.

LTS - Less Than Significant

Construction Emissions Summary and Significance Evaluation					
Criteria Pollutants	Average Emissions	Threshold	Emissions	Threshold	Significance
	lbs/day	lbs/day	tons/year	tons/year	
ROG (VOC)	1.64	54	0.30	10	LTS
NO _x	5.95	54	1.09	10	LTS
CO	9.70	-	1.77	-	LTS
SO _x	0.02	-	0.00	-	LTS
Exhaust PM ₁₀	0.05	82	0.01	15	LTS
Exhaust PM _{2.5}	0.05	54	0.01	10	LTS

Sources: BAAQMD 2017, CalEEMod version 2020.4.0

Notes:

LTS - Less Than Significant

Operational Greenhouse Gas Emissions from CalEEMod	
Greenhouse Gases	Emissions
	MT/yr
CO ₂	100.4
CH ₄	0.1
N ₂ O	0.0
CO ₂ e	103.2

Sources: BAAQMD 2017, CalEEMod version 2020.4.0

Notes:

Annual operational GHG emissions comprise direct area + direct stationary + direct mobile + indirect energy + indirect waste + indirect water usage

LTS - Less Than Significant

Construction Greenhouse Gas Emissions Summary			
Phase	Greenhouse Gases	Average Emissions	Emissions
		lbs/day	MT
Campus	CO ₂	1,526	278.5
	CH ₄	0.3	0.1
	N ₂ O	0	0.0
	CO ₂ e	1,545	281.9

Sources: CalEEMod version 2020.4.0

Total Greenhouse Gas Emissions Summary and Significance Evaluation				
Greenhouse Gases	Emission Factor	Pyrolysis Gas Emissions	Emission Factor	Natural Gas Emissions
	kG/mmBtu	MT/yr	kG/mmBtu	MT/yr
CO ₂	52.07	451.6	53.06	460.2
CH ₄	3.20E-03	0.03	1.00E-03	0.01
N ₂ O	6.30E-04	0.01	1.00E-04	0.00
CO ₂ e		453.9		460.6

Sources: 40CFR Part 98 Subpart A and Subpart C

Total Greenhouse Gas Emissions Summary and Significance Evaluation			
Greenhouse Gases	Emissions	Threshold	Significance
	MT/yr	MT/yr	
CO ₂ e	1,027.1	10,000	LTS

Sources: BAAQMD 2017, CalEEMod version 2020.4.0

Notes:

Total Operational GHG Emissions include operational GHG emissions and construction GHG emissions amortized over 30 years

LTS - Less Than Significant

Sludge Toxic Emissions

Rotary Drum Thickener (webfire)								
CAS	Compound	Emission Speciation ¹	Hourly Emissions ² (lbs/hr)	Maximum Hourly trigger level (lbs/hr)	Hourly Trigger Level Exceeded?	Annual Emissions (lbs/yr)	Maximum Annual trigger level (lbs/yr)	Annual Trigger Level Exceeded?
71-43-2	Benzene	2.09E-04	8.69E-07	1.20E-02	No	1.90E-03	2.90E+00	No
67-66-3	Chloroform	1.37E-02	5.69E-05	6.60E-02	No	1.24E-01	1.50E+01	No
75-09-2	Dichloromethane	1.31E-02	5.45E-05	6.20E+00	No	1.19E-01	8.20E+01	No
50-00-0	Formaldehyde	5.00E-05	2.08E-07	2.40E-02	No	4.54E-04	1.40E+01	No
1330-20-7	Isomers of xylene	1.25E-03	5.19E-06	9.70E+00	No	1.13E-02	2.70E+04	No
127-18-4	Perchloroethylene	4.38E-03	1.82E-05	8.80E+00	No	3.98E-02	1.40E+01	No
100-42-5	Styrene	1.20E-05	4.99E-08	9.30E+00	No	1.09E-04	3.50E+04	No
108-88-3	Toluene	2.75E-03	1.14E-05	2.20E+00	No	2.50E-02	1.60E+04	No
71-55-6	1,1,1-Trichloroethane	2.54E-03	1.06E-05	3.00E+01	No	2.31E-02	3.90E+04	No
79-01-6	Trichloroethylene	3.50E-03	1.45E-05	-	No	3.18E-02	4.10E+01	No
75-35-4	Vinylidene chloride	7.50E-04	3.12E-06	-	No	6.81E-03	2.70E+03	No

1. EPA AP-42 (WebFire) "POTW: Gravity Sludge Thickener" were used to get speciated emissions. These are multiplied by the total POC from JEIP to get individual toxic emissions.

2. Hourly emissions are assumed to be annual emissions divided by 2,184 (42 hours per week or 6 hours a day), since the RDT is expected to process the sludge by operating at least this amount annually.

Thickened Sludge Storage (webfire)								
CAS	Compound	Emission Speciation ¹	Hourly Emissions ² (lbs/hr)	Maximum Hourly trigger level (lbs/hr)	Hourly Trigger Level Exceeded?	Annual Emissions (lbs/yr)	Maximum Annual trigger level (lbs/yr)	Annual Trigger Level Exceeded?
71-43-2	Benzene	2.09E-04	2.28E-05	1.20E-02	No	2.00E-01	2.90E+00	No
67-66-3	Chloroform	1.37E-02	1.50E-03	6.60E-02	No	1.31E+01	1.50E+01	No
75-09-2	Dichloromethane	1.31E-02	1.43E-03	6.20E+00	No	1.26E+01	8.20E+01	No
50-00-0	Formaldehyde	5.00E-05	5.47E-06	2.40E-02	No	4.79E-02	1.40E+01	No
1330-20-7	Isomers of xylene	1.25E-03	1.37E-04	9.70E+00	No	1.20E+00	2.70E+04	No
127-18-4	Perchloroethylene	4.38E-03	4.79E-04	8.80E+00	No	4.19E+00	1.40E+01	No
100-42-5	Styrene	1.20E-05	1.31E-06	9.30E+00	No	1.15E-02	3.50E+04	No
108-88-3	Toluene	2.75E-03	3.01E-04	2.20E+00	No	2.63E+00	1.60E+04	No
71-55-6	1,1,1-Trichloroethane	2.54E-03	2.78E-04	3.00E+01	No	2.43E+00	3.90E+04	No
79-01-6	Trichloroethylene	3.50E-03	3.83E-04	-	No	3.35E+00	4.10E+01	No
75-35-4	Vinylidene chloride	7.50E-04	8.20E-05	-	No	7.18E-01	2.70E+03	No

1. EPA AP-42 (WebFire) "POTW: Gravity Sludge Thickener" were used to get speciated emissions. These are multiplied by the total POC from JEIP to get individual toxic emissions.

2. Hourly emissions are assumed to be annual emissions divided by 8,760, because the storage operation will be continuous.

Sludge Centrifuge Toxic Emissions (webfire)								
CAS	Compound	Emission Speciation ¹	Hourly Emissions ² (lbs/hr)	Maximum Hourly trigger level (lbs/hr)	Hourly Trigger Level Exceeded?	Annual Emissions (lbs/yr)	Maximum Annual trigger level (lbs/yr)	Annual Trigger Level Exceeded?
71-43-2	Benzene	1.84E-03	8.35E-06	1.20E-02	No	1.82E-02	2.90E+00	No
56-23-5	Carbon tetrachloride	1.60E-03	7.26E-06	8.40E-01	No	1.59E-02	1.90E+00	No
67-66-3	Chloroform	5.60E-03	2.54E-05	6.60E-02	No	5.55E-02	1.50E+01	No
75-09-2	Dichloromethane	5.32E-03	2.41E-05	6.20E+00	No	5.27E-02	8.20E+01	No
50-00-0	Formaldehyde	1.14E-02	5.17E-05	2.40E-02	No	1.13E-01	1.40E+01	No
1330-20-7	Xylenes	1.31E-02	5.94E-05	9.70E+00	No	1.30E-01	2.70E+04	No
127-18-4	Perchloroethylene	1.33E-03	6.04E-06	8.80E+00	No	1.32E-02	1.40E+01	No
100-42-5	Styrene	3.10E-03	1.41E-05	9.30E+00	No	3.07E-02	3.50E+04	No
108-88-3	Toluene	1.78E+00	8.08E-03	2.20E+00	No	1.76E+01	1.60E+04	No
71-55-6	1,1,1-Trichloroethane	1.52E-03	6.90E-06	3.00E+01	No	1.51E-02	3.90E+04	No
79-01-6	Trichloroethylene	1.70E-03	7.71E-06	-	No	1.68E-02	4.10E+01	No
75-01-4	Vinyl chloride	4.68E-03	2.12E-05	8.00E+01	No	4.64E-02	1.10E+00	No
75-35-4	Vinylidene chloride	7.20E-03	3.27E-05	-	No	7.14E-02	2.70E+03	No

1. EPA AP-42 (WebFire) "POTW: Sludge Centrifuge" were used to get speciated emissions. These are multiplied by the total POC from JEIP to get individual toxic emissions.

