

YOLO COUNTY CENTRAL LANDFILL PERMIT REVISIONS

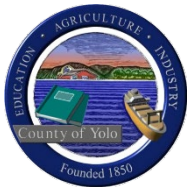
Draft Environmental Impact Report

SCH No. 2020080465

July 2021



Prepared for:
Yolo County Department of Community Services
292 W. Beamer Street
Woodland, CA 95695



Prepared by:

RCHGROUP
planning & environmental consulting



County of Yolo

DEPARTMENT OF COMMUNITY SERVICES

Taro Echiburú, DIRECTOR

Planning, Building & Public Works

292 West Beamer Street
Woodland, CA 95695-2598
(530) 666-8775
FAX (530) 666-8156
www.yolocounty.org

Environmental Health

292 West Beamer Street
Woodland, CA 95695-2598
(530) 666-8646
FAX (530) 669-1448
www.yolocounty.org

Integrated Waste Management

44090 CR 28 H
Woodland, CA 95776
(530) 666-8852
FAX (530) 666-8853
www.yolocounty.org

NOTICE OF AVAILABILITY AND SPECIAL PUBLIC MEETING for the DRAFT ENVIRONMENTAL IMPACT REPORT for the YOLO COUNTY CENTRAL LANDFILL (YCCL) PERMIT REVISIONS

DATE: July 30, 2021
TO: Responsible Agencies and Individuals
FROM: Yolo County Department of Community Services

The Draft Environmental Impact Report (DEIR) (SCH #2020080465) for the Yolo County Central Landfill (YCCL) Permit Revisions is now available for review. The public is invited to comment on this document for a 45-day period extending from Friday, July 30, 2021, to Monday, September 13, 2021, at 4:00 pm.

A special virtual public meeting via Zoom Webinar will be held on Wednesday, August 18, 2021, at 10:00 am. Connection information is provided directly below.

<https://us02web.zoom.us/j/82777037287?pwd=d2pWUkhMUzdsSIVjUDZuWTNfQ1h0OQT09>

Webinar ID: 827 7703 7287

Passcode: 2021

Or One tap mobile:

+16699006833,,82777037287#,,,,*2021# US (San Jose)

+13462487799,,82777037287#,,,,*2021# US (Houston)

Or join by phone:

Dial (for higher quality, dial a number based on your current location):

US: +1 669 900 6833 or +1 346 248 7799 or +1 253 215 8782 or +1 929 205 6099 or +1 301 715
8592 or +1 312 626 6799

Webinar ID: 827 7703 7287

Passcode: 2021

International numbers available: <https://us02web.zoom.us/j/kdWBNwSPnV>

Yolo County (County) is the Lead Agency for the preparation and review of the DEIR for the YCCL Permit Revisions (Project). The Project evaluated in the DEIR consists of several changes to YCCL's existing operations

and permits including but not limited to the Solid Waste Facility Permit (SWFP), Yolo-Solano Air Quality Management District Permits, and Waste Discharge Requirements. One aspect of the Project, development of a non-specific future off-site borrow area, may also require a mining permit under the state Surface Mining and Reclamation Act (SMARA) and Yolo County's Agricultural Surface Mining and Reclamation Ordinance. The Project is subject to the California Environmental Quality Act (CEQA) because the Project requires several discretionary actions by public bodies.

The YCCL is a municipal solid waste (MSW) facility located in unincorporated Yolo County about two miles northeast of Davis, and five miles southeast of Woodland, near the intersection of County Roads 28H and 104. The site covers 725 acres. The YCCL is owned by Yolo County and operated by the County's Department of Community Services, Division of Integrated Waste Management (DIWM); it has been in operation since 1975. The landfill is open seven days per week and accepts non-hazardous MSW, green waste and food waste, construction and demolition debris, liquid waste and recyclables.

The Project would be undertaken to allow the County greater flexibility in developing and implementing processes and operations that would reduce waste from the landfill, reduce environmental impacts of landfill operations, decrease greenhouse gas (GHG) emissions, increase the recovery of materials and energy from waste, operate more efficiently and economically, and extend the facility's lifespan. Proposed changes to the design and operation of the YCCL that constitute the Project, and which are analyzed in the DEIR, include the following:

1. Increased Daily Permitted Tonnage
2. Wood Pellet Facility
3. Large Scale Floating Solar Photovoltaic System
4. Solar Photovoltaic System on Closed Landfill Units
5. Waste Gasification Facility
6. Expanded Biogas Utilization Options
7. Peaking Power Plant
8. New Class 2 Surface Impoundment
9. Organic Waste Fertilizer Facility
10. Stormwater Treatment System and Discharge
11. Additional Groundwater Pumping (Possible Treatment and Discharge)
12. Transfer Station
13. Non-Specific Future Off-Site Borrow Area
14. Thermal Pressure Hydrolysis System
15. Biogas to Methanol Pilot Facility

The Project alternatives include:

Alternative 1: No Project Alternative

Alternative 2: Reduced Tonnage Alternative

Alternative 3: Reduced Footprint Alternative

Adoption of the Project will require the following actions by the County:

- Certification of the Final EIR for the Project;
- Adoption of a Mitigation Monitoring and Reporting Plan (MMRP), Findings, and Statement of Overriding Considerations;

- Approval of the Site Plan; Other County permits such as Building and Grading Permits related to individual Project elements; possibly an agricultural surface mining and reclamation permit related to the non-specific future off-site borrow area.

Adoption of the Project will require the following actions by Other Government Agencies:

- CalRecycle must concur with the Local Enforcement Agency (LEA)'s decision to approve the SWFP Revision. Yolo County Environmental Health Division is the LEA for Yolo County.
- The Yolo-Solano Air Quality Management District requires an Authority to Construct/ Permit to Operate (ATC/PTO) for equipment that emits air pollution related to the operation of the Project. Project elements may require revisions to current air quality permits for YCCL.
- The Central Valley Regional Water Quality Control Board (RWQCB) requires Waste Discharge Requirements (WDRs) for operations that discharge waste to land. The proposed Class 2 Surface impoundment would require WDRs. A new National Pollutant Discharge Elimination System (NPDES) State Construction General Permit would be required for construction activities not covered under the Stormwater Pollution Prevention Plan (SWPPP) for operations associated with the existing Industrial General Permit.

The County and its consultant, RCH Group, Inc. have prepared a DEIR pursuant to the California Environmental Quality Act (CEQA). A Final EIR (Response to Comments) will be prepared following public review and comment. The County will consider this information when deliberating adoption of the Project. Following certification of the Final EIR and adoption of the Project, Project elements may rely on the EIR for CEQA compliance and/or tiering.

The DEIR analyzes impacts in the areas of Aesthetics/Visual, Land Use, Planning and Agriculture, Air Quality (including Odors), Biological Resources, Cultural Resources and Tribal Cultural Resources, Energy, Greenhouse Gas Emissions, Public Health and Safety, Geology and Soils, Hydrology and Water Quality, Wildfire, Noise, Transportation, Public Services, Utilities and Service Systems, Cumulative Impacts, and Other CEQA-Required Analysis. Significant impacts are identified to Land Use, Planning, and Agriculture.

The YCCL Permit Revisions DEIR and all documents incorporated by reference and other key references are now available to the public at the following website: <https://www.yolocounty.org/government/general-government-departments/community-services/planning-division/current-projects>

Electronic copies of the document may be requested free of charge. Printed copies of the document may be requested for a fee to cover the cost of copying. Printed copies of the document are also available for public review at the public counter at the address provided below. Printed or electronic copies of the document are also provided at the Woodland Public Library at 250 First Street, Woodland, CA 95695, and Mary L. Stephens - Davis Branch Library at 315 E. 14th Street, Davis, CA 95616. Please contact Stephanie Cormier (using the contact information provided below) for more information.

You may submit comments on the DEIR during the 45-day public review period which begins Friday, July 30, 2021 and ends Monday, September 13, 2021 at 4:00 pm. All comments on the DEIR must be received by the Yolo County Department of Community Services by 4:00 pm on September 13, 2021, to be considered. Due to Covid19 restrictions, the public counter at 292 West Beamer Street is open 8:00 a.m. until 12:00 p.m. noon (except by appointment) so hand delivery after 12:00 p.m. each day will require an appointment. Comments may be sent by postal service, electronic mail, hand delivery, or provided verbally at the special virtual public

meeting via Zoom Webinar on Wednesday, August 18, 2021, at 10:00 am. Pursuant to Section 15088(a) of the CEQA Guidelines, late comments will be considered only at the County's discretion. Comments must be directed to:

Stephanie Cormier, Principal Planner
Yolo County Department of Community Services 292 West Beamer Street
Woodland, CA 95695
(530) 666-8041
Stephanie.Cormier@yolocounty.org.

A special virtual public meeting via Zoom Webinar will be held on Wednesday, August 18, 2021 at 10:00 am to accept oral comments on the DEIR. There will be no transcription of oral comments at this meeting, although the webinar will be recorded. Oral comments received will be summarized by staff for inclusion in the Final EIR. Those who wish to have their verbatim comments incorporated in the Final EIR must submit their comments in writing.

In compliance with the Americans with Disabilities Act, if you are a disabled person and you need a disability-related modification or accommodation to participate in these hearings, please contact the Yolo County Department of Community Services at (530) 666-8078. Please make your request as early as possible and at least one-full business day before the start of the meeting.

The Project site is not listed on State databases compiled pursuant to California Government Code Section 65962.5.

Pursuant to California Government Code Section 65009(b)(2) and other provisions of law, any lawsuit challenging the approval of the Project described in this notice shall be limited to only those issues raised at the public hearing or described in written correspondence delivered for consideration before the hearing is closed.

For more specific questions about the project, please contact Stephanie Cormier using the contact information provided above.

TABLE OF CONTENTS

YOLO COUNTY CENTRAL LANDFILL PERMIT REVISIONS DRAFT EIR

	<u>Page</u>
EXECUTIVE SUMMARY	ES-1
ES.1 Introduction.....	ES-1
ES.2 Purpose and Need for the Project.....	ES-1
ES.3 Project Description/Elements.....	ES-2
ES.4 Project Impacts and Mitigation Measures.....	ES-7
ES.5 Alternatives to the Project.....	ES-7
ES.6 Environmentally Superior Alternative	ES-9
ES.7 EIR Process and Scope	ES-9
ES.8 Areas of Controversy	ES-10
ES.9 References.....	ES-11
CHAPTER 1 INTRODUCTION	1-1
1.1 Project Overview and Background	1-1
1.2 Scope of the EIR	1-3
1.3 The EIR Process.....	1-4
1.4 References.....	1-5
CHAPTER 2 PROJECT DESCRIPTION.....	2-1
2.1 Background.....	2-1
2.2 Project Elements	2-1
2.3 Project Timing	2-12
2.4 Project Objectives	2-12
2.5 Regulatory Requirements, Permits and Approvals	2-12
2.6 References.....	2-13
CHAPTER 3 ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES	3-1
3.1 Aesthetics/Visual	3.1-1
3.2 Land Use, Planning and Agriculture.....	3.2-1
3.3 Air Quality	3.3-1
3.4 Biological Resources	3.4-1
3.5 Cultural Resources and Tribal Cultural Resources	3.5-1
3.6 Energy.....	3.6-1
3.7 Greenhouse Gas Emissions.....	3.7-1
3.8 Public Health and Safety.....	3.8-1
3.9 Geology, Soils, and Seismicity	3.9-1
3.10 Hydrology and Water Quality.....	3.10-1
3.11 Wildfire.....	3.11-1
3.12 Noise	3.12-1
3.13 Transportation	3.13-1
3.14 Public Services, Utilities, and Service Systems	3.14-1

	<u>Page</u>
CHAPTER 4 IMPACT OVERVIEW.....	4-1
4.1 Growth-Inducing Effects of the Proposed Project	4-1
4.2 Cumulative Impacts	4-2
4.3 Unavoidable significant adverse impacts.....	4-9
4.4 Significant Irreversible Environmental Changes	4-9
4.5 Effects found not to be significant	4-9
4.6 References.....	4-10
CHAPTER 5 ALTERNATIVES TO THE PROJECT	5-1
5.1 Introduction.....	5-1
5.2 Factors In Selection of Alternatives.....	5-2
5.3 Alternatives Eliminated From Further Consideration.....	5-2
5.4 No Project Alternative	5-4
5.5 Reduced Tonnage Alternative.....	5-7
5.6 Reduced Footprint Alternative.....	5-10
5.7 Summary Comparison of Alternatives.....	5-13
5.8 Environmentally Superior Alternative	5-14
CHAPTER 6 EIR AUTHORS, PERSONS AND ORGANIZATIONS CONTACTED	6-1
6.1 Lead Agency EIR Authors.....	6-1
6.2 EIR Consultants	6-1
6.3 Persons and Organizations Consulted.....	6-2
CHAPTER 7 ACRONYMS.....	7-1
 APPENDICES	
A. Notice of Preparation (NOP)	
B. Agency Comments on NOP	
C. Noise Appendix	
D. Biological Resources – Literature Review and Database Review Source Information	
E. Biological Resources – Representative Photographs	
F. Biological Resources – Plant Species Observed	
G. Air Quality Supporting Information	
H. Transportation	
I. Pavement Section Data County Roads 28H and 105	
 LIST OF FIGURES	
2-1 Project Location Map.....	2-2
2-2 Existing Site Plan.....	2-3
2-3 Proposed Site Plan	2-5
3.1-1 Vantage Point Location Map	3.1-2
3.1-2 Existing Views from Vantage Points 1 and 2	3.1-3
3.1-3 Existing Views from Vantage Points 3 and 4	3.1-4
3.1-4 Existing Vantage Points from Viewpoints 5 and 6.....	3.1-5
3.2-1 General Plan Land Use Map	3.2-2
3.4-1a CNDDDB Plant Records for the Yolo County Central Landfill Expansion Project ...	3.4-2
3.4-1b CNDDDB Bird Records for the Yolo County Central Landfill Expansion Project	3.4-3
3.4-1c CNDDDB Insect Records for the Yolo County Central Landfill Expansion Project..	3.4-4

LIST OF FIGURES (continued)

3.4-1d	CNDDDB Mammal and Reptile Records for the Yolo County Central Landfill Expansion Project.....	3.4-5
3.4-2	Land Cover Map Yolo County Central Landfill.....	3.4-7
3.4-3	Suitable Special-Status Species Habitat within the Yolo County Central Landfill.....	3.4-18
3.10.1	Water Resources Map.....	3.10-3
3.10.2	SWPPP Overview Site Map.....	3.10-5
3.10.3	FEMA Flood Zone Map.....	3.10-10
3.12-1	Noise Measurement Locations.....	3.12-4
3.13-1	Existing Traffic Volumes and Lane Configurations.....	3.13-3
3.13-2	Project Only Traffic Volumes and Lane Configurations.....	3.13-14
3.13-3	Project Only (PCE) Traffic Volumes and Lane Configurations.....	3.13-15

LIST OF TABLES

ES-1	Environmental Impacts and Mitigation Measures.....	ES-12
2-1	Current YCCL Permits Relevant to the Project.....	2-14
3.2-1	Project Consistency with General Plan Policies.....	3.2-4
3.2-2	Summary of Adjacent Zoning for the YCCL.....	3.2-7
3.2-3	Project Consistency with Integrated Waste Management Plan Goals and Policies..	3.2-8
3.3-1	Attainment Status Designations for Yolo County.....	3.3-2
3.3-2	Summary of Annual Monitoring Data of Ambient Air Quality.....	3.3-3
3.3-3	Residences on Agricultural Parcels within One Mile of the YCCL.....	3.3-11
3.3-4	Estimated Project Construction Emissions.....	3.3-14
3.3-5	Estimated 2025 Operational Mobile Emissions in YSAQMD.....	3.3-16
3.3-6	Estimated 2025 Operational Mobile Emissions in Other Air Districts.....	3.3-16
3.3-7	Estimated 2030 Operational Mobile Emissions in YSAQMD.....	3.3-17
3.3-8	Estimated 2030 Operational Mobile Emissions in Other Air Districts.....	3.3-17
3.4-1	Special-Status Wildlife Species Identified as Having the Potential to Occur in the Project Region.....	3.4-11
3.4-2	Special-Status Plant Species Identified as Having the Potential to Occur in the Project Region.....	3.4-23
3.4-3	Recommended Restricted Activity Dates and Setback Distances by Level of Disturbance for Burrowing Owls.....	3.4-43
3.12-1	Typical Noise Levels.....	3.12-2
3.12-2	Residences on Agricultural Parcels within One Mile of the YCCL.....	3.12-3
3.12-3	Existing Noise Levels.....	3.12-5
3.12-4	Land Use Compatibility Noise Standards.....	3.12-6
3.12-5	Typical Noise Levels from Construction Equipment (Lmax).....	3.12-10
3.12-6	Typical Construction Activities Noise Level.....	3.12-10
3.13-1	Existing Roadway Segment Traffic Volumes.....	3.13-4
3.13-2	Existing Peak Hour Intersection Queues.....	3.13-4
3.13-3	YCCL Operations Summary (2017-2020).....	3.13-5
3.13-4	Year 2015-2019 Collision History.....	3.13-8
3.13-5	Daily Trip Generation Estimates.....	3.13-11
3.13-6	Peak Hour Trip Generation Forecasts.....	3.13-12
3.13-7	Project Trip Distribution Assumptions.....	3.13-13
5-1	Project Alternatives Comparison.....	5-13
5-2	Alternatives Ability to Meet Project Objectives Comparison.....	5-14

This page intentionally left blank

EXECUTIVE SUMMARY

ES.1 INTRODUCTION

The Yolo County Central Landfill (YCCL or landfill) is a municipal solid waste (MSW) facility located in unincorporated Yolo County about two miles northeast of Davis, and five miles southeast of Woodland, near the intersection of County Roads 28H and 104. The site covers 725 acres. The YCCL is owned by Yolo County and operated by the County's Department of Community Services, Division of Integrated Waste Management (DIWM); it has been in operation since 1975. The landfill is open seven days per week and accepts non-hazardous MSW, green waste and food waste, construction and demolition debris, liquid waste, and recyclables. The origin of most of the MSW is from incorporated and unincorporated areas of Yolo County. YCCL is permitted to accept up to 1,800 tons per day (TPD) of waste. In recent years, average daily throughput has exceeded 1,000 TPD.

The landfill site sits on a 725-acre property (identified by Assessor's Parcel Numbers 042-140-001, 042-140-002, and 042-140-006) and includes several discrete areas, totaling 473 acres, that are permitted for disposal. These include seven Class III landfill areas for disposal of MSW (designated as Waste Management Units [WMUs] 1 through 7) and four Class II surface impoundments for holding liquid wastes. The site also includes one existing composting facility and one under development, a construction, demolition and inerts debris (CDI) recycling facility, areas for metal, wood, and inert material (concrete, rock, etc.) recovery and recycling, and a permanent household hazardous waste collection facility. Five of the Class III landfill areas (WMUs 1-5) have undergone final closure. WMU 6 is operational now and includes eight 20-acre modules (100 acres are active, and 60 acres remain to be developed). WMU 7 is approved for future development and consists of eight modules (160 acres total).

ES.2 PURPOSE AND NEED FOR THE PROJECT

The project evaluated in this Environmental Impact Report (EIR) consists of several changes to YCCL's existing operations and permits. The County is proposing these changes to achieve the following objectives:

1. To decrease adverse environmental impacts of landfill development, operations, and final closure, and increase the environmental benefits that can be derived from certain aspects of YCCL operations;
2. To increase the County's ability to divert waste (including organics) from the landfill and continue to meet the state-mandated diversion goals provided in AB 1383, other state-mandates to reduce waste from landfill (AB 341), and reduce greenhouse gas (GHG) emissions (AB 32);

3. To increase efficiency, diversify operations, and operate more economically; and
4. To extend the overall site life of the existing YCCL through new operational methodologies.

ES.3 PROJECT DESCRIPTION/ELEMENTS

The Project evaluated in this EIR consists of several changes to YCCL’s existing operations and permits including but not limited to the Solid Waste Facility Permit (SWFP), Yolo-Solano Air Quality Management District (YSAQMD) Permits, and Waste Discharge Requirements (WDRs). These changes would be undertaken to allow the County greater flexibility in developing and implementing processes and operations that would reduce waste from the landfill, reduce environmental impacts of landfill operations, decrease GHG emissions, increase the recovery of materials and energy from waste, operate more efficiently and economically, and extend the facility’s lifespan.

While some of the Project elements, such as construction and operation of a waste gasification facility, are entirely new, many of the Project elements are revisions or improvements to existing designs and operations. The following proposed changes to the design and operation of the YCCL constitute the Project proposed for evaluation in this EIR. The proposed increased daily permitted tonnage is reflective of additional waste streams that can benefit from new processing elements, effects of population increases and/or accommodations for peak days/months that have higher tonnage of certain waste streams that can be processed at YCCL (not increased landfill disposal). Some of the Project elements would potentially process out-of-County waste streams more efficiently than other options. Proposed changes to the design and operation of the YCCL that constitute the Project, and which are analyzed in this EIR, include the following:

1. Increased Daily Permitted Tonnage

The County is proposing to expand the overall permitted tonnage for the YCCL to a monthly average of 2,500 TPD with a daily peak of 3,000 TPD. Currently, the YCCL SWFP limits incoming waste tonnage (disposed and recycled) to a maximum of 1,800 TPD. The 1,800 TPD includes various waste streams, including waste for landfill disposal, organics (yard waste, food waste), wood waste, CDI, liquid waste and recyclables. The current average daily waste disposed in the landfill at the YCCL is about 500 tons. The County intends to increase the overall tonnage of waste processed at YCCL (recycling, composting, gasification, etc.) and expand construction of various waste conversion technologies to extend landfill life and reduce landfill disposal of wastes, reducing landfill gas methane GHG emissions. The current TPD limit also does not distinguish between a monthly average and “peak” daily. YCCL currently has days when waste tonnage would exceed 1,800 tons if not for the daily limit. Such peak days are typically the result of heavy vehicles delivering liquid wastes to the Class II surface impoundments or seasonal peaks for yard waste collection (i.e., leaf fall season). YCCL is currently limited to a maximum of 1,047 waste hauling vehicles per day. To accommodate the increased daily permitted tonnage and other Project elements that require truck trips to export products generated from waste, YCCL proposes to limit waste hauling vehicles to 1,305 waste hauling vehicles per day.

2. Wood Pellet Facility

The County is proposing to develop a wood pellet facility that would utilize biomass fuel (e.g., wood, woody fraction of green waste, compost overs) to create pellets as an energy source that could be sold. The facility would be sited within an approximately five-acre portion in the approximately 41-acre north central area at the YCCL identified for future facility development. Much of the facility's operations would be in a building and/or under a covered awning and would also include outdoor storage. The facility would generate up to 50,000 tons of pellets per year, which would require approximately 100,000 tons of incoming biomass feedstock per year. The facility would include conveyors, debarkers, shredders/chippers, dryers/ovens, mixer/agitators, pelletizers, screeners/sifters, coolers, baghouses/cyclones, storage silos, and other necessary material handling and storage equipment. Wood pellet facilities currently operate in California in Stockton, Rocklin and Mendocino County (Capella).

3. Large Scale Floating Solar Photovoltaic System

The County is proposing the installation of a Floating Solar Photovoltaic (PV) System to address energy usage and demand on-site as well as selling electrical power off-site. The proposed system design would include a floating PV array that would tie into seven PG&E meters for on-site use and off-site sale through County-owned power poles along County Road 29 and pole-mounted transformers at the intersection of County Road 28H and County Road 102. The floating PV panels would cover a large portion of the existing Water Storage Reservoir and would be part of a public-private partnership by the County to generate renewable energy locally, such as sale to the local Community Choice Aggregator (CCA), Valley Clean Energy (VCE).

4. Solar Photovoltaic System on Closed Landfill Units

The County is proposing the installation of a Solar PV System on closed landfill units to address current and future energy usage and demand on-site. The proposed system design would include ground mounted PV panels on closed landfill modules 1-5 and would be part of a public-private partnership by the County to generate renewable energy locally, such as sale to the local CCA, VCE.

5. Waste Gasification Facility

The County is proposing to develop a waste gasification facility to produce either hydrogen that would be sold and exported, or electricity that would be used onsite and sold when more electricity is produced than needed. Initially, the facility would utilize YCCL's CDI waste wood and compost overs as a feedstock, but could move towards MSW in the future if other Project elements prove to be more efficient or cost-effective in treating CDI waste wood and compost overs. The facility would be sized to process 200 TPD of feedstock, which would produce approximately 11 TPD of hydrogen that would be compressed, stored, and regularly collected, requiring up to approximately 15 tractor-trailer trips per day to export the hydrogen to local filling stations. The facility would also produce approximately 6 TPD of inert slag/aggregate co-product that could be used on-site for all weather road construction or would be exported from the site requiring approximately 3 tractor-trailer trucks per week. Alternatively, if the facility is

designed to generate electricity, the 200 TPD could approximately 5 megawatts (MW) of power. The facility would be integrated with the electrical grid, which would allow the YCCL to sell excess power when more electricity is produced than needed.

6. Expanded Biogas Utilization Options

The County is proposing expanded biogas uses. Currently, landfill gas (LFG) is entirely dedicated to the landfill gas to energy facility (LFG to Energy Facility), with the electricity going to SMUD. Additional biogas sources (not dedicated to producing electricity for SMUD) could include the biogas produced from City of Davis WWTP digester that is just east of the landfill, the anaerobic compost facility (Compost Facility #1), and the existing In-Vessel Digester (IV Digester). The IV Digester is a covered pond that digests slurry food wastes to generate biogas.

Options for utilizing non-landfill biogas sources include producing Renewable Compressed Natural Gas (RCNG) vehicle fuel or injection of RCNG gas into a pipeline (PG&E or SMUD high pressure gas line). A PG&E gas line is located directly next to the LFG to Energy Facility and a SMUD gas line runs past YCCL along County Road 29 just south of the landfill main entrance. Biogas would be cleaned and conditioned to meet the applicable standards for vehicle fuel and pipeline RCNG. Removal of biogas contaminants such as volatile organic compounds (VOC's), hydrogen sulfide (H₂S) and other contaminants would be required.

7. Peaking Power Plant

The County is proposing a peaking power plant that would replace the existing LFG to Energy Facility. As addressed above, LFG is dedicated to the LFG to Energy Facility, with the electricity going to SMUD. The peaking power plant would treat and compress LFG, which would then be stored during off-peak hours in underground storage tanks underneath the Plant. Stored LFG would be dispatched daily during peak hours to six 4.4 megawatt (MW) internal combustion (IC) engines for electricity generation for sale, such as to the local CCA, VCE.

8. New Class 2 Surface Impoundments

The County is proposing to develop a new Class 2 liquid surface impoundment to store and treat leachate and liquid waste received at the YCCL. The pond would be a Class 2 double lined liquid surface impoundment. The surface impoundment would be approximately 10 acres and located directly south of the existing WMU H3 surface impoundment. This impoundment would include treatment of the liquids (i.e., more aeration) that could then be sent to Davis WWTP.

9. Organic Waste Fertilizer Facility

The County is proposing to develop an organic fertilizer facility that utilizes organic waste (compost, compost feedstock, liquid waste, and animal manures) and converts it into fertilizer. The facility would be sited in an approximately five-acre portion of the approximately 41-acre north central area at the YCCL identified for future facility development. The facility would be sized to handle up to 50,000 tons to 100,000 tons of organic waste per year. Digestate would be removed from the Compost Facility #1 (anaerobic composter) and transported to the fertilizer

facility to be processed. Digestate would be heated to dry, sorted by size, and mixed with other products to produce a specific organic fertilizer for sale.

10. Stormwater Treatment System and Discharge

The County is proposing to develop a storm water treatment system to treat collected storm water that would meet EPA benchmarks for discharge into Willow Slough bypass. The system would be sized in conjunction with storage capacity to manage the 100-year, 24-hour storm, as required by the facility's WDRs. The proposed discharge point would be at an existing pump station located on YCCL's existing soil borrow site west of the landfill and County Road 104. The proposed storm water treatment would be upstream of the discharge point and could consist of passive floc logs that are used to clarify storm water removing turbidity such as sediment, heavy metals, and inanimate nutrients reducing the total suspended solids.

11. Additional Groundwater Pumping (Possible Treatment and Discharge)

The County is proposing to increase groundwater pumping at the YCCL. The YCCL area has naturally high groundwater. The landfill also has an existing groundwater extraction and treatment system to lower groundwater under several modules and treat volatile organic compounds (VOC's) detected in several wells. Currently this water is retained on-site due to naturally occurring boron and selenium. Recent groundwater readings indicate that this system is not completely effective at lowering groundwater under several of the closed landfill units and the Central Valley Regional Water Quality Control Board (CVRWQCB) has directed the County to address the issue. The County proposes to increase the groundwater pumping to address this and there may not be space to retain this water on-site. Currently, plant production (growing fescue for phytoremediation on 45 acres each year) is used to treat groundwater because of the high levels of naturally occurring boron and selenium. Additional treatment options may be necessary to allow this water to be discharged off-site. Various treatment options will be reviewed in the EIR as well as the relevant agency performance-based standards.

12. Transfer Station

The County is proposing to develop a transfer station to transfer solid waste to an off-site landfill in approximately ten years. The transfer station would be sited within an approximately 15-acre portion of the 41-acre north central area at the YCCL identified for future facility development. The transfer station would be sized to handle the landfill's current and future waste flow and the reductions of landfill disposal as required by the regulatory agencies. The transfer station is estimated to have a design capacity of 500 TPD, which would require an approximately 40,000 SF transfer building (U.S. EPA, 2002). Transfer stations are typically quite tall to accommodate several levels of traffic and transfer trailer loading, therefore the proposed transfer station building would be approximately 50 feet tall. The transfer station is being analyzed due to the increased soil needs and cost to develop new landfill modules as well as the associated air pollution and GHG emissions.

Incoming materials now generally go to the organics recycling area or directly to landfill disposal. Materials going directly to landfill disposal are wastes that are low in organics content

and low in recoverable recyclable materials. These loads would be directed to the transfer station, where they would be consolidated for transport into a transfer trailer and exported to an off-site landfill in the region.

13. Non-Specific Future Off-Site Borrow Area

The County may need to purchase a new off-site borrow area for its soil needs. YCCL has a shortage of soil for daily, intermediate, and final cover material, and DIWM imports soil from off-site sources for these purposes. Soil will also be needed to develop future landfill modules. The County may need to purchase additional property for development of an off-site borrow area that would supply soil to the facility. In 2014 the DIWM purchased a 320-acre parcel directly to the west of the landfill as a soil borrow source [EIR SCH # 2014102015] (Yolo County, 2015). No additional parcel of land has yet been identified for this purpose, but DIWM estimates that up to an additional 640-acre parcel would be needed. Ideally, the parcel would adjoin or be near the existing landfill property. Candidate properties would be surveyed for any important biological, archaeological, or historical resources, and appropriate mitigation measures would be developed and employed prior to commencement of borrow operations. This aspect of the Project may require additional or future environmental, land use and zoning considerations to allow soil borrow operations, including a mining permit.

14. Thermal Pressure Hydrolysis System

The County is proposing a Thermal Pressure Hydrolysis (TPH) system. TPH is a two-stage process combining high-pressure steaming of waste (organic and sludge) followed by a rapid decompression. This combined action sterilizes the waste and makes it more biodegradable, which improves digestion performance. Sterilization also destroys pathogens. This increases biogas production from anaerobic digestion (AD) of such waste. In a semi-continuous process, mechanized movements along with the pressure and temperature break down the most complex molecules to sanitize and homogenize the entire organic fraction of the waste. The product from this pre-treatment process is a bio-thermal-stabilized biomass with <70% moisture content and organic matter content >90%. TPH pretreatment can help to overcome the challenges of viability of AD as it has shown promising increase in efficacy of AD (~20% increase in biogas).

15. Biogas to Methanol Pilot Facility

The County is proposing a Biogas to Methanol Pilot Facility. Traditionally, natural gas is reformed into syngas, and then further converted into methanol and other liquid chemicals or fuels. The process is complex and requires high-maintenance catalysts and massive economies of scale to be profitable. Most natural gas sources are simply too small to apply syngas technologies.

The facility would use a process that eliminates the syngas step and associated catalyst by converting methane directly into methanol via a patented direct homogenous partial oxidation process. The process features an energy-neutral recycle loop where unreacted methane is scrubbed and recycled until the desired conversion is achieved. The carbon and thermal efficiencies of the resulting process are comparable to syngas-based technologies.

The process is a closed loop system with purge gas being sent back to a flare or power generation. The facility would result in a significant reduction in flaring emissions at YCCL and would produce renewable methanol that can be converted into electricity and/or low carbon transportation fuels.

ES.4 PROJECT IMPACTS AND MITIGATION MEASURES

The potentially significant adverse effects of the Project are described in Chapters 3 and 4. Mitigation measures have been identified that would reduce all the specific Project significant impacts to a level of insignificance except for the impact related to the conversion of farmland to a non-agricultural use (see Impact 3.2.2 and Mitigation Measure 3.2.2). Furthermore, as indicated in Chapter 4, since most of the non-urban land within the radius of the Project site is agricultural land, the off-site borrow area would most likely result in conversion of prime or non-prime agricultural farmland to a non-agricultural use. Therefore, this would be a significant and unavoidable cumulative impact of the Project.

Table ES-1, at the end of this chapter, presents a summary of potential environmental impacts, their level of significance before mitigation, mitigation measures, and the level of significance after mitigation.

ES.5 ALTERNATIVES TO THE PROJECT

The California Environmental Quality Act (CEQA) requires an EIR to describe and evaluate the comparative merits of a range of reasonable alternatives to the project, or to the location of the project, that would feasibly attain most of the basic project objectives but would avoid or substantially lessen any of the project's significant effects (CEQA Guidelines Section 15126.6). Chapter 5 (Alternatives to the Project) of this EIR provides an analysis of the impacts anticipated from three alternatives to the Project. The Project alternatives considered in this EIR include (1) No Project Alternative; (2) Reduced Tonnage Alternative; and (3) Reduced Footprint Alternative. The following provides a summary of each alternative and the EIR conclusions pertaining to it.

1. No Project Alternative

If the Project is not approved, the YCCL would continue to operate under its current Solid Waste Facilities Permit (SWFP) and the various Project elements would not have an approved California Environmental Quality Act (CEQA) review or Project approval from the County. The YCCL would continue to operate with a permitted tonnage of 1,800 tons per day and permitted traffic volume of 1,047 vehicles per day. The YCCL would continue to operate like the existing operations, including a continuation of challenges related to:

- Acquisition of soil to maintain current operations,
- Processing organic materials to meet state requirements, and
- Processing wood.

Under the No Project Alternative, minor operational changes could occur within the existing SWFP, but the scale of the changes would be limited compared to the various Project elements proposed by the Project. The No Project Alternative would continue to operate under the current SWFP limits. Therefore, under the No Project Alternative, the YCCL would have to reject loads that put daily totals above 1,800 tons per day or permitted traffic volume of 1,047 vehicles per day.

2. Reduced Tonnage Alternative

The Reduced Tonnage Alternative would include all the elements of the Project, except there would be a reduction in the increased daily permitted tonnage and the resulting increase in the facility's permitted traffic volume compared to the Project. Under the Reduced Tonnage Alternative, the County would expand the overall permitted tonnage for the YCCL to a monthly average of 1,800 tons per day with a daily peak of 2,400 tons per day, which would limit waste hauling vehicles to 1,253 vehicles per day.

The Reduced Tonnage Alternative could meet each of the Project objectives because all the Project elements would still be developed, but the Reduced Tonnage Alternative would be limited in increasing the County's ability to divert waste (including organics) from the landfill compared to the Project because the YCCL would have to reject loads that put daily totals above 2,400 tons per day (or the monthly average of 1,800 tons per day) or the permitted traffic volume of 1,253 vehicles per day.

3. Reduced Footprint Alternative

The Reduced Footprint Alternative would include most of the elements of the Project and there would be a reduction in the developmental footprint compared to the Project, specifically in the 41-acre north central area at the YCCL identified for future facility development (see **Figure 2-3**). Under the Reduced Footprint Alternative, the County would limit development in this area to 30 acres to avoid the potential wetland area to the northeast and limit potential impacts to biological resources. It is important to note that the north central area at the YCCL identified for future facility development was originally planned to be 80 acres, but the County reduced the footprint to 41-acres to avoid potential impacts to biological resources.

The Reduced Footprint Alternative could partially meet each of the Project objectives because most of the Project elements would likely still be developed. However, the Reduced Footprint Alternative would not meet each of the Project objectives as effectively as the Project because the Project elements proposed to be developed in the north central area at YCCL identified for future facility development (i.e., transfer station, waste gasification facility, organic waste fertilizer facility and wood pellet facility) would be unable to fit within a 30-acre area. Therefore, for the purposes of this alternatives analysis it is assumed that the organic waste fertilizer facility and wood pellet facility would not be developed under the Reduced Footprint Alternative.

ES.6 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The EIR must assess the identified alternatives and determine which among the alternatives is the environmentally superior alternative. One of the alternatives to be assessed is the “No Project” alternative. If the No Project alternative is identified as the environmentally superior alternative, then another of the remaining alternatives must also be identified as the environmentally superior alternative.

Chapter 5 includes a comparison of each of the three alternatives to the proposed Project with regard to impacts for each of the resource areas in the EIR (see Table 5-1). Chapter 5 also assesses the ability of each of the three alternatives to meet the four Project objectives (see Table 5-2).

Since the Reduced Tonnage Alternative substantially meets Project Objectives 1, 3 and 4 and partially meets Objective 2, while reducing impacts to air quality and transportation and having no impacts greater than the Project, the Reduced Tonnage Alternative is the environmentally superior alternative. However, the proposed Project meets all the objectives and could accept additional loads for processing (above the limit of the Reduced Tonnage Alternative).

ES.7 EIR PROCESS AND SCOPE

Based on a preliminary review of potential Project impacts, the County determined that an EIR would be the appropriate level of environmental review for the Project. In August 2020, the County prepared and circulated a Notice of Preparation (NOP) for this EIR (**Appendix A**), in accordance with CEQA Guidelines §15082, to seek comments from affected agencies and the public regarding the scope of the EIR. To avoid a public gathering during the COVID-19 crisis, the County held a virtual scoping meeting via Zoom Webinar on September 16, 2020. One oral comment was received at the virtual scoping meeting and four comment letters were received during the scoping period from governmental responsible agencies (see **Appendix B**).

The County will circulate this Draft EIR for review by public agencies and interested persons and organizations for a 45-day public review period, in accordance with CEQA Guidelines §15105, extending from Friday July 30, 2021 to Monday, September 13, 2021. Written comments will be accepted at the Yolo County Department of Community Services until 4 p.m. on Monday, September 13, 2021. Oral and written comments will be accepted at the special virtual public meeting via Zoom Webinar on Wednesday, August 18, 2021 at 10:00 a.m. Connection information is provided below:

<https://us02web.zoom.us/j/82777037287?pwd=d2pWUkhMUzdsSIVjUDZuWTNFO1h0QT09>

Webinar ID: 827 7703 7287

Passcode: 2021

Or One tap mobile:

+16699006833,,82777037287#,,,,*2021# US (San Jose)

+13462487799,,82777037287#,,,,*2021# US (Houston)

Or join by phone:

Dial (for higher quality, dial a number based on your current location):

US: +1 669 900 6833 or +1 346 248 7799 or +1 253 215 8782 or +1 929 205 6099 or +1 301 715 8592 or +1 312 626 6799

Webinar ID: 827 7703 7287

Passcode: 2021

International numbers available: <https://us02web.zoom.us/j/kdWBNwSPnV>

Written comments should be emailed to Stephanie.Cormier@yolocounty.org or submitted to: Stephanie Cormier, Yolo County Department of Community Services, 292 West Beamer Street, Woodland, California, 95695. At the close of the public review period, the County will evaluate the comments received on the environmental issues and prepare written responses, as required by CEQA Guidelines §15088. The comments and responses will be included in the Final EIR as a separate chapter, along with any revised EIR text necessitated by the response to comments.

This EIR evaluates the potential environmental impacts of the various Project elements that make up the proposed Project, and not on approved and permitted existing operations of YCCL or of already-approved projects. While the Project described and analyzed in this EIR is distinct from the projects that were subject of the certified 1992 YCCL EIR (Yolo County, 1992) and 2005 YCCL EIR (Yolo County, 2005), much of the information in those earlier documents are germane to this EIR. The certified 2015 YCCL EIR for the YCCL Soil Borrow Site Project (Yolo County, 2015) also contains information germane to this EIR. The analysis in this EIR therefore relies to a considerable extent on the background and analysis contained in the certified 1992, 2005 and 2015 EIRs. This EIR provides summary information from those previous EIRs when it is helpful for the evaluation or understanding of this Project,

ES.8 AREAS OF CONTROVERSY

There are no known areas of controversy with the Project. One oral comment was received at the virtual NOP scoping meeting and four comment letters were received during the NOP scoping period from governmental responsible agencies (see **Appendix B**). No major concerns were raised in the one oral comment or four comment letters.

ES.9 REFERENCES

Yolo County. 2020. *Notice of Preparation Environmental Impact Report (EIR) & Notice of Public Scoping Meeting*. August 28, 2020.

Yolo County. 2018. *Joint Technical Document, Yolo County Central Landfill, Yolo County, California*. June 2018.

Yolo County. 2015. *Final Environmental Impact Report Yolo County Central Landfill Soil Borrow Site Project*. April 2015.

Yolo County. 2005. *Yolo County Central Landfill Permit Revisions Final Subsequent Environmental Impact Report SCH No. 1991073040*. May 2005.

Yolo County. 1992. *Final Environmental Impact Report Yolo County Central Landfill State Clearinghouse No. 91123015*. October 1992.

United States Environmental Protection Agency (U.S. EPA). 2002. *Waste Transfer Stations: A Manual for Decision-Making*. June 2002.