2. Hourly emissions are assumed to be annual emissions divided by 2,184 (42 hours per week or 6 hours a day), since the centrifuge is expected to process the sludge by operating about this amount annually.

Dryer Toxic Emissions (webfire)								
CAS	Compound	Emission Speciation ¹	Hourly Emissions ² (lbs/hr)	Maximum Hourly trigger level (lbs/hr)	Hourly Trigger Level Exceeded?	Annual Emissions (lbs/yr)	Maximum Annual trigger level (lbs/yr)	Annual Trigger Level Exceeded?
75-07-0	Acetaldehyde	1.32E+01	4.09E-02	2.10E-01	No	8.93E+01	2.90E+01	Yes
71-43-2	Benzene	2.80E-03	8.67E-06	1.20E-02	No	1.89E-02	2.90E+00	No
75-09-2	Dichloromethane	5.70E-03	1.77E-05	6.20E+00	No	3.86E-02	8.20E+01	No
50-00-0	Formaldehyde	1.20E-03	3.72E-06	2.40E-02	No	8.12E-03	1.40E+01	No
1330-20-7	Isomers of xylene	1.10E-02	3.41E-05	9.70E+00	No	7.44E-02	2.70E+04	No
127-18-4	Perchloroethylene	2.70E-03	8.36E-06	8.80E+00	No	1.83E-02	1.40E+01	No
108-88-3	Toluene	1.30E-02	4.03E-05	2.20E+00	No	8.79E-02	1.60E+04	No
71-55-6	1,1,1-Trichloroethane	5.70E-03	1.77E-05	3.00E+01	No	3.86E-02	3.90E+04	No

1. EPA AP-42 (WebFire) "POTW: Sludge Drying Bed" were used to get speciated emissions. These are multiplied by the total POC from JEIP to get individual toxic emissions.

2. Hourly emissions are assumed to be annual emissions divided by 2,184 (42 hours per week or 6 hours a day), since the dryer is expected to process the sludge by operating about this amount annually.

Sludge Cake Handling Toxic Emissions (webfire)								
CAS	Compound	Emission Speciation ¹	Hourly Emissions ² (lbs/hr)	Maximum Hourly trigger level (lbs/hr)	Hourly Trigger Level Exceeded?	Annual Emissions (lbs/yr)	Maximum Annual trigger level (lbs/yr)	Annual Trigger Level Exceeded?
75-07-0	Acetaldehyde	1.32E+01	3.75E-05	2.10E-01	No	8.19E-02	2.90E+01	No
71-43-2	Benzene	2.80E-03	7.96E-09	1.20E-02	No	1.74E-05	2.90E+00	No
75-09-2	Dichloromethane	5.70E-03	1.62E-08	6.20E+00	No	3.54E-05	8.20E+01	No
50-00-0	Formaldehyde	1.20E-03	3.41E-09	2.40E-02	No	7.45E-06	1.40E+01	No
1330-20-7	Isomers of xylene	1.10E-02	3.13E-08	9.70E+00	No	6.83E-05	2.70E+04	No
127-18-4	Perchloroethylene	2.70E-03	7.67E-09	8.80E+00	No	1.68E-05	1.40E+01	No
108-88-3	Toluene	1.30E-02	3.69E-08	2.20E+00	No	8.07E-05	1.60E+04	No
71-55-6	1,1,1-Trichloroethane	5.70E-03	1.62E-08	3.00E+01	No	3.54E-05	3.90E+04	No

1. EPA AP-42 (WebFire) "POTW: Sludge Drying Bed" were used to get speciated emissions. These are multiplied by the total POC from JEIP to get individual toxic emissions.

2. Hourly emissions are assumed to be annual emissions divided by 2,184 (42 hours per week or 6 hours a day), since the dryer is expected to process the sludge by operating about this amount annually.

Sludge Cake Storage Toxic Emissions (webfire)								
CAS	Compound	Emission Speciation ¹	Hourly Emissions ² (lbs/hr)	Maximum Hourly trigger level (lbs/hr)	Hourly Trigger Level Exceeded?	Annual Emissions (lbs/yr)	Maximum Annual trigger level (lbs/yr)	Annual Trigger Level Exceeded?
75-07-0	Acetaldehyde	1.32E+01	1.90E-03	2.10E-01	No	1.67E+01	2.90E+01	No
71-43-2	Benzene	2.80E-03	4.03E-07	1.20E-02	No	3.53E-03	2.90E+00	No
75-09-2	Dichloromethane	5.70E-03	8.21E-07	6.20E+00	No	7.19E-03	8.20E+01	No
50-00-0	Formaldehyde	1.20E-03	1.73E-07	2.40E-02	No	1.51E-03	1.40E+01	No
1330-20-7	Isomers of xylene	1.10E-02	1.58E-06	9.70E+00	No	1.39E-02	2.70E+04	No
127-18-4	Perchloroethylene	2.70E-03	3.89E-07	8.80E+00	No	3.41E-03	1.40E+01	No
108-88-3	Toluene	1.30E-02	1.87E-06	2.20E+00	No	1.64E-02	1.60E+04	No
71-55-6	1,1,1-Trichloroethane	5.70E-03	8.21E-07	3.00E+01	No	7.19E-03	3.90E+04	No

1. EPA AP-42 (WebFire) "POTW: Sludge Drying Bed" were used to get speciated emissions. These are multiplied by the total POC from JEIP to get individual toxic emissions.

2. Hourly emissions are assumed to be annual emissions divided by 8,760, because the storage operation will be continuous.

Syngas External Combustion Toxic Pollutant Emissions

Data and Parameters			
Description	Source	Value	Units
Gas Flow (Max Rating)	Calculated	0.99	MMBtu/hr
Flare Rating	Per Applicant	60.0	scfm
Gas Flow (Max Rating)	Calculated	86,400	scf/day
Syngas Heating Value	Approximate	275	Btu/scf
Heating Value DG	Per Applicant	610	Btu/scf
Gas Flow (Max Rating)	Calculated	0.0036	MMscf/hr
Days/year	Per Applicant	365	Days/year
Hours/day	Per Applicant	24	hrs/day
Minutes/hour	Per Applicant	60	min/hr