TABLE ES-1. ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact	Mitigation Measure	Impact Significance	
		Before Mitigation	After Mitigation
3.1 AESTHETICS/VISUAL			
Impact 3.1.1: The Project could affect views from Vantage Point 1, views from Wildhorse Golf Course and adjacent recreational use path on the outskirts of the City of Davis, approximately 1.5 miles southwest of the southern edge of the YCCL, looking northeast.	None required.	LS	LS
Impact 3.1.2: The Project could affect views from Vantage Point 2 and Vantage Point 3, views from the intersection of Road 27 and Road 104, approximately 1 mile north of the northern boundary of the YCCL, looking southeast.	None required.	LS	LS
Impact 3.1.3: The Project could affect views from Vantage Point 4, views from Road 103, approximately 1 mile west of the western edge of the YCCL, looking east.	None required.	LS	LS
Impact 3.1.4: The Project could affect views from Vantage Point 5, views from south of Willow Slough Bypass, approximately 600 feet south of the southern edge of the YCCL, looking north.	None required.	LS	LS
Impact 3.1.5: The Project could affect views from Vantage Point 6, views from Road 30B, approximately 1.5 miles south of the southern boundary of the YCCL, looking north.	None required.	LS	LS
Impact 3.1.6: The Project activities at the YCCL could result in creation of increased amounts of windblown litter leaving the site.	None required.	LS	LS
Impact 3.1.7: The Project elements at the YCCL could result in creation of a new sources of light and glare.	Mitigation Measure 3.1.7: New lighting for Project Elements shall be arranged and controlled so as not to illuminate public rights of way or adjacent properties (i.e., downward facing lighting fixtures, dark sky friendly lighting fixtures, etc.).	S	LSM
Impact 3.1.8: Development of a non-specific off-site soil borrow area could degrade the visual character of the vicinity near the selected site.	Mitigation Measure 3.1.8a: Consistent with 2030 Yolo County General Plan Policy CC-1.8, development of the future off-site borrow area shall include visual screening along highways, freeways, roads, and trails. Visual screening could include retaining existing trees and vegetation, new landscaping or screen trees, or another option approved by the County. Mitigation Measure 3.1.8b: The off-site borrow area shall implement hours of operation that reduce or eliminate adverse effects of the off-site borrow area nighttime activities on nearby sensitive receptors, or operations controls such as directed lighting.	S	LSM

KEY: S - Significant SU – Significant and Unavoidable LS – Less than Significant LSM – Less than Significant with Mitigation NI – No Impact

TABLE ES-1. ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES (Continued)

Impact	Mitigation Measure	Impact Significance	
		Before Mitigation	After Mitigation
3.2 LAND USE, PLANNING AND AGRICULTURE			
Impact 3.2.1: Development of an off-site borrow area could result in conflicts with agricultural uses or Williamson Act contract.	Mitigation Measure 3.2.1a: The County shall site the off-site borrow area in a location not zoned or designated as agriculture land to the extent feasible. In the event that the only feasible off-site borrow area is zoned or designated as agricultural land, the County shall re-zone and re-designate the off-site borrow area site (to PQP and PQ, respectively) so the use of the site would not conflict with the land use designation.	S	LSM
Impact 3.2.2: Development of an off-site borrow area could result in conversion of farmland (including Prime Farmland, and non-prime farmland mapped as Unique Farmland or Farmland of Statewide Importance) to non-agricultural use.	Mitigation Measure 3.2.2: The County shall not locate the off-site borrow area or areas on agriculture farmland identified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, to the extent feasible. The California Department of Conservation’s “important farmlands” designation shall be used to identify the areas mapped as Prime, Unique, or Farmland of Statewide Importance. If the off-site borrow area includes Prime, Unique, or Farmland of Statewide Importance, then the County shall comply with the Agricultural Conservation and Mitigation Program, which requires up to three (3) acres of agricultural land shall be preserved for each acre of prime farmland converted to a predominantly non-agricultural use or zoning classification (3:1 ratio), or up to two (2) acres of agricultural land shall be preserved for each acre of non-prime farmland converted to a predominantly non-agricultural use or zoning classification (2:1 ratio). If the Project is determined exempt per Yolo County Code Sec. 8-2.404(c)(2)(ii), a minimum of one (1) acre of agricultural land shall be preserved for each acre of prime or non-prime farmland converted at the off-site borrow area to a predominantly non-agricultural use (1:1 ratio).	S	LSM
3.3 AIR QUALITY			
Impact 3.3.1: Project construction activities could result in a cumulatively considerable net increase of emissions of criteria air pollutants and precursors.	Mitigation Measure 3.3.1: The following shall be implemented during Project construction ground disturbing activities: <ul style="list-style-type: none"> Active construction sites shall be watered at least twice daily. Vehicles on unpaved roads shall be limited to 15 mph. 	S	LSM
Impact 3.3.2: Project-related mobile sources during operation could result in a cumulatively considerable net increase of emissions of criteria air pollutants and precursors.	Mitigation Measure 3.3.2: For Project elements planned to be operational before year 2030 (i.e. construction permits are approved) an updated emissions inventory shall be performed prior to operation in order to determine if NOx emissions from implemented Project element mobile sources exceed the YSAQMD’s annual NOx threshold of significance. If the updated emissions inventory concludes that NOx emissions from Project mobile sources exceed the YSAQMD annual NOx threshold of significance, the County shall decrease annual NOx emissions from Project mobile sources to below the YSAQMD’s threshold of significance. Methods to decrease annual NOx emissions from Project mobile sources include but are not limited to: <ul style="list-style-type: none"> Use of alternatively fueled (electric, natural gas, etc.) off-road equipment and on-road heavy trucks. Replacement of older vehicles and heavy equipment at YCCL with newer vehicles and heavy equipment with lower NOx emissions. 	S	LSM

KEY: S - Significant SU – Significant and Unavoidable LS – Less than Significant LSM – Less than Significant with Mitigation NI – No Impact

TABLE ES-1. ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES (Continued)

Impact	Mitigation Measure	Impact Significance	
		Before Mitigation	After Mitigation
3.3 AIR QUALITY (cont.)			
Impact 3.3.2 (cont.)	<ul style="list-style-type: none"> Replacement of older vehicles or heavy equipment at other locations in the County to offset NOx emissions below the YSAQMD's threshold of significance. Another method approved by the County that would reduce annual NOx emissions in the YSAQMD such as purchasing offsets. 		
Impact 3.3.3: Project operation of stationary sources could result in a cumulatively considerable net increase of emissions of criteria air pollutants and precursors, and/or could expose sensitive receptors to substantial concentrations of TACs.	None required.	LS	LS
Impact 3.3.4: Project-related on-road heavy trucks could expose sensitive receptors to substantial concentrations of TACs.	None required.	LS	LS
Impact 3.3.5: Project operations could generate odors that could adversely affect a substantial number of people.	None required.	LS	LS
3.4 BIOLOGICAL RESOURCES			
Impact 3.4.1: Temporary disturbance of potential giant garter snake habitat.	<p>Mitigation Measure 3.4.1a: Install and Maintain Exclusion and Construction Barrier Fencing between the Construction Area and Suitable Giant Garter Snake Habitat</p> <p>The construction specifications shall require that YCCL retain an agency-approved biologist to identify the suitable giant garter snake aquatic and upland habitat that are to be avoided during construction. To reduce the likelihood of giant garter snakes entering the construction area, YCCL shall install exclusion fencing to the extent practicable along the boundary of the Project area and around the proposed staging area. The exclusion fencing shall be installed during the active period for giant garter snakes (May 1–October 1) to reduce the potential for injury and mortality during construction activities. Where access is required into and out of the Project area and staging areas the fencing shall be opened to allow traffic in and out but shall be closed at the end of each workday. The exclusion fencing shall be installed the maximum distance practicable from the aquatic habitat areas and shall be in place before construction activities (including any vegetation removal or equipment staging) are initiated.</p> <p>The exclusion fencing shall consist of 3-foot-tall silt fencing buried 4–6 inches below ground level. The exclusion fencing shall ensure that giant garter snakes are excluded from the construction area and that suitable upland and aquatic habitat is protected throughout construction. In addition to the exclusion fencing, orange construction barrier fencing shall also be installed that is commercial-quality, 4-foot-high, woven polypropylene (Tensor Polygrid or equivalent) or signs indicating a sensitive resource area placed approximately every 10 feet along exclusion fencing. The construction barrier fencing shall be tightly strung on posts with a maximum of 10-foot spacing. The orange construction barrier fencing can be attached to the exclusion fencing or the exclusion fencing can double as construction barrier fencing if it is orange in color and at least 4 feet tall.</p>	S	LSM

KEY: S - Significant SU – Significant and Unavoidable LS – Less than Significant LSM – Less than Significant with Mitigation NI – No Impact

TABLE ES-1. ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES (Continued)

Impact	Mitigation Measure	Impact Significance	
		Before Mitigation	After Mitigation
3.4 BIOLOGICAL RESOURCES (cont.)			
Impact 3.4.1 (cont.)	<p>The fencing requirements shall be included in the construction specifications, and an agency-approved biological monitor shall be onsite to direct and monitor exclusion fence installation.</p> <p>The biological monitor shall be responsible for ensuring that the contractor maintains the protective fencing around giant garter snake habitat throughout construction. Weekly monitoring summary reports shall be provided to YCCL and applicable wildlife agencies, as necessary.</p> <p>Mitigation Measure 3.4.1b: Conduct Environmental Awareness Training for Construction Employees</p> <p>YCCL shall retain a qualified biologist to conduct environmental awareness training for construction crews before project implementation. The awareness training shall be provided to all construction personnel and shall brief personnel on the need to avoid effects on sensitive biological resources (i.e., non-wetland waters, giant garter snake and other special-status species habitats in and adjacent to the construction area, and active bird nests). The education program shall include a brief review of the special-status species with the potential to occur in the Project area (including their life history, habitat requirements, and photographs of the species). The training shall identify the portions of the Project area in which the species may occur, as well as their legal status and protection. The program also shall cover the relevant permit conditions and mitigation measures that must be followed by all construction personnel to reduce or avoid effects on these resources during project implementation through completion. The training shall emphasize the role that the construction crew plays in identifying and reporting any special-status species observations to the onsite biologist. Training shall identify the steps to be taken if a special-status species is found within the construction area (i.e., notifying the crew foreman, who would call the designated biologist).</p> <p>An environmental awareness handout that describes and illustrates sensitive resources to be avoided during project construction and identifies all relevant permit conditions shall be provided to each crew member. The crew foreman shall be responsible for ensuring that crew members adhere to the guidelines and restrictions. Education programs shall be conducted for appropriate new personnel as they are brought on the job.</p> <p>Mitigation Measure 3.4.1c: Minimize Potential Impacts of Dewatering on Giant Garter Snake</p> <p>YCCL shall implement the following measures to minimize potential impacts from dewatering aquatic giant garter snake habitat.</p> <ul style="list-style-type: none"> • Areas with sufficient standing water shall be inspected for the presence of giant garter snakes by the agency-approved biologist immediately prior to dewatering. The approved biologist shall monitor the dewatering activity until the biologist determines that monitoring is no longer needed (e.g. once the work area is fully dewatered and once exclusion fencing has been installed). 		

KEY: S - Significant SU – Significant and Unavoidable LS – Less than Significant LSM – Less than Significant with Mitigation NI – No Impact

TABLE ES-1. ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES (Continued)

Impact	Mitigation Measure	Impact Significance	
		Before Mitigation	After Mitigation
3.4 BIOLOGICAL RESOURCES (cont.)			
Impact 3.4.1 (cont.)	<ul style="list-style-type: none"> • Work areas shall be sufficiently dry (no standing water) prior to excavating or filling of the dewatered habitat. Dewatered habitat must remain dry, with no water puddles remaining, for at least 15 consecutive days prior to excavating or filling of the habitat. If a site cannot be completely dewatered, netting and salvage of giant garter snake prey items may be necessary to discourage use by snakes. • If the work areas are not fully drained prior to construction due to existing site conditions (e.g., low water table that causes infiltration back into the work area), the approved biologist shall survey the work area for snakes each morning prior to construction activities in the channel. <p>Mitigation Measures 3.4.1d: Minimize Potential Impacts on Giant Garter Snakes and their Habitat</p> <p>YCCL shall implement the following measures to minimize potential impacts on giant garter snakes and their habitat. These measures are consistent with the avoidance and minimization measures (AMMs) identified in the Yolo HCP/NCCP.</p> <ul style="list-style-type: none"> • All construction activities that involve disturbance within giant garter snake habitat shall be confined to the snake’s active season, May 1 through October 1. During this period, the potential for direct mortality is reduced because snakes are expected to move and avoid danger. • Construction vehicles shall observe the posted speed limit on hard-surfaced roads and a 10-mile-per-hour speed limit on unpaved roads during travel in the Project area. • Construction vehicles and equipment shall restrict off-road travel to the designated construction areas. • Construction vehicles and equipment left onsite overnight shall be thoroughly inspected each day for snakes (both underneath the vehicles and in open cabs) before they are moved. • All food-related trash shall be disposed of in closed containers and removed from the construction area daily during the construction period. Construction personnel shall not feed or otherwise attract fish or wildlife to the construction site. • No pets or firearms shall be allowed in the construction area. • To avoid entrapment of wildlife, all excavated steep-walled holes or trenches more than one foot deep shall either be properly covered or provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each workday. If left open overnight, the hole or trench shall be inspected by the onsite biological monitor prior to it being backfilled. • To prevent possible resource damage from hazardous materials such as motor oil or gasoline, construction personnel shall not service vehicles or construction equipment within 200 feet of wet canals. If servicing is required, the area shall be properly contained to prevent runoff of contaminants. 		

KEY: S - Significant SU – Significant and Unavoidable LS – Less than Significant LSM – Less than Significant with Mitigation NI – No Impact

TABLE ES-1. ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES (Continued)

Impact	Mitigation Measure	Impact Significance	
		Before Mitigation	After Mitigation
3.4 BIOLOGICAL RESOURCES (cont.)			
Impact 3.4.1 (cont.)	<ul style="list-style-type: none"> Maintain water quality and limit construction runoff into wetland areas through the use of hay bales, filter fences, vegetative buffer strips, or other accepted practices. No plastic, monofilament, jute, or similar erosion-control matting that could entangle snakes or other wildlife shall be permitted. <p>Mitigation Measure 3.4.1e: Conduct Preconstruction Surveys and Monitoring for Giant Garter Snake</p> <p>YCCL shall conduct preconstruction surveys and monitoring for giant garter snake and shall implement the following measures:</p> <ul style="list-style-type: none"> Within 24 hours prior to ground-disturbing activities within suitable giant garter aquatic and upland habitat (undeveloped areas within 200 feet of suitable aquatic habitat), an agency-approved biologist shall conduct a preconstruction clearance survey for giant garter snake. If construction activities stop for a period of two weeks or more, conduct another preconstruction clearance survey within 24 hours prior to resuming construction activity. A USFWS-approved biologist shall be onsite during initial ground disturbing activities within suitable aquatic and upland habitat to monitor construction activities and ensure that giant garter snake protection measures are being implemented properly. Once the Project area has been graded and ground disturbance has been completed, monitoring shall continue on a weekly basis, unless otherwise specified by project permits. YCCL shall prepare a giant garter snake relocation plan which must be approved by the appropriate resource agencies prior to work in giant garter snake habitat. If a live giant garter snake is encountered during construction activities, immediately notify the project's biological monitor and USFWS and CDFW. The monitor shall stop construction in the vicinity of the snake, monitor the snake, and allow the snake to leave on its own. The monitor shall remain in the area for the remainder of the workday to ensure the snake is not harmed or, if it leaves the site, does not return. If the giant garter snake does not leave on its own, the qualified biologist shall relocate the snake consistent with the relocation plan described above. The biological monitor shall prepare daily monitoring logs that include a description of construction activities; areas surveyed and monitored; communication with construction personnel, YCCL, and wildlife agencies; noncompliance issues and resolutions; and a list of all wildlife species observed during monitoring activities. The biological monitor shall also record all observations of Federally and State-listed species on CNDDDB field sheets and submit to CDFW. 		

KEY: S - Significant SU – Significant and Unavoidable LS – Less than Significant LSM – Less than Significant with Mitigation NI – No Impact

TABLE ES-1. ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES (Continued)

Impact	Mitigation Measure	Impact Significance	
		Before Mitigation	After Mitigation
3.4 BIOLOGICAL RESOURCES (cont.)			
Impact 3.4.1 (cont.)	Mitigation Measure 3.4.1f: Restore Temporarily Disturbed Aquatic and Upland Habitat to Pre-project Conditions Upon completion of proposed project, YCCL shall restore temporarily disturbed habitat for giant garter snake to pre-project conditions. Habitat shall be restored within one construction season.		
Impact 3.4.2: Disturbance to special-status species and removal of their suitable habitat from development of a new off-site borrow site.	Mitigation Measure 3.4.2: Conduct biological and wetland surveys of off-site borrow area and apply mitigation measures based on survey results. YCCL County shall conduct a biological resource survey of any Project area to be disturbed and nearby areas (e.g., including a 250-foot. buffer surrounding proposed borrow site), and/or enlarged buffer sufficient to comply with survey protocols (0.5-mile buffer for Swainson’s hawk) that may be affected by the construction. At a minimum, each survey shall include the following: <ul style="list-style-type: none"> • A database search for occurrence of special status species within a 5-mile radius of the borrow site, • A site reconnaissance by a qualified biologist to identify occurrence or potential occurrence of special-status species and habitats on and around the development site, and • Consultation, as appropriate, with regulatory agencies regarding the results and incorporation of appropriate mitigation measures identified in this section for impacts to those sensitive resources. 	S	LSM
Impact 3.4.3: Loss of western pond turtle habitat.	Mitigation Measure 3.4.3: Conduct Preconstruction Surveys for Western Pond Turtle and Allow Turtles to Leave Work Area Unharmed To avoid potential injury to or mortality of western pond turtles, YCCL shall retain a qualified biologist to conduct a preconstruction survey for western pond turtles immediately prior to construction activities (including vegetation removal) along suitable habitat and adjacent uplands. The biologist shall survey the aquatic habitat, canal banks, and adjacent upland habitat within the construction area immediately prior to disturbance. If a western pond turtle is found within the immediate work area during the preconstruction survey or during project activities, work shall cease in the area until the turtle is able to move out of the work area on its own. If the turtle does not move out of the area, the biologist shall coordinate with YCCL and CDFW to create and implement a live trapping plan and relocation effort. Information about the location of turtles seen during the preconstruction survey shall be included in the environmental awareness training (Mitigation Measure 3.4.1b) and provided directly to the construction crew working in that area to ensure that areas where turtles were observed are inspected each day prior to the start of work to ensure that no turtles are present. If a western pond turtle nest is discovered during the preconstruction survey or during project construction, YCCL’s biologist would coordinate with CDFW to determine whether additional avoidance measures (e.g., no-disturbance buffer or monitoring) is prudent.	S	LSM

KEY: S - Significant SU – Significant and Unavoidable LS – Less than Significant LSM – Less than Significant with Mitigation NI – No Impact

TABLE ES-1. ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES (Continued)

Impact	Mitigation Measure	Impact Significance	
		Before Mitigation	After Mitigation
3.4 BIOLOGICAL RESOURCES (cont.)			
Impact 3.4.4: Disturbance of nesting Swainson's hawks, white-tailed kite, tricolored blackbird, and other protected birds and raptors.	<p>Mitigation Measure 3.4.4: Conduct Vegetation Removal during the Non-Breeding Season and Conduct Pre-Construction Surveys for Nesting Migratory Birds and Raptors</p> <p>Where vegetation removal is required to construct project features, YCCL shall conduct this activity during the non-breeding season for birds and raptors (generally between September 1 and February 28), to the extent feasible.</p> <p>If construction activities are planned during the nesting season (March 1– August 31), prior to the start of construction activities (including equipment staging and site preparation), YCCL shall retain a qualified wildlife biologist with knowledge of the relevant bird species to conduct nesting bird surveys. The surveys shall include a minimum of two separate surveys to look for active bird and raptor nests. Surveys shall include a search of all trees, shrubs, wetlands, and grassland vegetation that provide suitable nesting habitat in the Project area. In addition, nesting habitat within 1,320 feet from the Project area shall be surveyed for Swainson's hawk and a 500-foot radius around the Project area shall be surveyed for other nesting raptors, and a 100-foot radius around the Project area shall be surveyed for passerines. One survey should occur within 15 days prior to construction and the second survey should occur within 48 hours prior to the start of construction or vegetation removal (including grubbing). If no active nests are detected during these surveys, no additional measures are required.</p> <p>If an active nest is found in the survey area, a no-disturbance buffer shall be established around the nest site to avoid disturbance or destruction of the nest until the end of the breeding season (August 31) or until after a qualified wildlife biologist determines that the young have fledged and moved out of the Project area (this date varies by species). The extent of the nesting buffers shall be 1,300 feet for active tricolored blackbird colonies, 500-feet for Swainson's hawk, 300 feet for nesting raptors and 50-feet for passerine birds. The buffers may be adjusted based on environmental factors through coordination between the YCCL biologist and CDFW. Factors that may influence an adjusted buffer shall include the bird species, level of construction disturbance, line-of-sight between the nest and the disturbance, ambient levels of preexisting noise and other disturbances, and other topographical or artificial barriers.</p>	S	LSM
Impact 3.4.5: Removal of suitable foraging habitat for Swainson's hawk.	<p>Mitigation Measure 3.4.5: Prior to commencing any phase involving ground disturbance for facilities developed in Swainson's hawk foraging habitat as shown on Figure 3.4-3, YCCL shall compensate for the loss of Swainson's hawk foraging habitat through the preservation of appropriate acreage of suitable Swainson's hawk foraging habitat for that phase by participating in the Yolo HCP/NCCP.</p> <p>Solar panel development of the three sites may reduce the value of the areas for foraging potential by Swainson's hawk, however there would still be some habitat value to the sites for Swainson's hawks. The YCCL will work with CDFW and the administrator of the Yolo HCP/NCCP to identify the appropriate acreage based on the value of the grassland habitat after placement of the solar panels.</p>	S	LSM

KEY: S - Significant SU – Significant and Unavoidable LS – Less than Significant LSM – Less than Significant with Mitigation NI – No Impact

TABLE ES-1. ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES (Continued)

Impact	Mitigation Measure	Impact Significance																				
		Before Mitigation	After Mitigation																			
3.4 BIOLOGICAL RESOURCES (cont.)																						
<p>Impact 3.4.6: Disturbance of nesting and wintering burrowing owls.</p>	<p>Mitigation Measure 3.4.6: Conduct Pre-Construction Surveys for Burrowing Owl and Establish Exclusion Zones, if Necessary</p> <p>YCCL shall retain a qualified biologist to conduct two separate pre-construction surveys for burrowing owl: no more than 30 days prior to initiating ground-disturbing activities (including grubbing and grading) within grassland habitat and then again within 3 days prior to construction. The preconstruction burrowing owl surveys shall be conducted in conjunction with the nesting bird surveys described under Mitigation Measure-3.4-3a and shall encompass the designated work area and a 500-foot buffer around this area where access is permitted. Areas where access is not permitted or is not accessible shall be surveyed using binoculars or a spotting scope.</p> <p>If burrowing owls are identified during the survey area, YCCL shall minimize activities that shall affect occupied habitat as follows. Occupied habitat is considered fully avoided if the project footprint does not impinge on a non-disturbance buffer around the suitable burrow. For occupied burrowing owl nest burrows, this non-disturbance buffer could range from 150 to 1,500 feet (Table 3.4-3, Recommended Restricted Activity Dates and Setback Distances by Level of Disturbance for Burrowing Owls), depending on the time of year and the level of disturbance, based on current guidelines (California Department of Fish and Game 2012).</p> <p>TABLE 3.4-3. RECOMMENDED RESTRICTED ACTIVITY DATES AND SETBACK DISTANCES BY LEVEL OF DISTURBANCE FOR BURROWING OWLS</p> <table border="1"> <thead> <tr> <th rowspan="2">Time of Year</th> <th colspan="3">Level of Disturbance (feet) from Occupied Burrows</th> </tr> <tr> <th>Low</th> <th>Medium</th> <th>High</th> </tr> </thead> <tbody> <tr> <td>April 1–August 15</td> <td>600</td> <td>1,500</td> <td>1,500</td> </tr> <tr> <td>August 16–October 15</td> <td>600</td> <td>600</td> <td>1,500</td> </tr> <tr> <td>October 16–March 31</td> <td>150</td> <td>300</td> <td>1,500</td> </tr> </tbody> </table> <p>SOURCE: Yolo Habitat Conservancy 2018</p> <p>The Yolo HCP/NCCP generally defines low, medium, and high levels of disturbances of burrowing owls as follows.</p> <ul style="list-style-type: none"> • Low: Typically, 71-80 decibels, generally characterized by the presence of passenger vehicles, small gas-powered engines (e.g., lawn mowers, small chain saws, portable generators), and high-tension power lines. Includes electric hand tools (except circular saws, impact wrenches and similar). Management and enhancement activities would typically fall under this category. Human activity in the immediate vicinity of burrowing owls would also constitute a low level of disturbance, regardless of the noise levels. 	Time of Year	Level of Disturbance (feet) from Occupied Burrows			Low	Medium	High	April 1–August 15	600	1,500	1,500	August 16–October 15	600	600	1,500	October 16–March 31	150	300	1,500	S	LSM
Time of Year	Level of Disturbance (feet) from Occupied Burrows																					
	Low	Medium	High																			
April 1–August 15	600	1,500	1,500																			
August 16–October 15	600	600	1,500																			
October 16–March 31	150	300	1,500																			

KEY: S - Significant SU – Significant and Unavoidable LS – Less than Significant LSM – Less than Significant with Mitigation NI – No Impact

TABLE ES-1. ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES (Continued)

Impact	Mitigation Measure	Impact Significance	
		Before Mitigation	After Mitigation
3.4 BIOLOGICAL RESOURCES (cont.)			
Impact 3.4.6 (cont.)	<ul style="list-style-type: none"> • Moderate: Typically, 81-90 decibels, and would include medium- and large-sized construction equipment, such as backhoes, front end loaders, large pumps and generators, road graders, dozers, dump trucks, drill rigs, and other moderate to large diesel engines. Also includes power saws, large chainsaws, pneumatic drills and impact wrenches, and large gasoline-powered tools. Construction activities would normally fall under this category. • High: Typically, 91-100 decibels, and is generally characterized by impacting devices, jackhammers, compression (“jake”) brakes on large trucks, and trains. This category includes both vibratory and impact pile drivers (smaller steel or wood piles) such as used to install piles and guard rails, and large pneumatic tools such as chipping machines. It may also include large diesel and gasoline engines, especially if in concert with other impacting devices. Felling of large trees (defined as dominant or subdominant trees in mature forests), truck horns, yarding tower whistles, and muffled or underground explosives are also included. Very few covered activities are expected to fall under this category, but some construction activities may result in this level of disturbance. <p>The buffer size may be reduced based on existing vegetation, human development, and land use, as determined during coordination with CDFW.</p> <p>If the biologist finds the site to be occupied by western burrowing owls during the breeding season (February 1 to August 31), the project proponent shall avoid all nest sites, based on the buffer distances described above, during the remainder of the breeding season or while the nest is occupied by adults or young (occupation includes individuals or family groups that forage on or near the site following fledging). Construction may occur inside of the disturbance buffer during the breeding season if the nest is not disturbed and the YCCL develops an avoidance plan that is approved by all applicable resource agencies (i.e., Yolo Conservancy, CDFW) prior to project construction, based on the following criteria:</p> <ul style="list-style-type: none"> • The avoidance plan is approved by all applicable resource agencies (i.e., CDFW, Yolo Conservancy). • A qualified biologist monitors the owls for at least three days prior to construction to determine baseline nesting and foraging behavior (i.e., behavior without construction). • The same qualified biologist monitors the owls during construction and finds no change in owl nesting and foraging behavior in response to construction activities. • If the qualified biologist identifies a change in owl nesting and foraging behavior as a result of construction activities, the qualified biologist shall have the authority to stop all construction related activities within the non-disturbance buffers described above. The qualified biologist shall report this information to YCCL and the applicable resources agencies within 24 hours, and the Conservancy shall require that these activities immediately cease within the non-disturbance buffer. Construction cannot resume within the buffer until the adults and juveniles from the occupied burrows have moved out of the Project area. 		

KEY: S - Significant SU – Significant and Unavoidable LS – Less than Significant LSM – Less than Significant with Mitigation NI – No Impact

TABLE ES-1. ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES (Continued)

Impact	Mitigation Measure	Impact Significance	
		Before Mitigation	After Mitigation
3.4 BIOLOGICAL RESOURCES (cont.)			
Impact 3.4.6 (cont.)	<ul style="list-style-type: none"> • If monitoring indicates that the nest is abandoned prior to the end of nesting season and the burrow is no longer in use by owls, YCCL may remove the non-disturbance buffer, only with concurrence from applicable resource agencies. If the burrow cannot be avoided by construction activity, the biologist shall excavate and collapse the burrow in accordance with CDFW’s 2012 guidelines to prevent reoccupation after receiving approval from the wildlife agencies. <p>If evidence of western burrowing owl is detected outside the breeding season (September 1 to January 31), the project proponent shall establish a non-disturbance buffer around occupied burrows, consistent with Table 3.4-3, as determined by a qualified biologist. Construction activities within the disturbance buffer are allowed if the following criteria are met to prevent owls from abandoning important overwintering sites:</p> <ul style="list-style-type: none"> • A qualified biologist monitors the owls for at least three days prior to construction to determine baseline foraging behavior (i.e., behavior without construction). • The same qualified biologist monitors the owls during construction and finds no change in owl foraging behavior in response to construction activities. • If there is any change in owl roosting and foraging behavior as a result of construction activities, these activities shall cease within the buffer. • If the owls are gone for at least one week, YCCL may request approval from the applicable resource agencies for a qualified biologist to excavate and collapse usable burrows to prevent owls from reoccupying the site if the burrow cannot be avoided by construction activities. The qualified biologist shall install one-way doors for a 48-hour period prior to collapsing any potentially occupied burrows. After all usable burrows are excavated, the buffer shall be removed, and construction may continue. <p>Monitoring must continue as described above for the nonbreeding season if the burrow remains active.</p> <p>A qualified biologist shall monitor the site, consistent with the requirements described above, to ensure that buffers are enforced, and owls are not disturbed. Exclusion and burrow closure shall not be conducted during the breeding season for any occupied burrow. If YCCL determines that passive relocation is necessary, they shall develop a burrowing owl exclusion plan in consultation with CDFW and Yolo Conservancy, as applicable. The methods shall be designed as described in the species monitoring guidelines (California Department of Fish and Game 2012) and consistent with the most up-to-date checklist of passive relocation techniques. This may include the installation of one-way doors in burrow entrances by a qualified biologist during the nonbreeding season. These doors shall be in place for 48 hours and monitored twice daily to ensure that the owls have left the burrow, after which time the biologist shall collapse the burrow to prevent reoccupation.</p>		

KEY: S - Significant SU – Significant and Unavoidable LS – Less than Significant LSM – Less than Significant with Mitigation NI – No Impact

TABLE ES-1. ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES (Continued)

Impact	Mitigation Measure	Impact Significance	
		Before Mitigation	After Mitigation
3.4 BIOLOGICAL RESOURCES (cont.)			
Impact 3.4.6 (cont.)	Burrows shall be excavated using hand tools. During excavation, an escape route shall be maintained at all times. This may include inserting an artificial structure, such as piping, into the burrow to prevent collapsing until the entire burrow can be excavated and it can be determined that no owls are trapped inside the burrow. Other methods of passive or active relocation may be used, based on best available science, if approved by the applicable resource agencies.		
Impact 3.4.7: Disturbance of nesting northern harrier and other protected ground-nesting birds and raptors.	Implementation of Mitigation Measures 3.4.1b and 3.4.4.	S	LSM
Impact 3.4.8: Potential adverse effects to special-status plants.	<p>Mitigation Measure 3.4.8a: Conduct appropriately timed floristic surveys</p> <p>A qualified botanist shall conduct protocol-level floristic surveys of the Project area. The floristic surveys shall be appropriately timed to coincide with the blooming/identifiable period of the special status plants with potential to occur in the Project area and follow methods described in <i>Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities</i> (CDFW 2018) and <i>Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants</i> (USFWS 2002).</p> <p>Mitigation Measure 3.4.8b: Avoid special-status plant populations, minimize and/or compensate for substantial impacts</p> <p>If special-status plants are detected in the Project area, the YCCL shall identify the populations with orange fencing for avoidance and notify CDFW and USFWS as appropriate. If the special-status plants cannot be avoided, addition minimization and mitigation measures shall be developed by the applicant and CDFW and USFWS prior to construction. These measures may include, but would not be limited to:</p> <ul style="list-style-type: none"> • Minimizing impacts to the population(s) by restricting impacts to a few individuals. • Developing a transplantation plan that involves relocating plants to suitable habitat approved by CDFW and/or USFWS. • Monitoring affected populations for a minimum of 3 years to document success of transplantation efforts. • Restoring or enhancing the occupied habitat onsite or in the project region. The seasonal wetlands and non-native annual grassland have potential to be restored and/or enhanced. If mitigation is required, the applicant shall consult with CDFW and/or USFWS on constraints and opportunities for appropriate on-site habitat enhancement and/or creation for the affected species. • Protecting occupied habitat at another location in the region. 	S	LSM

KEY: S - Significant SU – Significant and Unavoidable LS – Less than Significant LSM – Less than Significant with Mitigation NI – No Impact

TABLE ES-1. ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES (Continued)

Impact	Mitigation Measure	Impact Significance	
		Before Mitigation	After Mitigation
3.4 BIOLOGICAL RESOURCES (cont.)			
Impact 3.4.9: Potential inadvertent loss or disturbance of riparian habitat located near the Project area.	<p>Mitigation Measure 3.4.9: Avoid Willow Slough Bypass and obtain permits as needed and comply with permit requirements</p> <p>Project activities shall be designed to avoid surface activities within 300 feet of Willow Slough Bypass. If pipeline activities cannot be avoided within 300 feet of Willow Slough Bypass, the riparian corridor shall be delineated by a qualified biologist and orange construction fencing shall be installed along the outline of the corridor. Impacts to the Willow Slough Bypass shall be avoided through directional boring beneath the bypass. Should directional bores bore under Willow Slough Bypass, consultation with CDFW shall be required and if necessary, a Lake or Stream Bed Alteration Permit would be obtained. The levee along Willow Slough Bypass is regulated by the Central Valley Flood Protection Board and any work within 300 feet of the levee of designated floodways or regulated streams would require an Encroachment Permit.</p>	S	LSM
Impact 3.4.10: Placement of fill material into Waters of the U.S. or Waters of the State.	<p>Mitigation Measure 3.4.10: Conduct protocol aquatic resources delineation and compensate for substantial adverse effects on state or federally protected wetlands and non-wetland waters</p> <p>Prior to construction, a delineation of aquatic resources shall be conducted and submitted to USACE along with a request for verification. The delineation shall follow routine methods described in the <i>Corps of Engineers Wetlands Delineation Manual</i> (Environmental Laboratory 1987), <i>Regional Supplement to the Corps of Engineers Wetland Delineation Manual for the Arid West Region</i> (U.S. Army Corps of Engineers 2008), <i>A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States</i> (Lichvar and McColley 2008), and the State Water Board's <i>Dredged and Fill Procedures</i> (State Water Resources Control Board 2019). The delineation shall be submitted to RWQCB if there are aquatic resources that are not waters of the United States, but still regulated by the State pursuant to the Porter Cologne Water Quality Control Act.</p> <p>If waters of the United States are determined to be present in the Project area and would be filled by the proposed project, the applicant shall be required to obtain a Section 404 permit from USACE and a Section 401 permit from RWQCB. If the project would impact aquatic resources that are not regulated by USACE, the applicant shall be required to obtain Waste Discharge Requirements from the RWQCB. The USACE and/or RWQCB may require compensatory mitigation for impacts to jurisdictional aquatic resources. Should compensatory mitigation be required, it could be achieved by wetland enhancement or restoration in the Project area, which could be done in combination with the upland enhancement for special-status plant habitat discussed in Mitigation Measure 3.4.6b. If onsite mitigation is not available or feasible, the applicant shall purchase mitigation credits from a USACE/RWQCB-approved mitigation bank that services project's region.</p>	S	LSM

KEY: S - Significant SU – Significant and Unavoidable LS – Less than Significant LSM – Less than Significant with Mitigation NI – No Impact

TABLE ES-1. ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES (Continued)

Impact	Mitigation Measure	Impact Significance	
		Before Mitigation	After Mitigation
3.4 BIOLOGICAL RESOURCES (cont.)			
Impact 3.4.11: Potential interference with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impediment of the use of native wildlife nursery sites.	None required.	LS	LS
Impact 3.4.12: Potential for conflicting with local policies or ordinances protecting biological resources.	None required.	LS	LS
Impact 3.4.13: Potential conflict with provisions of an adopted HCP/NCCP.	None required.	LS	LS
3.5 CULTURAL RESOURCES AND TRIBAL CULTURAL RESOURCES			
Impact 3.5.1: The Project could either directly or indirectly result in impacts to cultural resources or TCRs.	<p>Mitigation Measure 3.5.1a: If cultural resources are encountered during Project implementation, construction (or Project actions) shall, in accordance with CEQA Section 15064.5, be halted or diverted to allow an archaeologist an opportunity to assess the resource.</p> <p>Mitigation Measure 3.5.1b: Section 7050.5 and 7052 of the California Health and Safety Code and Section 5097 of the Public Resources Code shall be implemented in the event that human remains, or possible human remains are located.</p> <p>Mitigation Measure 3.5.1c: Prior to Project ground disturbing activities, the County shall notify the Yocha Dehe Wintun Nation and arrange for a qualified personnel to conduct a cultural resources sensitivity training for all construction personnel who will be associated with the Project. The training shall be developed and conducted in coordination with a representative from the Yocha Dehe Wintun Nation. The training shall include relevant information regarding sensitive cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating State laws and regulations. The cultural sensitivity training shall also describe appropriate avoidance and minimization measures for resources that have the potential to be located on the Project site and shall outline what to do and whom to contact if any potential tribal cultural resources are discovered.</p>	S	LSM
Impact 3.5.2: Excavation of the non-specific future off-site borrow area could disturb previously unknown cultural resources or TCRs.	<p>Mitigation Measure 3.5.2a: A cultural resources survey of the site selected for the off-site borrow area, including a site survey and records search, shall be conducted by a registered archeologist prior to commencement of soil borrow activities. Any potential disturbance of identified cultural resources on the site shall be properly mitigated on-site or through proper recording and removal of the artifacts.</p> <p>Mitigation Measure 3.5.2b: If cultural resources are encountered during soil borrow activities, such activities shall, in accordance with CEQA Section 15064.5, be halted or diverted to allow an archaeologist an opportunity to assess the resource.</p>	S	LSM

KEY: S - Significant SU – Significant and Unavoidable LS – Less than Significant LSM – Less than Significant with Mitigation NI – No Impact

TABLE ES-1. ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES (Continued)

Impact	Mitigation Measure	Impact Significance	
		Before Mitigation	After Mitigation
3.5 CULTURAL RESOURCES AND TRIBAL CULTURAL RESOURCES (cont.)			
Impact 3.5.2 (cont.)	<p>Mitigation Measure 3.5.2c: Section 7050.5 and 7052 of the California Health and Safety code and Section 5097 of the Public Resources Code shall be implemented in the event that human remains, or possible human remains are located at the site selected for the off-site borrow area.</p> <p>Mitigation Measure 3.5.2d: Prior to ground disturbance at the future off-site borrow area, the County shall notify the Yocha Dehe Wintun Nation and arrange for a qualified personnel to conduct a cultural resources sensitivity training for all construction personnel who will be associated with the Project. The training shall be developed and conducted in coordination with a representative from the Yocha Dehe Wintun Nation. The training shall include relevant information regarding sensitive cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating State laws and regulations. The cultural sensitivity training shall also describe appropriate avoidance and minimization measures for resources that have the potential to be located on the Project site and shall outline what to do and whom to contact if any potential tribal cultural resources are discovered.</p>		
3.6 ENERGY			
Impact 3.6.1: Project construction or operation could result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources.	None required.	LS	LS
Impact 3.6.2: The Project could conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	None required.	LS	LS
3.7 GREENHOUSE GAS EMISSIONS			
Impact 3.7.1: Project construction or operation could conflict with CARB's 2017 Scoping Plan.	None required.	LS	LS
3.8 PUBLIC HEALTH AND SAFETY			
Impact 3.8.1: Operation of new Project element facilities (e.g., wood pellet facility, waste gasification facility, organic waste fertilizer facility, transfer station, thermal pressure hydrolysis system, peaking power plant, expanded biogas utilization options, and biogas to methanol pilot facility) could pose health and safety threats to workers at the YCCL.	Mitigation Measure 3.8.1: The Division of Integrated Waste Management (DIWM) (or the facility contractor) shall prepare a Health and Safety Plan (HASP) for all new Project Element facilities prior to commencement of new facility operations. Each HASP shall include staff training requirements, emergency procedures and equipment, personal protective equipment for facility staff, communications equipment and emergency contacts, hearing loss prevention, equipment maintenance, and other policies to ensure the protection of worker and public health and safety.	S	LSM

KEY: S - Significant SU – Significant and Unavoidable LS – Less than Significant LSM – Less than Significant with Mitigation NI – No Impact

TABLE ES-1. ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES (Continued)

Impact	Mitigation Measure	Impact Significance	
		Before Mitigation	After Mitigation
3.8 PUBLIC HEALTH AND SAFETY (cont.)			
Impact 3.8.2: Implementation of new facilities and increasing the daily permitted tonnage at the YCCL could result in increases in gulls and other scavenging birds at the site, thus increasing the risk of bird strikes for aircraft approaching or departing from nearby airports.	None required.	LS	LS
3.9 GEOLOGY, SOILS AND SEISMICITY			
Impact 3.9.1: The Project could directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking.	None required.	LS	LS
Impact 3.9.2: During the development and operation of the non-specific future off-site borrow area, soil excavation could directly or indirectly cause substantial erosion or loss of topsoil.	None required.	LS	LS
Impact 3.9.3: The Proposed Project could directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction, landslides, or is the Project site located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.	None required.	LS	LS
Impact 3.9.4: Elements of the Project could be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property.	None required.	LS	LS
Impact 3.9.5: During the development and operation of the non-specific future off-site borrow area, soil excavation could directly or indirectly destroy a unique paleontological resource.	Mitigation Measure 3.9.5: Prior to initiation of any future off-site borrow area excavation activities 8 feet or more below the ground surface, the County shall provide pre-construction briefing(s) to supervisory personnel of any excavation contractor to alert them to the possibility of exposing significant paleontological resources within the Project area. The briefing shall discuss any paleontological objects that could be exposed, the need to stop excavation at the discovery, and the procedures to follow regarding discovery protection and notification of the County. An "Alert Sheet" shall be posted in conspicuous locations at the future off-site borrow area to alert personnel to the procedures and protocols to follow for the discovery of potentially significant paleontological	S	LSM

KEY: S - Significant SU – Significant and Unavoidable LS – Less than Significant LSM – Less than Significant with Mitigation NI – No Impact

TABLE ES-1. ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES (Continued)

Impact	Mitigation Measure	Impact Significance	
		Before Mitigation	After Mitigation
3.9 GEOLOGY, SOILS AND SEISMICITY (cont.)			
Impact 3.9.5 (cont.)	resources. If unique and/or significant paleontological resources are discovered during soil management activities (as determined by a qualified paleontologist), the County shall allow excavation, identification, cataloging and/or other documentation by the qualified paleontologist. If appropriate, the County shall donate the resource to a local agency, state university, or other applicable institution, for curation and display for public education purposes.		
3.10 HYDROLOGY AND WATER QUALITY			
Impact 3.10.1: The Project could violate any water quality standards or waste discharge requirements, or otherwise substantially degrade surface or groundwater quality.	<p>Mitigation Measure 3.10.1: The YCCL shall complete the following actions to monitor and evaluate groundwater extraction and retention during and following its Phase 1 groundwater extraction program (10 extraction wells):</p> <ol style="list-style-type: none"> I. During the implementation period of the Phase 1 groundwater extraction program, YCCL shall continue to conduct regular groundwater level monitoring throughout each water year to assess the separation distance between the top of the groundwater table and bottom extent of the waste prism (5-foot separation) in WMUs 1-5. These data shall be reviewed annually to gauge the effectiveness of the groundwater extraction program. As required, water level monitoring data shall be submitted to the RWQCB. II. Within one year following the completion of the Phase 1 groundwater extraction well program, acquired annual groundwater elevation and extraction rate data shall be applied, as appropriate, to determine whether the 5-foot separation is adequately maintained, and to update and refine the site groundwater model and YCCL facility water balance. III. Groundwater level monitoring data, results of the updated groundwater model, and facility water balance shall be used to (a) determine the necessity and optimal location for additional extraction wells, (b) project the rate and quantity of extracted groundwater that would be necessary to maintain the 5-foot groundwater separation, and (c) determine whether storage area for that volume is available onsite. IV. If results of the updated groundwater model and updated facility water balance determine that additional extraction wells are necessary and would generate groundwater discharges in excess of onsite facility storage infrastructure available at that time, the County shall develop and implement alternative water storage strategies prior to installing and operating additional extraction wells. These alternatives could include: <ul style="list-style-type: none"> • Arrangements with neighboring properties to purchase excess stormwater for irrigation uses. • Acquiring additional property for land application of stored water or for construction of additional storage basins. • Developing technologies to enhance evaporative capacity of surface water. 	S	LSM

KEY: S - Significant SU – Significant and Unavoidable LS – Less than Significant LSM – Less than Significant with Mitigation NI – No Impact

TABLE ES-1. ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES (Continued)

Impact	Mitigation Measure	Impact Significance	
		Before Mitigation	After Mitigation
3.10 HYDROLOGY AND WATER QUALITY (cont.)			
Impact 3.10.2: The Project could substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin.	None required.	LS	LS
Impact 3.10.3: The Project could substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site.	None required.	LS	LS
Impact 3.10.4: The Project could substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite.	None required.	LS	LS
Impact 3.10.5: The Project could substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner which would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.	None required.	LS	LS
Impact 3.10.6: The Project could substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows.	None required.	LS	LS
Impact 3.10.7: In flood hazard, tsunami, or seiche zones, the Project could risk release of pollutants due to inundation.	None required.	LS	LS
Impact 3.10.8: The Project could conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	None required.	LS	LS

KEY: S - Significant SU – Significant and Unavoidable LS – Less than Significant LSM – Less than Significant with Mitigation NI – No Impact

TABLE ES-1. ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES (Continued)

Impact	Mitigation Measure	Impact Significance	
		Before Mitigation	After Mitigation
3.11 WILDFIRE			
Impact 3.11.1: The Project could result in an increased risk in wildfires.	None required.	LS	LS
Impact 3.11.2: The non-specific off-site borrow area Project element could create impacts related to wildfire.	None required.	LS	LS
3.12 NOISE			
Impact 3.12.1: New on-site Project elements that are proposed (including increased daily permitted tonnage, a peaking power plant, a wood pellet facility, a large scale floating solar photovoltaic system, a solar photovoltaic system on closed landfill units, a waste gasification facility, expanded biogas utilization options, a new class 2 surface impoundment, an organic waste fertilizer facility, development of a storm water treatment and drainage system, additional groundwater pumping with possible treatment and discharge, a transfer station, a thermal pressure hydrolysis system, and a biogas to methanol pilot facility) could increase noise levels at off-site residences on agriculturally-designated land.	Mitigation Measure 3.12.1: Construction activities for new facilities shall be limited to 6:00 a.m. to 9:00 p.m., Monday through Saturday, and 7:00 a.m. to 7:00 p.m. on Sunday.	S	LSM
Impact 3.12.2: Noise from activities at a future non-specific soil borrow site could affect sensitive receptors.	Mitigation Measure 3.12.2a: Soil borrow activities shall be located in areas with a buffer zone of 400 feet to the nearest residence on agriculturally-designated land. Mitigation Measure 3.12.2b: Soil borrow activities shall be limited to achieve a CNEL that does not exceed 75 dBA at the nearest residence on agriculturally-designated land. Mitigation Measure 3.12.2c: To avoid effects of nighttime operations, haul trips leaving the soil borrow area shall be limited to 6:00 a.m. to 9:00 p.m., Monday through Saturday, and 7:00 a.m. to 7:00 p.m. on Sunday.	S	LSM
Impact 3.12.3: Truck trips to and from the YCCL could increase noise levels at residences on agriculturally-designated land.	None required.	LS	LS
3.13 TRANSPORTATION			
Impact 3.13.1: The Project could conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.	None required.	LS	LS

KEY: S - Significant SU – Significant and Unavoidable LS – Less than Significant LSM – Less than Significant with Mitigation NI – No Impact

TABLE ES-1. ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES (Continued)

Impact	Mitigation Measure	Impact Significance	
		Before Mitigation	After Mitigation
3.13 TRANSPORTATION (cont.)			
Impact 3.13.2: The Project could generate vehicle miles travelled (VMT) that could conflict or be inconsistent with State CEQA <i>Guidelines</i> §15064.3, subdivision (b).	None required.	LS	LS
Impact 3.13.3: The Project could substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	None required.	LS	LS
Impact 3.13.4: The Project could result in inadequate emergency access.	None required.	LS	LS
3.14 PUBLIC SERVICES, UTILITIES, AND SERVICE SYSTEMS			
Impact 3.14.1: The increased daily permitted tonnage (TPD) could increase the risk of fire occurring at the YCCL.	None required.	LS	LS
Impact 3.14.2: The Project element facilities (e.g., waste gasification facility, thermal pressure hydrolysis system, transfer station, peaking power plant, wood pellet facility, organic waste fertilizer facility, biomass to methanol pilot facility, and expanded biogas utilization options) could increase the risk of fire occurring at the YCCL.	<p>Mitigation Measure 3.14.2: As part of the standard review process, the County shall review and approve a <i>Fire Prevention Control and Mitigation Plan</i> that shall be developed for each applicable Project element, which shall include but not be limited to:</p> <ul style="list-style-type: none"> • Description of the measures the operator will take to prevent fires and to control and extinguish fires. • Identification and description of the equipment the operator will have available (on-site) to control and extinguish fires. • Description of the measures the operator will take to mitigate the impacts of any fire at the site to the public health and safety and the environment. • Description of the arrangements the operator has made with the local fire control authority to provide fire prevention, control, and suppression in the event of a fire. 	S	LSM
Impact 3.14.3: The Project facilities could have water demands greater than water supplies.	None required.	LS	LS
Impact 3.14.4: The Non-Specific Future Off-Site Soil Borrow Area could create impacts related to public services and utilities.	None required.	LS	LS

KEY: S - Significant SU – Significant and Unavoidable LS – Less than Significant LSM – Less than Significant with Mitigation NI – No Impact

This page intentionally left blank

CHAPTER 1

INTRODUCTION

1.1 PROJECT OVERVIEW AND BACKGROUND

1.1.1 PROJECT OVERVIEW

The Yolo County Central Landfill (YCCL) is a municipal solid waste (MSW) facility located in unincorporated Yolo County about two miles northeast of Davis, and five miles southeast of Woodland, near the intersection of County Roads 28H and 104. The site covers 725 acres. The YCCL is owned by Yolo County and operated by the County's Department of Community Services, Division of Integrated Waste Management (DIWM); it has been in operation since 1975. The landfill is open seven days per week and accepts non-hazardous MSW, green waste and food waste, construction and demolition debris, liquid waste and recyclables. The origin of most of the MSW is from incorporated and unincorporated areas of Yolo County. YCCL is permitted to accept up to 1,800 tons per day of waste. In recent years, average daily throughput has exceeded 1,000 tons per day.

The Project evaluated in this Environmental Impact Report (EIR) consists of several changes to YCCL's existing operations and permits including but not limited to the Solid Waste Facility Permit (SWFP), Yolo-Solano Air Quality Management District Permits, and Waste Discharge Requirements. One aspect of the Project, development of a non-specific future off-site borrow area, may also require a mining permit under the state Surface Mining and Reclamation Act (SMARA) and Yolo County's Agricultural Surface Mining Permit program. The Project is subject to the California Environmental Quality Act (CEQA) because the project is undertaken by a public agency and approval of any permits requires discretionary actions by public bodies. Yolo County, which is the CEQA Lead Agency for environmental review, has determined that some of the proposed changes have the potential to cause a significant environmental impact. For this reason, the County has concluded that an EIR is the appropriate level of environmental review for this Project.

The Project would be undertaken to allow the County greater flexibility in developing and implementing processes and operations that would reduce waste from the landfill, reduce environmental impacts of landfill operations, decrease greenhouse gas (GHG) emissions, increase the recovery of materials and energy from waste, operate more efficiently and economically, and extend the facility's lifespan.

While some of the Project elements, such as construction and operation of a waste gasification facility, are entirely new, many of the Project elements are revisions or improvements to existing designs and operations. The following proposed changes to the design and operation of the YCCL

constitute the Project proposed for evaluation in this EIR. The proposed increased daily permitted tonnage is reflective of waste streams that can benefit from new processing elements, effects of population increases and/or accommodations for peak days/months that have higher tonnage of certain waste streams that can be processed at YCCL (not increased landfill disposal). Some of the Project elements would potentially process out-of-County waste streams more efficiently than other options. Proposed changes to the design and operation of the YCCL that constitute the Project, and which are analyzed in this EIR, include the following:

1. Increased Daily Permitted Tonnage
2. Wood Pellet Facility
3. Large Scale Floating Solar Photovoltaic System
4. Solar Photovoltaic System on Closed Landfill Units
5. Waste Gasification Facility
6. Expanded Biogas Utilization Options
7. Peaking Power Plant
8. New Class 2 Surface Impoundment
9. Organic Waste Fertilizer Facility
10. Stormwater Treatment System and Discharge
11. Additional Groundwater Pumping (Possible Treatment and Discharge)
12. Transfer Station
13. Non-Specific Future Off-Site Borrow Area
14. Thermal Pressure Hydrolysis System
15. Biogas to Methanol Pilot Facility

Each of these Project elements is described in greater detail in Chapter 2.

1.1.2 HISTORY AND BACKGROUND OF THE PROJECT

The YCCL covers 725 acres (Assessor's Parcel Numbers 042-004-001, 042-004-002, and 042-014-006) and includes several discrete areas, totaling 473 acres, that are permitted for disposal. These include seven Class III landfill areas for disposal of MSW (designated as Waste Management Units [WMUs] 1 through 7) and four Class II surface impoundments for holding liquid wastes. The site also includes one existing composting facility and one under development, a construction, demolition and inerts debris (CDI) recycling facility, areas for metal, wood, and inert material (concrete, rock, etc.) recovery and recycling, and a permanent household hazardous waste collection facility. Five of the Class III landfill areas (WMUs 1-5) have undergone final closure. WMU 6 is currently operational and includes eight 20-acre modules (100 acres are active, and 60 acres remain to be developed). WMU 7 is approved for future development and consists of eight modules (160 acres total).

The YCCL's current SWFP was issued on July 31, 2018. The Subsequent EIR certified by the Yolo County Board of Supervisors on September 27, 2005 and Addendum's #1, #2, #3 and #4 to

the Subsequent EIR prepared by the Yolo County Community Services Department in March 2006, February 2016, April 2017 and February 2018, respectively, support the design and operation of the YCCL authorized by the current SWFP. The YCCL’s Joint Technical Document (JTD) was amended in June 2018 (Yolo County, 2018).

1.2 SCOPE OF THE EIR

In August 2020, the County issued the Notice of Preparation (NOP) for the EIR, which included a list of topic areas for which the Project could result in potentially significant environmental impacts (Yolo County, 2020). The EIR’s impact analysis primarily focuses on the direct and indirect impacts of the Project on those topic areas.

This EIR focuses only on the potential environmental impacts of the various Project elements that make up the proposed Project, and not on the overall impacts of the operation of YCCL or of already-approved past projects. While the Project described and analyzed in this EIR is distinct from the projects that were subject of the certified 1992 YCCL EIR¹ and 2005 YCCL EIR², much of the information in those earlier documents are germane to this EIR. The certified 2015 YCCL EIR for the YCCL Soil Borrow Site Project³ also contains information germane to this EIR. The analysis in this EIR therefore relies to a considerable extent on the background and analysis contained in the certified 1992, 2005 and 2015 EIRs.

1.2.1 APPROACH TO ANALYSIS

CEQA Guidelines § 15125(a) addresses how a lead agency should establish the baseline conditions against which potential environmental impacts of a project are measured, as follows:

- “(1) Generally, the lead agency should describe physical environmental conditions as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, from both a local and regional perspective. Where existing conditions change or fluctuate over time, and where necessary to provide the most accurate picture practically possible of the project’s impacts, a lead agency may define existing conditions by referencing historic conditions, or conditions expected when the project becomes operational, or both, that are supported with substantial evidence. In addition, a lead agency may also use baselines consisting of both existing conditions and projected future conditions that are supported by reliable projections based on substantial evidence in the record.
- (2) A lead agency may use projected future conditions (beyond the date of project operations) baseline as the sole baseline for analysis only if it demonstrates with substantial evidence that use of existing conditions would be either misleading or without informative value to decision-makers and the public. Use of projected future conditions

¹ Yolo County. 1992. *Final Environmental Impact Report Yolo County Central Landfill State Clearinghouse No. 91123015*. October 1992.

² Yolo County. 2005. *Yolo County Central Landfill Permit Revisions Final Subsequent Environmental Impact Report SCH No. 1991073040*. May 2005.

³ Yolo County. 2015. *Final Environmental Impact Report Yolo County Central Landfill Soil Borrow Site Project*. April 2015.

as the only baseline must be supported by reliable projections based on substantial evidence in the record.

- (3) An existing conditions baseline shall not include hypothetical conditions, such as those that might be allowed, but have never actually occurred, under existing permits or plans, as the baseline.”

CEQA case law provides guidance as to the appropriate baseline for existing, permitted, facilities seeking modifications to permitted operations or activities. In *Fairview Neighbors v. County of Ventura* ([2d Dist. 1999] 70 Cal. App. 4th 238 [82 Cal. Rptr.2d 436]) the Court ruled that for an existing, permitted facility that was seeking a permit for a new or revised aspect of its operation, where the facility’s previously permitted operations had previously undergone environmental review, the appropriate baseline should be the existing permitted operations, rather than the level of operations actually occurring at the time of the Notice of Preparation.

In accordance with this decision, the design, operations, and environmental controls described in the existing SWFP and other current permits, based on the 2005 Subsequent EIR and Addendums, as well as other applicable permits that have undergone separate environmental review, constitute the baseline against which potential impacts of the Project are measured in this EIR.

One Project element, the development of a non-specific future off-site borrow area, is described and evaluated in this EIR in a general, programmatic manner. Implementation of this Project element would occur after a specific location for the off-site borrow area has been identified, and after completion of any required subsequent project-level environmental documentation.

1.3 THE EIR PROCESS

Based on a preliminary review of potential Project impacts, the County determined that an EIR would be the appropriate level of environmental review for the Project. In August 2020, the County prepared and circulated a Notice of Preparation (NOP) for this EIR (**Appendix A**), in accordance with CEQA Guidelines §15082, to seek comments from affected agencies and the public regarding the scope of the EIR. To avoid a public gathering during the COVID-19 crisis, the County held a virtual scoping meeting via Zoom Webinar on September 16, 2020. One oral comment was received at the virtual scoping meeting and several comment letters were received during the scoping period from interested governmental agencies (see **Appendix B**).

The County will circulate this Draft EIR for review by public agencies and interested persons and organizations for a 45-day public review period, in accordance with CEQA Guidelines §15105. Written comments will be accepted at the Yolo County Department of Community Services until 4 p.m. on the closing day of the review period. Oral and written comments will be accepted at a hearing on the Draft EIR prior to the close of the review period.

Written comments should be emailed to Stephanie.Cormier@yolocounty.org or submitted to: Stephanie Cormier, Yolo County Department of Community Services, 292 West Beamer Street, Woodland, California, 95695. At the close of the public review period, the County will evaluate

the comments received on the environmental issues and prepare written responses, as required by CEQA Guidelines §15088. The comments and responses will be included in the Final EIR as a separate chapter, along with any revised EIR text necessitated by the response to comments.

1.4 REFERENCES

Yolo County. 2020. *Notice of Preparation Environmental Impact Report (EIR) & Notice of Public Scoping Meeting*. August 28, 2020.

Yolo County. 2018. *Joint Technical Document, Yolo County Central Landfill, Yolo County, California*. June 2018.

Yolo County. 2015. *Final Environmental Impact Report Yolo County Central Landfill Soil Borrow Site Project*. April 2015.

Yolo County. 2005. *Yolo County Central Landfill Permit Revisions Final Subsequent Environmental Impact Report SCH No. 1991073040*. May 2005.

Yolo County. 1992. *Final Environmental Impact Report Yolo County Central Landfill State Clearinghouse No. 91123015*. October 1992.

This page intentionally left blank

CHAPTER 2

PROJECT DESCRIPTION

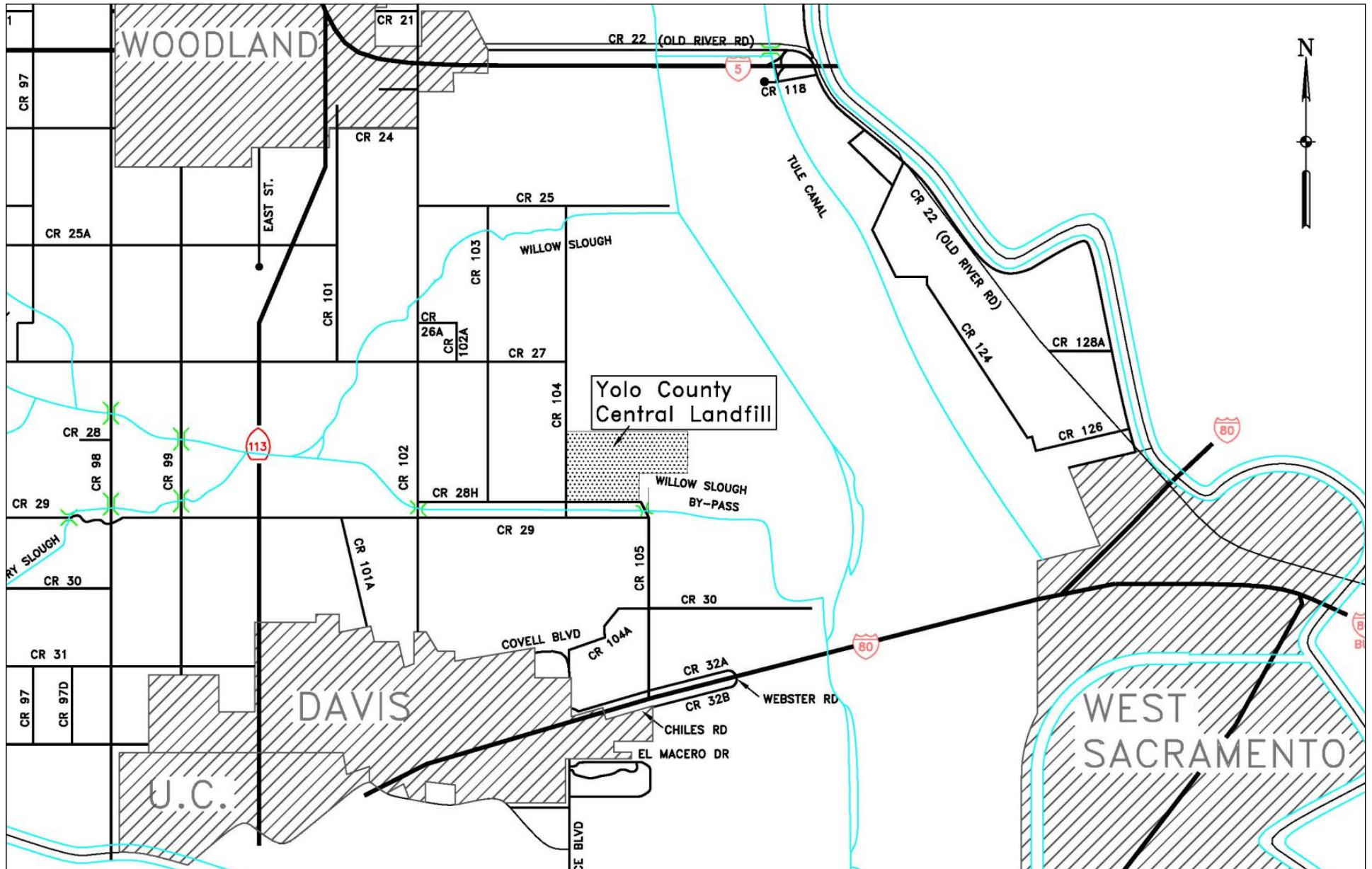
2.1 BACKGROUND

The Yolo County Central Landfill (YCCL) is a municipal solid waste facility located in unincorporated Yolo County about two miles northeast of Davis, and five miles southeast of Woodland, near the intersection of Roads 28H and 104 (see **Figure 2-1**). The YCCL is owned by Yolo County and operated by the County's Department of Community Services, Division of Integrated Waste Management (DIWM); it has been in operation since 1975. The landfill is open seven days per week, accepting non-hazardous municipal solid waste (MSW), green waste and food waste, construction and demolition debris, liquid waste, and recyclables from both incorporated and unincorporated areas of Yolo County. YCCL is permitted to accept up to 1,800 tons per day (TPD) of waste. In recent years, average daily throughput has exceeded 1,000 TPD.

The site covers 725 acres (Assessor's Parcel Numbers 042-140-001, 042-140-002, and 042-140-006) and includes several discrete areas, totaling 473 acres, that are permitted for disposal. These include seven Class III landfill areas for disposal of MSW (designated as Waste Management Units [WMUs] 1 through 7) and four Class II surface impoundments for holding liquid wastes. The site also includes one existing composting facility and one under development, a construction, demolition and inerts debris (CDI) recycling facility, areas for metal, wood, and inert material (concrete, rock, etc.) recovery and recycling, and a permanent household hazardous waste collection facility. Five of the Class III landfill areas (WMUs 1-5) have undergone final closure. WMU 6 is operational now and includes eight 20-acre modules (100 acres are active, and 60 acres remain to be developed). WMU 7 is approved for future development and consists of eight modules (160 acres total). The current layout of the landfill is shown in **Figure 2-2**.

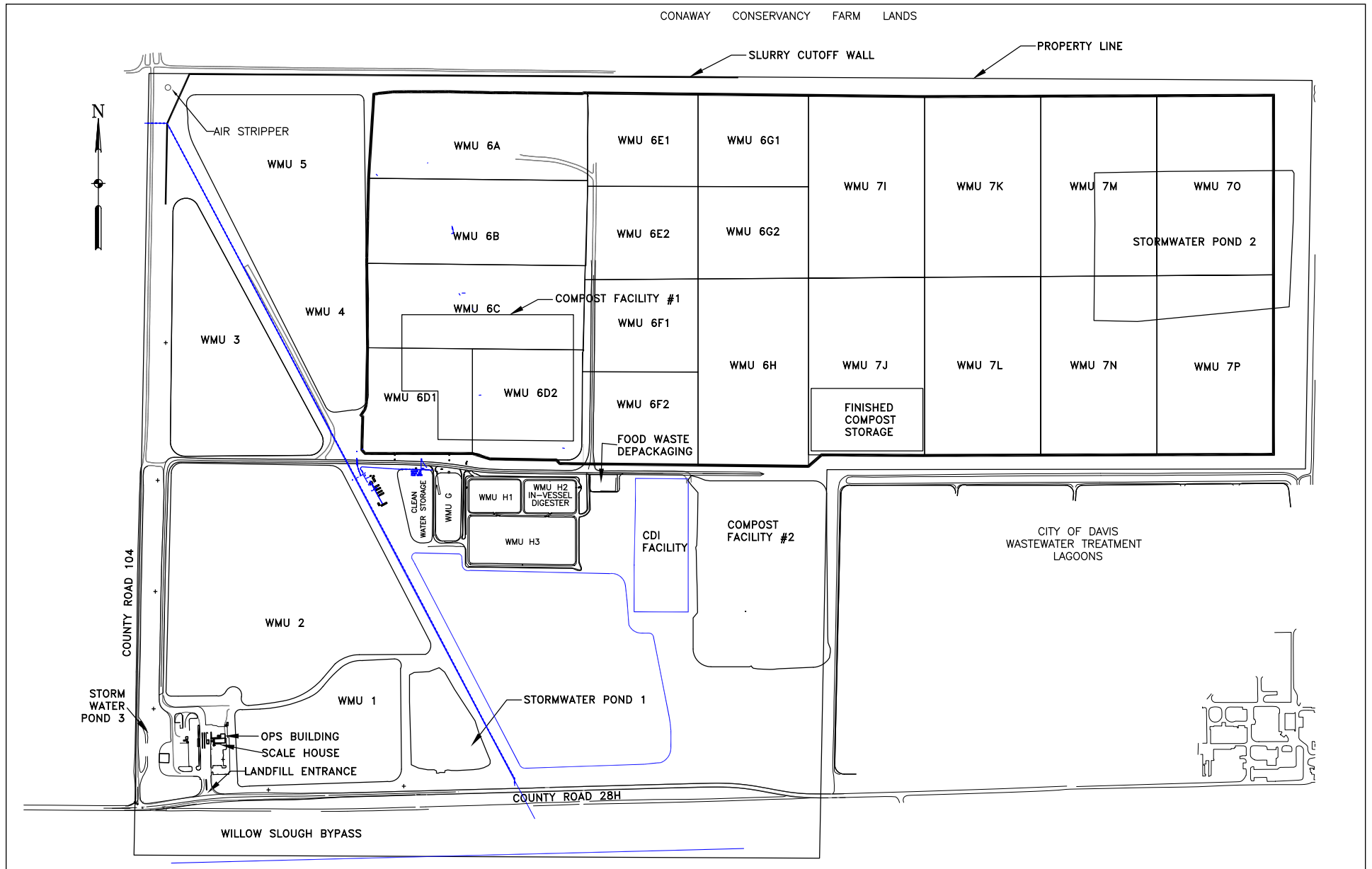
2.2 PROJECT ELEMENTS

The Project evaluated in this EIR consists of several changes to YCCL's existing operations and permits including but not limited to the Solid Waste Facility Permit (SWFP), Yolo-Solano Air Quality Management District (YSAQMD) Permits, and Waste Discharge Requirements (WDRs). These changes would be undertaken to allow the County greater flexibility in developing and implementing processes and operations that would reduce waste from the landfill, reduce environmental impacts of landfill operations, decrease greenhouse gas (GHG) emissions, increase the recovery of materials and energy from waste, operate more efficiently and economically, and extend the facility's lifespan.



Source: Yolo County Community Services Department, 2020

Figure 2-1
Project Location Map



Source: Yolo County Community Services Department, 2021

Figure 2-2
Existing Site Plan

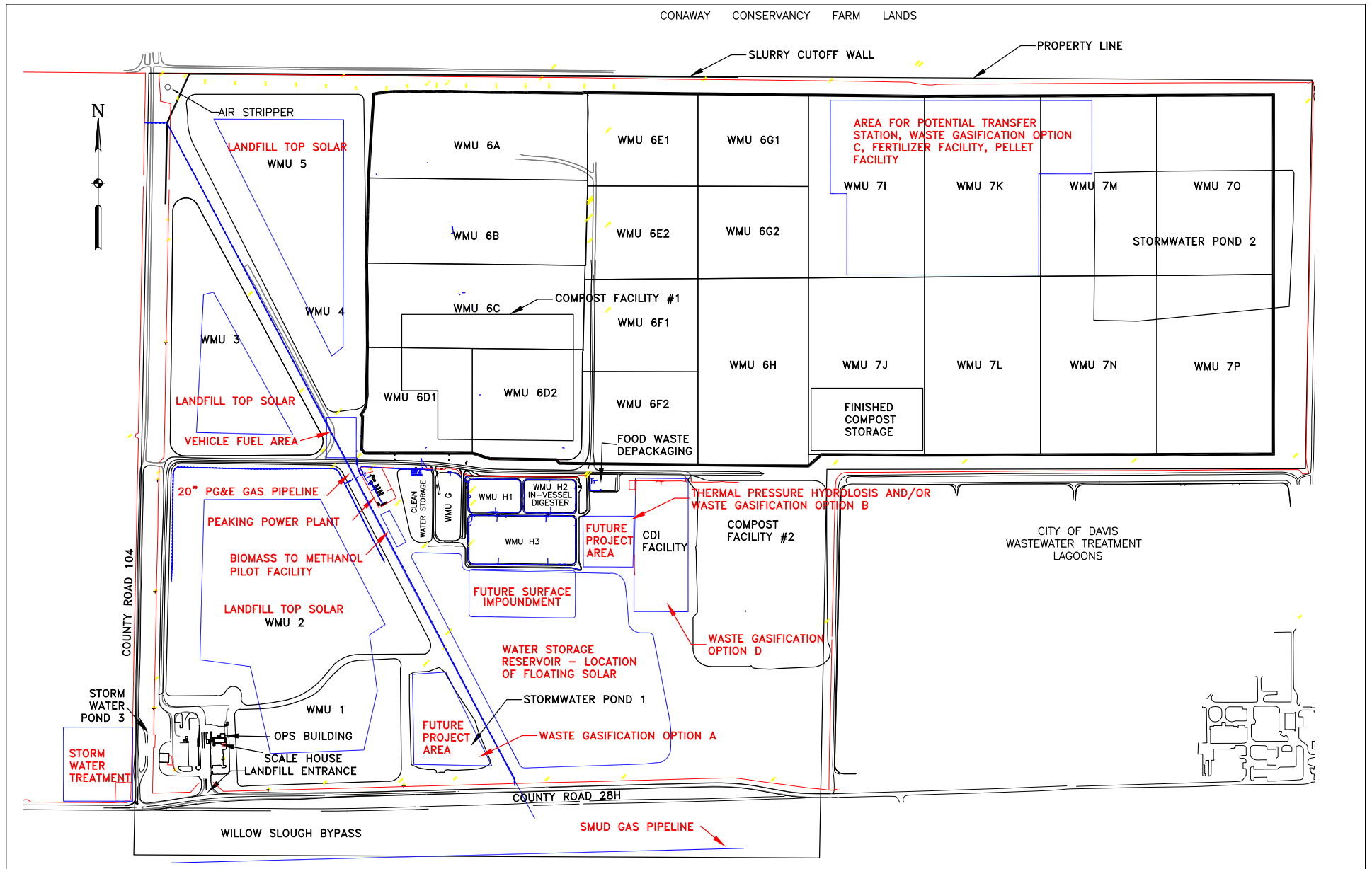
While some of the Project elements, such as construction and operation of a waste gasification facility, are entirely new, many of the Project elements are revisions or improvements to existing designs and operations. The following proposed changes to the design and operation of the YCCL constitute the Project proposed for evaluation in this EIR. The proposed increased daily permitted tonnage is reflective of additional waste streams that can benefit from new processing elements, effects of population increases and/or accommodations for peak days/months that have higher tonnage of certain waste streams that can be processed at YCCL (not increased landfill disposal). Some of the Project elements would potentially process out-of-County waste streams more efficiently than other options. Proposed changes to the design and operation of the YCCL that constitute the Project, and which are analyzed in this EIR, include the following:

1. Increased Daily Permitted Tonnage
2. Wood Pellet Facility
3. Large Scale Floating Solar Photovoltaic System
4. Solar Photovoltaic System on Closed Landfill Units
5. Waste Gasification Facility
6. Expanded Biogas Utilization Options
7. Peaking Power Plant
8. New Class 2 Surface Impoundment
9. Organic Waste Fertilizer Facility
10. Storm water Treatment System and Discharge
11. Additional Groundwater Pumping (Possible Treatment and Discharge)
12. Transfer Station
13. Non-Specific Future Off-Site Borrow Area
14. Thermal Pressure Hydrolysis System
15. Biogas to Methanol Pilot Facility

Each Project element is described in greater detail below. A proposed site layout is shown in **Figure 2-3**.

2.2.1 INCREASED DAILY PERMITTED TONNAGE

The County is proposing to expand the overall permitted tonnage for the YCCL to a monthly average of 2,500 tons per day (TPD) with a daily peak of 3,000 TPD. Currently, the YCCL Solid Waste Facility Permit limits YCCL incoming waste tonnage (disposed and recycled) to a maximum of 1,800 TPD. The 1,800 TPD includes various waste streams, including waste for landfill disposal, organics (yard waste, food waste), wood waste, CDI, liquid waste, and recyclables. The current average daily waste disposed in the landfill at the YCCL is about 500 tons. The County intends to increase the overall tonnage of waste processed at YCCL (recycling, composting, gasification, etc.) and expand construction of various waste conversion technologies in order to extend landfill life and reduce landfill disposal of wastes, reducing landfill gas methane GHG emissions. The current TPD limit also does not distinguish between a monthly average and “peak” daily.



Source: Yolo County Community Services Department, 2021

Figure 2-3
Proposed Site Plan

YCCL currently has days when waste tonnage would exceed 1,800 tons if not for the daily limit. Such peak days are typically the result of heavy vehicles delivering liquid wastes to the Class II surface impoundments or seasonal peaks for yard waste collection (i.e., leaf fall season). YCCL is currently limited to a maximum of 1,047 waste hauling vehicles per day. To accommodate the increased daily permitted tonnage and other Project elements that require truck trips to export products generated from waste, YCCL proposes to limit waste hauling vehicles to 1,305 per day.

2.2.2 WOOD PELLET FACILITY

The County is proposing to develop a wood pellet facility that would utilize biomass fuel (e.g., wood, woody fraction of green waste, compost overs) to create pellets as an energy source that could be sold. The facility would be sited within an approximately five-acre portion in the approximately 41-acre north central area at the YCCL identified for future facility development (see **Figure 2-3**). Much of the facility's operations would be in a building and/or under a covered awning and would also include outdoor storage. The facility would generate up to 50,000 tons of pellets per year, which would require approximately 100,000 tons of incoming biomass feedstock per year. The facility would include conveyors, debarkers, shredders/chippers, dryers/ovens, mixer/agitators, pelletizers, screeners/sifters, coolers, baghouses/cyclones, storage silos, and other necessary material handling and storage equipment. Wood pellet facilities currently operate in California in Stockton, Rocklin, and Mendocino County (Capella).

2.2.3 LARGE SCALE FLOATING SOLAR PHOTOVOLTAIC SYSTEM

The County is proposing the installation of a Floating Solar Photovoltaic (PV) System to address energy usage and demand on-site as well as selling electrical power off-site. The proposed system design would include a floating PV array that would tie into seven PG&E meters for on-site use and off-site sale through County-owned power poles along County Road 29 and pole-mounted transformers at the intersection of County Road 28H and County Road 102. The floating PV panels would cover a large portion of the existing Water Storage Reservoir (see **Figure 2-3**) and would be part of a public-private partnership by the County to generate renewable energy locally, such as sale to the local Community Choice Aggregator (CCA), Valley Clean Energy (VCE). The floating PV panels would provide approximately 1 megawatt (MW) per 3 acres of water storage reservoir area.

2.2.4 SOLAR PHOTOVOLTAIC SYSTEM ON CLOSED LANDFILL UNITS

The County is proposing the installation of a Solar PV System on closed landfill units to address current and future energy usage and demand on-site. The proposed system design would include ground mounted PV panels on closed landfill modules 1-5 (see **Figure 2-3**). The proposed system would include drainage systems and erosion controls to control runoff from the panels. The ground mounted PV panels would provide approximately 1 MW per 2-3 acres of closed landfill unit area and would be part of a public-private partnership by the County to generate renewable energy locally, such as sale to the local CCA, VCE.

2.2.5 WASTE GASIFICATION FACILITY

The County is proposing to develop a waste gasification facility to produce either hydrogen that would be sold and exported, or electricity that would be used onsite and sold when more electricity is produced than needed. Initially, the facility would utilize YCCL's CDI waste wood and compost overs as a feedstock, but could move towards MSW in the future if other Project elements prove to be more efficient or cost-effective in treating CDI waste wood and compost overs. The facility would be sized to process 200 TPD of feedstock, which would produce approximately 11 TPD of hydrogen that would be compressed, stored and regularly collected, requiring up to approximately 15 tractor-trailer trips per day to export the hydrogen to local filling stations. The facility would also produce approximately 6 TPD of inert slag/aggregate co-product that could be used on-site for all weather road construction or would be exported from the site requiring approximately 3 tractor-trailer trucks per week. Alternatively, if the facility is designed to generate electricity, the 200 TPD could produce approximately 5 MW of power. This would be achieved through a fully enclosed gasification/combustion process to create steam to run a turbine generator. The facility would be integrated with the electrical grid, which would allow the YCCL to sell excess power when more electricity is produced than needed.

The facility would require an approximately four-acre footprint and would consist of an approximate 20,000 SF feedstock preprocessing building, an approximate 1,500 SF plant control room and an approximate 20,000 SF main office, breakroom, laboratory, and workshop. The facility could be sited at four possible locations at YCCL (see **Figure 2-3**).

Construction of the facility would require approximately two to three years. Construction would consist of approximately nine months of onsite activities by YCCL and their contractors to bring utilities (e.g., all weather roadways, water supply, wastewater discharge, electricity, etc.) to the boundary of the facility footprint. Facility construction would follow and would require site preparation (e.g., excavation, grading, etc.), foundations and building erection, roads, fences, equipment installation, piping interconnection, and electrical installation.

Once operational, the facility would be open 24 hours per day, 365 days per year. The main process (gasification to hydrogen or gasification to electricity) would be operational for approximately 90% of the year. The facility could employ approximately 30 full time employees, with approximately 15 employees at the facility any given day (10 during daytime hours and five during nighttime/early morning hours). Operation of the facility would require onsite equipment such as front-end loaders or tractors, forklifts, boom lifts, and trucks.

2.2.6 EXPANDED BIOGAS UTILIZATION OPTIONS

DIWM is proposing expanded biogas uses. Currently, landfill gas (LFG) is entirely dedicated to the landfill gas to energy facility (LFG-to-energy facility), with the electricity going to SMUD. Additional biogas sources (not dedicated to producing electricity for SMUD) could include the biogas produced from City of Davis WWTP digester that is just east of the landfill, the anaerobic compost facility (Compost Facility #1), and the existing In-Vessel Digester (IV Digester). The IV Digester is a covered pond that digests slurry food wastes to generate biogas.

Options for utilizing non-landfill biogas sources include producing Renewable Compressed Natural Gas (RCNG) vehicle fuel (at a location just north of the LFG-to-energy facility – See **Figure 2-3**) or injection of RCNG gas into a pipeline (PG&E or SMUD high pressure gas line). A PG&E gas line is located directly next to the LFG to Energy Facility and a SMUD gas line runs past YCCL along County Road 29 just south of the landfill main entrance. Biogas would be cleaned and conditioned to meet the applicable standards for vehicle fuel and pipeline RCNG. Removal of biogas contaminants such as volatile organic compounds (VOC's), hydrogen sulfide (H₂S) and other contaminants would be required.

2.2.7 PEAKING POWER PLANT

The County is proposing a peaking power plant that would replace the existing LFG-to-energy facility (see **Figure 2-3**). As addressed above, LFG is dedicated to the LFG-to-energy facility, with the electricity going to SMUD. The peaking power plant would treat and compress LFG, which would then be stored during off-peak hours in underground storage tanks underneath the Plant. Stored LFG would be dispatched daily during peak hours to six 4.4 MW internal combustion (IC) engines for electricity generation for sale, such as to the local CCA, VCE.

The peaking power plant would consist of an approximately 10,000 SF building with the six 4.4 MW IC engines, a compressor, and 6,000 feet of underground storage piping where the LFG is treated (i.e., cleaned, moisture removed, compressed, pressurized, and stored). Construction of the plant would require grading and excavation for the underground storage piping and tanks. Plant construction would follow and would require building construction, equipment installation, piping interconnection and electrical installation.

2.2.8 NEW CLASS 2 SURFACE IMPOUNDMENTS

The County is proposing to develop a new Class 2 liquid surface impoundment to store and treat leachate and liquid waste received at the YCCL. The pond would be a Class 2 double lined liquid surface impoundment. The surface impoundment would be approximately 10 acres and located directly south of the existing WMU H3 surface impoundment (see **Figure 2-3**). This impoundment would include treatment of the liquids (i.e., more aeration) that could then be sent to Davis WWTP.

2.2.9 ORGANIC WASTE FERTILIZER FACILITY

The County is proposing to develop an organic fertilizer facility that utilizes organic waste (compost, compost feedstock, liquid waste, and animal manures) and converts it into fertilizer. The facility would be sited in an approximately five-acre portion of the approximately 41-acre north central area at the YCCL identified for future facility development (see **Figure 2-3**). The facility would be sized to handle up to 50,000 tons to 100,000 tons of organic waste per year. The facility would consist of an approximately 30,000 SF enclosed warehouse with outdoor storage and loading areas. Digestate would be removed from the Compost Facility #1 (anaerobic composter) and transported to the fertilizer facility to be processed. Digestate would be heated to dry, sorted by size, and mixed with other products to produce a specific organic fertilizer for sale.

2.2.10 STORM WATER TREATMENT SYSTEM AND DISCHARGE

The County is proposing to develop a storm water treatment system to treat collected storm water that would meet EPA benchmarks for discharge into Willow Slough bypass. The system would be sized in conjunction with storage capacity to manage the 100-year, 24-hour storm, as required by the facility's Waste Discharge Requirements (WDRs). The proposed discharge point would be at an existing pump station located on YCCL's existing soil borrow site west of County Road 104 (see **Figure 2-3**). The proposed storm water treatment would be upstream of the discharge point and could consist of passive floc logs that are used to clarify storm water removing turbidity such as sediment, heavy metals, and inanimate nutrients reducing the total suspended solids.

2.2.11 ADDITIONAL GROUNDWATER PUMPING (POSSIBLE TREATMENT AND DISCHARGE)

The County is proposing to increase groundwater pumping at the YCCL. The YCCL area has naturally high groundwater. The landfill also has an existing groundwater extraction and treatment system to lower groundwater under several modules and treat volatile organic compounds (VOC's) detected in several wells. Currently this water is retained on-site due to naturally occurring boron and selenium. Recent groundwater readings indicate that this system is not completely effective at lowering groundwater under several of the closed landfill units and the Central Valley Regional Water Quality Control Board (CVRWQCB) has directed the County to address the issue. DIWM proposes to increase the groundwater pumping to address this and there may not be space to retain this water on-site.