External Combustion Syngas Toxic Emissions (Based on SJVAPCD Digester Gas Emission Factors)									
Compound	CAS	Digester Gas Emission Factor ¹ (lb/MMscf)	Syngas Gas Emission Factor (lb/MMBtu)	Hourly Emissions (lb/hr)	BAAQMD Acute Trigger Level (lb/hr)	Exceed Acute Trigger?	Annual Emissions (lb/yr)	BAAQMD Chronic Trigger Level (lb/yr)	Exceed Chronic Trigger?
Ammonia	7664-41-7	3.72E-03	6.10E-06	6.04E-06	1.40E+00	No	5.29E-02	7.70E+03	No
Benzene	71-43-2	1.33E-03	2.18E-06	2.16E-06	1.20E-02	No	1.89E-02	2.90E+00	No
Chlorobenzene	108-90-7	3.08E-04	5.05E-07	5.00E-07	-	No	4.38E-03	3.90E+04	No
Ethyl Benzene	100-41-4	2.61E-02	4.28E-05	4.24E-05	-	No	3.71E-01	3.30E+01	No
Formaldehyde	50-00-0	1.46E+00	2.39E-03	2.37E-03	2.40E-02	No	2.08E+01	1.40E+01	Yes
Hydrogen Sulfide	7783-06-4	1.17E+00	1.92E-03	1.90E-03	1.90E-02	No	1.66E+01	3.90E+02	No
Methyl Chloroform	71-55-6	4.19E-03	6.87E-06	6.80E-06	3.00E+01	No	5.96E-02	3.90E+04	No
Methylene Chloride	75-09-2	8.67E-02	1.42E-04	1.41E-04	6.20E+00	No	1.23E+00	8.20E+01	No
Perchloroethylene	127-18-4	2.43E-03	3.98E-06	3.94E-06	8.80E+00	No	3.45E-02	1.40E+01	No
Toluene	108-88-3	9.59E-03	1.57E-05	1.56E-05	2.20E+00	No	1.36E-01	1.60E+04	No
Vinyl Chloride	75-01-4	1.32E-03	2.16E-06	2.14E-06	8.00E+01	No	1.88E-02	1.10E+00	No
Vinylidene Chloride	75-35-4	3.08E-04	5.05E-07	5.00E-07	-	No	4.38E-03	2.70E+03	No
Xylenes	1330-20-7	5.57E-02	9.13E-05	9.04E-05	9.70E+00	No	7.92E-01	2.70E+04	No

1. SJVAPCD AB 2588 "Hot Spots" Air Toxics Profiles, March 27, 2017, District Profile 230, which notes: "Digester Gas External and Internal Combustion Factors as developed by San Diego County Air Pollution Control District" in the November 1993 memo from SDAPCD.

2. Published emission factors are for digester gas. However, by converting the emission factor from lb/MMscf to lb/MMBtu and then using the MMBtu input rating, we correct for the use of Syngas which has a lower Btu than Digester Gas.

Natural Gas External Combustion Toxic Pollutant Emissions

Data and Parameters			
Description	Source	Value	Units
Gas Flow (Max Rating)	Calculated	8672.4	MMBtu/yr
Gas Flow (Max Rating)	Calculated	0.99	MMBtu/hr
Flare Rating	Per Applicant	16.0	scfm
Gas Flow (Max Rating)	Calculated	23,068	scf/day
Heating Value DG	Estimate	1,030	Btu/scf
Gas Flow (Max Rating)	Calculated	0.0010	MMscf/hr
Days/year	Per Applicant	365	Days/year
Hours/day	Per Applicant	24	hrs/day
Minutes/hour	Per Applicant	60	min/hr

External Combustion Natural Gas Toxic Emissions								
Compound	CAS	Natural Gas Emission Factor ¹ (lb/MMBtu)	Hourly Emissions (lb/hr)	BAAQMD Acute Trigger Level (lb/hr)	Exceed Acute Trigger?	Annual Emissions (lb/yr)	BAAQMD Chronic Trigger Level (lb/yr)	Exceed Chronic Trigger?
Acetaldehyde	75-07-0	4.22E-06	4.18E-06	2.10E-01	No	3.66E-02	2.90E+01	No
Acrolein	107-02-8	2.65E-06	2.62E-06	1.10E-03	No	2.30E-02	1.40E+01	No
Arsenic	7440-38-2	1.96E-07	1.94E-07	8.80E-05	No	1.70E-03	1.60E-03	Yes
Benzene	71-43-2	7.84E-06	7.76E-06	1.20E-02	No	6.80E-02	2.90E+00	No
Beryllium	7440-41-7	5.88E-09	5.82E-09	-	No	5.10E-05	3.40E-02	No
Cadmium	7440-43-9	1.08E-06	1.07E-06	-	No	9.37E-03	1.90E-02	No
Copper	7440-50-8	8.33E-07	8.25E-07	4.40E-02	No	7.22E-03	-	No
Ethyl Benzene	100-41-4	9.31E-06	9.22E-06	-	No	8.07E-02	3.30E+01	No
Formaldehyde	50-00-0	2.17E-04	2.15E-04	2.40E-02	No	1.88E+00	1.40E+01	No
n-Hexane	110-54-3	6.18E-06	6.12E-06	-	No	5.36E-02	2.70E+05	No
Lead	7439-92-1	4.90E-07	4.85E-07	-	No	4.25E-03	2.90E-01	No
Manganese	7439-96-5	3.73E-07	3.69E-07	-	No	3.23E-03	3.50E+00	No
Mercury	7439-97-6	2.55E-07	2.52E-07	2.70E-04	No	2.21E-03	2.10E-01	No
Naphthalene	91-20-3	5.98E-07	5.92E-07	-	No	5.19E-03	3.30E-03	Yes
Nickel	7440-02-0	2.06E-06	2.04E-06	8.80E-05	No	1.79E-02	3.10E-01	No
PAH (as benzo(a)pyrene-equiv.)	1150/1151	6.60E-09	6.53E-09	-	No	5.72E-05	3.30E-03	No
Propylene	115-07-1	7.17E-04	7.10E-04	-	No	6.22E+00	1.20E+05	No
Selenium	7782-49-2	1.18E-08	1.17E-08	-	No	1.02E-04	8.00E+00	No
Toluene	108-88-3	3.59E-05	3.55E-05	2.20E+00	No	3.11E-01	1.60E+04	No
Vanadium	7440-62-2	2.25E-06	2.23E-06	1.30E-02	No	1.95E-02	-	No
Xylenes	1330-20-7	2.67E-05	2.64E-05	9.70E+00	No	2.32E-01	2.70E+04	No

1. BAAQMD Toxic Air Contaminant (TAC) Emission Factor Guidelines Appendix A Default TAC Emission Factors for Specific Source Categories.

2. Published emission factors are for digester gas. Digester gas EF are adjusted for syngas by taking a ratio of the HHV of syn gas to the HHV of digester gas

Unabated Toxic Emissions Summary							
CAS	Compound	Hourly Emissions (lbs/hr)	Maximum Hourly trigger level (lbs/hr)	Hourly Trigger Level Exceeded?	Annual Emissions (lbs/yr)	Maximum Annual trigger level (lbs/yr)	Annual Trigger Level Exceeded?
71-43-2	Benzene	5.11E-05	1.20E-02	No	3.30E-01	2.90E+00	No
67-66-3	Chloroform	1.58E-03	6.60E-02	No	1.33E+01	1.50E+01	No
50-00-0	Formaldehyde	2.65E-03	2.40E-02	No	2.28E+01	1.40E+01	Yes
127-18-4	Perchloroethylene	5.16E-04	8.80E+00	No	4.30E+00	1.40E+01	No
100-42-5	Styrene	1.54E-05	9.30E+00	No	4.23E-02	3.50E+04	No
108-88-3	Toluene	8.48E-03	2.20E+00	No	2.09E+01	1.60E+04	No
71-55-6	1,1,1-Trichloroethane	3.20E-04	3.00E+01	No	2.58E+00	3.90E+04	No
79-01-6	Trichloroethylene	4.05E-04	-	No	3.40E+00	4.10E+01	No
75-35-4	Vinylidene chloride	1.18E-04	-	No	8.01E-01	2.70E+03	No
56-23-5	Carbon tetrachloride	7.26E-06	8.40E-01	No	1.59E-02	1.90E+00	No
1330-20-7	Xylenes	3.54E-04	9.70E+00	No	2.45E+00	2.70E+04	No
75-01-4	Vinyl chloride	2.34E-05	8.00E+01	No	6.51E-02	1.10E+00	No
75-07-0	Acetaldehyde	4.28E-02	2.10E-01	No	1.06E+02	2.90E+01	Yes
7664-41-7	Ammonia	6.04E-06	1.40E+00	No	5.29E-02	7.70E+03	No
108-90-7	Chlorobenzene	5.00E-07	-	No	4.38E-03	3.90E+04	No
100-41-4	Ethyl Benzene	5.16E-05	-	No	4.52E-01	3.30E+01	No
7783-06-4	Hydrogen Sulfide	1.90E-03	1.90E-02	No	1.66E+01	3.90E+02	No
75-09-2	Methylene Chloride	1.67E-03	6.20E+00	No	1.40E+01	8.20E+01	No
107-02-8	Acrolein	2.62E-06	1.10E-03	No	2.30E-02	1.40E+01	No
7440-38-2	Arsenic	1.94E-07	8.80E-05	No	1.70E-03	1.60E-03	Yes
7440-41-7	Beryllium	5.82E-09	-	No	5.10E-05	3.40E-02	No
7440-43-9	Cadmium	1.07E-06	-	No	9.37E-03	1.90E-02	No
7440-50-8	Copper	8.25E-07	4.40E-02	No	7.22E-03	-	No
110-54-3	n-Hexane	6.12E-06	-	No	5.36E-02	2.70E+05	No
7439-92-1	Lead	4.85E-07	-	No	4.25E-03	2.90E-01	No
7439-96-5	Manganese	3.69E-07	-	No	3.23E-03	3.50E+00	No
7439-97-6	Mercury	2.52E-07	2.70E-04	No	2.21E-03	2.10E-01	No
91-20-3	Naphthalene	5.92E-07	-	No	5.19E-03	3.30E-03	Yes
7440-02-0	Nickel	2.04E-06	8.80E-05	No	1.79E-02	3.10E-01	No
1150/1151	PAH (as benzo(a)pyrene-equiv.)	6.53E-09	-	No	5.72E-05	3.30E-03	No
115-07-1	Propylene	7.10E-04	-	No	6.22E+00	1.20E+05	No
7782-49-2	Selenium	1.17E-08	-	No	1.02E-04	8.00E+00	No
7440-62-2	Vanadium	2.23E-06	1.30E-02	No	1.95E-02	-	No

Abatement Efficiency	
Organic and H ₂ S Abatement Efficiency ¹	0.75
PM Abatement Efficiency ²	0.5

1) This assumes that the biofilter (and carbon adsorber, as applicable) achieves at least 75% abatement for all organics.

2) This assumes that toxic PM emissions are abated by 50% because the only toxic PM emissions are from combustion, and these emissions will go through a cyclone.

Abated Toxic Emissions Summary							
CAS	Compound	Hourly Emissions (lbs/hr)	BAAQMD 2-5 trigger level (lbs/hr)	Hourly Trigger Level Exceeded?	Annual Emissions (lbs/yr)	BAAQMD 2-5 trigger level (lbs/yr)	Annual Trigger Level Exceeded?
71-43-2	Benzene	1.28E-05	1.20E-02	No	8.24E-02	2.90E+00	No
67-66-3	Chloroform	3.95E-04	6.60E-02	No	3.32E+00	1.50E+01	No
50-00-0	Formaldehyde	6.61E-04	2.40E-02	No	5.70E+00	1.40E+01	No
127-18-4	Perchloroethylene	1.29E-04	8.80E+00	No	1.08E+00	1.40E+01	No
100-42-5	Styrene	3.86E-06	9.30E+00	No	1.06E-02	3.50E+04	No
108-88-3	Toluene	2.12E-03	2.20E+00	No	5.21E+00	1.60E+04	No
71-55-6	1,1,1-Trichloroethane	8.01E-05	3.00E+01	No	6.44E-01	3.90E+04	No
79-01-6	Trichloroethylene	1.01E-04	-	No	8.50E-01	4.10E+01	No
75-35-4	Vinylidene chloride	2.96E-05	-	No	2.00E-01	2.70E+03	No
56-23-5	Carbon tetrachloride	1.82E-06	8.40E-01	No	3.96E-03	1.90E+00	No
1330-20-7	Xylenes	8.84E-05	9.70E+00	No	6.12E-01	2.70E+04	No
75-01-4	Vinyl chloride	5.84E-06	8.00E+01	No	1.63E-02	1.10E+00	No
75-07-0	Acetaldehyde	1.07E-02	2.10E-01	No	2.65E+01	2.90E+01	No
7664-41-7	Ammonia	1.51E-06	1.40E+00	No	1.32E-02	7.70E+03	No
108-90-7	Chlorobenzene	1.25E-07	-	No	1.09E-03	3.90E+04	No
100-41-4	Ethyl Benzene	1.29E-05	-	No	1.13E-01	3.30E+01	No
7783-06-4	Hydrogen Sulfide	4.75E-04	1.90E-02	No	4.16E+00	3.90E+02	No
75-09-2	Methylene Chloride	4.18E-04	6.20E+00	No	3.50E+00	8.20E+01	No
107-02-8	Acrolein	6.56E-07	1.10E-03	No	5.75E-03	1.40E+01	No
7440-38-2	Arsenic	9.70E-08	8.80E-05	No	8.50E-04	1.60E-03	No
7440-41-7	Beryllium	2.91E-09	-	No	2.55E-05	3.40E-02	No
7440-43-9	Cadmium	5.35E-07	-	No	4.68E-03	1.90E-02	No
7440-50-8	Copper	4.12E-07	4.40E-02	No	3.61E-03	-	No
110-54-3	n-Hexane	1.53E-06	-	No	1.34E-02	2.70E+05	No
7439-92-1	Lead	2.43E-07	-	No	2.12E-03	2.90E-01	No
7439-96-5	Manganese	1.85E-07	-	No	1.62E-03	3.50E+00	No
7439-97-6	Mercury	1.26E-07	2.70E-04	No	1.11E-03	2.10E-01	No
91-20-3	Naphthalene	1.48E-07	-	No	1.30E-03	3.30E-03	No
7440-02-0	Nickel	1.02E-06	8.80E-05	No	8.93E-03	3.10E-01	No
1150/1151	PAH (as benzo(a)pyrene-equiv.)	1.63E-09	-	No	1.43E-05	3.30E-03	No
115-07-1	Propylene	1.77E-04	-	No	1.55E+00	1.20E+05	No
7782-49-2	Selenium	5.84E-09	-	No	5.12E-05	8.00E+00	No
7440-62-2	Vanadium	1.11E-06	1.30E-02	No	9.76E-03	-	No



Draft
INITIAL STUDY/ANTICIPATED MITIGATED NEGATIVE DECLARATION
Town of Windsor Wastewater Reclamation Facility Biosolids Treatment and
Disposal Upgrades
November 2022

Appendix B: Biological Resource Assessment

BIOLOGICAL RESOURCE ASSESSMENT

for the

Town of Windsor

Wastewater Reclamation Plant

Biosolids Treatment and Disposal – Phase 2 Project

Windsor, California

prepared for

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BIOLOGICAL RESOURCES

Background and Methods

Environmental Collaborative was retained by Hazen and Sawyer to conduct a *Biological Resource Assessment* of the Wastewater Reclamation Plant Biosolids Treatment and Disposal – Phase 2 Project at the Windsor Wastewater Treatment Plant in Windsor, California (see attached Treatment Plant and Project Area map). The site consists of an existing sludge disposal pond located at the eastern edge of the site, along the south side of the Windsor Creek corridor that bisects the Wastewater Treatment Facility property. The sludge disposal pond is surrounded by a levee system that is topped with a gravel maintenance road. This report serves as the *Biological Resource Assessment* (BRA) of the site, providing a summary of the biological resources on the site, conclusions regarding presence or absence of any sensitive biological or wetland resources, and an evaluation of the potential impacts of the proposed project.

Biological Resources on the site were identified through the review and compilation of existing information and conduct of a field reconnaissance survey. The review provided information on general resources in the project vicinity, and the distribution and habitat requirements of special-status species which have been recorded from or are suspected to occur in the Windsor and surrounding Sonoma County area. Background information reviewed includes occurrence records of special-status species and sensitive natural communities maintained by the California Natural Diversity Data Base (CNDDDB) of the California Department of Fish and Wildlife (CDFW), mapping of critical habitat for federally-listed species designated by the U.S. Fish and Wildlife (USFWS), mapping of wetlands as part of the National Wetland Inventory prepared by the USFWS, and data available from the Santa Rosa Plain Conservation Strategy,¹ among other sources.