Currently, plant production (growing fescue for phytoremediation on 45 acres each year) is used to treat groundwater because of the high levels of naturally occurring boron and selenium. The additional groundwater pumping would be phased, with 10 extraction wells under Phase 1 and 39 extraction wells under full build-out conditions. Additional treatment options may be necessary to allow this water to be discharged off-site. Various treatment options will be reviewed in the EIR as well as the relevant agency performance-based standards.

2.2.12 TRANSFER STATION

The County is proposing to develop a transfer station to transfer solid waste to an off-site landfill in approximately ten years. The transfer station would be sited within an approximately 15-acre portion of the 41-acre north central area at the YCCL identified for future facility development (see **Figure 2-3**). The transfer station would be sized to handle the landfill's current and future waste flow and the reductions of landfill disposal as required by the regulatory agencies. The transfer station is estimated to have a design capacity of 500 TPD, which would require an approximately 40,000 SF transfer building (U.S. EPA, 2002). Transfer stations are typically quite tall to accommodate several levels of traffic and transfer trailer loading, therefore the proposed transfer station building would be approximately 50 feet tall. The transfer station is being analyzed due to the increased soil needs and cost to develop new landfill modules as well as the associated air pollution and GHG emissions.

Incoming materials now generally go to the organics recycling area or directly to landfill disposal. Materials going directly to landfill disposal are wastes that are low in organics content and low in recoverable recyclable materials. These loads would be directed to the transfer station, where they would be consolidated for transport into a transfer trailer and exported to an off-site landfill in the region.

2.2.13 NON-SPECIFIC FUTURE OFF-SITE BORROW AREA

The County may need to purchase a new off-site borrow area for its soil needs. YCCL has a shortage of soil for daily, intermediate, and final cover material, and DIWM imports soil from off-site sources for these purposes. Soil will also be needed to develop future landfill modules. The County may need to purchase additional property for development of an off-site borrow area that would supply soil to the facility. In 2014 the DIWM purchased a 320-acre parcel directly to the west of the landfill as a soil borrow source [EIR SCH # 2014102015] (Yolo County, 2015). No additional parcel of land has yet been identified for this purpose, but DIWM estimates that up to an additional 640-acre parcel would be needed. Ideally, the parcel would adjoin or be near the existing landfill property. Candidate properties would be surveyed for any important biological, archaeological, or historical resources, and appropriate mitigation measures would be developed and employed prior to commencement of borrow operations. This aspect of the Project may require additional or future environmental, land use, and zoning considerations to allow soil borrow operations, including a mining permit.

2.2.14 THERMAL PRESSURE HYDROLYSIS SYSTEM

The County is proposing a Thermal Pressure Hydrolysis (TPH) system. TPH is a two-stage process combining high-pressure steaming of waste (organic and sludge) followed by a rapid decompression. This combined action sterilizes the waste and makes it more biodegradable, which improves digestion performance. Sterilization also destroys pathogens. This increases biogas production from anaerobic digestion (AD) of such waste. In a semi-continuous process, mechanized movements along with the pressure and temperature break down the most complex molecules to sanitize and homogenize the entire organic fraction of the waste. The product from this pre-treatment process is a bio-thermal-stabilized biomass with <70% moisture content and organic matter content >90%. TPH pretreatment can help to overcome the challenges of viability of AD as it has shown promising increase in efficacy of AD (~20% increase in biogas).

The TPH system would be sized to process 160 TPD of feedstock and would operate 24 hours per day, 330 days per year. The TPH system would be approximately 50 feet tall and would consist of four levels of autoclaves on outdoor stands with staircases for worker access. Feedstock material would be placed into the feeding hopper up in the first autoclave, and the processed material would be discharged down in the fourth autoclave. Belt conveyors feed the system and transport processed material from the fourth autoclave. Mobile equipment (likely a bulldozer and crane) would be required for feeding the belt conveyor and transporting processed material to AD facilities. The TPH system would be located right before or after existing pre-sorting equipment for AD facilities and would require an approximately 3,000 SF footprint (see **Figure 2-3**). The TPH system would require water, electricity, a cooling tower, and a boiler to produce steam.

Construction of the TPH system would require onsite activities by YCCL and their contractors to bring utilities (e.g., water, electricity, and natural gas) to the boundary of the TPD system footprint. TPH system construction would follow and would require site preparation (e.g., excavation, grading, etc.), foundations and erection of the prefabricated TPH system, equipment installation, piping interconnection and electrical installation.

2.2.15 BIOGAS TO METHANOL PILOT FACILITY

The County is proposing a Biogas to Methanol Pilot Facility. The facility would be a GasTechno® Process facility or similar technology. Traditionally, natural gas is reformed into syngas, and then further converted into methanol and other liquid chemicals or fuels. The process is complex and requires high-maintenance catalysts and massive economies of scale to be profitable. Most natural gas sources are simply too small to apply syngas technologies. For these applications the GasTechno process is the only option.

The GasTechno process eliminates the syngas step and associated catalyst by converting methane directly into methanol via a patented direct homogenous partial oxidation process. The GasTechno system features an energy-neutral recycle loop where unreacted methane is scrubbed and recycled until the desired conversion is achieved. The carbon and thermal efficiencies of the resulting process are comparable to syngas-based technologies.

The facility would utilize LFG and digester gas from YCCL that is currently being flared, as well as City of Davis WWTP digester gas (adjacent to YCCL), as feedstock. The facility is estimated to require approximately 350 standard cubic feet per minute (SCFM) of gas input, which would produce approximately 1,500 gallons per day (GPD) of methanol, 300 GPD of ethanol, and 1,200 GPD of wastewater. The wastewater from the process would be sent to on-site surface impoundments then eventually sent to City of Davis WWTP. The methanol and ethanol would be stored on-site and periodically collected, requiring approximately two truck trips per day.

The GasTechno process is a closed loop system with purge gas being sent back to a flare or power generation. The facility would result in a significant reduction in flaring emissions at YCCL and would produce renewable methanol that can be converted into electricity and/or low carbon transportation fuels.

The facility would be located just south of the existing LFG to energy facility (west of the existing clean water storage pond) and would require an approximately 16,000 SF footprint (see **Figure 2-3**). Construction of the facility would require onsite activities by YCCL and their contractors to bring utilities (e.g., water and electricity) to the boundary of the facility footprint. A pipeline from the City of Davis WWTP to the facility would also be constructed if WWTP digester gas is utilized as feedstock. Facility construction would follow and would require minor site preparation (e.g., excavation, grading, etc.), equipment installation, piping interconnection, and electrical installation.

2.3 PROJECT TIMING

Construction activities would occur intermittently over the next twenty years as funding becomes available and equipment/technology manufacturers are selected. It is expected that some of the Project elements would be constructed as soon as 2023.

For the purposes of estimating air quality emissions, since the exact timing of the construction of individual Project elements is unknown, construction emissions were estimated under the assumption that construction of the proposed waste gasification facility, thermal pressure hydrolysis system, new class 2 surface impoundment and biogas to methanol pilot facility would occur simultaneously in 2023 and 2024. Construction of other Project elements that would require major construction activities would likely occur in a subsequent year exclusive of construction activities for other Project elements and would be less intense than the simultaneous construction of these four Project elements.

2.4 PROJECT OBJECTIVES

1. To decrease adverse environmental impacts of landfill development, operations, and final closure, and increase the environmental benefits that can be derived from certain aspects of existing YCCL operations.
2. To increase the County's ability to divert waste (including organics) from the landfill and continue to meet the state-mandated diversion goals provided in AB 1383, other state-mandates to reduce waste from landfill (AB 341) and reduce greenhouse gas (GHG) emissions (AB 32).
3. To increase efficiency, diversify operations, and operate more economically.
4. To extend the overall site life of the existing YCCL through new operational methodologies.

2.5 REGULATORY REQUIREMENTS, PERMITS AND APPROVALS

Yolo County would be required to approve the Project prior to developing any of the Project elements. Yolo County would use information contained in this EIR during the decision-making process. The Yolo County Environmental Health Division is the solid waste Local Enforcement Agency (LEA). The LEA and CalRecycle would also use the EIR during the decision-making process to approve the SWFP Revision. Permits and approvals from other agencies would be necessary prior to the development of the Project. Known entitlements, permits, and approvals required for the Project are identified below.

Yolo County:

- Certification of Final EIR;
- Adoption of a Mitigation Monitoring and Reporting Plan (MMRP), Findings, and Statement of Overriding Considerations (if necessary);
- Approval of the Site Plan; Other County permits such as Building and Grading Permits related to individual Project elements; possibly an agricultural surface mining permit related to the non-specific future off-site borrow area.

Other Governmental Agency Approvals:

- CalRecycle must concur with the LEA's decision to approve the SWFP Revision.
- The Yolo-Solano Air Quality Management District (YSAQMD) requires an Authority to Construct/ Permit to Operate (ATC/PTO) for equipment that emits air pollution related to the operation of the project. Project elements may require revisions to current air quality permits outlined in **Table 2-1**.
- The Central Valley Regional Water Quality Control Board (RWQCB) requires Waste Discharge Requirements (WDRs) for operations that discharge waste to land. The proposed Class 2 Surface impoundment would require WDRs. A new National Pollutant Discharge Elimination System (NPDES) State Construction General Permit would be required for construction activities not covered under the Stormwater Pollution Prevention Plan (SWPPP) for operations associated with the existing Industrial General Permit.

The YCCL's current permits relevant to the Project elements analyzed in this EIR are outlined below in **Table 2-1**.

2.6 REFERENCES

- Applied Polymer Systems. *APS 700 Series Floc Logs*. <https://www.siltstop.com/pictures/floclogdatasheet.pdf>. Accessed February 4, 2021.
- Yolo County. 2020. *Notice of Preparation Environmental Impact Report (EIR) & Notice of Public Scoping Meeting*. August 28, 2020.
- Yolo County. 2018. *Joint Technical Document, Yolo County Central Landfill, Yolo County, California*. June 2018.
- Yolo County. 2015. *Draft Environmental Impact Report Yolo County Central Landfill Soil Borrow Site Project*. January 2015.
- Yolo County. 2005. *Yolo County Central Landfill Permit Revisions Final Subsequent Environmental Impact Report SCH No. 1991073040*. May 2005.
- Yolo County. 1992. *Final Environmental Impact Report Yolo County Central Landfill State Clearinghouse No. 91123015*. October 1992.
- United States Environmental Protection Agency (U.S. EPA). 2002. *Waste Transfer Stations: A Manual for Decision-Making*. June 2002.

TABLE 2-1. CURRENT YCCL PERMITS RELEVANT TO PROJECT

Permit Type	Permitting Agency	Permit Authority	Permit Date	Revision
WATER QUALITY				
Waste Discharge Requirements, Order No. R5-2016-0094 (for the Class III Landfills and Class II Surface Impoundments)	California Regional Water Quality Control Board, Central Valley Region	State Water Resources Control Board Resolution No. 93-62 implementing Parts 257 and 258 of Title 40 CFR (Subtitle D)	14 December 2016	Would require revisions to address development of future Project elements, such as the New Class 2 Surface impoundment.
Waste Discharge Requirements, Order No. R5-2002-0078 (for the Groundwater Extraction and Treatment System, Storage Reservoir, and Land Application Area)	California Regional Water Quality Control Board, Central Valley Region	State Water Resources Control Board Resolution No. 93-62 implementing Parts 257 and 258 of Title 40 CFR (Subtitle D)	26 April 2002	May require revision if the proposed additional ground water pumping is found to be not in accordance with current permit conditions.
AIR QUALITY				
Permit To Operate for Neo Yolo LLC	Yolo Solano Air Quality Management District	Permit To Operate enclosed flare and landfill gas collection system according to YSAQMD Rules and Regulations	1 March 2017	No revision required or requested.
Permit To Operate for MM Yolo Power LLC, for five (5) energy recovery generators operated in conjunction with energy recovery facility.	Yolo Solano Air Quality Management District	Regulation II, Rule 2.34 – Stationary Gas Turbines	1 March 2017	No revision required or requested. Project could potentially replace these engines with a peaking power plant.
Permit to Operate Yolo County	Yolo Solano Air Quality Management District	Permit To Operate two internal combustion engines, back-up generators, landfill fugitive emissions, septage receiving system/in-vessel digester, and use of biosolids as landfill cover. Also permits for anaerobic composters, grinding, crushing, and screening activities.	Various Dates	May require revisions to address development of future Project elements.
Title V Permit (F-01392-8)	Yolo Solano Air Quality Management District	Title V Permit (encompasses all local air permits)	13 March 2018	Would require revisions to address development of future Project elements.
LAND USE AND PLANNNG				
County Integrated Waste Management Plan Consistency, Siting Element and Non-Disposal Facility Element	Yolo County Planning and Public Works Department, Division of Integrated Waste Management	Public Resources Code § 41700 <i>et seq</i>	23 October 2012 Update was approved (to address the closure of the UC Davis Landfill)	Next periodic revision of Countywide Siting Element would need to be revised to reflect future Project elements, such as the Transfer Station.

TABLE 2-1. CURRENT YCCL PERMITS RELEVANT TO PROJECT (Continued)

Permit Type	Permitting Agency	Permit Authority	Permit Date	Revision
PUBLIC AND ENVIRONMENTAL HEALTH				
Solid Waste Facility Permit 57-AA-0001	Local Enforcement Agency with concurrence from the CalRecycle	Chapter 3 of Title 14 CCR—Minimum Standards for the Handling and Disposal of Solid Waste	Revised Solid Waste Facility Permit issued July 31, 2018	Revised permit required to incorporate proposed physical and operational change, such as the proposed increases in waste acceptance and vehicles.

This page intentionally left blank

CHAPTER 3

ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

This page intentionally left blank

3.1 AESTHETICS/VISUAL

3.1.1 SETTING

Visual Character of the Region and Project Vicinity

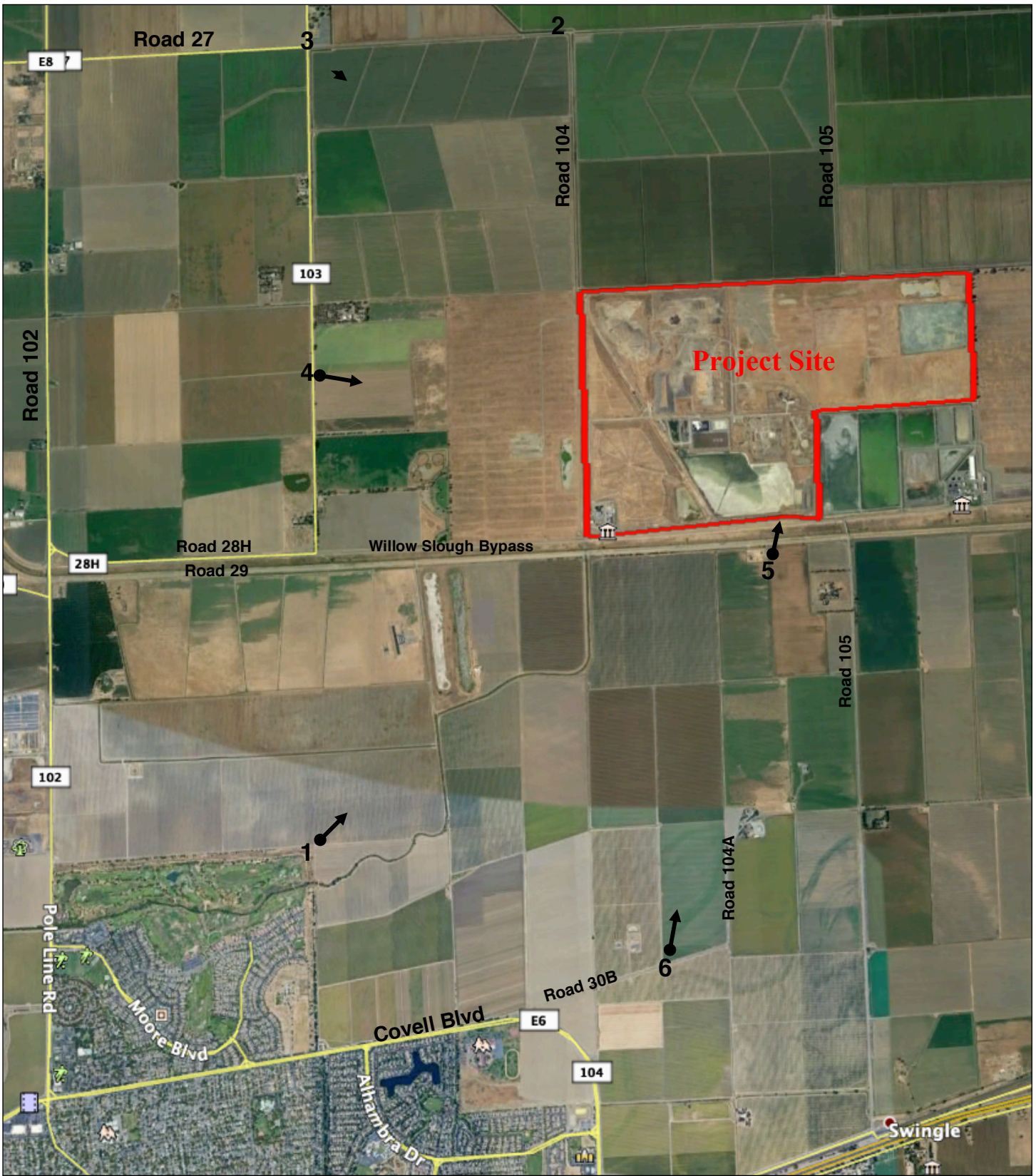
The Yolo County Central Landfill (YCCL) is in a rural landscape. The visual character of the Project vicinity is shaped by agricultural land uses and the broad, flat expanse of the Sacramento Valley. The surrounding landscape includes farm buildings and houses, clusters of trees, local waterways, roads, power lines and other utilities. The YCCL rises above the valley floor and is visible from some distance. The YCCL rises above the treetops as a broad mound. On clear days, the Coast ranges are visible to the west, and to the east the Sacramento skyline and the peaks of the Sierra Nevada.

Compared to the surrounding landscape, the YCCL has more vertical height. At a distance, it appears to be a natural feature. Upon closer approach, its engineered contours and the nature of its use become apparent, and the site has an unnatural, industrial appearance.

Scenic Vistas, Public Views, and Significant Features

There are few scenic vistas or public vantage points that include views of YCCL. The predominant views of the YCCL are from the roads in the immediate vicinity, including County Road (CR) 27, CR 28H, CR 29, CR 103, CR 104, and CR 105. There are intermittent views of the site, that are usually partly or fully obscured by trees and other intervening landscape features, from CR 102, and even less frequent views from State Route (SR) 113. The site is not visible from Interstate 80. The YCCL can be seen from several residences in the vicinity, particularly from homes to the west along CR 103 and CR 102: and to the south, across Willow Slough Bypass on CR 29 and along CR 30B. There are no residences to the east with views of YCCL. **Figure 3.1-1** identifies six vantage points with views that include the YCCL and that are considered in this analysis. **Figure 3.1-2** (Vantage Points 1 & 2), **Figure 3.1-3** (Vantage Points 3 & 4) and **Figure 3.1-4** (Vantage Points 5 & 6) present existing views toward the landfill. These vantage points were selected to show representative views of the landfill from the surrounding areas.

SR 128 in Yolo County was recently added as a State Scenic Highway under Assembly Bill 998 (2019). The 2030 Yolo County General Plan designates several local scenic highways: State Route 16 from the Colusa County line to Capay, State Route 128 from the City of Winters to the Napa County line, County Roads 116 and 116B from the Town of Knights Landing to the eastern terminus of County Road 16, County Roads 16 and 117 and Old River Road from the northern terminus of County Road 117 to the City of West Sacramento and South River Road from Jefferson Boulevard from City of West Sacramento city limits to the Sacramento County Line (Yolo County, 2009). YCCL is not visible from any of these local scenic highways.



Source: RCH Group, 2020

Figure 3.1-1
Vantage Point Location Map



Vantage Point 1



Vantage Point 2

Source: RCH Group, 2020

Figure 3.1-2
Existing Views from Vantage Points 1 and 2



Vantage Point 3



Vantage Point 4

Source: RCH Group, 2020

Figure 3.1-3
Existing Vantage Points from Viewpoints 3 and 4



Vantage Point 5



Vantage Point 6

Source: RCH Group, 2020

Figure 3.1-4
Existing Vantage Points from Viewpoints 5 and 6

Findings of the 1992 YCCL Environmental Impact Report (EIR)

The 1992 YCCL Environmental Impact Report (EIR) evaluated the potential effects of previous changes to the landfill. The analysis concluded that there would be no significant effects on visual resources, and that no mitigation measures were required.

Findings of the 2005 YCCL EIR

The 2005 YCCL EIR analyzed the potential aesthetic impacts of development of an off-site non-specific soil borrow area. The 2005 YCCL EIR also determined that there would be significant and unavoidable impacts with mitigation included related to the physical changes in the landfill's form associated with the proposed height increase, the development of a materials recovery facility's (MRF) impact on aesthetic views, and potential glare being introduced from anaerobic bioreactors.

Mitigation measures included strategic plantings of tall, native trees to screen views of the landfill from public vantage points and rights of way, designing the massing and exterior treatment of the proposed MRF structure to mimic a typical large agricultural structure, using covers with low reflective properties on the anaerobic bioreactors, locating the soil borrow area outside of the viewshed of any designated or candidate scenic highway and restoring the soil borrow area after it has been mined to an appropriate use, such as open space or wildlife refuge to provide a harmonious scenic vista.

Regulatory Setting

2030 Countywide General Plan for Yolo County

The Land Use and Community Character Element of the 2030 Countywide General Plan seeks to preserve and foster the rural character of the unincorporated area of the County. The element includes the following policies pertaining to Aesthetics that are relevant to the Project:

Goal CC-1: Preservation of Rural Character. Ensure that the rural character of the County is protected and enhanced, including the unique and distinct character of the unincorporated communities.

Policy CC-1.2: Preserve and enhance the rural landscape as an important scenic feature of the County.

Policy CC-1.3: Protect the rural night sky as an important scenic feature to the greatest feasible extent where lighting is needed.

Policy CC-1.8: Screen visually obtrusive activities and facilities such as infrastructure and utility facilities, storage yards, outdoor parking, and display areas, along highways, freeways, roads, and trails.

California Code of Regulations Title 27

In addition to the 2030 General Plan's goals and policies pertaining to visual quality, Title 27 of the California Code of Regulations (CCR) requires landfills to control litter, which can have adverse effects on visual quality, as follows:

§20830 Litter Control: Litter shall be controlled, routinely collected, and disposed of properly. Windblown materials shall be controlled to prevent injury to the public and personnel. Controls shall prevent the accumulation, or off-site migration, of litter in quantities that create a nuisance or cause other problems.

3.1.2 IMPACTS AND MITIGATION MEASURES

Significance Criteria

Appendix G of the California Environmental Quality Act (CEQA) *Guidelines* states that a Project would result in a significant impact to Aesthetics if it would:

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- In non-urbanized area, substantially degrade the existing visual character or quality of public views of the site and its surroundings (Public views are those that are experienced from publicly accessible vantage point). If the Project is an urbanized area, would the Project conflict with applicable zoning and other regulations governing scenic quality; or,
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Impact Analysis

Impact 3.1.1: The Project could affect views from Vantage Point 1, views from Wildhorse Golf Course and adjacent recreational use path on the outskirts of the City of Davis, approximately 1.5 miles southwest of the southern edge of the YCCL, looking northeast. (Less than Significant)

Figure 3.1-2 (Vantage Point 1) presents the current view of the YCCL from the northeast edge of the Wildhorse Golf Course and adjacent recreational use path. This vantage point is typical of other distant views of the site from the area along Road 102 and Covell Blvd. From this vantage point, there are several orchards and trees that visually screen the landfill. Due to the existing screening from the orchards and distance from the Project site, it is unlikely that the proposed Project elements would be distinctly visible from this vantage point. Thus, the proposed Project elements would not substantially degrade the existing visual character. This impact would therefore be less than significant, and no mitigation is required.

Mitigation Measures

None required.

Impact 3.1.2: The Project could affect views from Vantage Point 2 and Vantage Point 3, views from the intersection of Road 27 and Road 104, approximately 1 mile north of the northern boundary of the YCCL, looking southeast. (Less than Significant)

Figure 3.1-2 and **Figure 3.1-3** (Vantage Point 2 and Vantage Point 3) present the current view of the YCCL from approximately 1 mile north of the YCCL, looking southeast. This view shows agricultural fields that end at the YCCL. The main features that are visible from Vantage Point 2 are the northern landfill face and part of the western landfill face and the existing tall steel radio tower. The Project would develop new facilities in the northern area of the landfill that may be visible from these vantage points. However, due to the distance of the northern area of the landfill to these viewpoints, it is unlikely that development of new facilities would substantially degrade the existing visual character. This impact would therefore be less than significant, and no mitigation is required.

Mitigation Measures

None required.

Impact 3.1.3: The Project could affect views from Vantage Point 4, views from Road 103, approximately 1 mile west of the western edge of the YCCL, looking east. (Less than Significant)

Figure 3.1-3 (Vantage Point 4) presents the current view of the YCCL from one mile west of the landfill site, looking east. This view shows agricultural fields that end at the landfill. From this vantage point, the western face of the landfill Waste Management Units (WMUs) 2, 3, 4 and 5 are the main visible features of the YCCL. Except for the stormwater treatment system and discharge facility, the Project elements would be east of the western face of the landfill. The proposed solar PV system on closed landfill units would be on top of closed WMUs 1-5, but due to the distance from closed landfill units to Vantage Point 4, it is unlikely that ground-mounted PV panels would substantially degrade the existing visual character. Due to the screening the western face of the landfill provides, it is unlikely that the proposed Project elements would be visible from this vantage point. Thus, the proposed Project elements would not substantially degrade the existing visual character. This impact would therefore be less-than-significant, and no mitigation is required.

Mitigation Measures

None required.

Impact 3.1.4: The Project could affect views from Vantage Point 5, views from south of Willow Slough Bypass, approximately 600 feet south of the southern edge of the YCCL, looking north. (Less than Significant)

Figure 3.1-4 (Vantage Point 5) presents the current view of the YCCL from approximately 600 feet south of the YCCL, looking north. The main features that are visible from Vantage Point 5 are the existing tall steel radio tower and the landfill gas (LFG)-to-energy facility that appears as a white building to the west and the planned compost facility to the east. The central working faces of the landfill (WMU 6H, WMU 7J, WMU 7L and WMU 7N) are also slightly visible from Vantage Point 5. As discussed above, the 2005 YCCL EIR required the planting of appropriate native trees along the southern boundary of the YCCL to help screen the YCCL from vantage points that are south of the YCCL and to break-up the dominance of the mass of the landfill on the landscape (as a mitigation measure). Due to this, trees were planted along the southern boundary of the YCCL and are now visible from this vantage point. The proposed Project elements (e.g., the biomass gasification facility, future surface impoundment, the floating photovoltaic [PV] solar array, and the solar PV system on closed landfill units) would be somewhat screened from this vantage point by the existing trees and topography, thus the proposed Project elements would not substantially degrade the existing visual character. This impact would therefore be less-than-significant, and no mitigation is required.

Mitigation Measures

None required.

Impact 3.1.5: The Project could affect views from Vantage Point 6, views from Road 30B, approximately 1.5 miles south of the southern boundary of the YCCL, looking north. (Less than Significant)

Figure 3.1-4 (Vantage Point 6) presents the current view of the YCCL from approximately 1.5 miles south of the YCCL, looking north. Vantage Point 6 shows agricultural fields stretching away to the YCCL. The main features that are visible from Vantage Point 5 is the southern boundary of the site that appears as a distant hill feature. At this distance, it is very unlikely that development of any of the proposed Project elements would be visible. The proposed Project elements would not substantially degrade the existing visual character. This impact would therefore be less-than-significant, and no mitigation is required.

Mitigation Measures

None required.

Impact 3.1.6: The Project activities at the YCCL could result in creation of increased amounts of windblown litter leaving the site. (Less than Significant)

Several proposed Project elements at the YCCL could cause increases in the amount of litter in the vicinity of the site. However, a properly implemented litter control program would be capable of ensuring that the incremental increase in litter that could result from these activities would be minimized. The YCCL's existing litter control program includes use of movable litter fences and daily collection of windblown litter by site personnel has shown to be effective in preventing litter from blowing off-site. Continued implementation of this program, with adjustments as necessary to ensure compliance with 27 California Code of Regulations (CCR) 20830, would ensure that this program remain effective. This impact would therefore be less-than-significant, and no mitigation is required.

Mitigation Measures

None required.

Impact 3.1.7: The Project elements at the YCCL could result in creation of a new sources of light and glare. (Significant)

Glare is the sensation produced by luminance within the visual field that is sufficiently greater than the luminance to which the eyes are adapted to and can cause annoyance, discomfort, or loss in visual performance (Illuminating Engineering Society, 2018). The proposed Project elements, in particular the floating solar array that would sit afloat the water storage reservoir and the solar PV system on closed landfill units, would not create a substantial or significant source of glare. PV panels are designed to absorb as much of the sun's energy to generate electricity. Solar panels are made from formulated glass that only reflects approximately 10 percent of light they receive. In addition, solar panels have much lower reflective properties than regular glass. Any light reflecting from the solar arrays will drop off rapidly with distance (Jacobs Engineering, 2018). As discussed in Impact 3.1.4 above, the floating solar array and solar PV system on closed landfill units would be somewhat screened by the existing trees and topography, further reducing any potential glare impacts. Therefore, glare impacts would be less-than-significant.

Several proposed Project elements at the YCCL would require new sources of exterior lighting (such as lighting fixtures) that could emit new sources of light at the YCCL. The 2030 Yolo County General Plan includes Policy CC-1.3, "Protect the rural night sky as an important scenic feature to the greatest extent where lighting is needed." Uncontrolled lighting has the potential to illuminate public rights of way or adjacent properties and potentially the rural night sky. Therefore, this impact would be significant.

Mitigation Measures

Mitigation Measure 3.1.7: New lighting for Project Elements shall be arranged and controlled so as not to illuminate public rights of way or adjacent properties (i.e., downward facing lighting fixtures, dark sky friendly lighting fixtures, etc.).

Level of Significance after Mitigation

The implementation of Mitigation Measure 3.1.7 would reduce this impact to a less-than-significant level.

Impact 3.1.8: Development of a non-specific off-site soil borrow area could degrade the visual character of the vicinity near the selected site. (Significant)

The Project includes development of an off-site non-specific soil borrow area. The location of the soil borrow area has not been identified, but the Division of Integrated Waste Management (DIWM) estimates that up to a 640-acre parcel would be needed. DIWM would ideally obtain the parcel of land that would adjoin or be near the existing YCCL. Based on the current location of the YCCL, the most likely areas would be characterized as rural non-developed agricultural land, with isolated farm buildings and houses, clusters of trees, local waterways, roads, power lines and other utilities. Soil borrow activities from an off-site non-specific soil borrow area would include removal of any natural vegetation from the area being excavated, and removal of several feet of soil. Any candidate property would be surveyed for any important biological, archaeological, or historical resources. DIWM would obtain a parcel that would likely not be in an area where operations could damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway. Further, it is unlikely that the non-specific soil borrow area would be visible from any County-designated scenic roadway or scenic roadways.

Sensitive receptors and users of highways, freeways, roads, and trails nearby the future off-site borrow area could experience changes to the visual environment including earthwork moving equipment used for soil excavation, transport, and reclamation, topography alterations and new sources of lighting. Based on the areas near YCCL, it is unlikely that any of these potential visual changes would be highly visible to residences and roadways due to the depth of excavation that lowers beneath the surface horizon. Therefore, any aesthetic changes resulting from the off-site borrow area are not expected to cause a substantial adverse effect on a scenic vista or nearby public vantage points. Regardless, because the site could be anywhere in the general vicinity of the YCCL, without mitigation development of the non-specific off-site borrow area could have significant adverse impacts to sensitive roadway views or nearby sensitive receptors (including nighttime views). This would therefore be a significant impact of the Project.

Mitigation Measures

Mitigation Measure 3.1.8a: Consistent with 2030 Yolo County General Plan Policy CC-1.8, development of the future off-site borrow area shall include visual screening along highways, freeways, roads, and trails. Visual screening could include retaining existing trees and vegetation, new landscaping or screen trees, or another option approved by the County.

Mitigation Measure 3.1.8b: The off-site borrow area shall implement hours of operation that reduce or eliminate adverse effects of the off-site borrow area nighttime activities on nearby sensitive receptors, or operations controls such as directed lighting.

Level of Significance after Mitigation

The implementation of Mitigation Measures 3.1.8a and 3.1.8b would reduce this impact to a less-than-significant level.

3.1.3 REFERENCES

- Caltrans. 2018. *California State Scenic Highway Scenic Highway System Map*
<https://www.arcgis.com/apps/webappviewer/index.html?id=2e921695c43643b1aaf7000dfc19983>. Accessed December 14, 2020.
- Illuminating Engineering Society. 2018. *5.9.11 Glare*. <https://www.ies.org/definitions/glare/>. Accessed December 14, 2020.
- Jacobs Engineering. 2018. *CalSun Solar Project Initial Study and Mitigated Negative Declaration*. http://www.acgov.org/cda/planning/landuseprojects/documents/CalSun_IS-MND-9.13.2018-FINAL-for-dist.pdf. September 2018.
- Yolo County. 1992. *Final Environmental Impact Report Yolo County Central Landfill State Clearinghouse No. 91123015*. October 1992.
- Yolo County. 2005. *Yolo County Central Landfill Permit Revisions Final Subsequent Environmental Impact Report SCH No. 1991073040*. May 2005.
- Yolo County. 2009. *2030 Countywide General Plan, Land Use and Community Character Element*. November 2009.
- Yolo County Code, *Title 10, Chapter 8, Article 4, Section 10-8.414. Lighting*,
<https://codelibrary.amlegal.com/codes/yolocounty/latest/yolo/0-0-0-19021>. Accessed December 14, 2020.
-

3.2 LAND USE, PLANNING AND AGRICULTURE

This section identifies potential impacts of the Project on Land Use, Planning and Agricultural Resources. This section evaluates the compatibility of the Project with existing or future land uses and adopted plans. The Project site is designated PQ (Public and Quasi-Public) and zoned PQP (Public/Quasi-Public) consistent with the 2030 Yolo County General Plan land use map.

3.2.1 SETTING

The predominant land use designation in the Project vicinity is Agriculture (see **Figure 3.2-1**). Agricultural land extends for substantial distances in most directions from the Project site. Portions of the eastern and southern boundaries of the site are adjacent to the City of Davis wastewater treatment plant lagoons. In 2014, a 320-acre parcel directly to the west of the Project site was purchased by the County for development of an off-site borrow area. Willow Slough By-Pass, an engineered waterway, is located across Road 28H to the south of the landfill. Portions of the City of Davis are about 1.5 miles southwest of the site. Other land uses in the project vicinity include the road grid, utility corridors, farmhouses, and outbuildings. There are several residences on agricultural parcels to the south and west of the Project Site.

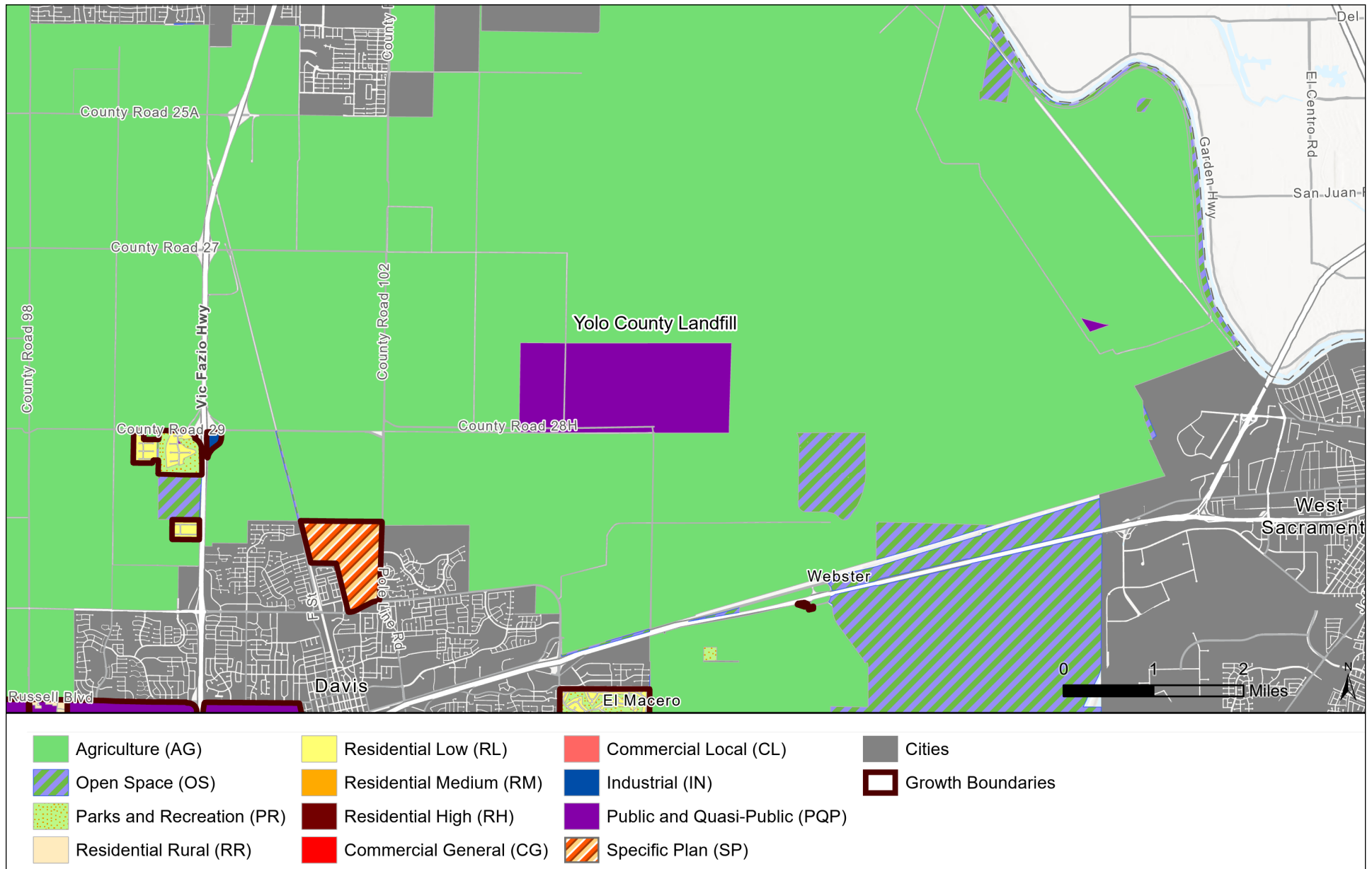
Findings of the 1992 YCCL EIR

The 1992 Yolo County Central Landfill (YCCL) Environmental Impact Report (EIR) evaluated the potential land use/policy effects of previous changes to the landfill. The analysis included one mitigation measure that required the County to respond within 72 hours to any complaints regarding nuisance impacts (wind-blown or illegally dumped refuse, or odors). The analysis concluded that with the implementation of this mitigation measure there would be no significant effects on land use/policy.

Findings of the 2005 YCCL EIR

Like the current EIR, the 2005 YCCL EIR included development of an off-site borrow area. The 2005 YCCL EIR analysis determined that there could be significant impacts related to land use and planning and the use of agricultural land for the off-site borrow area. Mitigation measures for the off-site borrow area included the measures shown directly below, which were determined to reduce the impact to less than significant. The 2005 YCCL EIR determined that with implementation of mitigation measures, land use and policy impacts would be less than significant.

Mitigation Measure 3.6.1a: The off-site soil borrow area should be sited in the “possible future expansion” areas identified in the General Plan, located directly east and north of Yolo County Central Landfill. Although these areas are currently designated as A-P, the intent of the general plan is to allow future landfill expansion in the adjacent northern and eastern parcels; therefore, the use of these parcels as a borrow area should not conflict with the General Plan’s intent to preserve agricultural land. Also, the Yolo County Zoning Regulations, Title 8, Chapter 2 Zoning, Sec. 8-2.404 states that upon review and approval, conditional uses such as the operation of a solid waste disposal site shall be authorized by a Minor Use Permit.



Source: Yolo County Community Services Department, 2020

Figure 3.2-1
General Plan Land Use Map

Mitigation Measure 3.6.1b: The County could site the off-site borrow area in a location that is not zoned or designated as agricultural land.

Mitigation Measure 3.6.1c: The County can re-zone and re-designate the borrow area site so the use of the site would not conflict with the land use designation. However, re-designating the site could conflict with other land use policies.

Mitigation Measure 3.6.1d: The County can use alternative sources of daily cover (e.g., fines from the landfill mining operations, the compost generated from the compost operations), which would reduce the need to develop an off-site borrow area.

Mitigation Measure 3.6.1e: In the event that the only feasible borrow area is agricultural land, the County shall purchase agricultural easements on land of at least equal quality and size as partial compensation for the direct loss of agricultural land, as well as for the mitigation of growth inducing and cumulative impacts on agricultural land. This may take the form of outright purchase of conservation easements, or via the donation of mitigation fees to a local, regional, or statewide organization or agency, including land trusts and conservancies, whose purpose includes the purchase, holding, and maintenance of agricultural conservation easements. Mitigation lands may be located within Yolo County or the region of the Central Valley.

Mitigation Measure 3.6.2: The County should not locate the borrow area or areas on prime agricultural land where prime soils may be found. The California Department of Conservation's "important farmlands" designation may be used to identify the areas of prime agricultural soils.

Findings of the 2015 YCCL Soil Borrow Site EIR

The project site was located adjacent to the YCCL and surrounded by agricultural land uses, and, therefore, soil borrow activities would not physically divide an established community. The project site is zoned as Public and Quasi Public (PQP), but, at the time, designated as Agriculture (AG) in the 2030 Countywide General Plan. The proposed project included a minor General Plan Amendment to change the land use designation of the project site from AG to Public and Quasi-Public (PQ), to be consistent with the PQP zoning. Although the use of designated agricultural lands for soil borrow activities would conflict with Countywide Plan Policy LU-2.5, directing the conservation of agricultural lands, it complies to the more specific Policy LU-3.7, which specifies that land uses surrounding critical infrastructure such as landfills should be compatible with the existing and planned land operations. Mitigation Measures 3.6.1a through 3.6.1d, implemented as part of the 2005 Yolo County Central Landfill Permit Revision EIR for the landfill (2005 Permit Revision EIR), address this conflict. These measures specify that if a landfill soil borrow area is to be located on prime agricultural land that the project must purchase agricultural easements on land of at least equal quality and size as partial compensation for the direct loss of agricultural land, and the project would comply with this requirement. The Initial Study concluded that impacts related to land use compatibility would be less than significant and therefore no further analysis is included in this Draft EIR. (Yolo County, 2015)

Regulatory Setting

2030 Countywide General Plan

The Land Use and Community Character Element of the 2030 Countywide General Plan seeks to preserve and foster the rural character of the County. The Agriculture and Economic Development Element of the 2030 Countywide General Plan presents policies and actions intended to support, conserve, and protect agricultural resources and seeks to support, sustain, reinvent, and diversify agricultural economy in the County. The use of agricultural conservation easements and/or land dedication to mitigate for loss of farmland from non-agricultural development is required.