A field reconnaissance survey of the site was conducted on 19 September 2022. The field reconnaissance was used to determine existing conditions on the site, the potential for suitable habitat for special-status species, and whether any additional detailed surveys were necessary. The perimeter of the site was inspected during the survey, with periodic entrance into the dense riparian cover along the adjacent Windsor Creek corridor, to determine vegetative cover, and indicators of any sensitive resources such as wetlands or essential habitat features for special-status species.

The following provides the results of the background information review, field reconnaissance survey and assessment for the BRA.

¹ U.S. Fish and Wildlife Service, 2005. *Santa Rosa Plain Conservation Strategy, Final*. December 1.

SETTING

Vegetation and Wildlife Habitat

The site has been extensively disturbed by past construction and maintenance of the sludge pond and levee system. Vegetative cover is largely absent with the exception of a dense mat of the invasive creeping water primrose (*Ludwigia peploides*) which covers the entire bottom and lower to mid-elevations of the bottom. Some liquid was present at the lowest elevations in the bottom of the pond visible through the creeping water primrose. A sparse cover of ruderal (weedy) grassland cover occurs at the upper banks of the levees, with gravel over the levee top around the entire pond. These include: Bermuda grass (*Cynodon dactylon*), wild oats (*Avena fatua*), brome (*Bromus* spp. (field bindweed (*Convolvulus arvensis*), birdfoot trefoil (*Lotus corniculatus*), and clover (*Trifolium* sp.).

The developed areas of the site have relatively low wildlife habitat values due to the absence of cover and foraging opportunities. Birds likely forage in the dense carpet of creeping water primrose, but it is unlikely that many species can survive in the sludge bed, even when hydrated by surface water. Areas of ruderal cover are of only marginal habitat value but do provide foraging opportunities for birds and small mammals common in suburban habitats, such as English sparrow, house finch, pocket gopher, and house mouse.

The adjacent Windsor Creek corridor forms the northwestern edge of the sludge pond and is composed of a dense riparian woodland of primarily native trees and shrubs. These include valley oaks (*Quercus lobata*), coast live oak (*Quercus agrifolia*), California buckeye (*Aesculus californica*), willow (*Salix* sp.), poison oak (*Toxicodendron diversilobum*), wild grape (*Vitis californicus*), with an understory of ruderal grassland species and invasive periwinkle (*Vinca major*).

Contrary to the habitat conditions on the site, the Windsor Creek corridor provides important habitat to wildlife. The dense riparian vegetation provides protective cover and serves as a movement corridor for deer and other wildlife. The surface water provides a source of drinking water and supports aquatic-dependent species. The mature trees provide foraging and roosting opportunities to numerous species of birds and may support nest locations during the nesting season (typically February 1 through August 31). Species associated with the riparian corridor include black-tailed deer, raccoon, opossum, eastern fox squirrel, deer mouse, woodpeckers, scrub jay, brown towhee, and mourning dove, among others. Raptors such as red-tailed hawk, great horned owl, and American kestrel may roost and possibly nest in the larger trees in the corridor. No evidence of active nesting was observed, but it is possible that new nests could be established in the future. Nests of native bird species are protected

under the federal Migratory Bird Treaty Act (MBTA) and California Fish and Game Code when they are in active use.

Special-Status Species

Special-status species² are plants and animals that are legally protected under the state and/or federal Endangered Species Acts³ or other regulations, as well as other species that are considered rare enough by the scientific community and trustee agencies to warrant special consideration, particularly with regard to protection of isolated populations, nesting or denning locations, communal roosts and other essential habitat. Species with legal protection under the Endangered Species Acts often represent major constraints to development, particularly when they are wide ranging or highly sensitive to habitat disturbance and where proposed development would result in a "take"⁴ of these species.

The habitat suitability assessment was conducted as part of the field reconnaissance survey to determine whether suitable habitat for any special-status species occurs on the study area. Past grading and on-going maintenance precludes the occurrence of any special-status plant species known or suspected to occur in the remaining grasslands and vernal pools in the Windsor area. These include: Sonoma alopecurus (*Alopecurus aequalis* var. *sonomensis*), Sonoma sunshine (*Blennospera bakeri*), Burke's goldfields (*Lasthenia burkei*), legenere (*Legenere limosa*), Sebastopol meadowfoam (*Limnanthes vinculans*), many-flowered navarretia (*Navarretia leucocephala* ssp. *pauciflora*), north coast semaphore grass (*Pleuropogon hooverianus*), and showy Indian clover (*Trifolium amoenum*), among others. As indicated in **Figure 1**, no specific occurrences of special-status plant species have been reported from the site by the CNDDDB. A general occurrence of narrow-anthered brodiaea (*Brodiaea leptandra*) extends over the entire Windsor area, based on a collection

² Special-status species include: designated rare, threatened, or endangered and candidate species for listing by the CDFW; designated threatened or endangered and candidate species for listing by the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NOAA Fisheries); species considered rare or endangered under the conditions of Section 15380 of the *CEQA Guidelines*, such as those plant species identified with a Rare Plant Rank of 1A, 1B and 2 in the California Native Plant Society's *Inventory of Rare and Endangered Plants of California* (Inventory); and possibly other species which are considered sensitive or of special concern due to limited distribution or lack of adequate information to permit listing or rejection for state or federal status, such as those with a Rare Plant Rank of 3 in the California Native Plant Society's *Inventory* or identified as "California Special Concern" species by the CDFW.

³ The federal Endangered Species Act (FESA) of 1973 declares that all federal departments and agencies shall utilize their authority to conserve endangered and threatened plant and animal species. The California Endangered Species Act (CESA) of 1984 parallels the policies of FESA and pertains to native California species.

⁴ "Take" as defined by the FESA means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect" a threatened or endangered species. "Harm" is further defined by the USFWS to include the killing or harming of wildlife due to significant obstruction of essential behavior patterns (i.e., breeding, feeding, or sheltering) through significant habitat modification or degradation. The CDFW also considers the loss of listed species habitat as take, although this policy lacks statutory authority and case law support under the CESA.

made in 1936 from the general vicinity of Windsor. Based on observed conditions on the site and absence of suitable habitat, no special-status plant species are suspected to occur on the site due to the extent of past and on-going disturbance.

Figure 2 shows the distribution of known occurrences of special-status animal species reported from about a five mile radius of the site and **Table 1** provides a summary of the special-status animal species considered to occur in the Windsor vicinity. However, suitable habitat for special-status animal species is also absent from the site. This includes absence of suitable breeding, nesting, dispersal, or essential foraging habitat for listed species such as the federally-endangered and State-threatened California tiger salamander (*Ambystoma californiense*), the State and federally-endangered California freshwater shrimp (*Syncaris pacifica*), the federally-threatened California red-legged frog (*Rana aurora draytonii*), the State-endangered and proposed federally-threatened foothill yellow-legged frog (*Rana boylei*), and the federally-threatened steelhead (*Oncorhynchus mykiss*), as well as species considered to be California Species of Special Concern (SSC) species by the CDFW or protected under the State Fish and Game Code such as western pond turtle (*Emys marmorata*). As indicated in **Figure 2**, an occurrence of western pond turtle was reported by the CNDDDB from a treatment pond on the north side of Windsor Creek in 2003. The site is outside the mapped range and designated critical habitat of the Sonoma population of California tiger salamander (see **Figure 2**). The sludge deposits in the pond create aquatic conditions that are unsuitable for aquatic-dependent species such as California freshwater shrimp, steelhead, California tiger salamander, California red-legged frog, foothill yellow-legged frog and western pond turtle.

The nearby riparian woodland along Windsor Creek does provide potential foraging and nesting opportunities for numerous bird species and foraging opportunities for a number of bat species, a number of which are considered SSC by the CDFW as indicated in **Table 1**. No suitable roosting habitat for bats or nesting habitat for birds is present on the site itself. No evidence of any nesting activity by bird species considered to be SSC species or more common species was observed during the field reconnaissance survey, and the intensity of human activity in the area makes the likelihood of future nesting by raptors highly unlikely. However, new nests could be established in the future.

TABLE 1. SPECIAL-STATUS ANIMAL SPECIES WITH THE POTENTIAL TO OCCUR IN THE PROJECT SITE VICINITY

Species Name	Status (federal/State) ^a	Habitat Characteristics (Occurrence within the Project Site Vicinity)
Fish/Amphibians/Reptiles		
California tiger salamander	FT/ST, SSC	Grassland and open woodlands with temporary or permanent (unlikely)
Western pond turtle	-/SSC	Ponds, marshes, rivers and streams (unlikely)
California red-legged frog	FT/SSC	Permanent ponds, pools, and streams (unlikely)
Foothill yellow-legged frog	-/SSC	Perennial streams (unlikely)
Steelhead Trout	FT/	Perennial and intermittent streams (unlikely)
Birds		
Golden eagle	-/SSC, CP	Open mountains, foothills, and canyons (unlikely)
Burrowing owl	-/SSC	Open grassland and fields, farms, and ruderal areas (unlikely)
Cooper's hawk	-/-	Riparian and woodland habitat (possible)
Sharp-shinned hawk	-/-	Riparian and woodland habitat (possible)
Northern harrier	-/SSC	Marshes, fields, and grassland (possible)
White-tailed kite	-/CP	Open foothills, marshes, and grassland (possible)
California horned lark	-/-	Open habitat with sparse cover (unlikely)
Prairie falcon	-/-	Canyons, mountains, open grassland (foraging possible)
Peregrine falcon	Delisted/ Delisted, CP	Canyons, mountains, open grassland (foraging possible)
Loggerhead strike	-/SSC	Open habitat with scattered trees, shrubs, and other perches (unlikely)
Mammals		
American badger	-/SSC	Open grassland, scrub and savanna (unlikely)
Pallid bat	-/SSC	Roosts in tree hollows, crevices, unused structures (foraging possible)
Townsend western big-eared bat	-/C, SSC	Roosts in caves, mines, and unused buildings (foraging possible)
Western red bat	-/SSC	Roosts in trees (foraging possible)
Western yellow bat	-/SSC	Roosts in trees (foraging possible)
Little brown bat	-/-	Roosts in caves and buildings (foraging possible)
Yuma bat	-/-	Roosts in caves, mines and buildings (foraging possible)

a: Status Designations:

Federal:

FE = Listed as Endangered under federal Endangered Species Act

FT = Listed as Threatened under federal Endangered Species Act

PE = Proposed for federal listing as "endangered"

PT = Proposed for federal listing as "threatened"

State:

SE = Listed as Endangered under the California Endangered Species Act

ST = Listed as Threatened under the California Endangered Species Act

C = Candidate species under review for listing, includes taxa for which the CDFW has sufficient biological information to support a proposal to list as endangered or threatened

CP = California fully protected species; individuals may not be possessed or taken at any time

Wetlands

Although definitions vary to some degree, wetlands are generally considered to be areas that are periodically or permanently inundated by surface or ground water, and support vegetation adapted to life in saturated soil. Wetlands are recognized as important features on a regional and national level due to their high inherent value to fish and wildlife, use as storage areas for storm and flood waters, and water recharge, filtration and purification functions. The CDFW, Corps, and Regional Water Quality Control Board (RWQCB) have jurisdiction over modifications to stream channels and other wetland features.⁵

Regulated waters are absent on the site. Surface water was observed in very bottom of the sludge pond, which is covered with invasive creeping water primrose. However, this is a man-made structure constructed in uplands as part of the Wastewater Treatment Plant facilities, and as such is not a State or federally-regulated waters.

The nearby Windsor Creek corridor is a State and federally-regulated waters. The federal jurisdiction under Section 404 of the Clean Water Act extends to the Ordinary High Water Mark (OHWM) along the active channel bottom. The limits of State waters extends to the edge of the woody riparian vegetation, well beyond the OHWM. But the outboard side of the maintenance levee to the sludge pond separates the regulated riparian woodland habitat from the site.

Relevant Goals, Policies, and Ordinances

The Environmental Resources element of the *Town of Windsor 2040 General Plan*⁶ contains biological goals and policies relevant to biological resources. Most of these pertain to protection of sensitive resources such as wetlands, riparian woodlands, oaks and heritage trees. scenic resources, creeks, mature oaks and other native trees, and open space lands.

Goal ER-6: Biological Resources. *Protect unique and sensitive biotic features such as rare and endangered plant and animal species, dense*

⁵ Jurisdiction of the Corps is established through the provisions of §404 of the Clean Water Act, which prohibits the discharge of dredged or fill material into "waters" of the United States without a permit, including wetlands and unvegetated "other waters of the U.S.". Jurisdictional authority of the CDFW over wetland areas is established under §1600 of the Fish and Game Code, which pertains to activities that would disrupt the natural flow or alter the channel, bed, or bank of any lake, river, or stream. The Fish and Game Code stipulates that it is "unlawful to substantially divert or obstruct the natural flow or substantially change the bed, channel or bank of any river, stream or lake" without notifying the Department, incorporating necessary mitigation, and obtaining a Streambed Alteration agreement. The RWQCB is responsible for upholding state water quality standards pursuant to Section 401 of the Clean Water Act and for regulating wetlands under the Porter-Cologne Water Quality Act.

⁶ Town of Windsor, 2018. *Town of Windsor 2040 General Plan*. Adopted April 4.

oak woodlands, and vernal pools, and encourage sensitive design in these areas

Policies

ER-6.1 Protection of Biological and Ecological Resources. *The Town shall protect significant biological and ecological resources in Windsor, including:*

- a. Wetlands, in particular, high value wetlands*
- b. Rare, threatened, or endangered species*
- c. Vulnerable habitats*
- d. Vernal pools*
- e. Oak groves and woodlands*
- f. Riparian woodlands*
- g. Heritage trees*

ER-6.2 Sensitive Resources Inventory for New Development. *The Town shall require a detailed inventory of sensitive resources conducted by an independent, professionally qualified biologist, plant ecologist, arborist, or appropriately qualified specialist for development proposals in sensitive and vulnerable habitats. If sensitive resources are identified on the project site, proposals to protect them shall conform with applicable State and Federal regulations regarding their protection and may include avoidance of the resource, installing vegetative buffers, providing setbacks, clustering development onto less sensitive areas, preparing restoration plans, and off-site mitigation.*

ER-6.3 Biological Studies for Undeveloped Areas. *The Town shall require project applicants to provide a biological assessment for projects on undeveloped parcels, unless a biological assessment has previously been prepared for the specific site. The purpose of these assessments is to identify appropriate mitigation measures to avoid or minimize harm to these resources and to incorporate the recommended measures as conditions of approval.*

ER-6.4 Compliance with State and Federal Wetland Regulations. *The Town shall ensure that development projects that would fill wetlands or vernal pools conform with applicable State and Federal regulations regarding the protection of these resources.*

ER-6.5 Applicant Mitigation Obligation. *The Town shall ensure the protection or restoration of sensitive biological resources that is required as a condition or mitigation of a development project is closely monitored at the cost of the project applicant to determine compliance with the condition or mitigation and to evaluate the effectiveness of the measure.*

ER-6.6 Prohibition of Certain Activities in Riparian Habitats. *The Town shall prohibit dumping or disposal of refuse; confinement of livestock; and structural improvements except necessary water supply projects, flood control projects, fish and wildlife enhancement projects, trail projects, road and bridge projects, and utility projects in significant riparian areas.*

ER-6.7 Preservation of Oak Woodlands. *The Town shall encourage the preservation of oak woodlands and significant stands of oaks and heritage trees. Development plans should indicate preservation of these resources to the fullest extent feasible and restrict pavement and other encroachments within the root zones of oak trees to ensure their long term survival. Should removal be necessary, the project applicant shall be required to plant replacement trees or removal can be done through the payment of an in-lieu fee.*

ER-6.8 Tree Protection During Construction. *The Town shall require proper measures be implemented to ensure the long-term survival of trees designated in the Tree Preservation and Protection Ordinance during construction activities. Fencing around individual trees or groups of trees shall be required to protect them from compaction and mechanical injury.*

ER-6.9 Ecological Education and Access. *Along creeks, wetlands, and vernal pools, the Town should encourage controlled public access, where appropriate, to educate the public regarding the area's natural resources and ecological processes.*

ER-6.10 Interpretative Learning along Waterways. *The Town shall encourage interpretive signage for education purposes in public access areas along streams and creeks.*

ER-6.11 Natural Area Acquisition. *The Town shall support Sonoma County and other open space organizations in efforts to acquire valuable ecological lands.*

The Tree Preservation and Protection Ordinance (Chapter 27.36 of the Town's Zoning Ordinance) provides comprehensive information related to tree preservation and protection. The removal of trees meeting a minimum trunk size is regulated under the Ordinance and requires of a tree removal permit, preparation of a tree protection plan, restrictions within the Tree Protection Zone around trees to be retained, and mitigation where removal is not avoidable. The focus in the ordinance is preservation of native oaks, California buckeye, and California bay (*Umbellularia californica*).