The Countywide General Plan relies, in part, on the California Department of Conservation’s Farmland Mapping and Monitoring Program (FMMP) to classify and describe Yolo County’s agricultural farmland and soil resource capabilities. The FMMP is a classification system used to map the State’s important farmlands, which, in Yolo County, may include Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, and Grazing Land.

The Project site is in the unincorporated area of Yolo County and the site is subject to the policies of the 2030 General Plan. **Table 3.2-1** reviews the consistency of relevant policies pertaining to land use and agriculture.

In addition to policies related to agricultural resources, **Table 3.2-1** includes analysis of relevant policies and action programs in the Public Facilities (PF) and Services Element. These PF Goals and Actions of the General Plan acknowledge the importance of long-term landfill space at YCCL. The PF Goals and Actions also include protection of waste processing from encroaching nearby incompatible uses.

TABLE 3.2-1. PROJECT CONSISTENCY WITH GENERAL PLAN POLICIES

General Plan Policies	Consistent?	Analysis
Goal Agriculture (AG) AG-1: Preservation of Agriculture. Preserve and defend agriculture as fundamental to the identity of Yolo County.	Yes	The Project would not change the agricultural identity of Yolo County or conflict with the County’s mission to preserve and defend agriculture as a fundamental identity.
Policy AG-1.3: Prohibit the division of agricultural land for non-agricultural uses.	Yes	The Project site is designated PQ (public and quasi-public) and zoned PQP (public/quasi-public) consistent with the GP land use and zoning maps. The Project’s footprint is sufficient for the proposed landfill operations and proposed Project elements. Most Project elements would not require conversion of agriculture land to other uses. The proposed future off-site borrow area could be located in an area zoned for agricultural uses, however, it is not anticipated that acquiring land for the future off-site borrow area would result in the division of agricultural land since up to a 640-acre parcel would be needed.
Policy AG-1.4: Prohibit land use activities that are not compatible with agriculturally designated areas.	Yes	The Project is compatible with surrounding agriculture land uses.

TABLE 3.2-1. PROJECT CONSISTENCY WITH GENERAL PLAN POLICIES (Continued)

General Plan Policies	Consistent?	Analysis
<p>Policy AG-1.5: Strongly discourage the conversion of agricultural land for other uses. No lands shall be considered for redesignation from Agricultural or Open Space to another land use designation unless all of the following findings can be made:</p> <ul style="list-style-type: none"> a. There is public need or net community benefit derived from the conversion of the land that outweighs the need to protect the land for long-term agricultural use. b. There are no feasible alternative locations for the proposed project that are either designated for non-agricultural land uses or are less productive agricultural lands. c. The use would not have a significant adverse effect on existing or potential agricultural activities on surrounding lands designated Agricultural. 	Yes	<p>The Project’s footprint is sufficient for the proposed landfill operations and proposed Project elements. Most Project elements would not require conversion of agriculture land to other uses. The proposed future off-site borrow area could be in an area zoned for agricultural uses, but:</p> <ul style="list-style-type: none"> a. Sufficient land for soil cover is specifically identified in Action PF-A50. There is a public need and a net community benefit derived from the conversion because the borrow area is needed for the YCCL to continue landfilling operations. b. The soil borrow area would only be sited in a location designated for agricultural land if there are no other feasible alternative locations. c. The future soil borrow activities would not have a significant adverse effect on existing or potential agricultural activities on surrounding lands designated Agricultural.
<p>Policy AG-1.6: Strongly continue to mitigate a ratio of no less than 1:1 the conversion of farm land and/or the conversion of land designated or zoned for agriculture, to other uses.</p>	Yes	<p>The Project proposes a future off-site borrow area in an area that has not yet been established. Future conversion of farm land for an off-site borrow area would be mitigated at a ratio of no less than 1:1. See Mitigation Measure 3.2.2b.</p>
<p>Goal PF-9: Solid Waste and Recycling. Provide safe, cost-effective, and environmentally responsible solid waste management.</p>	Yes	<p>The Project elements are proposed to achieve on-going safe, cost-effective, and environmentally responsible solid waste management.</p>
<p>Policy PF-9.1: Meet or exceed State waste diversion requirements.</p>	Yes	<p>The Project elements would assist the County in meeting or exceeding State waste diversion requirements.</p>
<p>Policy PF-9.2: Manage property to ensure adequate landfill space for existing and planned land uses.</p>	Yes	<p>The Project site has adequate space for all proposed modifications occurring on-site.</p>
<p>Policy PF-9.3: Employ innovative strategies to ensure efficient and cost-effective solid waste and other discarded materials collection, disposal, transfer and processing.</p>	Yes	<p>The Project elements would increase efficiency and allow the YCCL to operate more economically.</p>
<p>Policy PF-9.4: Prioritize disposal and processing capacity at the landfill for waste materials generated within Yolo County, but accept waste materials from outside the county when capacity is available and the rates cover the full cost of disposal and processing.</p>	Yes	<p>The increased daily permitted tonnage at the YCCL proposed by the Project would ensure that in-County waste disposal is prioritized while allowing out-of-County wastes to be accepted, such as increased organics acceptance to provide feedstock for Project elements and support waste diversion requirements.</p>
<p>Policy PF-9.5: Promote technologies, including biomass or biofuels, which allow the use of solid waste as an alternative energy source.</p>	Yes	<p>Several of the Project Elements promote technologies and the use of solid waste as an alternative energy source, such as the waste gasification facility, expanded biogas utilization options, peaking power plant, thermal pressure hydrolysis system and biogas to methanol pilot facility.</p>
<p>Policy PF-9.6: Treat waste materials as potential revenue sources for the County, and maximize the revenue potential associated with the waste stream as new products, economies, needs, and technologies emerge.</p>	Yes	<p>Several of the Project Elements would allow waste to be treated as a revenue source for the County, such as the wood pellet facility, waste gasification facility, expanded biogas utilization options, peaking power plant, organic waste fertilizer facility, thermal pressure hydrolysis system and biogas to methanol pilot facility.</p>

TABLE 3.2-1. PROJECT CONSISTENCY WITH GENERAL PLAN POLICIES (Continued)

General Plan Policies	Consistent?	Analysis
Policy PF-9.8: Require salvage, reuse or recycling of construction and demolition materials and debris at all construction sites.	Yes	Construction and demolition materials from development of Project elements would be recycled consistent with local and State regulations.
Policy PF-9.11: Expand opportunities for energy and/or fuel production resulting from the solid waste disposal process.	Yes	Several of the Project Elements expand opportunities for energy and/or fuel production from solid waste, such as the waste gasification facility, expanded biogas utilization options, peaking power plant, thermal pressure hydrolysis system and biogas to methanol pilot facility.
Action PF-A50: Acquire sufficient land to maintain long-term landfill operations, including property for mitigation and soil cover.	Yes	The Project's current footprint has sufficient area to implement the operations of the Project elements. The off-site soil borrow area would be consistent with this action.
Action PF-A59: Designate lands in the vicinity of the landfill and other waste-related processing and transfer facilities through Yolo County Zoning Code to ensure that potential incompatible land uses which may lead to safety hazards and/or which may imperil the continued operation of these facilities are prohibited.	Yes	Land uses surrounding the Project are zoned for agriculture, except for the Davis Wastewater Treatment Plant and the adjacent off-site borrow area, which are zoned PQP. This ensures that surrounding uses would not be hazardous to Project operations.
Action PF-A60: Acquire easements of properties adjacent to the Central Landfill to ensure that farming operations emphasize crops that require low or no irrigation to help continue successful operation of the landfill under high groundwater conditions.	Not Applicable to the Project	The Project elements would be developed at the YCCL, except for the future off-site borrow area. Future easements would be obtained as necessary to ensure that adjacent properties utilize farm crops of low or no irrigation at the discretion of the County.
Goal Land Use LU-1: Range and Balance of Land uses. Maintain an appropriate range and balance of land uses to maintain the variety of activities necessary for a diverse, healthy and sustainable society.	Yes	The County manages the YCCL for safe disposal of solid wastes. This goal is supported by Policy LU-1.1 which specifically identifies landfills as an acceptable use in PQ land use designations.
Goal LU-2: Agricultural Preservation. Preserve farmland and expand opportunities for related business and infrastructure to ensure a strong local agricultural economy.	Partly	The Project elements would not affect the surrounding agricultural uses. However, the proposed off-site borrow area could be in an area zoned for agriculture. Use of agriculture land for soil mining is not consistent with this policy to preserve such land for agriculture.
Policy LU-2.3: Prohibit the division of land in an agricultural area if the division is for non-agricultural purposes and/or if the result of the division will be parcels that are infeasible for farming. Projects related to clustering and/or transfers of development rights are considered to be compatible with agriculture.	Yes	The Project elements would not affect the surrounding agricultural uses. However, the proposed off-site borrow area could be in an area zoned for agriculture, however, it is not anticipated that acquiring land for the future off-site borrow area would result in the division of agricultural land since up to a 640-acre parcel would be needed.
Goal LU-3: Growth Management. Manage growth to preserve and enhance Yolo County's agricultural, environment, rural setting and small town character.	Yes	The Project would not encourage growth and would preserve the County's rural setting.
Policy LU-3.6: Maintain the compatibility of surrounding land uses and development, so as not to impede the existing and planned operation of public airports, landfills and related facilities and community sewage treatment facilities.	Yes	The Project would not result in incompatible uses with the existing YCCL or the adjacent Davis Wastewater Treatment Plant.

SOURCE: Yolo County General Plan 2030, RCH Group 2021

Yolo County Code

The land surrounding Yolo County Central Landfill is utilized for either agricultural activities or wastewater treatment operations. Overall, the landfill facility is compatible with these surrounding land uses and the corresponding zoning. Zoning of the site and adjacent land is summarized in **Table 3.2-2**.

TABLE 3.2-2. SUMMARY OF ADJACENT ZONING FOR THE YOLO COUNTY CENTRAL LANDFILL

Area (and extent of applicable zoning)	Zoning
Yolo County Central Landfill	PQP
North of YCCL (1 mile)	A-N
West of YCCL (½ mile)	PQP/A-N
East of YCCL (2 miles)	PQP/A-N
South of YCCL (½ mile)	A-N

SOURCE: Yolo County Zoning Map

The following are zoning definitions for A-N and PQP designations, as stated in the Yolo County Zoning Regulations, Title 8, Chapter 2 (Yolo County, 2014):

Agricultural Intensive (A-N) Zone:

The A-N zone is applied to preserve lands best suited for intensive agricultural uses typically dependent on higher quality soils, water availability, and relatively flat topography. Uses in A-N zones are primarily limited to intensive agricultural production and other activities compatible with agricultural uses. Minimum lot size for newly created parcels in the A-N zone is 40 acres for irrigated parcels primarily planted in permanent crops (i.e., orchards and vineyard), 80 acres for irrigated parcels that are cultivated and 160 acres for parcels that are generally uncultivated and/or not irrigated.

Public and Quasi-Public (PQP) Zone:

The PQP zone is applied to lands that are occupied or used for public and governmental offices. The PQP zone implements the Public and Quasi-Public (PQ) land use designation in the 2030 Countywide General Plan.

Other relevant sections of the Yolo County Code include:

Sec. 8-2.404. Agricultural Conservation and Mitigation Program.

(a) Purpose.

- (1) The purpose of this section is to implement the agricultural land conservation policies contained in the Yolo County General Plan with a program designed to permanently protect agricultural land located within the unincorporated area.

(c) Mitigation requirements.

- (1) Agricultural mitigation shall be required for conversion or change from agricultural use to a predominantly non- agricultural use prior to, or concurrent with, approval of a zone change from agricultural to urban zoning, permit, or other discretionary or ministerial approval by the County.

- (2) The following uses and activities shall be exempt from, and are not covered by, the Agricultural Conservation and Mitigation Program:
- (ii) Public uses such as parks, schools, cultural institutions, and other public agency facilities and infrastructure that do not generate revenue. The applicability of this exemption to public facilities and infrastructure that generate revenue shall be evaluated by the approving authority on a case-by-case basis. The approving authority may partly or entirely deny the exemption if the approving authority determines the additional cost of complying with this program does not jeopardize project feasibility and no other circumstances warrant application of the exemption;

Yolo County Integrated Waste Management Plans

Yolo County’s waste management plan consists of the following elements:

- Siting Element for Yolo County (2012)
- Summary Plan for Yolo County (1995)
- Source Reduction and Recycling Elements (SRRE) for each City within the County and for the Unincorporated Area
- Non-disposal Facility Elements for each City within the County and for the Unincorporated Area

Together these plans establish county-wide goals and objectives for integrated waste management planning, describe the current system of solid waste management in the county and its cities, and summarize the programs and facilities selected in the multi-jurisdictional planning documents prepared for Yolo County and its cities. **Table 3.2-3** evaluates the Project consistency with the County’s solid waste management plan goals and policies that are relevant to the Project:

TABLE 3.2-3. PROJECT CONSISTENCY WITH INTERGRATED WASTE MANAGEMENT PLAN GOALS AND POLICIES

Yolo County Integrated Waste Management Plan Goals & Policies	Consistent With Waste Management Plan?	Analysis
Siting Element Goal 2: Ensure compliance with all state and federal standards for locating and operating solid waste disposal facilities.	Yes	Waste disposal would continue at YCCL. The Project includes elements to address high groundwater and extracted water.
Siting Element Goal 3: Operate and maintain solid waste facilities that ensure protection of public health and minimize environmental impacts and nuisances.	Yes	Potential environmental impacts and nuisances are subject to this EIR. Refer to impact analyses presented in Chapter 3, including mitigation measures.
Siting Element Goal 4 Policy A: Maintain a hazardous waste exclusion program using trained technicians at disposal facilities for loads inspection and removal of inappropriate materials.	Yes	The Project would continue its hazardous waste exclusions program at YCCL, which use trained technicians for load inspection and removal of inappropriate materials. There is a permanent Household Hazardous Waste Collection Facility on-site.
Siting Element Goal 5: Ensure availability of solid waste disposal facility capacity to meet Yolo County’s long-term needs.	Yes	The Siting Element requires a minimum of 15 years solid waste disposal capacity for Yolo County. Additional landfill capacity is not required to ensure that Yolo County maintains adequate landfill capacity through the year 2032.

TABLE 3.2-3. PROJECT CONSISTENCY WITH INTERGRATED WASTE MANAGEMENT PLAN GOALS AND POLICIES (Continued)

Yolo County Integrated Waste Management Plan Goals & Policies	Consistent With Waste Management Plan?	Analysis
Siting Element Goal 6: Manage solid waste disposal facilities to maximize cost effectiveness and convenience to county residents.	Yes	One of the objectives of the Project is to allow the YCCL to operate more economically to avoid future landfill tipping fee increases, even after considering the construction and development of the Project elements. Siting additional solid waste facilities at the same location would maximize convenience to County residents.
Siting Element Goal 8: Consider regional approaches to solid waste disposal that are mutually convenient and beneficial to those involved.	Yes	This EIR considers development of new landfill facilities that would be beneficial for the region in the management of solid waste.
Siting Element Goal 9: Prevent the development of new or expanded solid waste facilities in incompatible land use areas. Protect existing facilities from encroachment of incompatible land uses.	Yes	The proposed Project does not involve new or expanded solid waste facilities in incompatible areas. Development of new landfill facilities would occur within the current footprint and would be compatible with surrounding land uses.
Siting Element Goal 10: Maintain an integrated waste management system for Yolo County based on the waste management hierarchy and optimizing the use of economically feasible source reduction, recycling, and composting to conserve existing landfill capacity at YCCL. &	Yes	The Project elements address waste streams that can benefit from new processing elements and operations. Several of the Project elements would provide more beneficial opportunities for organics.
Summary Plan Goal 1: To conserve natural resources, energy and disposal capacity, the cities and counties will minimize the quantity of solid waste requiring disposal using the hierarchy of: (1) source reduction (2) recycling and composting; and (3) transformation and land disposal.	Yes	The Project changes would be undertaken to allow the County greater flexibility in developing and implementing processes and operations that would reduce waste from the landfill, reduce environmental impacts of landfill operations, increase the recovery of materials and energy from waste, and address challenges related to soil availability and high groundwater that affect land disposal.
Summary Plan Goal 2: All integrated waste management programs will continue to be implemented so as to reduce the maximum extent possible environmental impacts and nuisances and ensure public safety.	Yes	The purpose of this EIR is to identify potential environmental impacts of the project and identify mitigation measures to minimize those impacts and ensure public safety.
Summary Plan Goal 3: The cities and counties will seek to increase interagency cooperation and cooperation with institutions and the private sector to achieve efficient and cost effective integrated waste management services in Yolo County.	Yes	The successful development of the Project elements would benefit cost effective integrated waste management services in Yolo County.
Summary Plan Goal 4: To minimize the improper disposal of hazardous wastes, Yolo County residents and appropriate businesses will be provided reasonable access to programs for safe and efficient management of Household Hazardous Waste (HHW) and small quantity generator (SQG) wastes. Where technically and/or economically feasible, HHW materials will be reused or recycled and the remainder disposed of in an environmentally friendly manner.	Yes	The permanent HHW facility will continue to provide reasonable access to efficient HHW disposable.

SOURCE: Summary Plan of the Yolo County Integrated Waste Management Plan (2005), Yolo Countywide Siting Element (2012), RCH Group (2021).

3.2.2 IMPACTS AND MITIGATION MEASURES

Significance Criteria

For the purposes of the EIR, consistent with Appendix G of the *CEQA Guidelines*, the Project could have a significant impact to Land Use Planning and Agricultural Resources if the Project would:

- Physically divide an established community;
- 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;
- 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 uses;
- Conflict with existing zoning for agricultural use, or a Williamson Act contract;
- Conflict with existing zoning for, or cause rezoning of forest land, timberland, or timberland zoned Timberland Production;
- Result in the loss of forest land or conversion of forest land to non-forest use; or,
- 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.

The Project would not physically divide an established community. Therefore, there are no impacts to the division of established communities. There are no forest or timberland resources or forest land resources on-site. Therefore, there are no impacts to forest land, timberland and timberland zoning. These issues are not discussed further in this analysis.

Impact 3.2.1: Development of an off-site borrow area could result in conflicts with agricultural uses or Williamson Act contract. (Significant)

Since most of the non-urban land within the radius of the Project site is agricultural land, the off-site borrow area will most likely be located on a parcel currently used for agriculture, designated as Agriculture (AG) in the General Plan, and zoned for agriculture. The use of agriculture lands for non-agriculture uses conflicts with the 2030 General Plan's Goal LU-2. The use of agriculture land for non-agricultural use could also conflict with the existing land use designation. The off-site borrow area could also be located on a parcel under a Williamson Act Contract. However, if a parcel under a Williamson Act contract is selected for the future off-site borrow area, the County would be required to follow the Department of Conservation's Public Acquisition Notification Procedures and would be required to cancel the Williamson Act contract prior to soil borrow operations. To the extent that locating the off-site borrow area in a location where this use conflicts with the intent to preserve agricultural land and with the existing land use designation and zoning, impacts would be significant.

Mitigation Measures

Mitigation Measure 3.2.1a: The County shall site the off-site borrow area in a location not zoned or designated as agriculture land to the extent feasible. In the event that the only feasible off-site borrow area is zoned or designated as agricultural land, the County shall re-zone and re-designate the off-site borrow area site (to PQP and PQ, respectively) so the use of the site would not conflict with the land use designation.

Level of Significance After Mitigation

Implementation of Mitigation Measure 3.2.1 would reduce this impact to a less-than-significant level. However, this impact may have to be re-visited in a project-level environmental review when a location is established for the off-site borrow area.

Impact 3.2.2: Development of an off-site borrow area could result in conversion of farmland (including Prime Farmland, and non-prime farmland mapped as Unique Farmland or Farmland of Statewide Importance) to non-agricultural use. (Significant)

To continue long-term disposal operations at YCCL, the County would need to acquire a new off-site borrow area. The Project includes acquiring a parcel for mining of soil to be used as daily, intermediate, and final cover material, but a specific site has not yet been identified. As discussed above, in 2014, the DIWM purchased a 320-acre parcel directly to the west of the landfill as a soil borrow source (County of Yolo, 2015). Although no additional parcel of land has yet been identified, the DIWM estimates that up to an additional 640 acres would be needed. The use of soil for daily cover from an off-site borrow area located on agricultural land would conflict with the 2030 General Plan's Goal LU-2, which discourages the conversion of agricultural land for other uses. Most of the properties in the vicinity of the YCCL are identified as Prime Farmland but may also include non-prime soils mapped as Unique Farmland or Farmland of Statewide Importance. Trucking soil from further distances would be uneconomical and create significant environmental impacts, while still likely being from agricultural lands mapped as Prime, Unique, or Farmland of Statewide Importance. Therefore, the expected use of a nearby agricultural property as an off-site borrow area would be a **significant impact**.

The off-site borrow area would be a key component of long-term landfill operations that provide a benefit to County residents and are consistent with General Plan Goal PF-9 and Policies PF-9.2, -9.3, -9.4, -9.6, and Action PF-A50 (see above in Table 3.2-1). To the extent that the costs of purchasing agricultural conservation easements to offset the conversion of agricultural land under the County's Agricultural Conservation and Mitigation Program (Yolo County Code Sec. 8-2.404) could jeopardize long-term economic viability of the landfill, the Board of Supervisors could determine as part of the project approval that the Project is exempt from the ordinance's requirements per Yolo County Code Sec. 8-2.404(c)(2)(ii).

Mitigation Measures

Mitigation Measure 3.2.2: The County shall not locate the off-site borrow area or areas on agriculture farmland identified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, to the extent feasible. The California Department of Conservation's

“important farmlands” designation shall be used to identify the areas mapped as Prime, Unique, or Farmland of Statewide Importance. If the off-site borrow area includes Prime, Unique, or Farmland of Statewide Importance, then the County shall comply with the Agricultural Conservation and Mitigation Program, which requires up to three (3) acres of agricultural land shall be preserved for each acre of prime farmland converted to a predominantly non-agricultural use or zoning classification (3:1 ratio), or up to two (2) acres of agricultural land shall be preserved for each acre of non-prime farmland converted to a predominantly non-agricultural use or zoning classification (2:1 ratio). If the Project is determined exempt per Yolo County Code Sec. 8-2.404(c)(2)(ii), a minimum of one (1) acre of agricultural land shall be preserved for each acre of prime or non-prime farmland converted at the off-site borrow area to a predominantly non-agricultural use (1:1 ratio).

Level of Significance After Mitigation

Implementation of Mitigation Measure 3.2.2 would reduce this impact, but the conversion of the farmland would nonetheless be a significant environmental impact. Furthermore, cumulative impacts of farmland conversion are considered significant and unavoidable (see Chapter 4 Impact Overview for Cumulative Impacts Discussion).

3.2.3 REFERENCES

- Yolo County. 1992. *Final Environmental Impact Report Yolo County Central Landfill State Clearinghouse No. 91123015*. October 1992.
- Yolo County. 2005. *Yolo County Central Landfill Permit Revisions Final Subsequent Environmental Impact Report SCH No. 1991073040*. May 2005.
- Yolo County. 2009. *2030 Countywide General Plan, Agriculture and Economic Development Element*. November 2009.
- Yolo County. 2009. *2030 Countywide General Plan, Land Use and Community Character Element*. November 2009.
- Yolo County. 2012. *Countywide Siting Element*. August 2012.
- Yolo County. 2015. *Draft Environmental Impact Report Yolo County Central Landfill Soil Borrow Site Project*. January 2015.
- Yolo County. 2020. *Zoning Map Yolo County GIS Viewer*. <https://yolo.maps.arcgis.com/apps/webappviewer/index.html?id=07aafdb9df8b40fea378723de601c69b&extent=-13651962.5683%2C4642419.391%2C-13505203.474%2C4708996.0427%2C102100>. Accessed December 29, 2020.

3.3 AIR QUALITY

This section evaluates the potential for the Project to cause air quality impacts and has been prepared using methods and assumptions recommended in the Yolo-Solano Air Quality Management District's (YSAQMD's) *Handbook for Assessing and Mitigating Air Quality Impacts* (YSAQMD, 2007).

3.3.1 SETTING

The Project site is within the YSAQMD. The YSAQMD is located within the boundaries of the Sacramento Valley Air Basin (SVAB). The SVAB encompasses eleven counties including all of Shasta, Tehama, Glenn, Colusa, Butte, Sutter, Yuba, Sacramento, and Yolo Counties, the westernmost portion of Placer County and the northeastern half of Solano County.

Climate, Meteorology and Topography

The SVAB is bounded by the North Coast Ranges on the west and Northern Sierra Nevada Mountains on the east. The intervening terrain is relatively flat. Hot dry summers and mild rainy winters characterize the Mediterranean climate of the SVAB. During the year the temperature may range from 20 to 115 degrees Fahrenheit with summer highs usually in the 90s and winter lows occasionally below freezing. Average annual rainfall is about 20 inches, and the rainy season generally occurs from November through March. The prevailing winds are moderate in strength and vary from moist clean breezes from the south to dry land flows from the north.

The mountains surrounding the SVAB create a barrier to airflow, which can trap air pollutants under certain meteorological conditions. The highest frequency of air stagnation occurs in the autumn and early winter when large high-pressure cells collect over the Sacramento Valley. The lack of surface wind during these periods and the reduced vertical flow caused by less surface heating reduces the influx of outside air and allows air pollutants to become concentrated in a stable volume of air. The surface concentrations of pollutants are highest when these conditions are combined with temperature inversions that trap pollutants near the ground.

The ozone season (May through October) in the Sacramento Valley is characterized by stagnant morning air or light winds with the delta sea breeze from the southwest arriving in the afternoon. The evening breeze typically transports airborne pollutants to the north out of the Sacramento Valley. During about half of the days from July to September, however, a phenomenon called the "Schultz Eddy" prevents this from occurring. Instead of allowing for the prevailing wind patterns to move north carrying the pollutants out, the Schultz Eddy causes the wind pattern to recirculate to the south. Essentially, this phenomenon causes the air pollutants to be blown south toward the SVAB. This phenomenon has the effect of exacerbating the pollution levels in the area and increases the likelihood of violating federal or state air quality standards. The eddy normally dissipates around noon when the delta sea breeze arrives.

Criteria Air Pollutants

Concentrations of criteria air pollutants are used to indicate the quality of the ambient air. A brief description of key criteria air pollutants in the SVAB and their health effects are provided below. Criteria air pollutants include ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter less than 10 micrometers (coarse or PM₁₀), particulate matter less than 2.5 micrometers (fine or PM_{2.5}), and lead. However, ozone, PM₁₀, and PM_{2.5} are the criteria air pollutants of primary concern in this analysis due to their nonattainment status with respect to the applicable National Ambient Air Quality Standards (NAAQS) and/or California Ambient Air Quality Standards (CAAQS). The attainment status of criteria air pollutants with respect to the NAAQS and CAAQS in Yolo County are shown in **Table 3.3-1**. Monitoring data representative of ambient air concentrations in Yolo County from the Woodland-Gibson Road monitoring station (approximately five miles northwest of the Project site) are summarized in **Table 3.3-2**.

TABLE 3.3-1. ATTAINMENT STATUS DESIGNATIONS FOR YOLO COUNTY

Pollutant	CAAQS	NAAQS
Ozone	Nonattainment (1-hour)	Nonattainment (1-hour) ¹
	Nonattainment (8-hour)	Nonattainment (8-hour)
Particulate Matter (PM ₁₀)	Nonattainment (24-hour)	Unclassified (24-hour)
	Nonattainment (Annual)	No National Standard for Annual
Particulate Matter (PM _{2.5})	No State Standard for 24-hour	Nonattainment (24-hour)
	Unclassified (Annual)	Attainment (Annual)
Carbon Monoxide (CO)	Attainment (1-hour)	Attainment (1-hour)
	Attainment (8-hour)	Attainment (8-hour)
Nitrogen Dioxide (NO ₂)	Attainment (1-hour)	Attainment (1-hour)
	Attainment (Annual)	Attainment (Annual)
Sulfur Dioxide (SO ₂)	Attainment (1-hour)	Attainment (1-hour)
	Attainment (24-hour)	Attainment (24-hour)
Lead	Attainment (30-day average)	Attainment (3-month rolling average)
Visibility Reducing Particulates	Unclassified (8-hour)	No National Standards
Sulfates	Attainment (24-hour)	
Hydrogen Sulfide	Unclassified (1-hour)	
Vinyl Chloride	Unclassified (24-hour)	

NOTE:

¹ The national 1-hour ozone standard was revoked in June 2005.

SOURCE: YSAQMD, *Attainment Status*, <https://www.ysaqmd.org/plans-data/attainment/>

TABLE 3.3-2. SUMMARY OF ANNUAL MONITORING DATA OF AMBIENT AIR QUALITY

Pollutant	Standard	2017	2018	2019
Ozone				
Maximum Concentration (1-hour/8-hour average)	ppm	0.089/ 0.074	0.095/0.085	0.078/0.067
Number of days State standard exceeded (1-hour/8-hour)	0.09/0.070	0/2	1/2	0/0
Number of days National standard exceeded (8-hour)	0.070	2	2	0
Fine Particulate Matter (PM2.5)				
Maximum Concentration (24-hour)	µg/m ³	60.1	165.4	27.8
Number of days National standard exceeded (24-hour measured/estimated)	35	2/12	2/12	0/*
Annual Average (State/National standard)	12/12.0	8.7	12.8	*
Respirable Particulate Matter (PM10)				
Maximum Concentration (24-hour)	µg/m ³	130.8	212.4	83.0
Number of days State standard exceeded (24-hour measured/estimated)	50	3/18	4/25	3/*
Number of days National standard exceeded (24-hour measured/estimated)	150	0/0	1/6	3/*
Annual Average (State standard)	20	22.0	26.1	*

NOTES:

* means there was insufficient data available to determine the value

ppm = parts per million, µg/m³ = micrograms per cubic meter**bold values** exceeded the State and/or National standard

Ambient air concentrations from the Woodland-Gibson Road monitoring station (approximately five miles northwest of the Project site)

SOURCE: CARB, *iADAM: Air Quality Data Statistics*, <https://www.arb.ca.gov/adam>**Ozone**

Ozone in the lower atmosphere is one of the main components of smog. It is not directly emitted but is formed in the atmosphere over several hours from combinations of various precursors in the presence of sunlight. Reactive organic gases (ROG) and nitrogen oxides (NO_x) are the primary compounds, or precursors, contributing to the formation of ozone. Ozone is viewed as both a secondary pollutant and a regional pollutant because ozone can form far from where precursors are emitted (YSAQMD, 2007).

Short-term exposure to ozone can result in injury and damage to the lungs, decreases in pulmonary function, and impairment of immune mechanisms. Chronic lung disease can occur as a result of longer-term exposure. Symptoms of ozone irritation include shortness of breath, chest pain when inhaling deeply, wheezing, and coughing. Children and persons with pre-existing respiratory disease (e.g., asthma, chronic bronchitis, and emphysema) are at greater risk (YSAQMD, 2007).

ROG are photochemically reactive hydrocarbons whose primary sources include mobile sources, consumer products, petroleum marketing (e.g., gas dispensing), coatings and solvents, and agricultural related activities. NO_x is a family of gaseous nitrogen compounds whose emissions result primarily from the combustion of fossil fuels under high temperature and pressure. On-road and off-road motor vehicle fuel combustion is the major source of NO_x (YSAQMD, 2007).

Particulate Matter

The term "particulate matter" (PM) includes both solid particles and liquid droplets found in air. Many manmade and natural sources emit PM directly or emit other pollutants that react in the atmosphere to form PM. These solid and liquid particles come in a wide range of sizes.

Particles less than 10 micrometers in diameter (PM10) pose a health concern because they can be inhaled into and accumulate in the respiratory system. Particles with diameters between 2.5 and 10 micrometers are referred to as "coarse." Sources of coarse particles include crushing or grinding operations, and dust from paved or unpaved roads. Particles less than 2.5 micrometers in diameter (PM2.5) are referred to as "fine" particles and are believed to post the largest health risks. Because of their small size, fine particles can lodge deeply into the lungs. Sources of fine particles include all types of combustion (motor vehicles, power plants, wood burning, etc.) and some industrial processes (YSAQMD, 2007).

Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases, heart and lung disease, and coughing, bronchitis, and respiratory illnesses in children. Recent mortality studies have shown a statistically significant direct association between mortality and daily concentrations of particulate matter in the air. Other air quality-related effects include reduced visibility (YSAQMD, 2007).

Other Criteria Pollutants

The standards for CO, NO₂, SO₂, and lead are being met in the YSAQMD, and the latest pollutant trends suggest that these standards will be attained for the foreseeable future. Ambient levels of airborne lead are well below the state and federal standards and are expected to continue to decline. Since the phase-out of leaded gasoline, ambient lead concentrations have decreased dramatically and lead inhalation is no longer a significant health concern (YSAQMD, 2007).

Friant Ranch Decision and the San Joaquin Valley Air Pollution Control District Amicus Brief

The proposed Friant Ranch Specific Plan is in the San Joaquin Valley Air Basin, under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD). The SJVAPCD Amicus Brief (SJVAPCD, 2015) addresses whether it is scientifically feasible to correlate an individual project's air quality emissions of criteria air pollutants to specific health impacts. Human health impacts associated with criteria air pollutants are analyzed and taken into consideration when the U.S. EPA sets the NAAQS for each criteria pollutant. The health impact of a particular criteria air pollutant is analyzed on a regional, not a facility level, based on how close the area is to complying with (attaining) the NAAQS. As discussed in the SJVAPCD Amicus Brief, it is not feasible to conduct a criteria air pollutant analysis detailing health impacts, as currently available computer modeling tools are not equipped for this task for individual projects.

In requiring a health risk type analysis for criteria air pollutants, it is important to understand how the relevant criteria air pollutants (ozone and particulate matter) are formed, dispersed and regulated. Ground level ozone (smog) is not directly emitted into the air but is instead formed

when precursor pollutants such as NO_x and ROG are emitted into the atmosphere and undergo complex chemical reactions driven by sunlight. Once formed, ozone can be transported long distances by wind. Because of the complexity of ozone formation, a specific tonnage amount of NO_x or ROG emitted in a particular area does not equate to a particular concentration of ozone in that area. In fact, even rural areas that have relatively low tonnages of emissions of NO_x or ROG can have high levels of ozone concentrations simply due to wind transport. Conversely, areas that have substantially more NO_x and ROG emissions could experience lower concentrations of ozone simply because sea breezes disperse the emissions. Secondary PM, like ozone, is formed via complex chemicals such as SO_x and NO_x. Because of the complexity of secondary PM formation, the tonnage of PM-forming precursor emissions in an area does not necessarily result in an equivalent concentration of secondary PM in that area.

The disconnect between the tonnage of precursor pollutants and the concentration of ozone or PM formed is important because it is not necessarily the tonnage of precursor pollutants that causes health effects; rather, it is the concentration of resulting ozone or PM that causes these effects. As such, the NAAQS, which are statutorily required to be set by U.S. EPA at levels that are requisite to protect the public health, are established as concentrations of ozone and not as tonnages of their precursor pollutants. Because the NAAQS are focused on achieving a particular concentration region-wide, the California Air Districts' tools and plans for attaining the NAAQS are regional in nature.

In regard to regional concentrations and air basin attainment, the SJVAPCD emphasized that attempting to identify a change in background pollutant concentrations that can be attributed to a single project, even one as large as the entire Friant Ranch Specific Plan, is a theoretical exercise. The SJVAPCD Amicus Brief noted that it *“would be extremely difficult to model the impact on NAAQS attainment that the emissions from the Friant Ranch project may have”*. The situation is further complicated by the fact that background concentrations of regional pollutants are not uniform either temporally or geographically throughout an air basin but are constantly fluctuating based upon wind speed and direction, precipitation, and topography. The currently available modeling tools are equipped to model the impact of all emission sources in the San Joaquin Valley Air Basin on attainment. The SJVAPCD indicated that, *“Running the photochemical grid model used for predicting O₃ attainment with the emissions solely from the Friant Ranch project (which equate to less than one-tenth of one percent of the total NO_x and VOC [ROG] in the Valley) is not likely to yield valid information given the relative scale involved”*. (SJVAPCD, 2015).

The computer models used to simulate and predict an attainment date for ozone are based on regional inventories of precursor pollutants, atmospheric chemistry and meteorology within an air basin. At a very basic level, the models simulate future ozone levels based on predicted changes in precursor emissions basin wide. The computer models are not designed to determine whether the emissions generated by an individual development project will affect when the air basin attains the NAAQS or CAAQS. Instead, the models help inform regional planning strategies based on the extent to which all of the emission-generating sources within the air basin must be controlled in order to reach attainment for criteria pollutants.

Toxic Air Contaminants

According to section 39655 of the California Health and Safety Code, a toxic air contaminant (TAC) is "an air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health." In addition, substances which have been listed as federal hazardous air pollutants (HAPs) pursuant to section 7412 of Title 42 of the United States Code are TACs under the air toxics program pursuant to section 39657 (b) of the California Health and Safety Code. The California Air Resources Board (CARB) has formally identified over 200 substances and groups of substances as TACs.

TACs are capable of causing short-term (acute) and long-term (chronic or carcinogenic) adverse human health effects. TACs can be emitted from a variety of common sources, including gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations. Agricultural and construction activities can also contribute to toxic air emissions. In 1998, CARB identified diesel exhaust particulate matter (diesel PM) as a TAC (YSAQMD, 2007).

The Air Toxics "Hot Spots" Information and Assessment Act (Assembly Bill 2588) requires stationary sources to report the types and quantities of toxic substances their facilities routinely release into the air. The goals of the Air Toxics "Hot Spots" Act are to collect emission data, to identify facilities having localized impacts, to ascertain health risks, and to notify nearby residents of significant risks (YSAQMD, 2007).

Regulation of TACs is achieved through federal and State controls on individual sources. All major stationary sources of designated TACs are required to obtain an operating permit and pay the required fees. New sources that require a permit from the YSAQMD, or existing sources that are being modified, are analyzed by the YSAQMD based on their potential to emit toxics. If it is determined that a project will emit air toxics resulting in a lifetime cancer risk above one in one million, or the noncancer risk Hazard Index greater than one, sources may have to implement Best Available Control Technology (BACT) for toxics, or "T-BACT," in order to reduce toxic emissions. In addition, if the analysis shows risk greater than one in one million, a formal risk assessment is conducted. If a source cannot reduce the risk below the ten in one million level or the non-cancer risks Hazard Index less than one even after T-BACT has been implemented, the YSAQMD may have cause to deny the permit required by the source. This program helps to prevent new toxics problems, and reduces increases in toxics from existing older sources by requiring them to apply new technology when retrofitting (YSAQMD, 2007).

Regulatory Framework

The U.S. Environmental Protection Agency (U.S. EPA) and CARB regulate direct emissions from motor vehicles. YSAQMD is the regional agency responsible for ensuring healthful air quality in Yolo County and the northeast portion of Solano County.

Federal Clean Air Act

The 1970 Federal Clean Air Act (FCAA) authorized the establishment of national health-based air quality standards and also set deadlines for their attainment. The FCAA Amendments of 1990 changed deadlines for attaining national standards as well as the remedial actions required of

areas of the nation that exceed the standards. Under the FCAA, State and local agencies in areas that exceed the national standards are required to develop State Implementation Plans to demonstrate how they will achieve the national standards by specified dates. The FCAA requires that all projects receiving federal funds demonstrate conformity to the approved State Implementation Plan and local air quality attainment plan for the region.

California Clean Air Act

The California Clean Air Act (CCAA) provides local air quality districts with authority to regulate indirect sources and mandates that air quality districts focus particular attention on reducing emissions from transportation and area-wide emission sources. CARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the CCAA. Each nonattainment district is required to adopt a plan to achieve a five percent annual reduction, averaged over consecutive three-year periods, in district-wide emissions of each nonattainment pollutant or its precursors. A Clean Air Plan shows how a district would reduce emissions to achieve air quality standards. Generally, the State standards for these pollutants are more stringent than the national standards.

CARB's Truck and Bus Regulation

The Truck and Bus Regulation requires heavy-duty diesel vehicles that operate in California to reduce TAC emissions from their exhaust. The Truck and Bus Regulation affects individuals, private companies, and federal agencies that own diesel vehicles with a Gross Vehicle Weight Rating (GVWR) greater than 14,000 pounds that operate in California. Diesel exhaust is responsible for 70 percent of the cancer risk from airborne toxics. Therefore, by January 1, 2023, nearly all trucks and buses will be required to have 2010 or newer model year engines to reduce PM and NOx emissions. To help ensure that the benefits of this regulation are achieved, starting in 2020, only vehicles compliant with this regulation will be registered by the California Department of Motor Vehicles (DMV).

CARB's Solid Waste Collection Vehicle Regulation

The Solid Waste Collection Vehicle (SWCV) regulation was amended in 2019. The 2019 amendments clarify the definition of vehicles subject to the SWCV regulation and require reporting for all fleets that own or operate pre-2010 model year diesel engines to improve enforceability and to avoid delays with DMV registration starting in 2020. The SWCV regulation was adopted by CARB in 2004 and applied to on-road diesel-fueled vehicles with a GVWR greater than 14,000 pounds that hauled waste for a fee, and had engine model years from 1960 to 2006. All SWCVs, except for certain low-use vehicles, were required to have PM filters installed by December 31, 2010. The amendments clarified the definition of SWCVs to include any diesel vehicle with a GVWR over 14,000 pounds that have specific body types (“garbagepacker” or “garbage-roll off”).

Local Air Quality Management Plans

YSAQMD, in coordination with other air districts in the Sacramento Region (e.g., El Dorado Air Pollution Control District (EDAPCD), Feather River Air Quality Management District (FRAQMD),

Placer County Air Pollution Control District (PCAPCD), and Sacramento Metropolitan Air Quality Management District (SMAQMD)), prepared and submitted the 1991 Air Quality Attainment Plan (AQAP) in compliance with the requirements set forth in the CCAA. The CCAA also requires a triennial assessment of the extent of air quality improvements and emissions reductions achieved through the use of control measures. As part of the assessment the AQAP must be reviewed and, if necessary, revised to correct for deficiencies in progress and to incorporate new data or projections. The YSAQMD has completed seven triennial plan updates since 1991, the most recent adopted triennial plan is the *Triennial Assessment and Plan Update* (July 2016), which covers the years 2012-2014 (YSAQMD, 2016).