POTENTIAL IMPACTS AND MITIGATION MEASURES

Significance Criteria

The biological resources analysis uses criteria from the State CEQA Guidelines. According to the CEQA Guidelines a proposed project would have potentially significant biological resources impacts if it would:

1. 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 US Fish and Wildlife Service.

2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or US Fish and Wildlife Service.
3. Have a substantial or adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
4. 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.
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

Impact 1: Special Status Species

*The proposed project would not adversely affect any special-status species. However, there is a remote possibility that active bird nests protected under the Migratory Bird Treaty Act and State Fish and Game Code or western pond turtles could be disturbed during construction if adequate controls are not taken. **Potentially Significant Impact.***

No special-status plant species occur on the site and essential habitat for special-status animal species is absent. This includes absence of breeding, dispersal, or aestivation habitat for California tiger salamander, California red-legged frog, steelhead, California freshwater shrimp, and western pond turtle. No western pond turtles were observed at the site during the field reconnaissance survey or have been reported from the sludge pond by workers at the treatment facility, other than the 2003 record from a different tertiary treatment pond on the north side of Windsor Creek. There is a remote possibility that western pond turtle could move into the sludge pond in advance of construction if enough water were to pond to allow for temporary aquatic habitat. But suitable nesting habitat and permanent aquatic habitat is on the site and if an individual turtle were to occupy the pond before construction starts it could be relocated to nearby habitat, as recommended below. Foraging by bats, including a number of special-status bat species is not expected to be significantly disrupted as construction activities would take place during the day and no roosting substrate would be affected. No significant impacts on special-status species are anticipated as a result of the project.

Grading and construction would be limited to the highly disturbed area of the sludge pond and surrounding maintenance roads. No trees or other suitable bird

nesting substrate would be affected. But construction would occur in close proximity to the Windsor Creek riparian corridor and could disrupt nesting by native birds and result in abandonment of an active nest(s) given the proximity of construction. Destruction or abandonment of a nest in active use would be a violation of the MBTA and State Fish and Game Code. Appropriate avoidance measures would be required to ensure compliance with these regulations.

A standard method to address the potential for nesting birds is either to initiate construction during the non-nesting season, which in the Windsor area is typically from September 1 to January 31, or to conduct a nesting survey within 7 days prior to initial construction to determine whether any active nests are present that must be protected with appropriate setbacks until any young have fledged and are no longer dependent on the nest. Protection of the nest(s), if present, would require that construction setbacks be provided during the nesting and fledging period, with the setback depending on the type of bird species, degree to which the individuals have already acclimated to other ongoing disturbance, and other factors. Without these controls, construction activities associated with the proposed project could adversely affect nesting birds associated with the Windsor Creek corridor and surrounding mature trees, which would be a potentially *significant* impact.

The following mitigation measures are recommended to avoid possible bird nests in active use and the remote potential for western pond turtles in the sludge pond.

Mitigation Measure BIO-1.1: Adequate measures shall be taken to avoid inadvertent take of bird nests of native species protected under the federal Migratory Bird Treaty Act and State Fish and Game Code when in active use. This shall be accomplished by taking the following steps:

- If construction is proposed during the nesting season (February 1 to August 31), a focused survey for nesting raptors and other migratory birds shall be conducted by a qualified biologist within 7 days prior to the onset of tree and vegetation removal in order to identify any active nests on the site and surrounding area within 100 feet of proposed construction. The proposed development area of the project site shall be resurveyed to confirm that no new nests have been established if construction has been delayed or curtailed for more than 7 days during the nesting season.
- If no active nests are identified during the construction survey period, or development is initiated during the non-breeding season (September 1 to January 31), project construction may proceed with no restrictions.
- If bird nests are found, an adequate setback shall be established around the nest location and construction activities restricted within this no-disturbance zone until the qualified biologist has confirmed that any young birds have fledged and are able to function outside the nest location.

Required setback distances for the no-disturbance zone shall be based on input received from the CDFW, and may vary depending on nest location, species, and sensitivity to disturbance. As necessary, the no-disturbance zone shall be fenced with temporary orange construction fencing if construction is to be initiated on the remainder of the proposed development area on the project site.

- A report of findings shall be prepared by the qualified biologist and submitted for review and approval by the Town prior to initiation of construction during the nesting season (February 1 to August 31). The report shall either confirm absence of any active nests or should confirm that any young are located within a designated no-disturbance zone and construction can proceed. Following approval by the Town, tree removal, building demolition, and construction within the nest buffer zone may proceed. No report of findings is required if vegetation removal and other construction is initiated during the non-nesting season (September 1 to January 31) and continues uninterrupted according to the above criteria.

Mitigation Measure BIO-1.2: Adequate measures shall be prevent inadvertent take of western pond turtles if any individual(s) were to move into the sludge pond on the site before construction proceeds. This shall be accomplished by taking the following steps:

- If water is present in the sludge pond when construction is to proceed, a focused survey for western pond turtle shall be conducted by a qualified biologist within 7 days prior to any dewatering or grading of the pond.
- If turtles are found to be present in the pond, a dewatering plan shall be implemented under the supervision of the qualified biologist and the turtles captured and relocated to secure habitat in the nearby area.
- All construction crew involved in the initial dewatering and grading for the project shall be trained by the qualified biologist over the remote potential for presence of western pond turtle in the sludge pond. That if any turtles are observed, that all work shall stop until they have been safely relocated to nearby secure habitat as required above.

Significance with Mitigation: Less than significant.

Impact 2: Sensitive Natural Communities

*The proposed project would not adversely affect any sensitive natural communities. **No Impact.***

No sensitive natural communities, such as riparian woodland or vernal pools, occur on the site and no impacts are therefore anticipated. The adjacent riparian woodland along the Windsor Creek corridor qualifies as a sensitive natural

community type, but not incursion into the woodland is proposed as part of the project. No oaks or other trees are proposed for removal. No sensitive natural communities would be affected, and no significant adverse impacts are anticipated.

No mitigation is required.

Impact 3: Wetlands

*The proposed project would not adversely affect jurisdictional wetlands and construction controls would prevent any adverse impacts on the nearby Windsor Creek corridor. **Less than Significant Impact.***

Proposed improvements would eliminate the existing sludge pond and related infrastructure to accommodate the proposed biotreatment facility, but no modifications to the adjacent Windsor Creek corridor are proposed. The sludge pond is a man-made feature excavated in uplands as part of the Town's Wastewater Treatment Plant operations and is therefore not a regulated State or federal waters.

A Stormwater Pollution Prevention Plan will be prepared addressing all water-quality, sedimentation, and erosion aspects of the proposed project, including adequate controls to address any potential direct and indirect impacts on nearby Windsor Creek. The Stormwater Pollution Prevention Plan will be prepared by a qualified engineer utilizing Best Management Practices.

No mitigation is required.

Impact 4: Wildlife Habitat and Movement Opportunities

*The proposed project would not substantially affect wildlife habitat, nursery areas, or important movement corridors. **Less-than-Significant Impact.***

Proposed development would convert the existing sludge pond to a biotreatment facility, but this would not adversely affect any particularly sensitive wildlife habitat, nursery areas, or important movement corridors. No trees are proposed for removal and the Windsor Creek corridor would remain undisturbed and available for wildlife movement. Construction would temporarily disrupt wildlife activities in the vicinity during daylight hours, but these would be temporary, and the area would remain accessible for foraging by birds and other wildlife common in the area. Mitigation Measure BIO-1 would ensure that any active nests for native birds are protected during the nesting season. No significant adverse impacts on wildlife movement opportunities or nursery areas are anticipated.

No mitigation is required.

Impact 5: Conflict with Local Policies or Ordinances

The proposed project would not conflict with any local plans or ordinances protecting biological resources. Adequate controls would be implemented to avoid Windsor Creek and to ensure avoidance of any active bird nests **Less-than-Significant Impact.**

The proposed project would not conflict with any goals or policies of the Town's General Plan. This BRA serves to provide the background information called for in policies ER-6.2, *Sensitive Resources Inventory for New Development* and ER-6.3, *Biological Studies for Undeveloped Areas*. No sensitive resources occur on the site and the nearby Windsor Creek corridor would be avoided. No native trees would be removed as part of the project and the site is a highly disturbed sludge pond with very limited wildlife habitat values. Mitigation Measure BIO-1 recommended above, calls for avoidance of any native bird nests when in active use, and ensure compliance with the MBTA and State Fish and Game Code. No conflicts with local plans and policies are anticipated and no significant adverse impacts are anticipated.

No mitigation is required.

Impact 6: Conflict with Habitat or Community Conservation Plans

*The proposed project would not conflict with any adopted Habitat or Community Conservation Plans. **No Impact.***

The proposed project would not conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved conservation plan. No such conservation plans have been adopted encompassing the project vicinity, and no impact is therefore anticipated.

The *Santa Rosa Plain Conservation Strategy* was prepared to establish a long-term conservation program sufficient to mitigate potential adverse effects on listed species due to future development on the Santa Rosa Plain. The *Conservation Strategy* was prepared by an Implementation Committee comprised of representatives of local agencies (including Windsor), USFWS, CDFG, and the agricultural, environmental and private landowner communities. One of the ultimate goals of the *Conservation Strategy* is to contribute to the recover of the Sonoma County population of California tiger salamander, as well as four listed special-status plant species, Burke's goldfield, Sonoma sunshine, Sebastopol meadowfoam and many-flowered navarretia.

The *Conservation Strategy* identifies ten Conservation and Preserve Areas, one of which is centered in the Windsor vicinity. The Windsor Plant Conservation Areas designated in the *Conservation Strategy* occur at the southwestern, southeastern, and northwestern limits of the projected Urban Growth Boundary. None extend to within a half mile of the site. The site has been identified as "Already Developed or Permitted" (see Figure 1) and "Out of Potential Range for CTS" (see Figure 2) in the *Conservation Strategy*. The proposed project would not conflict with any mapped resources identified in the *Conservation Strategy*, which assumes the site is already developed, outside the suspected range of California tiger salamander, and within the Urban Growth Boundaries for Windsor. No adverse impacts are anticipated, and no significant adverse impacts are anticipated.

No mitigation is required.

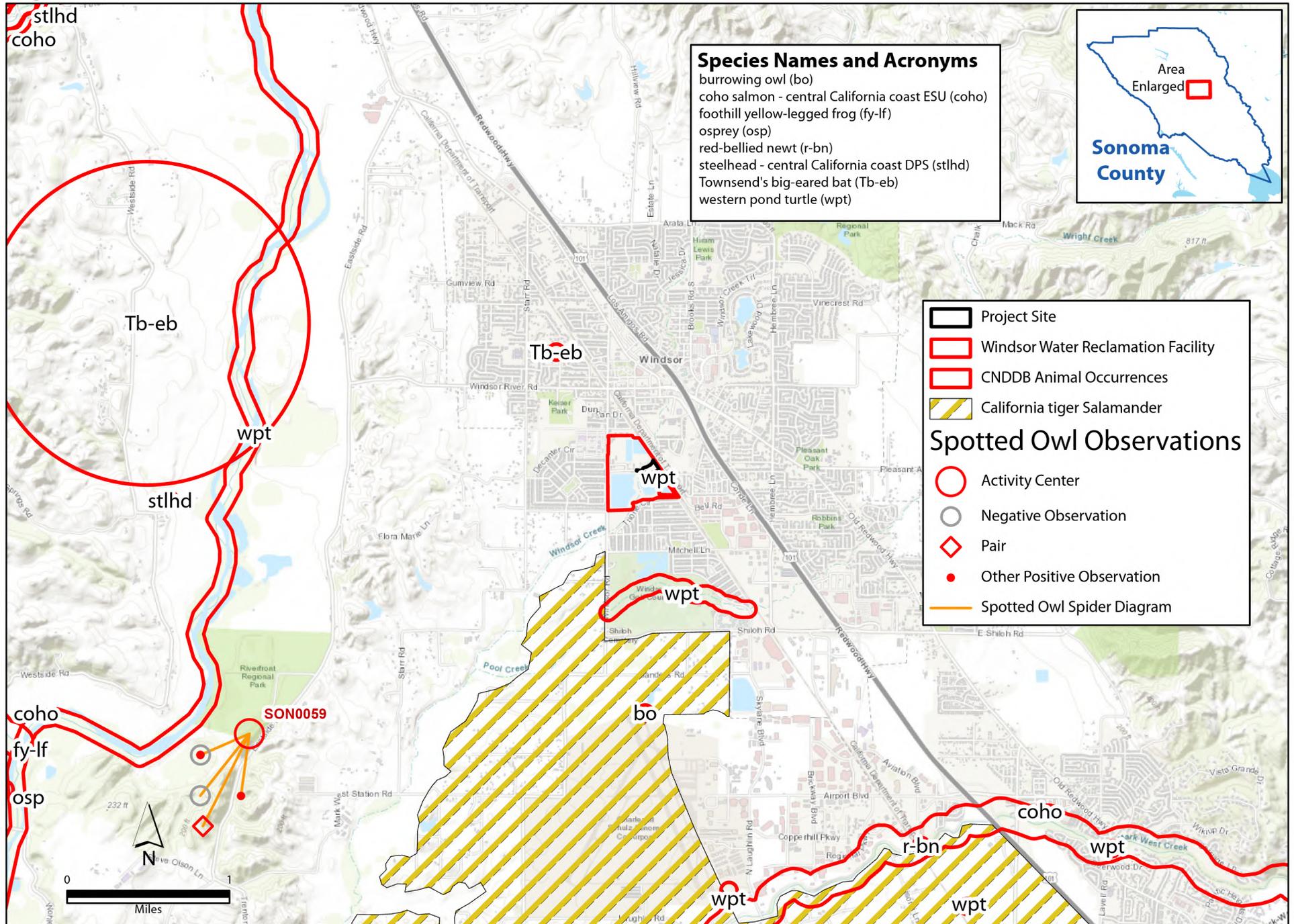
APPENDIX A
PERSONS INVOLVED IN REPORT PREPARATION

This report was prepared by ENVIRONMENTAL COLLABORATIVE under contract to Hazen and Sawyer. Mr. James Martin, Principal of ENVIRONMENTAL COLLABORATIVE, served as the principal biologist and conducted the field reconnaissance survey, and prepared this written report. Any questions regarding this report may be directed to Mr. Martin by telephoning (510) 393-0770.



-  Approximate Boundaries of Windsor Water Reclamation Facility
-  Approximate Boundaries of Project Area

Figure 2. Special-Status Animals and Critical Habitat



SOURCES: California Natural Diversity Database release date 5/1/2022 accessed on 6/6/2022; USFWS critical habitat data release date 6/3/2022 accessed on 6/6/2022. Basemap by: ESRI. Map produced by www.digitalmappingsolutions.com on 9/12/2022.