YSAQMD Rules and Regulations

YSAQMD rules and regulations relevant to the Project include but are not limited to the following:

- *Rule 2.3 (Ringelmann Chart)*. This rule prohibits stationary diesel-powered equipment from generating visible emissions that would exceed the rule's visibility threshold.
- *Rule 2.5 (Nuisance)*. This rule prohibits any source from generating air contaminants or other materials that would cause injury, detriment, nuisance, or annoyance to the public; endanger the comfort, repose, health, or safety of the public; or damage businesses or property. Under Rule 2.6, the provisions of Rule 2.5. do not apply to odors emanating from agricultural operations in the growing of crops or raising of fowl, animals, or bees.
- *Rule 2.11 (Particulate Matter Concentration)*. This rule prohibits any source that would emit dust, fumes, or total suspended PM from generated emissions that would exceed the rule's established emission concentration limit.
- *Rule 2.14 (Architectural Coatings)*. This rule establishes volatile organic compound (VOC) content limits for all architectural coatings supplied, sold, offered for sale, applied, solicited for application, or manufactured within YSAQMD's jurisdiction.
- *Rule 2.28 (Cutback and Emulsified Asphalts)*. This rule establishes organic compound limits for cutback and emulsified asphalts manufactured, sold, mixed, stored, used, and applied within YSAQMD's jurisdiction.
- *Rule 2.38 (Standards for Municipal Solid Waste Landfills)*. This rule limits the emission of non-methane organic compounds (NMOCs) from existing MSW landfills and implements the Emission Guidelines for Municipal Solid Waste Landfills as promulgated by the U.S. EPA at 40 Code of Federal Regulations Part 60 Subpart Cc.
- *Rule 3.1 (General Permit Requirements)*. This rule establishes permitting processes (i.e., Authority to Construct and Permit to Operate) to review new and modified sources of air pollution.
- *Rule 3.4 (New Source Review)*. This rule requires any new or modified stationary source that generates emissions that exceed established emissions limits for each pollutant (i.e., ROG, NOx, SOx, PM10, CO, and lead) to comply with BACT requirements and emissions offset requirements.

- *Rule 3.8 (Federal Operating Permits)*. This rule establishes the requirement for facilities to obtain permits associated with requirements under Title V of the CAA. The most common type of Title V source is one that meets YSAQMD's threshold as a "major source." Currently, YSAQMD's thresholds for a major source are:
 - 100 tons per year of any pollutant subject to regulation,
 - 25 tons per year of volatile organic compounds or nitrous oxides,
 - 10 tons per year of any single hazardous air pollutant, and
 - 25 tons per year of two or more hazardous air pollutants.

2030 Countywide General Plan

Yolo County adopted the 2030 Countywide General Plan in November 2009. The Conservation and Open Space Element contains the following goals and policies applicable to the Project:

GOAL CO-6: Air Quality. Improve air quality to reduce the health impacts cause by harmful emissions.

Policy CO-6.6: Encourage implementation of YSAQMD Best Management Practices to reduce emissions and control dust during construction activities.

Action CO-A103: Require development proposals that introduce sources of toxic air pollutants to prepare a health risk assessment and, based on the results of the assessment, establish appropriate land use buffer zones around those uses posing substantial health risks.

Action CO-A104: For discretionary permits, require agricultural Best Management Practices regarding odor control, stormwater drainage, and fugitive dust control where appropriate.

Action CO-A105: Implement the regulations and programs established by the YSAQMD to bring local air quality into attainment with State and federal standards.

Action CO-A107: Regulate the location and operation of land uses to avoid or mitigate harmful or nuisance levels of air emissions to the following sensitive receptors: residentially designated land uses; hospitals, nursing/convalescent homes, and similar board and care facilities; hotels and lodging; schools and day care centers; and neighborhood parks. Home occupation uses are excluded. New development shall follow the recommendations for siting new sensitive land uses consistent with the CARB's recommendation as shown in Table CO-9 below.

Policy HS-7.3: Protect important agricultural, commercial, industrial, and transportation uses from encroachment by land uses sensitive to noise and air quality impacts.

Findings of the 1992 YCCL EIR

The 1992 YCCL Environmental Impact Report (EIR) included significant and unavoidable impacts to air quality. The 1992 YCCL EIR implemented the following mitigation measures:

- All on-site diesel vehicles and equipment should be operated with fuel-injected timing, be equipped with high-pressure injectors, and use reformulated fuel.
- All engines should be properly operated and maintained.

- Diesel fuel should be 0.05 percent sulfur by weight or less.
- Diesel-powered equipment should be turned off when not in use more than 30 minutes; and gas-powered equipment should be turned off when not in use more than five minutes.
- Unpaved roads and active portions of the landfill should be watered twice daily.
- Non-selective catalytic reduction should be used on landfill gas (LFG)-fueled generation.
- Air/fuel ratio controllers should be installed on landfill gas-fueled generators.
- Annual source testing should be conducted for the energy recovery facility.

Findings of the 2005 YCCL EIR

The 2005 YCCL EIR included significant and unavoidable impacts to air quality. The 2005 YCCL EIR implemented the following mitigation measures:

- Updating of the Health and Safety Plan (HASP) prior to commencing landfill mining operations.
- Preparation of an Odor Impact Minimization Plan in accordance with state composting regulations.
- Replacement of older vehicles at the landfill with diesel-powered vehicles (with proven technologies) that generate less NO_x and PM₁₀ emissions than older vehicles.
- Periodic reviews to identify feasible retrofit equipment, or fuels that could lower emissions at the landfill.
- Watering of composted or cured materials during final windrow tear down and before loading the finished compost onto vehicles.
- Maintenance of records of all materials composted and compliance with all applicable rules, regulations, and permit conditions.
- Retrofitting of diesel-fueled engines and vehicles to reduce diesel particulate matter where it is determined to be technically feasible and cost-effective.
- Use of reduced sulfur fuel for existing on-road, off-road, and stationary diesel-fueled engines as soon as it is available, compatible with diesel-fueled engines on-site, and economically feasible.
- Maintenance of existing residential buffer areas surrounding the landfill and expansion of the buffers areas when opportunities arise in the future.

Sensitive Receptors

Sensitive receptors are generally considered to include those land uses where exposure to pollutants could result in health-related impacts to sensitive individuals. The 2030 Countywide General Plan defines sensitive receptors as residentially designated land uses; hospitals, nursing/convalescent

homes, and similar board and care facilities; hotels and lodging; schools and day care centers; and neighborhood parks. No schools, day-care centers, extended-care facilities or hospitals are within two miles of the Yolo County Central Landfill (YCCL). The nearest residentially designated land uses are approximately 1.75 miles to the southwest of the YCCL. As shown in **Table 3.3-3**, approximately nine residences on agricultural parcels are within one mile of the YCCL.

TABLE 3.3-3. RESIDENCES ON AGRICULTURAL PARCELS WITHIN ONE MILE OF THE YCCL

Use/Location	Direction from the YCCL	Distance from YCCL Boundary (Feet)
Approximately six residences on Road 103	West of YCCL boundary	4,300 to 5,200
Residence south of Willow Slough By-Pass	South of southern YCCL boundary	600
Residence south of Willow Slough By-Pass	Southwest of the southwestern YCCL boundary corner	3,400
Residence south of Willow Slough By-Pass	South of the southeastern YCCL boundary corner	1,400

NOTE: Based on 2018 aerial and 2020 site reconnaissance.

SOURCE: RCH Group, 2020

3.3.2 IMPACTS AND MITIGATION MEASURES

Significance Criteria

For the purposes of the EIR, consistent with Appendix G of the *CEQA Guidelines*, impacts related to air quality would be considered significant if the Project would:

- conflict with or obstruct implementation of the applicable air quality plan;
- result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable NAAQS or CAAQS;
- expose sensitive receptors to substantial pollutant concentrations; or
- result in other emissions (such as those leading to odors adversely affecting a substantial number of people).

As stated in Appendix G of the *CEQA Guidelines*, the significance criteria established by the applicable air quality district may be relied upon to make the above determinations. Thus, according to the YSAQMD's *Handbook for Assessing and Mitigating Air Quality Impacts*, the Project would result in a significant impact to air quality if it would result in the following during either temporary construction activities or long-term operation:

- result in emissions of criteria air pollutants or precursors to exceed 10 tons per year (tons/year) of ROG, 10 tons/year of NO_x, 80 pounds per day (lbs/day) of PM₁₀, or substantially contribute to CO concentrations that exceed the CAAQS (YSAQMD, 2007).

However, these mass emission thresholds for criteria air pollutants and precursors do not apply to emissions directly generated by stationary sources, including Project elements such as the wood pellet facility, waste gasification facility, expanded biogas utilization options, peaking power plant, organic waste fertilizer facility, transfer station, thermal pressure hydrolysis system, and biogas to methanol pilot facility. The YSAQMD states in their *Handbook for Assessing and Mitigating Air Quality Impacts* that “stationary sources complying with applicable [YSAQMD] regulations pertaining to BACT and offset requirements usually will not be considered a significant air quality impact. This qualification does not exempt projects with any special circumstances such as emitting objectionable odors that cause a nuisance to nearby receptors, having significant cumulative effects, or emissions associated with construction of stationary sources (YSAQMD, 2007). That is, the required air permitting would be completed prior to Project construction and operation. Since the *Handbook for Assessing and Mitigating Air Quality Impacts* was published in 2007, the YSAQMD was contacted in December 2020 regarding this approach and YSAQMD agreed it was acceptable to not quantify emissions from stationary sources since they are subject to YSAQMD permitting (P. Hensleigh, personal communication, December 28, 2020). Therefore, the mass emission thresholds were applied to Project construction activities and mobile sources associated with Project operation (heavy truck trips, employee trips, and off-road equipment).

As stated previously, regulation of TACs is achieved through federal and State controls on individual sources. All major stationary sources of designated TACs are required to obtain an operating permit and pay the required fees. New sources that require a permit from the YSAQMD, or existing sources that are being modified, are analyzed by the YSAQMD based on their potential to emit toxics. If it is determined that a project will emit toxics resulting in a lifetime cancer risk above one in one million, or the noncancer risk Hazard Index greater than one, sources may have to implement BACT for toxics, or “T-BACT,” in order to reduce toxic emissions. In addition, if the analysis shows risk greater than one in one million, a formal risk assessment is conducted. If a source cannot reduce the risk below the ten in one million level or the non-cancer Hazard Index less than one even after T-BACT has been implemented, the YSAQMD may have cause to deny the permit required by the source. This program helps to prevent new toxics problems, and reduces increases in toxics from existing older sources by requiring them to apply new technology when retrofitting (YSAQMD, 2007).

For the evaluation of TAC emissions, YSAQMD considers proposed projects that have the potential to expose the public to TACs in excess of the following thresholds to have a significant impact. These thresholds are based on YSAQMD’s Risk Management Policy:

- Probability of contracting cancer for the Maximally Exposed Individual (MEI) equals to 10 in one million or more; and/or
- Ground-level concentrations of non-carcinogenic TACs would result in a hazard index equal to or greater than 1 for the MEI (YSAQMD, 2007).

Because YSAQMD has not developed thresholds of significance for evaluating the exposure of sensitive receptors to mobile-source TACs, Yolo County is choosing, for this EIR, to apply these same incremental increase thresholds to evaluate the impact of diesel PM (DPM) generated by

heavy truck trips associated with the Project and the exposure of residential receptors on agricultural properties located along heavy truck routes.

For the evaluation of odorous emissions, YSAQMD considers there to be a significant impact if a project causes odorous emissions in such quantities as to cause detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which may endanger the comfort, repose, health, or safety of any such person or the public, or which may cause, or have a natural tendency to cause, injury or damage to business or property (YSAQMD, 2007).

On a cumulative basis, YSAQMD finds that any exceedance of project-level thresholds would also result in a significant cumulative impact. In addition, YSAQMD considers combined CO impacts from a project and other existing projects (i.e., background concentration) that exceed air quality standards as cumulatively considerable.

Impact Analysis

Impact 3.3.1: Project construction activities could result in a cumulatively considerable net increase of emissions of criteria air pollutants and precursors. (Significant)

ROG, NO_x, PM₁₀, and PM_{2.5} are the criteria air pollutants of primary concern in this analysis since the YSAQMD is designated as nonattainment for NAAQS and/or CAAQS for ozone (ROG and NO_x are ozone precursors), PM₁₀, and PM_{2.5}. Construction-related activities would generate emissions of ROG, NO_x, PM₁₀, and PM_{2.5} from off-road equipment used for site preparation, grading/excavation, trenching/utilities, paving, building construction/equipment installation and architectural coating associated with Project elements; on-road trucks used for material delivery and equipment hauling; and worker commute trips. Fugitive dust PM₁₀ and PM_{2.5} emissions would also be generated by ground disturbance and would vary as a function of soil silt content, soil moisture, wind speed, and acreage of disturbance.

Since the exact timing of the construction of individual Project elements is unknown, construction emissions were estimated under the assumption that construction of the proposed waste gasification facility, thermal pressure hydrolysis system, new class 2 surface impoundment and biogas to methanol pilot facility would occur simultaneously in 2023 and 2024. Construction of other Project elements that would require major construction activities would likely occur in a subsequent year exclusive of construction activities for other Project elements and would be less intense than the simultaneous construction of these four Project elements. It is unlikely these four Project elements would be constructed simultaneously, thus this is considered a worst-case analysis for comparison to YSAQMD's thresholds of significance. Construction emissions were estimated using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2 (CAPCOA, 2016) and are summarized in **Table 3.3-4**. Detailed modeling assumptions and results are provided in **Appendix G**.

As shown in **Table 3.3-4**, unmitigated construction activities would exceed the YSAQMD's threshold of significance for daily PM₁₀ emissions. Implementation of Mitigation Measure 3.3.1 would decrease maximum daily PM₁₀ emissions to below the YSAQMD's threshold of significance for daily PM₁₀ emissions (80 lbs/day). Therefore, Project construction activities

would not result in a cumulatively considerable net increase of emissions of criteria air pollutants and precursors. Therefore, the Project would have a less-than-significant impact with mitigation.

TABLE 3.3-4. ESTIMATED PROJECT CONSTRUCTION EMISSIONS

Condition	ROG tons/year	NOx tons/year	PM10 lbs/day	PM2.5 lbs/day
Unmitigated Construction Emissions ¹	0.62	2.07	112.56	12.81
YSAQMD Threshold of Significance	10	10	80	-- ²
Potentially Significant?	No	No	Yes	No
Mitigated Construction Emissions ¹	0.62	2.07	69.56	7.69
YSAQMD Threshold of Significance	10	10	80	-- ²
Potentially Significant?	No	No	No	No

NOTES:

¹ Emissions estimates assume the proposed waste gasification facility, thermal pressure hydrolysis system, new class 2 surface impoundment and biogas to methanol pilot facility would occur simultaneously in 2023 and 2024. The highest value from either 2023 or 2024 is shown.

² YSAQMD does not have a threshold of significance for PM2.5. PM2.5 emissions shown for informational purposes.

SOURCE: CAPCOA, 2016 & RCH Group, 2021

Mitigation Measures

Mitigation Measure 3.3.1: The following shall be implemented during Project construction ground disturbing activities:

- Active construction sites shall be watered at least twice daily.
- Vehicles on unpaved roads shall be limited to 15 mph.

Level of Significance After Mitigation

Implementation of Mitigation Measure 3.3.1 would ensure this impact is less than significant.

Impact 3.3.2: Project-related mobile sources during operation could result in a cumulatively considerable net increase of emissions of criteria air pollutants and precursors. (Significant)

The YCCL’s Solid Waste Facility Permit (SWFP) allows acceptance of up to 1,800 tons per day (TPD) of waste and 1,047 vehicles per day (VPD). The Project would increase YCCL’s permitted VPD to 1,305 (an increase of 258 vehicles [or round trips]) to accommodate the Project’s increased daily permitted tonnage, soil import for the non-specific future borrow site, and other Project elements that require exporting products created from incoming waste. The Project would be expected to generate 258 heavy truck round trips per day from the following Project elements:

- *Increased Daily Permitted Tonnage:* 104 vehicles or heavy truck round trips per day
- *Wood Pellet Facility:* 8 vehicles or heavy truck round trips per day

- *Waste Gasification Facility*: 15 vehicles or heavy truck round trips per day
- *Organic Waste Fertilizer Facility*: 4 vehicles or heavy truck round trips per day
- *Transfer Station*: 25 vehicles or heavy truck round trips per day
- *Non-Specific Future Borrow Site*: 100 vehicles or heavy truck round trips per day
- *Biogas to Methanol Pilot Facility*: 2 vehicles or heavy truck round trips per day

The majority of new truck round trips would occur within the YSAQMD, however, it is expected that some incoming waste would come from neighboring air districts and outgoing products produced by Project elements would also likely go to Sacramento (SMAQMD) and the Bay Area (Bay Area Air Quality Management District or BAAQMD). Future transfer trucks could also travel in other air districts including but not limited to the SMAQMD, BAAQMD, SJVAPCD, and PCAPCD. Therefore, heavy truck emissions occurring in the YSAQMD and in other air districts were calculated separately for comparison to applicable significance thresholds. The Project would also add approximately 35 employees from the Project elements, thus 35 employee round trips were assumed. These new light duty automobile trips were assumed to occur fully within the YSAQMD.

The YCCL has various equipment that is used for the day-to-day operation of the landfill. This includes County equipment, waste placement contractor equipment, wood and greenwaste facility contractor equipment, and construction, demolition and inert debris (CDI) recycling facility contractor equipment. It is assumed that this equipment could serve some of the Project elements, but the following new equipment was assumed for Project operation (this equipment is assumed to be diesel fueled unless otherwise noted):

- *Wood Pellet Facility*: Front-end loader and excavator.
- *Waste Gasification Facility*: 2 front-end loaders, 3 forklifts (electric), 3 boom lifts, a flatbed truck and 3 pick-up trucks (gasoline).
- *Organic Waste Fertilizer Facility*: Front-end loader and excavator.
- *Thermal Pressure Hydrolysis System*: Bulldozer and crane.

Operational emissions were estimated using the CARB's EMFAC and OFFROAD emission factors, and U.S. EPA AP-42 emission factors (for entrained road dust). Operational emissions were estimated for the Project for years 2025 and 2030. Operational emissions for year 2025 are summarized in **Table 3.3-5** and **3.3-6**. Operational emissions for year 2030 are summarized in **Table 3.3-7** and **3.3-8**. Detailed modeling assumptions and results are provided in **Appendix G**. The decrease in emissions for 2030 compared to 2025 is due to adopted regulations and policies that improve engine emissions, increase fuel efficiency, increase the use of renewable fuels and zero emission vehicles.

As shown in **Table 3.3-5**, Project operational mobile emissions in the YSAQMD would exceed the YSAQMD threshold of significance for annual NO_x emissions if the Project elements that require new mobile sources (i.e., Wood Pellet Facility, Waste Gasification Facility, Organic

Waste Fertilizer Facility, Transfer Station, Biogas to Methanol Facility, Thermal Pressure Hydrolysis System and non-specific future borrow site) are fully operational by year 2025. As shown in **Table 3.3-6**, Project operational mobile emissions in other air districts would not exceed the other air districts' thresholds of significance (assumed to be primarily within the SMAQMD and the BAAQMD) in year 2025.

TABLE 3.3-5. ESTIMATED 2025 OPERATIONAL MOBILE EMISSIONS IN YSAQMD

Mobile Source	ROG tons/year	NOx tons/year	PM10 ² lbs/day	PM2.5 ¹ lbs/day
Off-Road Equipment	0.40	3.55	0.80	0.74
Heavy Trucks	0.12	7.90	1.71	0.79
Heavy Truck Idling	0.08	1.77	0.01	0.01
Entrained Road Dust	--	--	9.21	2.26
Employee Vehicles	0.01	0.02	0.05	0.02
Total Mobile Sources Emissions	0.61	13.24	11.78	3.82
YSAQMD Threshold of Significance	10	10	80	-- ¹
Potentially Significant?	No	Yes	No	No

NOTES:

¹ YSAQMD does not have a threshold of significance for PM2.5. PM2.5 emissions shown for informational purposes.

² PM10 emissions do not include onsite emissions from mobile equipment travel on paved and unpaved roads – the YSAQMD regulates these emissions through permitting.

SOURCE: CARB EMFAC/OFFROAD, U.S. EPA AP42 & RCH Group, 2021

TABLE 3.3-6. ESTIMATED 2025 OPERATIONAL MOBILE EMISSIONS IN OTHER AIR DISTRICTS

Mobile Source	ROG tons/year	NOx tons/year	ROG lbs/day	NOx lbs/day	PM10 lbs/day	PM2.5 lbs/day
Heavy Trucks	0.02	1.60	0.09	9.17	0.52	0.26
Entrained Road Dust	--	--	--	--	2.74	0.67
Total Mobile Sources Emissions	0.02	1.60	0.09	9.17	3.26	0.93
BAAQMD/SMAQMD Thresholds of Significance	10/-- ¹	10/-- ¹	54/65	54/65	82/80	54/82
Potentially Significant?	No	No	No	No	No	No

NOTE:

¹ SMAQMD has not adopted annual thresholds of significance for operational ROG and NOx emissions.

SOURCE: CARB EMFAC/OFFROAD, U.S. EPA AP42 & RCH Group, 2021

As shown in **Table 3.3-7**, Project operational mobile emissions in the YSAQMD would not exceed the YSAQMD thresholds of significance if the Project elements that new require mobile sources (i.e., Wood Pellet Facility, Waste Gasification Facility, Organic Waste Fertilizer Facility, Transfer Station, Biogas to Methanol Facility, Thermal Pressure Hydrolysis System and non-

specific future borrow site) are not fully operational until year 2030. As shown in **Table 3.3-8**, Project operational mobile emissions in other air districts would be further reduced by 2030 (compared to 2025) and would not exceed the other air districts' thresholds of significance (assumed to be primarily SMAQMD and BAAQMD).

TABLE 3.3-7. ESTIMATED 2030 OPERATIONAL MOBILE EMISSIONS IN YSAQMD

Mobile Source	ROG tons/year	NOx tons/year	PM10 ² lbs/day	PM2.5 ¹ lbs/day
Off-Road Equipment	0.36	2.87	0.56	0.51
Heavy Trucks	0.09	5.44	1.70	0.79
Heavy Truck Idling	0.08	1.53	<0.01	<0.01
Entrained Road Dust	--	--	9.21	2.26
Employee Vehicles	0.01	0.02	0.05	0.02
Total Mobile Sources Emissions	0.54	9.86	11.53	3.60
YSAQMD Threshold of Significance	10	10	80	-- ¹
Potentially Significant?	No	No	No	No

NOTES:

¹ YSAQMD does not have a threshold of significance for PM2.5. PM2.5 emissions shown for informational purposes.

² PM10 emissions do not include onsite emissions from mobile equipment travel on paved and unpaved roads – the YSAQMD regulates these emissions through permitting.

SOURCE: CARB EMFAC/OFFROAD, U.S. EPA AP42 & RCH Group, 2021

TABLE 3.3-8. ESTIMATED 2030 OPERATIONAL MOBILE EMISSIONS IN OTHER AIR DISTRICTS

Mobile Source	ROG tons/year	NOx tons/year	ROG lbs/day	NOx lbs/day	PM10 lbs/day	PM2.5 lbs/day
Heavy Trucks	0.01	1.45	0.08	8.28	0.52	0.26
Entrained Road Dust	--	--	--	--	2.74	0.67
Total Mobile Sources Emissions	0.01	1.45	0.08	8.28	3.26	0.93
BAAQMD/SMAQMD Thresholds of Significance	10/-- ¹	10/-- ¹	54/65	54/65	82/80	54/82
Potentially Significant?	No	No	No	No	No	No

NOTE

¹ SMAQMD has not adopted annual thresholds of significance for operational ROG and NOx emissions.

SOURCE: CARB EMFAC/OFFROAD, U.S. EPA AP42 & RCH Group, 2021

While the operational emissions of the Project would exceed the YSAQMD's annual NOx threshold of significance if the Project elements that require new mobile sources are operational before year 2030, it is not feasible to determine the concentration of ozone that will occur at or near the Project site or conduct a criteria air pollutant analysis detailing health impacts in the Project vicinity or region, as currently available computer modeling tools are not equipped for

this task in the analysis of individual projects (see Section 3.3.1 – Friant Ranch Decision). Wind speed and direction, and the presence or absence of sunlight, and other complex chemical factors all combine to determine the ultimate concentrations and locations of ozone. The SJVAPCD Amicus Brief (SJVAPCD, 2015) addresses whether it is scientifically feasible to correlate an individual project’s air quality emissions of criteria air pollutants to specific health impacts. A health risk assessment for TACs was conducted for the Project (See Impact 3.3.4), which analyzed potential health risks from mobile sources (i.e., heavy trucks).

It is unlikely that the Wood Pellet Facility, Waste Gasification Facility, Organic Waste Fertilizer Facility, Transfer Station, Biogas to Methanol Facility, Thermal Pressure Hydrolysis System and non-specific future borrow site would be fully operational before year 2030, however, since the exact timing of the development of individual Project elements is unknown, this impact would be potentially significant. Implementation of Mitigation Measure 3.3.2 would ensure annual NOx emissions from the Project would be below the YSAQMD’s annual NOx threshold of significance if the Project elements referenced above are fully operational before year 2030. Therefore, Project operational activities would not result in a cumulatively considerable net increase of emissions of criteria air pollutants and precursors. Thus, the Project would have a less-than-significant impact with mitigation.

Mitigation Measures

Mitigation Measure 3.3.2: For Project elements planned to be operational before year 2030 (i.e. construction permits are approved) an updated emissions inventory shall be performed prior to operation in order to determine if NOx emissions from implemented Project element mobile sources exceed the YSAQMD’s annual NOx threshold of significance. If the updated emissions inventory concludes that NOx emissions from Project mobile sources exceed the YSAQMD annual NOx threshold of significance, the County shall decrease annual NOx emissions from Project mobile sources to below the YSAQMD’s threshold of significance. Methods to decrease annual NOx emissions from Project mobile sources include but are not limited to:

- Use of alternatively fueled (electric, natural gas, etc.) off-road equipment and on-road heavy trucks.
- Replacement of older vehicles and heavy equipment at YCCL with newer vehicles and heavy equipment with lower NOx emissions.
- Replacement of older vehicles or heavy equipment at other locations in the County to offset NOx emissions below the YSAQMD’s threshold of significance.
- Another method approved by the County that would reduce annual NOx emissions in the YSAQMD such as purchasing offsets.

Level of Significance After Mitigation

Implementation of Mitigation Measure 3.3.2a would ensure this impact is less than significant.

Impact 3.3.3: Project operation of stationary sources could result in a cumulatively considerable net increase of emissions of criteria air pollutants and precursors, and/or could expose sensitive receptors to substantial concentrations of TACs. (Less than Significant)

Stationary-source criteria air pollutant emissions (including on-site fugitive dust emissions from mobile equipment travel) from the Project are not analyzed further in this EIR because they would be subject to YSAQMD's permitting requirements and, per YSAQMD's *Handbook for Assessing and Mitigating Air Quality Impacts*, stationary sources complying with applicable YSAQMD regulations pertaining to BACT and offset requirements are not considered a significant impact to air quality. The required air permitting would be completed prior to construction and operation of stationary sources proposed by the Project, which would ensure less-than-significant impacts to air quality.

New sources that require a permit from the YSAQMD, or existing sources that are being modified, are analyzed by the YSAQMD based on their potential to emit toxics. If it is determined that a project will emit toxics resulting in a lifetime cancer risk above one in one million, or the noncancer risk Hazard Index greater than one, BACT for toxics, or "T-BACT," maybe be required in order to reduce toxic emissions. In addition, if the analysis shows risk greater than one in one million, a formal risk assessment is conducted. If a source cannot reduce the risk below the ten in one million level or the non-cancer risks Hazard Index less than one even after T-BACT has been implemented, the YSAQMD may have cause to deny the permit required by the source. This program helps to prevent new toxics problems, and reduces increases in toxics from existing older sources by requiring them to apply new technology when retrofitting (YSAQMD, 2007).

Criteria air pollutant and TAC emissions from Project stationary sources would be analyzed during YSAQMD permitting and would be required to comply with YSAQMD regulations pertaining to BACT, T-BACT and offset requirements. Therefore, the Project would have a less-than-significant impact.

Mitigation Measures

None required.

Impact 3.3.4: Project-related on-road heavy trucks could expose sensitive receptors to substantial concentrations of TACs. (Less than Significant)

As noted in Impact 3.3.2, the Project would generate up to 258 heavy truck round trips per day at full buildout of all the Project elements. Studies have demonstrated that DPM from diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to DPM poses a chronic health risk. A health risk assessment (HRA) was prepared to evaluate the health impacts to existing residences on agricultural parcels from increased emissions of TAC, such as DPM emissions from the increase in heavy truck trips. While the 2030 Countywide General Plan does not include residences on agricultural parcels as sensitive receptors, they were treated as such for the purposes of the HRA. The HRA was prepared based on the California Office of Environmental

Health Hazard Assessment (OEHHA)'s *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (OEHHA, 2015) and YSAQMD's *Handbook for Assessing and Mitigating Air Quality Impacts*. The HRA Technical Report is provided in **Appendix G**.

The HRA analyzed the incremental cancer risks to sensitive receptors (residences on agricultural properties) in the vicinity of the Project's heavy truck routes, using emission rates (in pounds per hour) derived from CARB's EMFAC emission model (CARB, 2018). DPM (reported as exhaust emissions of PM_{2.5}) emission rates were input into the U.S. EPA's AERMOD atmospheric dispersion model to calculate ambient air concentrations at sensitive receptors. The HRA is intended to provide a worst-case estimate of the increased exposure by employing a standard emission estimation program, an accepted pollutant dispersion model, approved toxicity factors, and conservative exposure parameters.

In accordance with OEHHA's *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*, the HRA was accomplished by applying the highest estimated concentrations of TAC at the sensitive receptors analyzed to the established cancer potency factors and acceptable reference concentrations for non-cancer health effects. Increased cancer risks were calculated using the modeled DPM concentrations and OEHHA-recommended methodologies for both child and adult exposure. The cancer risk calculations were based on applying the OEHHA-recommended age sensitivity factors and breathing rates, as well as fraction of time at home and an exposure duration of 30 years, to the DPM concentration exposures. Age-sensitivity factors reflect the greater sensitivity of infants and small children to cancer causing air pollutants.

The HRA determined that the maximum cancer risk from Project heavy truck emissions for a residential-adult sensitive receptor would be 1.0 per million persons and for a residential-child sensitive receptor would be 2.6 per million persons. Therefore, cancer risk due to Project heavy truck trips would be less than the YSAQMD's significance threshold of 10 per million persons.

The HRA also evaluated acute (short-term) and chronic (long-term) adverse health impacts unrelated to cancer. Acute and chronic health impacts unrelated to cancer are measured against a hazard index (HI), which is defined as the ratio of the predicted incremental DPM exposure concentration from the Project to a reference exposure level (REL) that could cause adverse health effects.

The acute HI would be less than 0.01, based on a Project-related maximum 1-hour diesel concentration of 0.67 µg/m³, respectively (per dispersion modeling analysis) and acrolein speciation of 1.3 percent for DPM or 0.67 µg/m³/2.5 µg/m³ times 1.3 percent, which is less than 0.01. The acute HI would be below less than the YSAQMD's significance threshold of 1. The chronic HI would be less than 0.01, based on the Project's maximum annual diesel concentration from Project heavy truck trips. Therefore, the chronic HI would be less than the YSAQMD's significance threshold of 1.

Cancer risk and adverse health impacts unrelated to cancer resulting from increased heavy truck trips with the Project would be below YSAQMD significance thresholds. Therefore, the Project would have a less-than-significant impact.

Mitigation Measures

None required.

Impact 3.3.5: Project operations could generate odors that could adversely affect a substantial number of people. (Less than Significant)

For the evaluation of odorous emissions, YSAQMD considers there to be a significant impact if a project causes odorous emissions in such quantities as to cause detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which may endanger the comfort, repose, health, or safety of any such person or the public, or which may cause, or have a natural tendency to cause, injury or damage to business or property (YSAQMD, 2007).

The occurrence and severity of odor impacts depend on numerous factors, including: the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of the receptors. While offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and regulatory agencies.

Wind flow in the Project vicinity tends to be either from the south or the north. No residences are located within two miles to the north of the Project site and only three residences are located within two miles to the south of the Project site. The limited number of residences and wind flow in the Project vicinity limits the potential for odor nuisance impacts.

A Public Records Act Information Request was submitted to the YSAQMD in December 2020 requesting odor complaints related to the YCCL. After review, the YSAQMD confirmed they do not have any records of odor complaints related to the YCCL (L. O'Brien, personal communication, December 16, 2020). The Yolo County Department of Community Services, Environmental Health Division (the Local Enforcement Agency [LEA]) was also contacted to request odor complaints/violations related to the YCCL. The LEA responded that the YCCL has not received an Area of Concern (AOC) or Violation for odor in the last five years and that there are no odor complaints recorded in the LEA's internal database (S. Dawley, Personal Communication, January 22, 2021).

The YCCL currently has an Odor Impact Minimization Plan (OIMP) for its composting operations and in-vessel digester facility. The Project does not include operational changes to composting or in-vessel digester facility operations at YCCL. Many of the Project elements would use compostable material, such as organics (yard waste, food waste), wood waste and liquid waste. Project elements subject to the regulatory requirements of Title 14 CCR §17863.4 would be required to prepare and maintain an OIMP, which would reduce the likelihood of odor impacts. Furthermore, the Project elements would provide more options for processing organics,

wood waste, and liquid waste at YCCL in a timely manner and would reduce the amount of waste that is buried at the active face, which would help reduce the likelihood of potential odor impacts at YCCL. Therefore, the Project would have a less-than-significant impact.

Mitigation Measures

None required.

3.3.3 REFERENCES

- Bay Area Air Quality Management District (BAAQMD). 2017. *California Environmental Quality Act Air Quality Guidelines*. May 2017.
- California Air Pollution Control Officers Association (CAPCOA). 2017. *California Emissions Estimator Model User's Guide Version 2016.3.2*. November 2017. <http://www.caleemod.com/>. Accessed March 21, 2021.
- California Air Resources Board (CARB). 2018. *EMFAC2017 User's Guide*. March 1, 2018. <https://ww3.arb.ca.gov/msei/downloads/emfac2017-volume-i-users-guide.pdf>. Accessed March 21, 2021.
- California Air Resources Board (CARB). Mobile Source Emissions Inventory Documentation – Off Road Diesel Equipment. <https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/road-documentation/msei-documentation-road>. Accessed March 21, 2021.
- California Air Resources Board (CARB). *iADAM: Air Quality Data Statistics*. <https://www.arb.ca.gov/adam>. Accessed December 14, 2020.
- L. O'Brien. Yolo-Solano Air Quality Management District. Personal Communication. December 16, 2020.
- Office of Environmental Health Hazard Assessment. *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. February 2015.
- P. Hensleigh. Yolo-Solano Air Quality Management District. Personal Communication. December 28, 2020.
- S. Dawley. Yolo County Department of Community Services Environmental Health Division/LEA. Personal Communication. January 22, 2021.
- Sacramento Metropolitan Air Quality Management District (SMAQMD). 2020. *Guide to Air Quality Assessment in Sacramento County*. April 2020.
- San Joaquin Valley Air Pollution Control District (SJVAPCD). 2015. San Joaquin Valley Air Pollution Amicus Brief. April 13, 2016. <https://www.courts.ca.gov/documents/7-s219783-ac-san-joaquin-valley-unified-air-pollution-control-dist-041315.pdf>. Accessed April 14, 2021.

U.S. EPA. 2011. *Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition, Volume I: Stationary Point and Area Sources, Section 13.2.1 Paved Roads*. January 2011.

Yolo County. 2018. *Joint Technical Document, Yolo County Central Landfill, Yolo County, California*. June 2018.

Yolo County. 2015. *Draft Environmental Impact Report Yolo County Central Landfill Soil Borrow Site Project*. January 2015.

Yolo County. 2009. *2030 Countywide General Plan, Conservation and Open Space Element*. November 2009.

Yolo County. 2005. *Yolo County Central Landfill Permit Revisions Final Subsequent Environmental Impact Report SCH No. 1991073040*. May 2005.

Yolo County. 1992. *Final Environmental Impact Report Yolo County Central Landfill State Clearinghouse No. 91123015*. October 1992.

Yolo-Solano Air Quality Management District (YSAQMD). 2007. *Handbook for Assessing and Mitigating Air Quality Impacts*. July 11, 2007.

Yolo-Solano Air Quality Management District (YSAQMD). 2016. *Triennial Assessment and Plan Update*. July 13, 2016.

Yolo-Solano Air Quality Management District (YSAQMD). *Attainment Status*. <https://www.ysaqmd.org/plans-data/attainment/>. Accessed December 14, 2020.

This page intentionally left blank

3.4 BIOLOGICAL RESOURCES

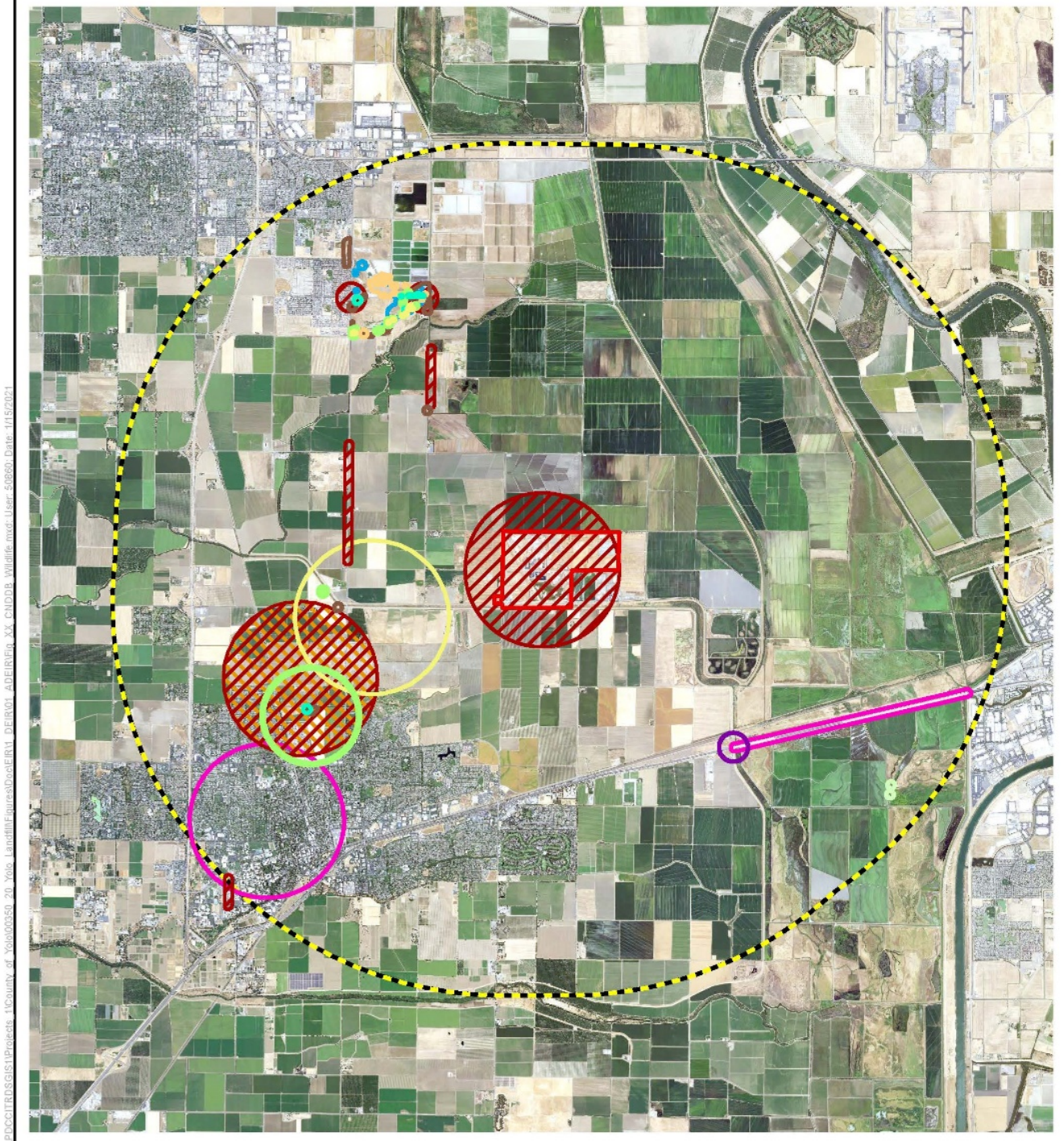
This section describes the environmental conditions of the Project area, analyzes potential impacts to biological resources, and provides mitigation measures to reduce potential biological impacts to a less-than-significant level.

3.4.1 METHODS

For this analysis, the biological project area (Project area) includes the eight proposed facility locations at the Yolo County Central Landfill (YCCL).

To assess the environmental conditions and biological resources, ICF biologists conducted a literature review, database inquiries, and reconnaissance field surveys. The reconnaissance surveys were conducted by ICF wildlife biologists Steve Avery and Stephen Barlow on November 23, 2020, and ICF botanist/wetland ecologist Devin Jokerst on December 4 and December 16, 2020. Mr. Jokerst returned to the property on February 16, 2021 for further assessment. The purpose of these surveys was to document existing conditions to support the CEQA analysis, specifically to describe the vegetation/land use cover types, assess habitat suitability for special-status wildlife and plants, determine whether potential aquatic resources (wetlands and non-wetland waters) are present in the Project area. The literature review and database review included the following sources:

- The California Department of Fish and Wildlife's (CDFW's) California Natural Diversity Database (CNDDDB) records search of occurrences within 5 miles of the Project area (CDFW 2020a; **Figures 3.4-1a-d**).
- California Native Plant Society's (CNPS's) online Inventory of Rare and Endangered Plants of California for Davis and 8 surrounding USGS 7.5-minute quadrangles (CNPS 2020; Appendix D).
- The U.S. Fish and Wildlife Service (USFWS) IPaC Trust Resource report species list for Yolo County (U.S. Fish and Wildlife Service 2020a; Appendix D).
- The Natural Resources Conservation Service's Web Soil Survey Custom Soil Resource Report for the Project area (Natural Resources Conservation Service 2020; Appendix D).
- Google Earth's Current and Historic Aerial Maps (Google Earth 2020).
- Final designated critical habitat as mapped by the USFWS Environmental Conservation Online System (ECOS) (U.S. Fish and Wildlife Service 2020).
- *Yolo County Central Landfill Permit Revision EIR*, SCH No. 1991073040 (Yolo County Public Works and Planning Department Division of Integrated Waste Management 2004).
- 2030 County Wide General Plan (County of Yolo 2009).
- Yolo County Habitat Conservation Plan/Natural Communities Conservation Plan (Yolo HCP/NCCP) (Yolo Habitat Conservancy 2018).



I:\PROJECTS\GIS\Projects_1\County of Yolo\00050_20_Yolo_LandfillExpansion\ERVI_BERVOI_ADEIRVIR_XX_CNDDDB_Vhullis.mxd User: S06901 Date: 11/15/2021

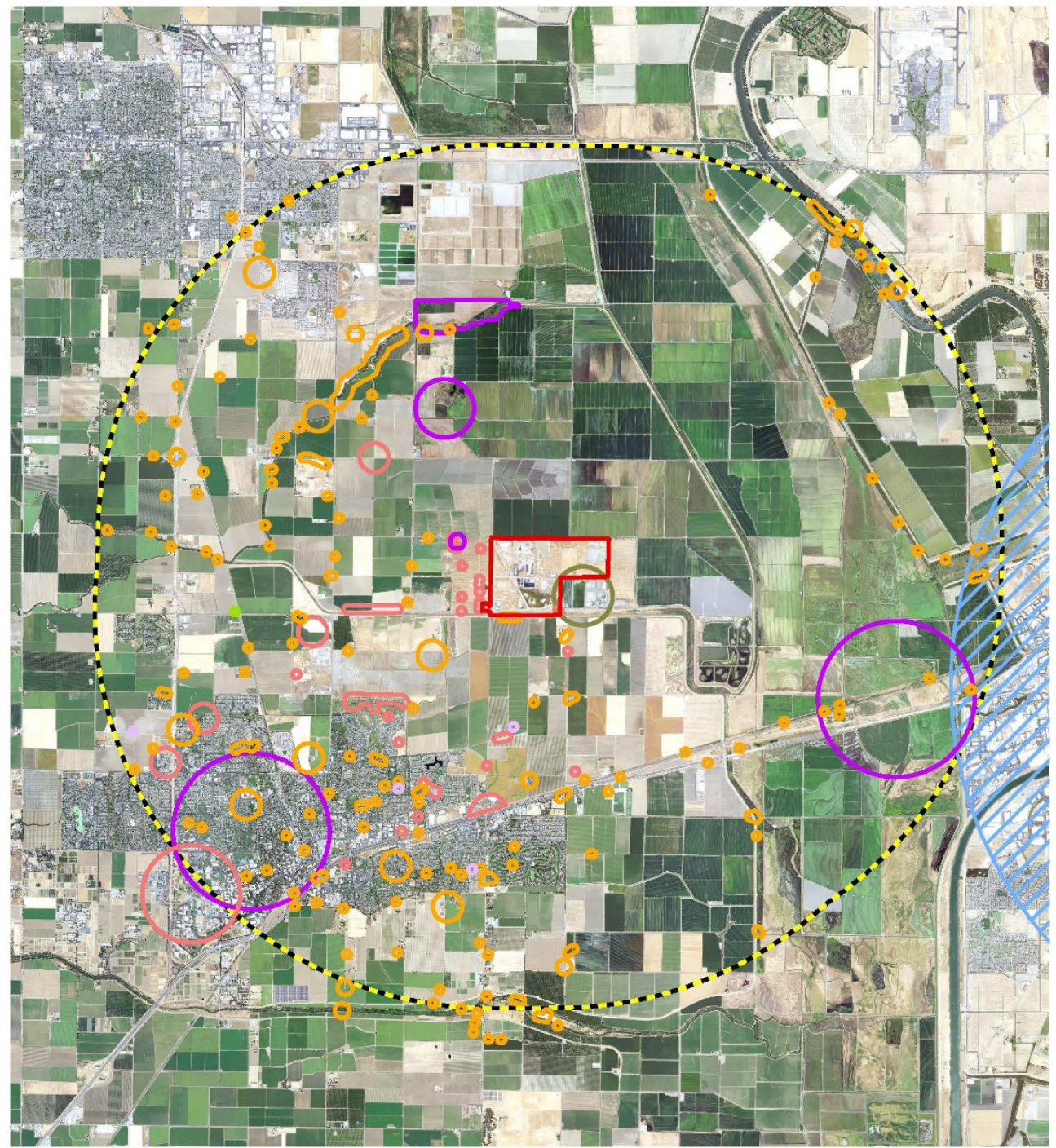
Legend

- | | | |
|---------------|-------------------------|-----------------------------|
| Yolo Landfill | California alkali grass | brittlescale |
| 5 Mile Buffer | Ferris' milk-vetch | heartscale |
| | Heckard's pepper-grass | palmate-bracted bird's-beak |
| | San Joaquin spearscale | pappose tarplant |
| | Suisun Marsh aster | saline clover |
| | alkali milk-vetch | |

Source: ICF, 2020

Figure 3.4-1a
 CNDDB Plant Records for the Yolo County
 Central Landfill Expansion Project

\\P0001TR05\GIS\1\Projects_1\County_of_Yolo\00350_20_Yolo_Landfill\Figures\Docs\EIR\1_DEIR\01_ADER\Fig_XX_CNDDDB_Wildlife_Birds.mxd User: 50960 Date: 1/20/2021



Legend

- Yolo Landfill
- 5 Mile Buffer

- Swainson's hawk
- burrowing owl
- northern harrier
- song sparrow ("Modesto" population)

- tricolored blackbird
- western snowy plover
- white-tailed kite

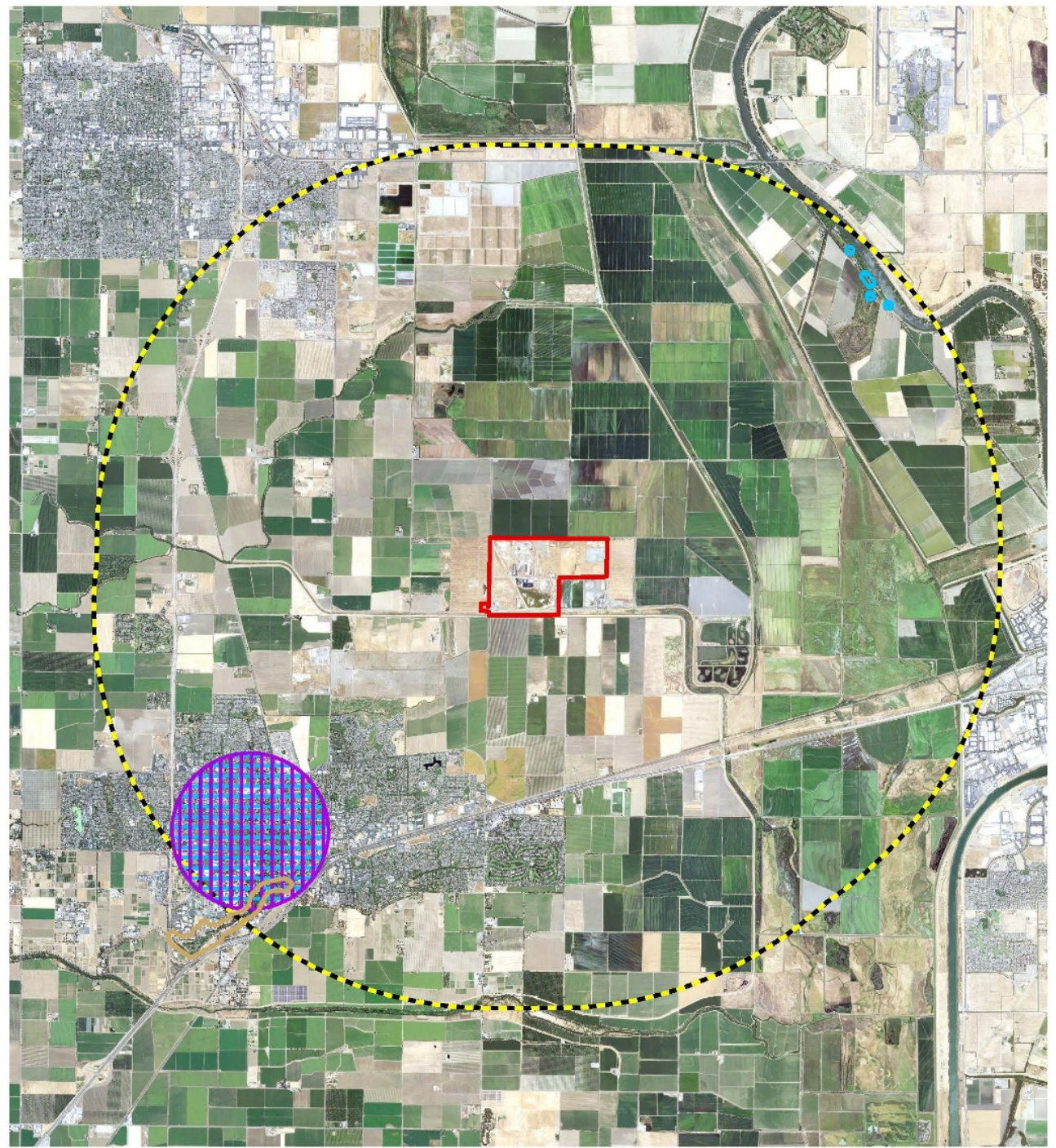


0 0.5 1
Miles



Source: ICF, 2020


Figure 3.4-1b
CNDDDB Bird Records for the Yolo County
Central Landfill Expansion Project


\\PDC\ITRDS\GIS\Projects_1\County of Yolo\00350_20_Yolo_Landfill\Figures\Docs\ERVI_DEIR\VI_ADEIR\Fig_XX_CNDDDB_Midlife_Insects.mxd User: 50860 Date: 1/20/2021



Legend

-  Yolo Landfill
-  5 Mile Buffer

 Crotch bumble bee

 valley elderberry longhorn beetle

 western bumble bee

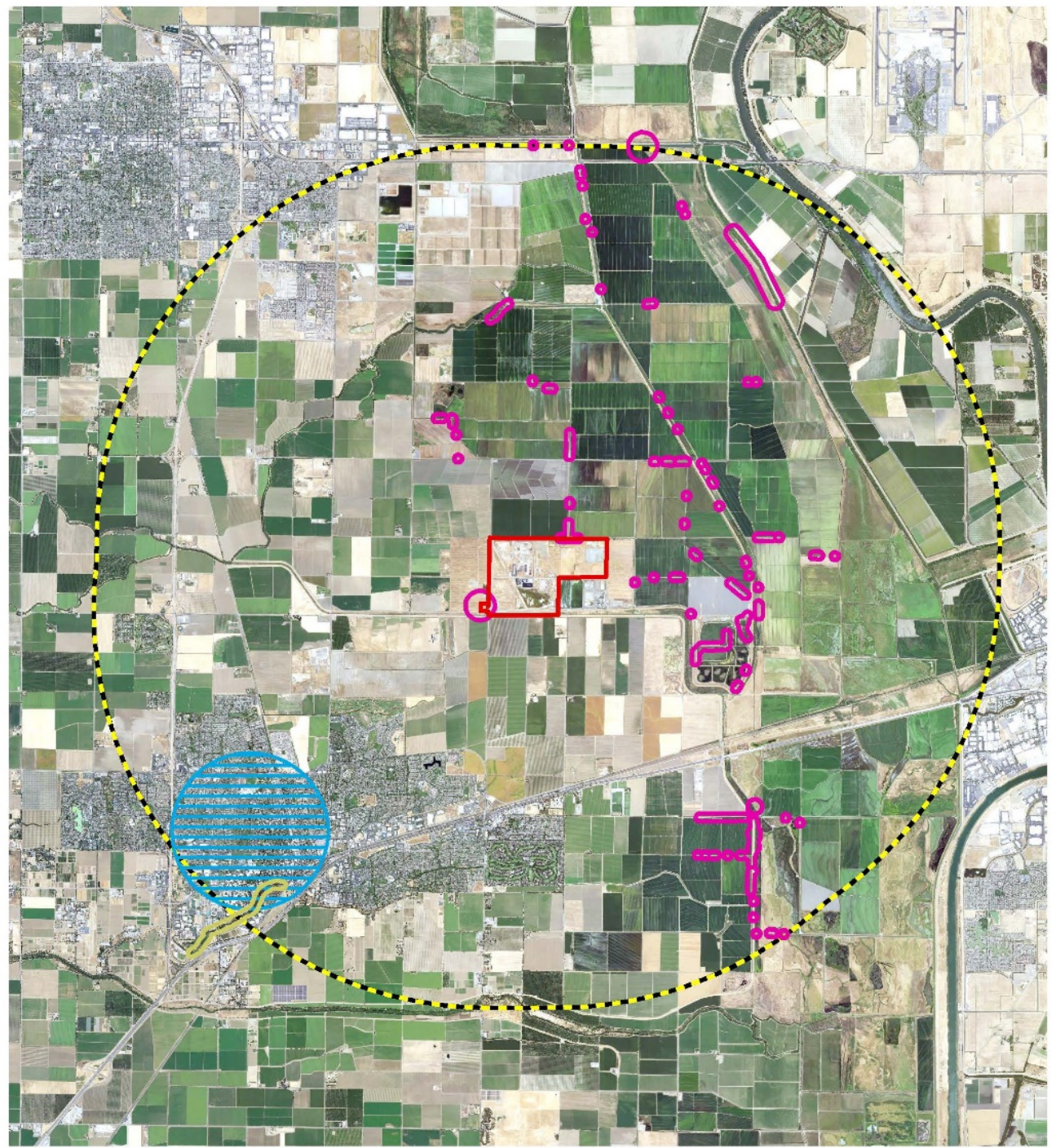


0 0.5 1
Miles






Source: ICF, 2020

Figure 3.4-1c
CNDDB Insect Records for the Yolo County
Central Landfill Expansion Project

\\P0001\Projects\1\County of Yolo\00350_20_Yolo_Landfill\Figures\Docs\EIR\11_DEIR\01_ADEIR\Ep_XX_CNDDDB_Wildlife_MammalReptileAmphibian.mxd; User: 50860; Date: 1/19/2021



Legend

-  Yolo Landfill
-  giant gartersnake
-  western pond turtle
-  5 Mile Buffer
-  pallid bat



0 0.5 1
Miles

Source: ICF, 2020

Figure 3.4-1d
CNDDDB Mammal and Reptile Records for the Yolo County
Central Landfill Expansion Project

Figures 3.4-1a-d contain the CNDDDB records for the Project. Appendix D contains database inquiries identified in the list above. Appendix E contains representative photographs. Appendix F contains a list of species observed during the reconnaissance surveys.

3.4.2 SETTING

Biological components discussed in the setting below include land cover types and associated wildlife habitats, special-status species, sensitive natural communities, and wetland and non-wetland waters.

Land Cover Types and Associated Wildlife Habitats

Prior to agriculture and urbanization, the Project region supported a mosaic of grasslands, seasonal wetlands, marshes, oak woodlands, streams, and riparian corridors. Presently, the remaining natural areas are restricted to isolated remnant patches intermixed between agricultural and urban landscapes. Land cover types in the Project area consist of non-native annual grassland, seasonal wetland, drainage ditch, detention basin, ruderal, disturbed/bare, and facilities.

The YCCL is surrounded by agricultural land to the north, east and west, with County Road 28H bordering to the south. Willow Slough Bypass occurs south of County Road 28H and flows eastward.

Non-Native Annual Grassland

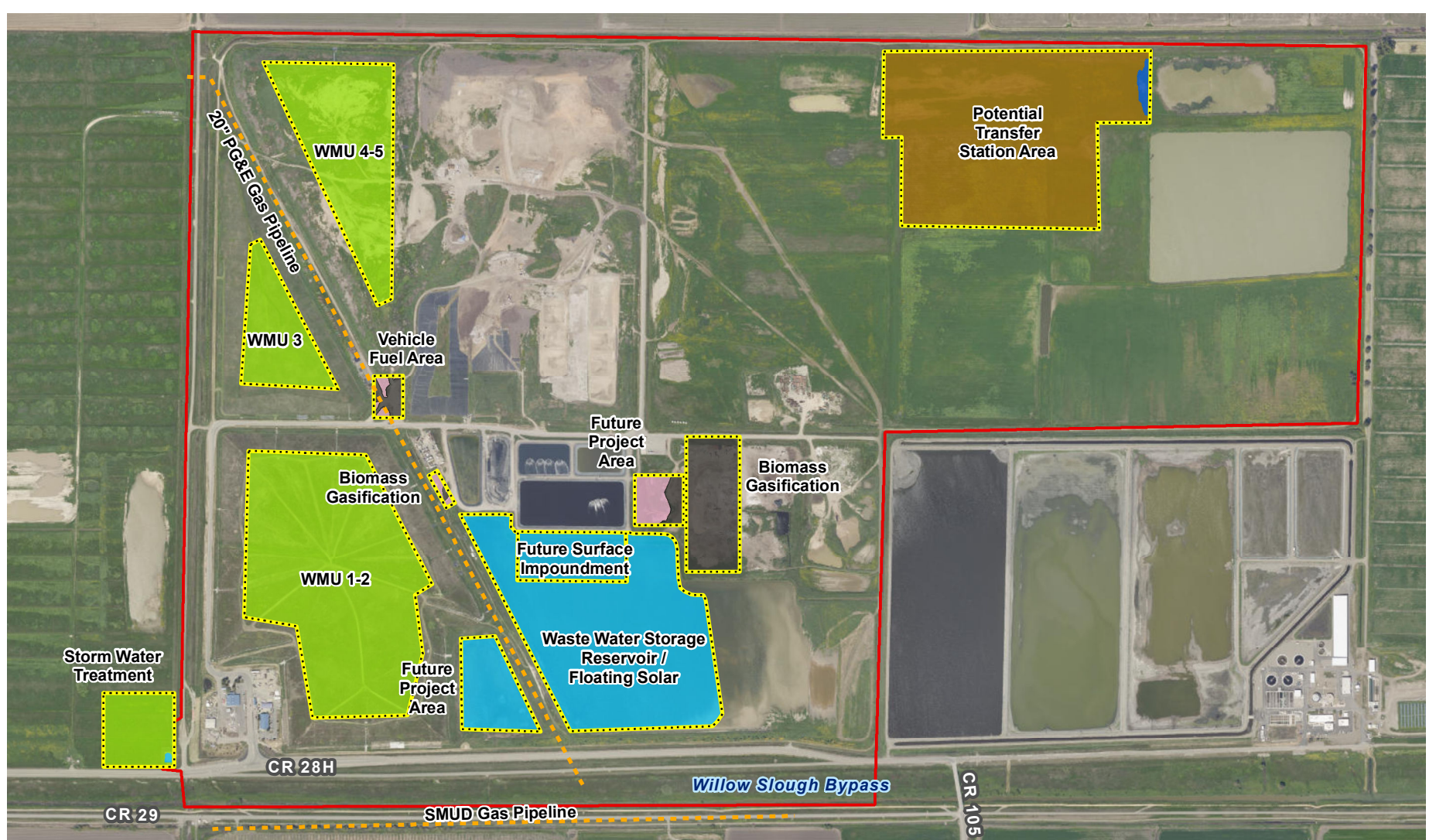
Non-native annual grassland occurs in the areas identified for the proposed placement of the solar panels and in the southeastern corner of Project area proposed for Storm Water Treatment (**Figure 3.4-2**, and **Appendix E**, Photo 11). The non-native annual grassland has been intermittently disturbed by YCCL operations in previous years (Google Earth 2020). The non-native annual grassland is dominated by Harding grass (*Phalaris aquatica*), ripgut brome (*Bromus diandrus*), foxtail barley (*Hordeum murinum ssp. leporinum*), yellow star thistle (*Centaurea solstitialis*), Italian rye grass (*Festuca perennis*), and sour clover (*Melilotus indicus*).

Wildlife species typical of non-native annual grasslands include coyote (*Canis latrans*), striped skunk (*Mephitis mephitis*), lesser goldfinch (*Spinus psaltria*), red-shouldered hawk (*Buteo lineatus*).

Artificial Seasonal Wetland

An artificial seasonal wetland occurs in the northeastern corner of the Project area, which is proposed for the Transfer Station, and other Project elements (**Appendix E**, Photo 12). Borrow activities started in 1993 and are evident on a 2018 aerial map (Google Earth 2020). The artificial seasonal wetland is lined with tule (*Schoenoplectus acutus var. occidentalis*) and cattails (*Typha* sp.) and the bed is dominated by swamp pickle grass (*Crypsis schoenoides*), with Italian rye grass and Parry's rough tarplant (*Centromadia parryi ssp. rudis*) primarily along the western margin. Wetland hydrology indicators observed in the artificial seasonal wetland included soil cracks and salt crusts. The disturbed/bare area adjacent to the artificial seasonal wetland contained wetlands delineated in 2004 (Yolo County Public Works and Planning Department Division of Integrated Waste Management 2004). Since then, the topsoil has been scraped, and this area may develop wetland conditions if left undisturbed. The seasonal wetland appears to be

I:\Projects\1\County of Yolo\00350_20_Yolo_Landfill\Figures\Misc\Figure_3.4.1_Land_Cover\Map\Users_60860_Date_7/27/2021



Legend

- | | | |
|---------------|----------------------------|-------------------------------|
| Yolo Landfill | Land Cover Types | Non-native annual grassland |
| Project Area | Artificial Detention Basin | Ruderal |
| Pipelines | Disturbed/bare | Artificial Seasonal wetland** |
| | Facilities | Artificial Drainage Ditch |



0 500 1,000
 Feet 1:12,000

Notes:

*Aquatic resources mapped in the field and with aerial map interpretation. The disturbed/bare area contains depressions discernable on aerial maps in previous years (Google Earth 2020)

**Aquatic resources in Project Area are isolated, artificial, and not presumed waters of the U.S.



Figure 3.4-2
Land Cover Map Yolo County Central Landfill

artificial and isolated; as a result, they would not likely fall under jurisdiction of the U.S. Army Corps of Engineers (USACE). However, given the artificial seasonal wetland has become a relatively permanent part of the landscape, the Central Valley Regional Water Quality Control Board (RWQCB) could take jurisdiction over the resource. The jurisdiction would need to be confirmed in the future as part of a formal aquatic resource delineation.

Wildlife species that may typically occupy seasonal wetlands include, Sierran treefrog (*Pseudacris sierra*), water flea (*daphnia sp.*), and water beetle (*Datacidae sp.*).

Drainage Ditch

Three drainage ditches also occur in the area proposed for the Stormwater Treatment area (**Figure 3.4-2**). Two of the ditches run parallel east to west and converge with an additional ditch orientated north to south. The two parallel ditches were dominated upland non-native annual grasses. The ditch orientated north to south contained cobble bed with cocklebur growing in between. These artificial ditches are used for the YCCL's existing water treatment operations. Therefore, these features are not likely regulated by the USACE or RWQCB.

Wildlife species that would typically use drainage ditches include mallard (*Anas platyrhynchos*), mountain garter snake (*Thamnophis elegans elegans*), savannah sparrow (*Passerculus sandwichensis*), and racoon (*Procyon lotor*).

Detention Basin

The Project area includes three detention basins. The eastern detention basin would contain the proposed Floating Solar and Future Surface Impoundment Facilities (**Appendix E**, Photographs 7-9) (**Figure 3.4-2**). The eastern detention basin was inundated at the time of the survey and contained extensive salt flats; both perennial and annual herbaceous hydrophytic vegetation lined the marshy northern shore with dominant species including: broadleaf cattail (*Typha latifolia*), saltmarsh bulrush (*Bolboschoenus maritimus subsp. paludosus*), smartweed (*Persicaria sp.*) and cocklebur. The central detention basin contains a proposed Future Project area. The topsoil in the central detention basin was recently scraped and most the basin was bare; some stump remains of cattails were observed in the detention basin and several arroyo willows (*Salix lasiolepis*) were present along the southern bank. The western detention basin occurs in the proposed Storm Water Treatment area and was fenced off preventing a close assessment. Wetland hydrology indicators observed in the detention basins consist of salt crusts, water lines, and inundation observed on aerial imagery. The detention basins would not likely be regulated by USACE or RWQCB because they are actively used for wastewater treatment.

Detention basins typically provide habitat for the same species associated with drainage ditches. In addition, detention basins provide habitat for bullfrog (*Lithobates catesbeianus*), common yellowthroat (*geothlypis trichas*), red-winged blackbird (*Agelaius phoeniceus*), and killdeer (*Charadrius vociferus*).

Ruderal

Ruderal vegetation is dominated by non-native annual forbs that grow in frequently disturbed areas. In the Project area, ruderal vegetation occurs in the Vehicle Fuel Area, Biomass

Gasification, and Future Project area (**Figure 3.4-2**). Dominant species observed in the ruderal land cover type include yellow star thistle, bristly ox-tongue (*Helminthotheca echioides*), and field bindweed (*Convolvulus arvensis*).

Ruderal areas provide habitat for the same species associated with non-native annual grasslands.

Disturbed/Bare

The disturbed/bare land cover type occurs in the northeastern portion of the Project area. This area contains previously delineated wetland features. Additional wetlands may reestablish in this area if the area is left undisturbed.

Special-Status Species

Special-status species refers to plant, animal, and fish species that are legally protected under the federal ESA, CESA, or other regulations, as well as species considered sufficiently rare by the scientific community to qualify for such listing. Special-status species include species, subspecies, or varieties that meet one or more of the following criteria.

- Species listed or proposed for listing as threatened or endangered under ESA (50 CFR 17.12 [listed plants]; 50 CFR 17.11 [listed animals]; various notices in the Federal Register (FR) [proposed species]).
- Species that are candidates for possible future listing as threatened or endangered under ESA (81 FR 87246 December 2, 2016).
- Species listed or proposed for listing by the State of California as threatened or endangered under CESA (14 CCR 670.5).
- Species that meet the definitions of rare or endangered under CEQA (State CEQA Guidelines Section 15380).
- Plants listed as rare under the California Native Plant Protection Act (California Fish and Game Code Section 1900 et seq.).
- Plants that meet the definitions of rare or endangered under CEQA (State CEQA Guidelines Section 15380[b], [c], and [d]). Plants that may meet this definition consist of the following:
 - Plants considered by CDFW to be “rare, threatened, or endangered in California” and assigned a California Rare Plant Rank (CRPR). The CDFW system includes five rarity and endangerment ranks for categorizing plant species of concern:
 - CRPR 1A – Plants presumed to be extinct in California,
 - CRPR 1B – Plants that are rare, threatened, or endangered in California and elsewhere,
 - CRPR 2A – Plants presumed to be extinct in California, but more common elsewhere,
 - CRPR 2B – Plants that are rare, threatened, or endangered in California but more common elsewhere, and
 - Plants that may warrant consideration on the basis of local significance or recent biological information (State CEQA Guidelines 15380[d]), which may include plants

rated CRPR 3 (Review List; plants about which more information is needed to determine their status) and CRPR 4 (Watch List: plants of limited distribution).

- Animal species that may warrant consideration on the basis of local significance or recent biological information (State CEQA Guidelines 15380[d])
- Species that are considered locally significant, that is, a species that is not rare from a statewide perspective but is rare or unique in a local context such as within a county or region (State CEQA Guidelines Section 15125 [c]) or is so designated in local or regional plans, policies, or ordinances (State CEQA Guidelines, Appendix G).
- Animal species of special concern to CDFW, as identified and defined in the CNDDDB.
- Animals fully protected in California (California Fish and Game Code Sections 3511 [birds], 4700 [mammals], and 5050 [amphibians and reptiles]).

Wildlife

Based on a review of the CNDDDB search results; the USFWS list of endangered, threatened, and proposed species within the Project region; and species' distribution and habitat data, 27 special-status wildlife species were determined to have the potential to occur in the Project area and surrounding region (**Table 3.4-1**). After completion of the field survey and habitat assessment, the biologist determined that 12 of the 27 species would not occur in the Project area because the Project area lacks suitable habitat or is outside the species' current range. Another five species of amphibians, birds, and bats, including spade-foot toad, mountain plover, American peregrine falcon, bald eagle, and western red bat, have potential to forage in the Project area or nest in habitats adjacent to the Project area; however, suitable nesting or roosting habitat is not present in the Project area. An explanation for the absence of each of these species from the Project area is provided in Table 3.4-1. The location of CNDDDB records for special-status wildlife within a 5-mile radius of the Project area are presented in **Figures 3.4-1a-d**.

The Project area has suitable habitat and CNDDDB record occurrences within 5 miles for the 10 remaining species listed below that could be affected by Project activities. These species are discussed in further detail below.

- Giant garter snake (*Thamnophis gigas*).
- Western pond turtle (*Actinemys marmorata*).
- Western burrowing owl (*Athene cunicularia hypugea*).
- Swainson's hawk (*Buteo swainsoni*).
- White-tailed kite (*Elanus leucurus*).
- Northern harrier (*Circus cyaneus*).
- Song Sparrow "Modesto" population (*Melospiza melodia mailliardi*).
- Western snowy plover (*Charadrius nivosus nivosus*).
- Tricolored blackbird (*Agelaius tricolor*).
- Pallid bat (*Antrozous pallidus*).

TABLE 3.4-1. SPECIAL-STATUS WILDLIFE SPECIES IDENTIFIED AS HAVING THE POTENTIAL TO OCCUR IN THE PROJECT REGION

Common and Scientific Names	Status ^a Federal/ State	Geographic Distribution	Habitat Requirements	Potential for Occurrence in Project Area
INVERTEBRATES				
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	T/-	Streamside habitats below 3,000 feet throughout the Central Valley.	Riparian and oak savanna habitats with elderberry shrubs; elderberries are the host plant.	None—no elderberry shrubs within the Project area.
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	T/-	Central Valley, central and south Coast Ranges from Tehama County to Santa Barbara County. Isolated populations also in Riverside County.	Common in vernal pools; also found in sandstone rock outcrop pools.	None—no suitable seasonal aquatic habitat that ponds deep enough for this species.
Vernal pool tadpole shrimp <i>Lepidurus packardii</i>	E/-	Shasta County south to Merced County.	Vernal pools and ephemeral stock ponds.	None—no suitable seasonal aquatic habitat that ponds deep enough for this species.
Crotch bumble bee <i>Bombus crotchii</i>	-/CE	Historically common in the California Central Valley.	Open grassland and scrub; nests underground. Food plants include <i>Asclepias</i> , <i>Chaenactis</i> , <i>Lupinus</i> , <i>Medicago</i> , <i>Phacelia</i> , and <i>Salvia</i> .	None – The nearest detection from Bumble Bee Watch (Bee 863) is more than 4.5 miles from the Project area.
Western bumble bee <i>Bombus occidentalis</i>	-/CE	Historically this species ranged from the Pacific coast to the Colorado Rocky Mountains; severe population decline west of Sierra-Cascade Crest, population now largely restricted to high elevations in the Sierra Nevada and northern California coast	Nests underground in squirrel burrows, in mouse nests, and in open west-southwest facing slopes bordered by trees. Visits a wide variety of wildflowers. Plant genera it is most commonly associated with are <i>Cirsium</i> , <i>Erigonum</i> , <i>Solidago</i> , “ <i>Aster</i> ”, <i>Ceanothus</i> , <i>Centaurea</i> , and <i>Penstemon</i> .	None– No nearby detections from Bumble Bee Watch. The nearest CNDDDB occurrence is detected approximately 4.5 miles from the Project area.
AMPHIBIANS				
California red-legged frog <i>Rana draytonii</i>	T/SSC	Found along the coast and coastal mountain ranges of California from Marin County to San Diego County and in the Sierra Nevada from Tehama County to Fresno County.	Permanent and semi-permanent aquatic habitats, such as creeks and cold-water ponds, with emergent and submergent vegetation. May estivate in rodent burrows or cracks during dry periods.	None—considered extirpated from the valley floor (U.S. Fish and Wildlife Service 2002).
California tiger salamander <i>Ambystoma californiense</i>	T/T	Central Valley, including Sierra Nevada foothills, up to approximately 1,000 feet, and coastal region from Butte County south to northeastern San Luis Obispo County.	Small ponds, lakes, or vernal pools in grasslands and oak woodlands for larvae; rodent burrows, rock crevices, or fallen logs for cover for adults and for summer dormancy.	None—Limited marginal habitat occurs in the seasonal ponds associated with the Project area. No known CNDDDB occurrences of this species within 10 miles of the Project area.
Western spadefoot <i>Spea hammondi</i>	-/SSC	Endemic to California. Ranges from Redding south throughout the Great Valley.	Shallow streams with riffles and seasonal wetlands, such as vernal and seasonal pools in annual grasslands and oak woodlands.	Low to none — Some marginal quality seasonal wetlands are present in the northern expansion area. Ground squirrel burrows are also present within the Project area, however, no CNDDDB records occur within a 10-mile radius of the Project area (California Department of Fish and Wildlife 2020).

TABLE 3.4-1. SPECIAL-STATUS WILDLIFE SPECIES IDENTIFIED AS HAVING THE POTENTIAL TO OCCUR IN THE PROJECT REGION (Continued)

Common and Scientific Names	Status ^a Federal/ State	Geographic Distribution	Habitat Requirements	Potential for Occurrence in Project Area
REPTILES				
Western pond turtle <i>Actinemys marmorata</i>	-/SSC	Occurs from the Oregon border of Del Norte and Siskiyou Counties south along the coast to San Francisco Bay, inland through the Sacramento Valley, and on the western slope of Sierra Nevada.	Occupies ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms and with watercress, cattails, water lilies, or other aquatic vegetation in woodlands, grasslands, and open forests.	Moderate quality habitat is present in Willow Slough Bypass. Marginal quality habitat is present within canals and various open water storage ponds within the expansion areas of the landfill
Giant garter snake <i>Thamnophis gigas</i>	T/T	Central Valley from the vicinity of Burrel in Fresno County north to near Chico in Butte County; has been extirpated from areas south of Fresno.	Sloughs, canals, low gradient streams and freshwater marsh habitats where there is a prey base of small fish and amphibians; also found in irrigation ditches and rice fields; requires grassy banks and emergent vegetation for basking and areas of high ground protected from flooding during winter.	High quality aquatic habitat is present in Willow Slough Bypass. Marginal quality aquatic and upland habitat is present within the expansion areas at the landfill. There are also CNDDDB records of detections within canals associated with rice fields adjacent to the Project area. (California Department of Fish and Wildlife 2020).
BIRDS				
Mountain plover <i>Charadrius montanus</i>	-/SSC	Does not breed in California. Winter range spans the western Central Valley, including areas of the Delta east of Suisun Marsh, and portions of southern California.	Forages in short grasslands and plowed agricultural fields where vegetation is sparse, and trees are absent.	Low—suitable winter foraging habitat in and adjacent to the Project area. The nearest CNDDDB record is over 10 miles from the Project area (California Department of Fish and Wildlife 2020).
Western snowy plover <i>Charadrius nivosus</i>	T/SSC	Breeds in coastal California and near alkali lakes in eastern California and remnant alkali playas in the southern San Joaquin Valley	Nests and forages on sandy and gravelly beaches along the coast and the shores of inland alkali lakes.	High—suitable foraging and nesting habitat present within the Project area; a nesting population of this species occurs within the City of Davis Wastewater Treatment Ponds (California Department of Fish and Wildlife 2020).
Swainson's hawk <i>Buteo swainsoni</i>	-/T	Lower Sacramento and San Joaquin Valleys, the Klamath Basin, and Butte Valley. Highest nesting densities occur near Davis and Woodland, Yolo County.	Nests in oaks or cottonwoods in or near riparian habitats. Forages in grasslands, irrigated pastures, and grain fields.	High—suitable nesting habitat is lacking in the expansion areas. Suitable foraging habitat is present in and adjacent to the Project area, several documented nesting structures present adjacent to the Project area (California Department of Fish and Wildlife 2020).
White-tailed kite <i>Elanus leucurus</i>	-/FP	Lowland areas west of Sierra Nevada from the head of the Sacramento Valley south, including coastal valleys and foothills to western San Diego County at the Mexico border.	Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands for foraging.	High—suitable nesting habitat is marginal at the Project area. Suitable foraging habitat is present within and adjacent to the Project area, suitable nesting habitat is present bordering the Project area; the closest documented nest site in CNDDDB is approximately 1.6 miles South of the Project area (California Department of Fish and Wildlife 2020).

TABLE 3.4-1. SPECIAL-STATUS WILDLIFE SPECIES IDENTIFIED AS HAVING THE POTENTIAL TO OCCUR IN THE PROJECT REGION (Continued)

Common and Scientific Names	Status ^a Federal/ State	Geographic Distribution	Habitat Requirements	Potential for Occurrence in Project Area
BIRDS (continued)				
American peregrine falcon (<i>Falco peregrinus anatum</i>)	-/SFP	Found throughout California.	Nests and roosts on protected ledges of high cliffs, usually adjacent to lakes, rivers, or marshes that support large prey populations; habitats vary from wetlands, woodlands, other forested habitats, and coastal habitats.	Low—no suitable nesting habitat within or adjacent to the Project area.
Bald eagle <i>Haliaeetus leucocephalus</i>	D/E	Most breeding territories are in northern California, but scattered locations in the central and southern Sierra Nevada mountains and foothills, in several locations from the central coast range to inland southern California, and on Santa Catalina Island.	Nests and roosts in mountain and foothill coniferous forests within 1 mile of large bodies of water (lake, reservoir, river, or the ocean).	Low—low quality forging habitat present; no nesting habitat within or adjacent to the Project area.
Northern harrier <i>Circus cyaneus</i>	-/SSC	Occurs throughout lowland California. Has been recorded in fall at high elevations.	Nests and forages in grasslands, meadows, marshes, and seasonal and agricultural wetlands.	High—suitable nesting and foraging habitat is present adjacent to and within the Project area within fallow fields and within dense vegetation along canals.
Western yellow-billed cuckoo <i>Coccyzus americanus</i>	C/E	Nests along the upper Sacramento, lower Feather, south fork of the Kern, Amargosa, Santa Ana, and Colorado Rivers.	Wide, dense riparian forests with a thick understory of willows for nesting; a with a dominant cottonwood overstory are preferred for foraging; may avoid valley-oak riparian habitats where scrub jays are abundant.	None—no suitable riparian nesting habitat is located within or adjacent to the Project area.
Western burrowing owl <i>Athene cunicularia hypugea</i>	-/SSC	Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas. Rare along south coast.	Level, open, dry, heavily grazed or low-stature grassland or desert vegetation with available burrows.	High—suitable nesting habitat in and adjacent to the Project area based on presence of tall, dense grasses and suitable burrows created by California ground squirrel; disturbed areas and fields with sparse or short vegetation along the proposed work areas provide wintering and breeding habitat for burrowing owls; multiple burrowing owls observed in the fallow fields used as borrow sites during a survey conducted in 2020.
Bank swallow <i>Riparia</i>	-/T	Occurs along the Sacramento River from Tehama County to Sacramento County, along the Feather and lower American Rivers, in the Owens Valley, and in the plains east of the Cascade Range in Modoc, Lassen, and northern Siskiyou Counties. Small populations near the coast from San Francisco County to Monterey County.	Nests in bluffs or banks, usually adjacent to water, where the soil consists of sand or sandy loam.	None—no suitable bank nesting habitat is present within the Project area.

TABLE 3.4-1. SPECIAL-STATUS WILDLIFE SPECIES IDENTIFIED AS HAVING THE POTENTIAL TO OCCUR IN THE PROJECT REGION (Continued)

Common and Scientific Names	Status ^a Federal/ State	Geographic Distribution	Habitat Requirements	Potential for Occurrence in Project Area
BIRDS (continued)				
Least Bell's vireo <i>Vireo bellii pusillus</i>	E/E	California to northern Baja. Rare, local, summer resident below about 600m (2000ft), mostly in San Benito and Monterey counties. Present in coastal southern CA from Santa Barbara County south.	Inhabits low, dense riparian growth along water or along dry parts of intermittent streams. Typically associated with willow, cottonwood, coyote bush, wild blackberry, or mesquite in desert localities.	None—no suitable nesting habitat is present within the Project area
California black rail <i>Laterallus jamaicensis coturniculus</i>	-/T	Permanent resident in the San Francisco Bay and east-ward through the Delta into Sacramento and San Joaquin Counties; northern Sierra foothills of Butte, Nevada, and Placer Counties; small populations in Marin, Santa Cruz, San Luis Obispo, Orange, Riverside, and Imperial Counties	Resident of saltwater, brackish, and freshwater marshes with a vegetation structure characterized by high stem density and canopy cover. Typically use wetland zones with shallow water (generally less than 1.2 inches).	None— suitable habitat not present in the Project area Potential habitat present within Willow Slough Bypass; closest CNDDDB nesting record is from a created wetland adjacent to the Deep Water Ship Channel located about 6 miles South East of the Project area (California Department of Fish and Wildlife 2020).
Song sparrow “Modesto” population <i>Melospiza melodia mailliardi</i>	-/SSC	Year-round range includes the Delta east of Suisun Marsh, the Sacramento Valley, and the northern San Joaquin Valley.	Nests and forages primarily in emergent marsh, riparian scrub, and early successional riparian forest habitats, and infrequently in mature riparian forest and sparsely vegetated ditches and levees.	High—the riparian scrub habitat present within or adjacent to the Project area can sustain habitat suitable for foraging and nesting; the closest CNDDDB record located approximately 6 miles southeast along the Yolo bypass (California Department of Fish and Wildlife 2020).
Tricolored blackbird <i>Agelaius tricolor</i>	-/T	Permanent resident in the Central Valley from Butte County to Kern County; breeds at scattered coastal locations from Marin County south to San Diego County and at scattered locations in Lake, Sonoma, and Solano Counties; rare nester in Siskiyou, Modoc, and Lassen Counties.	Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grain fields; habitat must be large enough to support 50 pairs; probably requires water at or near the nesting colony.	High—there is suitable foraging and nesting habitat within the Project area. CNDDDB record of a nesting colony within the North West corner of the Western borrow site (California Department of Fish and Wildlife 2020).
MAMMALS				
Western red bat <i>Lasiurus blossevillii</i>	-/SSC	Scattered throughout much of California at lower elevations.	Found primarily in riparian and wooded habitats. Occurs at least seasonally in urban areas. Day roosts in trees in the foliage. Found in fruit orchards and sycamore riparian habitats in the Central Valley.	Low—could forage over the Project area; however no suitable roosting habitat is present within the Project area; closest potential roost habitat are large trees bordering the Project area.
Townsend’s big-eared bat <i>Corynorhinus townsendii</i>	-/T	Occurs in inland deserts, moist cool redwood forests, oak woodlands of the inner Coast Ranges and Sierra Nevada foothills, and lower to mid-elevation mixed coniferous forests.	The species is not known to occur on the floor of the Sacramento Valley. Roosts in caves, tunnels, mines, and dark attics of abandoned buildings	None— Species is not known to occur on the floor of the Sacramento Valley.

TABLE 3.4-1. SPECIAL-STATUS WILDLIFE SPECIES IDENTIFIED AS HAVING THE POTENTIAL TO OCCUR IN THE PROJECT REGION (Continued)

Common and Scientific Names	Status ^a Federal/ State	Geographic Distribution	Habitat Requirements	Potential for Occurrence in Project Area
MAMMALS (continued)				
Pallid bat <i>Antrozous pallidus</i>	-/SSC	Occurs in a variety of habitats from desert to coniferous forest. Most closely associated with oak, mixed conifer, redwood, and giant sequoia habitats in northern California.	Day and night roosts include crevices in rocky outcrops and cliffs, caves, mines, basal hollows and exfoliating bark of trees, bridges, barns, and even occupied homes.	Low—could forage over the Project area; suitable roosting trees are outside of the Project area, some existing buildings within the Project area could provide suitable roosting habitat.

^a Status explanations:

Federal

E = listed as endangered under the Federal Endangered Species Act.

T = listed as threatened under the Federal Endangered Species Act.

C = candidate species for which USFWS has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list, but issuance of the proposed rule is precluded.

- = no listing.

State

E = listed as endangered under the California Endangered Species Act.

T = listed as threatened under the California Endangered Species Act.

FP = fully protected under the California Fish and Game Code.

SSC = species of special concern in California.

- = no listing.

Other

WBWG = Western Bat Working Group 2007. Available: <http://www.wbwg.org/spp_matrix.html>.

Medium priority = species status is unclear because of a lack of data; this designation indicates a level of concern that should warrant (1) closer evaluation and more research of the species and possible threats and (2) conservation actions benefiting the species.

High priority = species are imperiled or at high risk of imperilment.

Giant Garter Snake

Giant garter snake is state and federally listed as threatened. A Revised Recovery Plan for giant garter snake was completed in 2017, but no critical habitat has been designated for this species (U.S. Fish and Wildlife Service 2017). Giant garter snake historically occupied wetlands throughout the Sacramento and San Joaquin Valleys, as far north as Chico, and as far south as Buena Vista Lake, near Bakersfield (Hansen and Brode 1980). The current known distribution of giant garter snakes is patchy, extending from near Chico, Butte County, south to Mendota Wildlife Area, Fresno County. Giant garter snakes are not known from the northern portion of the San Joaquin Valley north to the eastern fringe of the Sacramento-San Joaquin River Delta, where the floodplain of the San Joaquin River is limited to a relatively narrow trough (Hansen and Brode 1980, Federal Register 58:54053—54066).

Giant garter snakes typically breed in March and April and live young are born from late July to early September. The giant garter snake inhabits marshes, sloughs, ponds, small lakes, low gradient streams, agricultural wetlands (including irrigation canals and rice fields), and adjacent uplands. Essential habitat components consist of 1) freshwater aquatic habitat with protective emergent vegetation cover where snakes can forage; 2) upland habitat near the aquatic habitat that can be used for thermoregulation and summer shelter (i.e., burrows), and 3) upland refugia outside flood waters that can serve as winter hibernacula (U.S. Fish and Wildlife Service 2017).

Ideal giant garter snake aquatic habitat exhibits the following characteristics.

- Water present from March through November.
- Slow moving or static water flow with mud substrate.
- Presence of emergent and bankside vegetation that provides cover from predators and may serve in thermoregulation.
- Absence of a continuous canopy of riparian vegetation.
- Available prey in the form of small amphibians and small fish.
- Thermoregulation (basking) sites with supportive vegetation such as folded tule clumps immediately adjacent to escape cover.
- Absence of large predatory fish.
- Absence of recurrent flooding, or, where flooding is probable, the presence of upland refugia.

Another key requirement of the giant garter snake includes maintenance of connectivity between habitats. Giant garter snakes rely on canals and ditches as movement corridors. These corridors provide important habitat and are used during daily movement within a home range. Recent work by the U.S. Geological Survey (USGS) (Halstead et al. 2010) suggests that giant garter snakes primarily occur in areas with dense networks of canals among rice agriculture and wetlands.

Giant garter snake typically forages and shelter within cattail, bulrush, or other emergent herbaceous wetland vegetation, using grassy banks and openings at the water's edge for basking.

Rice fields may be important nursery and feeding habitat, providing prey that are absent from other permanent aquatic areas (U.S. Fish and Wildlife Service 2017). Wintering habitat consists of higher elevation upland areas with vegetation, burrows or other underground refugia (Hansen 1988). During the winter months, when the snakes are inactive, small mammal burrows and other soil or rock crevices may be used for hibernation, and also provide refuge from hot conditions during the snake's active season (Hansen and Brode 1993; U.S. Fish and Wildlife Service 2017). Giant garter snakes have been documented using burrows as much as 165 feet from marsh edges to shelter from heat during the active season, and up to 820 feet away during the winter (Wylie et al. 2000).

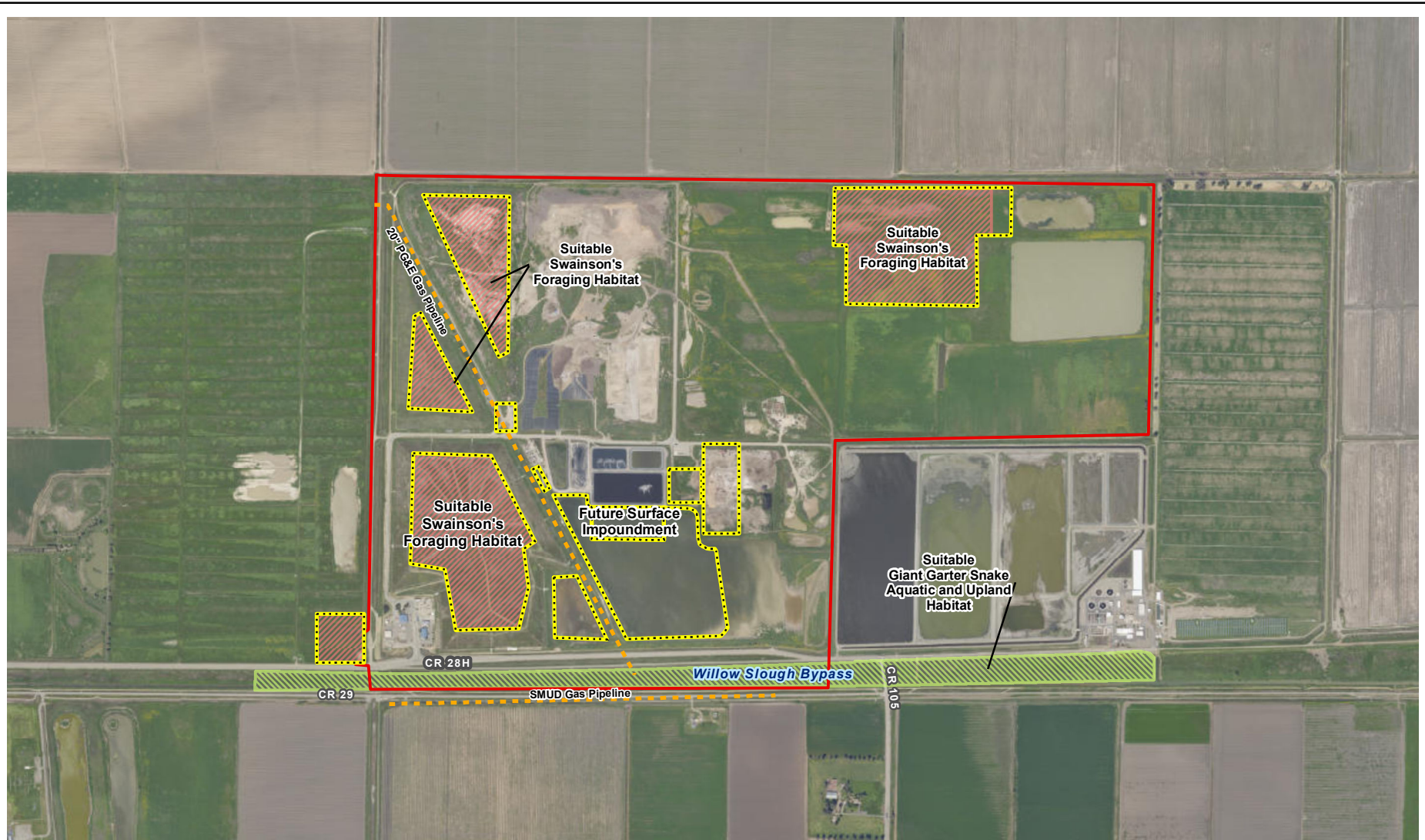
Many observations of giant garter snake have been documented within the agriculture areas and Willow Slough Bypass that surround the Project area (**Figure 3.4-1d** and **Figure 3.4-3**). Because of the Project areas' proximity to higher quality agricultural rice aquatic habitat and canals that support that agriculture, Project area features such as water runoff canals, storm water basins and other infrastructure, provide marginal aquatic habitat for this species. The Project area habitat is considered marginal quality due to the disturbance from heavy truck traffic at the Project area, the disturbed nature of the storm water basins, and general lack of dense stands of emergent vegetation. Portions of Willow Slough Bypass adjacent to the Project area and the location of the SMUD pipeline would be considered suitable habitat. Giant garter snakes may also disperse across or bask on dirt and gravel roads along the access routes, in the Project area, that are adjacent to suitable Willow Slough Bypass habitat.

Western Pond Turtle

Western pond turtle is a California species of special concern. The western pond turtle occurs from Baja California north into the State of Washington. Historically, this turtle once inhabited the vast permanent and seasonal wetlands throughout much of California except for east of the Sierra-Cascade crest and desert regions (with the exception of the Mojave River and its tributaries). Elevation range extends from near sea level to approximately 4,690 feet (Jennings and Hayes 1994). Aquatic habitats used by pond turtles include ponds, lakes, marshes, rivers, streams, and irrigation ditches with a muddy or rocky bottom in grassland, woodland, and open forest areas (Stebbins 2003). Pond turtles spend a considerable amount of time basking on rocks, logs, emergent vegetation, mud or sand banks, or human-generated debris (Jennings et al. 1992). They move to upland areas adjacent to watercourses to deposit eggs and overwinter (Jennings and Hayes 1994). Western pond turtles may spend the winter buried in mud bottoms of their aquatic habitats or under soil and duff in nearby uplands (Rosenburg et al. 2009). Throughout their range, the furthest distance that pond turtles have been reported to travel from water is between approximately 500 and 1,500 feet (Pilliod et al. 2013). Where permanent water is available and winter temperatures are mild, for example in the southern portion of the range and along the central coast, this pond turtles can be active year-round. In colder regions and where permanent water is not reliable or aquatic habitat is associated with streams and rivers, this pond turtles typically become active in March and return to overwintering sites by October or November (Jennings et al. 1992, Pilliod et al. 2013).

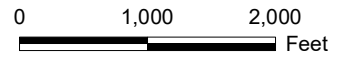
Suitable habitat for the turtle occurs in Willow Slough Bypass and the adjacent agricultural canals. Pond turtles could bask in or disperse through the Project area and potentially nest in Project area in grassland areas that are near suitable aquatic habitat (generally within 1,500 feet).

\\PDC\CITRDS\GIS\Projects_1\County of Yolo\00350_20_Yolo_Landfill\Figures\Misc\Wildlife_Survey_20210114.mxd User: 50860 Date: 7/27/2021



Legend

- Yolo Landfill
- Pipelines
- Suitable Swainson's Hawk Habitat
- Suitable Giant Garter Snake and Western Pond Turtle Habitat



1:18,000



Figure 3.4-3
Suitable Special-Status Species Habitat within the Yolo County Central Landfill

Western Burrowing Owl

Western burrowing owl is a state species of special concern and is protected under the MBTA and California Fish and Game Code Section 3503.5. Burrowing owls are a year-round resident and ground-nesting raptor that typically use the burrows of other species, such as ground squirrels for nesting, protection, and shelter (Trulio 1997). In urban and agricultural areas, burrowing owls often use artificial burrows, such as culverts, cement, asphalt, wood debris piles or openings beneath cement or asphalt pavement, particularly pipes (Rosenburg et al. 1998). The primary habitat requirement of the burrowing owl are burrows appropriate for roosting and nesting and are found in variety of grasslands, as well as in scrublands with a low density of trees, shrubs, and low-growing vegetation. Burrowing owls always need access to burrows for survival (Green and Anthony 1989, Haug et al. 1993). Burrowing owls that nest in the Central Valley may winter elsewhere (Catlin 2004, Rosier et al. 2006). This owl generally breeds from March through August and is most active while hunting during dawn and dusk.

There are several CNDDDB recorded occurrence of wintering burrowing owls within 5-miles of the Project area (**Figure 3.4-1b**). Burrowing owls have also been observed in the western borrow site at the YCCL (observed in October 2020). Annual grassland and unvegetated/graded areas throughout the Project area provide suitable breeding and wintering habitat for burrowing owls. Owls could also use existing ground squirrel burrows or culverts present within or adjacent to the Project area.

Swainson's Hawk

Swainson's hawk is state listed as a threatened species. Swainson's hawks forage in grasslands, grazed pastures, alfalfa and other hay crops, and certain grain and row croplands. Vineyards, orchards, rice, and cotton crops are generally unsuitable for foraging because of the density of the vegetation (California Department of Fish and Game 1992). The majority of Swainson's hawks winter in Mexico and South America, although some winter in the United States. Swainson's hawks arrive in California in early March to establish nesting territories and breed (California Department of Fish and Game 1994). They usually nest in large, mature trees. Most nest sites (87 percent) in the Central Valley are found in riparian habitats (Estep 1989), where the abundance of trees is more prevalent than other habitats. Swainson's hawks also nest in mature roadside trees and in isolated trees in agricultural fields or pastures. The breeding season is from March through August (Estep 1989).

There are numerous historic nest locations for Swainson's hawk documented by CNDDDB surrounding the Project area (**Figure 3.4-1b**). Historic nests have also been documented within 1,600 - 2,600 feet of the Project area. These nests are located within trees associated with agriculture areas along County Road 103. One historic nest has been recorded on Willow Slough Bypass, along County Road 28H and is approximately 450 feet from the Project area. These nests experience regular noise and potential disturbance from farm equipment and vehicles. Other trees along the perimeter of the Project area could be used for nesting habitat. Grasslands in the Project area provide suitable foraging habitat for this species.

White-Tailed Kite

White-tailed kite is a state species of special concern and is designated as fully protected under California Fish and Game Code Section 3511. White-tailed kites occur in coastal and valley lowlands in California. They generally inhabit low-elevation grassland, savannah, oak woodland, wetlands, agricultural, and riparian habitats. Some large shrubs or trees are required for nesting and for communal roosting sites. Nest trees range from small, isolated shrubs and trees to trees in relatively large stands (Dunk 1995). White-tailed kites make nests of loosely piled sticks and twigs, lined with grass and straw, near the top of dense oaks, willows, and other tree stands. The breeding season lasts from February through October and peaks between May and August. They forage in undisturbed, open grassland, meadows, farmland, and emergent wetlands.

Within the Project area, potential nesting habitat for white-tailed kite is limited to a few small trees along the southern portion of the Project area that borders County Road 28H. Annual and ruderal grassland in the Project area provides suitable foraging habitat for white-tailed kite.

Northern Harrier

Northern harrier is a California species of special concern and is protected during its nesting season under the MBTA and California Fish and Game Code Section 3503.5. Northern harrier is a year-round resident throughout the Central Valley and often is associated with marshes, meadows, open grassland habitats, and agricultural fields. Nests are found on the ground in tall, dense herbaceous vegetation (MacWhirter and Bildstein 1996). Northern harrier nests from April to September, with peak activity in June and July. The breeding population has been reduced, particularly along the southern coast, because of the destruction of wetland habitat, native grassland, and moist meadows and from burning and plowing of nesting areas during early stages of breeding.

Suitable nesting habitat for northern harriers is present within the proposed transfer station, waste gasification, fertilizer facility, and pellet facility. They may also forage along margins of suitable habitat found along vegetated water storage berms. Agricultural areas adjacent to the Project area provide suitable foraging and nesting habitat for northern harriers.

Song sparrow (“Modesto” population)

The Modesto population of song sparrows are a state species of special concern. They are endemic to the north-central portion of the Central Valley and the Bay-Delta regions of California. These sparrows breed in emergent marsh and riparian scrub, and in valley oak riparian forests with dense blackberry understory, vegetated irrigation canals, and levees. Their habitat requires moderately dense vegetation to supply cover for nesting sites, a source of standing or running water, semi-open canopies to allow light, and exposed ground or leaf litter for foraging (Grinnell and Miller 1994).

Suitable habitat for the song sparrow is present along vegetation growing along Willow Slough Bypass, the eastern detention basin, and borders along neighboring agriculture that surround the Project area.

Western Snowy Plover

The western snowy plover is federally listed as threatened. The current known breeding range of the Pacific coast population of the Western snowy plover extends from Damon Point, Washington to Bahia Magdalena in Baja California, Mexico (U.S. Fish and Wildlife Service 2016c).

The western snowy plover breeds above the high tide line on coastal beaches, sand spits, dune-backed beaches, sparsely-vegetated dunes, beaches at creek and river mouths, and salt pans at lagoons and estuaries; less commonly, they breed on bluff-backed beaches, dredged material disposal sites, salt pond levees, dry salt ponds, and river bars (U.S. Fish and Wildlife Service 2016c).

Breeding occurs from early March through late September but may be variable depending on latitude. Breeding may take place up to 2 to 4 weeks earlier in southern California than in Oregon or Washington. The two or three eggs are incubated by both parents for 26-33 days. Chicks are fully mobile within hours of hatching but are tended to by the male for approximately one month. Once the chicks are hatched, the female departs to begin a new nest with a new male. Females often produce two broods per year, and up to three broods where the breeding season is longer (National Parks Service 2020a). Fledging can take place as late as September (U.S. Fish and Wildlife Service 2016c).

Adult snowy plovers do not feed their young, instead they lead young to food within hours of hatching. They are primarily visual foragers, feeding on terrestrial and aquatic invertebrates (U.S. Fish and Wildlife Service 2007c). Adults will try to distract predators and humans from young by presenting a broken-wing or tail-drag display (U.S. Fish and Wildlife Service 2016c). Nests may be natural or scrapped shallow depressions lined with pebbles, shell fragments, vegetation fragments, or mud chips (U.S. Fish and Wildlife Service 2007c). Western snowy plovers generally return to the same area each year for breeding (U.S. Fish and Wildlife Service 2016c).

An extant population is known to occur along the City of Davis former wastewater treatment plant lagoons which are approximately 1,200 feet southeast from the Project area. The eastern detention basin contained extensive salt flats that would be suitable nesting and foraging habitat for this species.

Tricolored Blackbird

Tricolored blackbirds can be found throughout California's central valley in addition to a few peripheral sites. Breeding occurs from mid-March through mid-July (Hamilton 1998). This species is known to show annual site fidelity (Beedy and Hamilton 1997). Colonies that finish nesting within Sacramento county and San Joaquin valley settle in Sacramento Valley during late May through early June (Beedy and Hamilton 1999). In November large foraging flocks frequent the Sacramento- San Joaquin Delta region.

Tricolored blackbirds are opportunistic foragers of any abundant insect resource and have been known to travel up to 13 km for food (Orians 1961a, p.299; Beedy and Hamilton 1997, p.5).

Tricolored blackbirds have been known to nest in the north west portion of the western borrow site (CDFW 2020a), however any emergent marsh vegetation, such as tules and cattails found bordering detention basins within the Project area, or upland areas with blackberries, nettles, thistles would be considered suitable habitat.

Other Protected Birds and Raptors

Other non-special-status migratory birds and raptors could nest in and adjacent to the Project area, based on the presence of suitable nesting habitat (annual grassland, agricultural areas, trees and shrubs). In addition to individual bird nests, the large trees adjacent to the Project area have the potential to support heron rookeries, including great egret, snowy egrets, great blue herons, black-capped night herons, and green herons. The breeding season for most birds is generally from March 1 to August 30. The occupied nests and eggs of these birds are protected by federal and state laws, including the MBTA and California Fish and Game Code Sections 3503 and 3503.5. CDFW is responsible for overseeing compliance with the codes and makes recommendations on nesting bird and raptor protection.

Pallid Bat

Pallid bat is designated as a California species of special concern. Pallid bat occurs at low elevations throughout California (Zeiner et al. 1990:70). They occur in a variety of habitat, including grasslands, shrublands, and woodlands, and are most common in open, dry habitats with rocky areas for roosting (Zeiner et al. 1990:70). Pallid bats roost alone, in small groups, or gregariously in crevices in rocky outcrops and cliffs, caves, mines, trees hollows, exfoliating tree bark, and various human structures such as bridges and buildings (Western Bat Working Group 2005a).

Suitable roosting habitat occurs within the YCCL manmade structures in the Project area. Foraging habitat occurs within the grasslands of the borrow sites and along vegetated margins between work areas. Suitable foraging and roosting habitat also occur in habitat adjacent to the Project area. No directed surveys for bats were conducted.

Plants

Based on the results of the database inquiries and the reconnaissance surveys/habitat assessment, there is low quality potential habitat for all 11 special-status plant species known to occur within 5 miles of the Project area, listed in **Table 3.4-2** below (CDFW 2020a and CNPS 2020) and identified in **Figures 3.4-1a**. The only state or federally listed species with potential to occur in the Project area is the federally and state endangered palmate-bracted bird's beak (*Chloropyron palmatum*). The remaining species with potential to occur include CRPR 1B.1 Ferris' milk-vetch (*Astragalus tener* var. *ferrisiae*) and nine other CRPR 1B.2 species. The artificial seasonal wetland occurs on alkaline soils and provides low quality potential habitat for all but one of the special-status species listed in Table 3.4-2; the eastern detention basin contains low quality potential habitat for Ferris' milk-vetch, Suisun Marsh aster (*Symphyotrichum lentum*), California alkali grass (*Puccinellia simplex*), and saline clover (*Trifolium hydrophilum*) along the northern marshy margin.

TABLE 3.4-2. SPECIAL-STATUS PLANT SPECIES IDENTIFIED AS HAVING THE POTENTIAL TO OCCUR IN THE PROJECT REGION

Common and Scientific Names	Status^a Federal/ State/CNPS	Geographic Distribution	Habitat Requirements	Blooming/ Identifiable Period	Potential to Occur in Project area
Ferris' milk-vetch <i>Astragalus tener</i> var. <i>ferrisiae</i>	-/-/1B.1	Sacramento Valley	Subalkaline flats and flood lands, usually on alkaline soils	April–May	Low–Project area is heavily disturbed, but there is potential suitable habitat in the artificial seasonal wetland and eastern detention basin on alkaline soils.
Alkali milk-vetch <i>Astragalus tener</i> var. <i>tener</i>	-/-/1B.2	Southern Sacramento Valley, northern San Joaquin Valley, east San Francisco Bay Area	Grassy flats and vernal pool margins, on alkali soils; below 197 feet	March–June	Low–Project area is heavily disturbed, but there is potential suitable habitat in the artificial seasonal wetland.
Heartscale <i>Atriplex cordulata</i> var. <i>cordulata</i>	-/-/1B.2	Central Valley from Colusa County to Kern County	Alkali grassland, alkali meadow, alkali scrub	May–October	Low–Project area is heavily disturbed, but there is potential suitable habitat in the artificial seasonal wetland on alkaline soils.
Brittlescale <i>Atriplex depressa</i>	-/-/1B.2	Western and eastern Central Valley and adjacent foothills on west side of Central Valley	Alkali grassland, alkali meadow, and alkali scrub	June–October	Low–Project area is heavily disturbed, but there is potential suitable habitat in the artificial seasonal wetland and non-native annual grassland.
Pappose spikeweed <i>Centromadia parryi</i> subsp. <i>parryi</i>	-/-/1B.2	Northern San Francisco Bay Area, North Coast Ranges, Sacramento Valley	Coastal prairie, meadows, seeps, coastal salt marsh, annual grassland, below 1,380 ft.	July–October	Low–Project area is heavily disturbed, but there is potential suitable habitat in the artificial seasonal wetland and non-native annual grassland.
Palmate bird's-beak <i>Chloropyron palmatum</i>	E/E/1B.1	Livermore Valley and scattered locations in the Central Valley from Colusa to Fresno County	Alkaline grasslands, chenopod scrub	May–October	Low–Project area is heavily disturbed, but there is potential habitat in the artificial seasonal wetland.
San Joaquin spearscale <i>Extriplex joaquinana</i>	-/-/1B.2	Eastern San Francisco Bay Area, west edge of Central Valley from Glenn County to Fresno County	Alkali meadow, alkali grassland, saltbush scrub	April–September	Low–Project area is heavily disturbed, but there is potential suitable habitat in the artificial seasonal wetland and non-native annual grassland.
Heckard's pepper-grass <i>Lepidium latipes</i> var. <i>heckardii</i>	-/-/1B.2	Yolo and Solano Counties	Alkaline soils, vernal pool margins, salt marsh edges	April–May	Low–Project area is heavily disturbed, but there is potential suitable habitat in the artificial seasonal wetland on alkaline soils.
California alkali grass <i>Puccinellia simplex</i>	-/-/1B.2	Scattered locations in the San Francisco Bay Area, Great Valley, Tehachapi Mountains, western Mojave Desert;	Seasonal alkali wetlands, sinks, flats, vernal pools, and lake margins; 5–3,050 feet	March–May	Low–Project area is heavily disturbed, but there is potential habitat in the artificial seasonal wetland on alkaline soils.

TABLE 3.4-2. SPECIAL-STATUS PLANT SPECIES IDENTIFIED AS HAVING THE POTENTIAL TO OCCUR IN THE PROJECT REGION (Continued)

Common and Scientific Names	Status^a Federal/ State/CNPS	Geographic Distribution	Habitat Requirements	Blooming/ Identifiable Period	Potential to Occur in Project area
Suisun Marsh aster <i>Symphotrichum lentum</i>	—/—/1B.2	Sacramento-San Joaquin delta, Suisun Marsh, Suisun Bay	Brackish and freshwater marsh	August–November	Low—the marshy margins of the eastern detention basin support low quality habitat. Management practices and habitat fragmentation further reduce potential.
Saline clover <i>Trifolium hydrophilum</i>	—/—/1B.2	Sacramento Valley, central western California	Salt marsh, mesic alkaline areas in grasslands, vernal pools, below 990 feet	April–June	Low—Project area is heavily disturbed, but there is potential habitat in the artificial seasonal wetland and eastern detention basin containing alkaline soils.

^a Status explanations:

Federal

- E = Listed as endangered under the federal ESA.
- = No listing status.

State

- E = Listed as endangered under CESA.
- = No listing status.

CRPR

- 1B = List 1B species: rare, threatened, or endangered in California and elsewhere.
- .1 = Seriously threatened in California (over 80% of occurrences threatened—high degree and immediacy of threat).
- .2 = moderately threatened in California (20–80% occurrences threatened / moderate degree and immediacy of threat).
- .3 = not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known).

SOURCES: California Native Plant Society 2020; California Department of Fish and Wildlife 2020a.

Ferris' milk-vetch (*Astragalus tener* var. *ferrisiae*) is a CRPR 1B.1 species. Two occurrences were mapped within 5 miles of the Project area (CNDDDB Occurrences #17 and 18, CDFW 2020a), but the variety wasn't observed in follow up visits. Suitable habitat for Ferris' milk-vetch includes subalkaline flats and flood lands, usually on alkaline soils. As a result, the Project area contains low quality potential habitat in the alkaline soils of the artificial seasonal wetland and margins the eastern detention basin.

Alkali milk-vetch (*Astragalus tener* var. *tener*) is a CRPR 1B.2 species. Alkali milk-vetch grows in grassy flats and vernal pool margins, on alkali soils. As a result, the Project area contains low quality potential habitat in the artificial seasonal wetland on alkaline soils. The two closest alkali milk-vetch occurrences occur within 2.2 miles of the Project area (CNDDDB Occurrences #35 and 36); they are both considered possibly extirpated because suitable habitat no longer exists at the locations and alkali milk-vetch has not been observed in recent surveys of both locations (CDFW 2020a). The closest extant occurrence (CNDDDB Occurrence #38) is approximately 3.4 miles northwest of the Project area.

Heartscale (*Atriplex cordulata* var. *cordulata*) is CRPR 1B.2 species. Suitable habitat for heartscale includes alkali grassland, alkali meadow, and alkali scrub. As a result, the Project area contains low quality suitable habitat in the artificial seasonal wetland and non-native annual grasslands on alkaline soils. There is a single occurrence mapped within 5 miles of the Project area; the occurrence is extirpated and is located approximately 1.68 miles southwest of the Project area (CNDDDB Occurrence #4, CDFW 2020a).

Brittlescale (*Atriplex depressa*) is a CRPR 1B.2 species. Suitable habitat for brittlescale includes alkali grassland, alkali meadow, and alkali scrub. As a result, the Project area contains low quality potential habitat in the artificial seasonal wetland and non-native annual grassland on alkaline soils. There are three extant occurrences mapped within 5 miles of the Project area. The closest occurrence is 2.7 miles southwest of the Project area (CNDDDB Occurrence # 57, CDFW 2020a).

Pappose spikeweed (*Centromadia parryi* ssp. *parryi*) is a CRPR 1B.2 species. Suitable habitat for pappose tar plant includes coastal prairie, meadows, seeps, coastal salt marsh, and annual grassland. As result, the Project area contains low quality suitable habitat in the artificial seasonal wetland and non-native annual grassland. The closest occurrence is 2.8 miles southeast of the Project area from a 2011 collection (CNDDDB Occurrence # 37, CDFW 2020a).

Parry's rough tarplant (*Centromadia parryi* ssp. *rudis*) is a CRPR 4.2 species observed in the Project area. Parry's rough tarplants were observed in the artificial seasonal wetland; the artificial seasonal wetland generally contained lower vegetation cover and was dominated by swamp pickle grass, with Parry's rough tar plant and Italian rye grass growing along the margins. The closest Parry's rough tar plant's occurrence is from 1985 and is approximately 1.8 miles southeast of the Project area on the west edge of the Yolo Causeway between Interstate 80 and the Davis-Sacramento railroad tracks; an additional occurrence from 1999 is approximately 2.9 miles southeast of the Project area in a low area between Frontage Road and Interstate 80 (Consortium of California Herbaria 2021).

Palmate-bracted bird's beak (*Chloropyron palmatum*) is federally and state listed as endangered with a CRPR of 1B.1. Suitable habitat for palmate-bracted bird's beak includes alkaline grasslands and chenopod scrub. As a result, the Project area contains low quality potential habitat in the artificial seasonal wetland and non-native annual grassland on alkaline soils. There are two extant occurrences within 5 miles of the Project area. The closest occurrence is 3.4 miles northwest of the Project area close to the north side of Willow Slough (CNDDDB Occurrence #1, CDFW 2020a).

San Joaquin spearscale (*Extriplex joaquinana*) is a CRPR 1B.2 species. Suitable habitat for San Joaquin spearscale includes alkali meadow, alkali grassland, and saltbush scrub. As a result, the Project area contains low quality suitable habitat in alkaline soils of the artificial seasonal wetland and non-native annual grassland. There are 5 extant occurrences mapped within 5 miles of the Project area (CDFW 2020a). The closest occurrence is 1.9 miles west of the Project area (CNDDDB Occurrence #39).

Heckard's pepper-grass (*Lepidium latipes* var. *heckardii*) is a CRPR 1B.2 species. Suitable habitat for Heckard's pepper-grass includes alkaline soils, vernal pool margins, salt marsh edges, and pastures. As a result, the Project area contains low quality suitable habitat in the alkaline soils of the artificial seasonal wetland and non-native annual grassland. There are three CNDDDB occurrences mapped within 5 miles of the Project area. The closest occurrence is the type specimen mapped 0.6 miles west of the Project area, but the collected specimen is historic, and the exact location is unknown (CNDDDB Occurrence #2, CDFW 2020a). The next closest occurrence is approximately 3.3 miles northwest of the Project area (CNDDDB Occurrence #1), which occurs in the same wetland complex as the palmate-bracted bird's beak occurrence referenced above.

California alkali grass (*Puccinellia simplex*) is a CRPR 1B.2 species. Suitable habitat for California alkali grass includes seasonal alkali wetlands, sinks, flats, vernal pools, and lake margins. As a result, there is low quality potential habitat in the alkali soils of the artificial seasonal wetland and eastern detention basin. There are seven occurrences mapped within 5 miles of the Project area (CDFW 2020a). The Project area occurs in a possibly extirpated occurrence that is based on a 1949 record with an unknown exact location (CNDDDB Occurrence #53). The closest extant occurrence is 2.2 miles northeast of the Project area (CNDDDB Occurrence #57).

Suisun Marsh aster (*Symphyotrichum lentum*) is a CRPR 1B.2 species. Suitable habitat for Suisun Marsh aster included brackish and freshwater marshes. As a result, the Project area contains low quality potential habitat along the northern marshy border of the detention basin. There is a single extant occurrence mapped within 5 miles of the Project area, which is located in the Yolo Bypass approximately 5 miles to the southeast (CNDDDB Occurrence #195, CDFW 2020a).

Saline clover (*Trifolium hydrophilum*) is a CRPR 1B.2 species. Suitable habitat for saline clover includes salt marshes and mesic alkaline areas in grasslands. As a result, there is low quality potential habitat in the artificial seasonal grassland and marshy margin of the eastern detention basin. There are two occurrences mapped within 5 miles of the Project area. The closest occurrence is 3.5 miles northwest of the Project area (CNDDDB Occurrence #43, CDFW 2020a) in the same wetland complex as the previously referenced palmate-bracted bird's beak occurrence.

Sensitive Natural Communities

The Project area is regularly disturbed from routine landfill operations. Most vegetation types/natural communities in the Project area are dominated by non-native plants. While salt marsh bulrush marshes (*Bolboschoenus maritimus* Herbaceous—Alliance) are a sensitive natural community (CDFW 2020b) and the species is present in the eastern detention basin, the detention basin is not a sensitive natural community due to its artificial origin and routine disturbance. Of note, Willow Slough Bypass, close to the SMUD gas pipeline, would be considered a sensitive natural community.

Wetlands and Non-Wetland Waters

Aquatic resources in the Project area consist of an artificial seasonal wetland, drainage ditches, and detention basins. The artificial seasonal wetland is dominated by hydrophytic vegetation and contained observable wetland hydrology (soils cracks and salt crusts). Soil pits were not excavated to examine the soil profile, but the occurrence of the other two wetland indicators suggests hydric soils are present. In addition, seasonal wetlands at the landfill contained hydric soils during a wetland delineation conducted in 2004 (Yolo County Public Works and Planning Department Division of Integrated Waste Management 2004). Wetland hydrology in the drainage ditches consists of inundation observed on aerial imagery (Google Earth 2020). Wetland hydrology observed in the detention basins consist of salt crusts, water lines, and inundation observed on aerial imagery. The wetland delineation conducted for the *Yolo County Central Landfill Permit Revision EIR*, SCH No. 1991073040 delineated four ditches in their stormwater drainage system that ultimately flow to the Willow Slough Bypass; the Willow Slough Bypass discharges into the Yolo Basin and ultimately the Sacramento River (Yolo County Public Works and Planning Department Division of Integrated Waste Management 2004).

According to the *Navigable Waters Protection Rule* (85 FR 22250), the aquatic resources in the Project area are not likely under jurisdiction of the U.S. Army Corps of Engineers (USACE) because the features are artificial and are not traditional navigable waters, tributaries to traditional navigable waters, or lakes, ponds, and/or impoundments of jurisdictional waters, and the wetlands are not adjacent to the jurisdictional waters (i.e., they are isolated). According to the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (State Water Resources Control Board 2019), the detention basins and drainage ditches in the Project area would not likely fall under jurisdiction of the Central Valley Regional Water Quality Control Board (RWQCB) because they are artificial and are used for ongoing operations and maintenance, including municipal wastewater treatment operations. Given the artificial seasonal wetland is not currently used for wastewater treatment and have become a relatively permanent part of the land scape, RWQCB could take jurisdiction over the features. The artificial seasonal wetland and detention basins likely meet the State's official wetland definition (recurrent saturation, anaerobic conditions in upper substrate, and a dominance of hydrophytes or lacking vegetation). If this area is developed the applicant must demonstrate the features are not a water of the state. However, only USACE and RWQCB can determine their jurisdiction status and a protocol aquatic resources delineation would be submitted to the agencies to confirm the features' jurisdiction.

3.4.3 REGULATORY SETTING

Regulatory Considerations

This section summarizes the federal and state regulations that may pertain to the proposed Project. This section also discusses pertinent local general plan policies and ordinances related to the protection and preservation of biological resources.

Federal Regulations

Federal Endangered Species Act

The federal Endangered Species Act (ESA) of 1973, and subsequent amendments, provide regulations for the conservation of endangered and threatened species and the ecosystems on which they depend. The U.S. Fish and Wildlife Service (USFWS), which has jurisdiction over plants, wildlife, and resident fish, and the National Marine Fisheries Service (NMFS), which has jurisdiction over anadromous fish and marine fish and mammals, oversee the ESA. Section 7 of the ESA mandates all federal agencies to consult with USFWS and NMFS if they determine that a Project may affect a listed species or destroy or adversely modify designated critical habitat. Under Section 7, the federal lead agency must obtain incidental take authorization or a letter of concurrence stating that the Project is not likely to adversely affect federally listed species. Section 7 requirements do not apply to nonfederal actions. For projects that do not involve a federal action, ESA compliance is obtained through Section 10 for projects that will adversely affect (result in take) of a federally listed species. Section 10 compliance requires preparation of a habitat conservation plan by the project proponent and results in the issuance of an Incidental Take Permit from USFWS and/or NMFS. Section 9 of the ESA prohibits the take of any fish or wildlife species listed as endangered, including the destruction of habitat that prevents the species' recovery. Take is defined as any action or attempt to hunt, harm, harass, pursue, shoot, wound, capture, kill, trap, or collect a species. Section 9 prohibitions also apply to threatened species unless a special rule has been defined with regard to take at the time of listing. Under Section 9 of the ESA, the take prohibition applies only to wildlife and fish species. However, Section 9 does prohibit the unlawful removal and possession, or malicious damage or destruction, of any endangered plant from federal land. Section 9 prohibits acts to remove, cut, dig up, damage, or destroy an endangered plant species in nonfederal areas in knowing violation of any state law or in the course of criminal trespass. Candidate species and species that are proposed for or under petition for listing receive no protection under Section 9.

Three federally listed species (vernal pool fairy shrimp, western snowy plover, giant garter snake,), have the potential to occur in the Project area and may be affected by the Project.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) protects migratory bird species from take. Under the MBTA, "take" is defined as to (or attempt to) pursue, hunt, shoot, capture, collect, or kill (50 Code of Federal Regulations [CFR] 10.12). The definition differentiates between intentional take (take that is the purpose of the activity in question) and unintentional take (take that results from, but is not the purpose of, the activity in question). Executive Order 13186, signed January 10, 2001,

directs each federal agency taking actions that would, or likely would, negatively affect migratory bird populations to work with USFWS to develop a Memorandum of Understanding (MOU) to promote the conservation of migratory bird populations. Protocols developed under the MOU must include the following agency responsibilities.

- Avoid and minimize, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions.
- Restore and enhance habitat of migratory birds, as practicable.
- Prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable.

Migratory birds could nest in the Project area and could be directly or indirectly impacted by the Project.

Clean Water Act

The Clean Water Act (CWA) was passed by Congress in 1972 with a broad mandate “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” The chief purpose of the CWA is to establish the basic structure for regulating discharges of pollutants into waters of the United States. The CWA authorizes the EPA to set national water quality standards and effluent limitations, and includes programs addressing both point-source and nonpoint-source pollution. Point-source pollution is pollution that originates or enters surface waters at a single, discrete location, such as an outfall structure or an excavation or construction site. Nonpoint-source pollution originates over a broader area and includes urban contaminants in storm water runoff and sediment loading from upstream areas. The CWA operates on the principle that all discharges into waters of the United States are unlawful unless specifically authorized by a permit; permit review is the CWA’s primary regulatory tool. Aquatic resources present in the Project area would not likely be regulated under CWA Section 404 (described below).

Section 401: Water Quality Certification

Under CWA Section 401, applicants for a federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the United States must apply for water quality certification from the state. Therefore, all projects with a federal component that may affect state water quality (including projects that require federal agency approval, such as a Section 404 permit) must comply with CWA Section 401. Aquatic resources that appear to qualify as waters of the State are present in the Project area.

It is anticipated that construction associated with the Project could result in discharge of pollutants into aquatic resources outside of the Project area that flow into waters of the United States. It is also anticipated that the project would result in fill into potential waters of the state (artificial seasonal wetland). Therefore, a Section 401 water quality certification from the Central Valley Water Board would be required for the project.

However, only the RWQCB can verify their jurisdiction. Therefore, a delineation of aquatic resources would be submitted to the RWQCB. If the RWQCB confirms the Project area contains waters of the State, a Section 401 permit application would be submitted as a part of the project.

Section 402: Permits for Stormwater Discharge

CWA Section 402 regulates construction-related storm water discharges to surface waters through the National Pollutant Discharge Elimination System (NPDES) program, administered by EPA. In California, the State Water Resources Control Board (State Water Board) is authorized by EPA to oversee the NPDES program through the regional water boards.

NPDES permits are required for projects that disturb more than 1 acre of land. The NPDES permitting process requires the applicant to file a public notice of intent to discharge storm water and to prepare and implement a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP must include a site map, a description of proposed construction activities, and the best management practices (BMPs) that would be implemented to prevent soil erosion and discharge of other construction-related pollutants (e.g., petroleum products, solvents, paints, and cement) that could contaminate nearby water resources.

Because the Project would disturb more than 1 acre of land, preparation of a SWPPP and compliance with an NPDES permit would likely be required.

Section 404: Permits for Fill Placement in Waters of the United States (Including Wetlands)

Waters of the United States (including wetlands) are protected under Section 404 of the CWA. Any activity that involves a discharge of dredged or fill material into waters of the United States, including wetlands, is subject to regulation by the U.S. Army Corps of Engineers (USACE). “Waters of the United States” is defined to encompass navigable waters of the United States; interstate waters; all other waters where their use, degradation, or destruction could affect interstate or foreign commerce; tributaries of any of these waters; and wetlands that meet any of these criteria and are adjacent to navigable waters. Wetlands are defined under Section 404 as those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Jurisdictional wetlands must meet three wetland criteria.

- They support hydrophytic vegetation (i.e., plants that grow in saturated soil).
- They have hydric soil types (i.e., soils that are wet or moist enough to develop anaerobic conditions).
- They have wetland hydrology.

It is not anticipated that USACE would take jurisdiction over aquatic resources into the Project area because they are isolated from waters of the U.S. However, only USACE can verify their jurisdiction. Therefore, a delineation of aquatic resources would be submitted to USACE. If USACE verifies the Project area contains waters of the U.S., a section 404 permit application would be submitted as a part of the project.

State Regulations

California Endangered Species Act

The California Endangered Species Act (CESA; California Fish and Game Code Section 2050 et seq.) establishes state policy to conserve, protect, restore, and enhance threatened or endangered species and their habitats. CESA mandates that state agencies should not approve projects that jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. For projects that would affect a species on the federal and state lists, compliance with ESA satisfies CESA if CDFW determines that the federal incidental take authorization is consistent with CESA under California Fish and Game Code Section 2080.1. For projects that would result in take of a species that is only state listed, the project proponent must apply for a take permit under Section 2081(b).

Three state-listed species (giant garter snake, Swainson's hawk, and tricolored blackbird) have potential to occur in the Project area and may be impacted by the project. If "take" of these species cannot be avoided, a Section 2081 permit from CDFW would be required for the project.

California Fish and Game Code

Several sections of the California Fish and Game Code apply to the Project, as described below.

Lake or Streambed Alteration (Section 1602)

CDFW regulates activities that would interfere with the natural flow of—or substantially alter the channel, bed, or bank of—a lake, river, or stream, including disturbance of riparian vegetation, under California Fish and Game Code Sections 1600–1616. CDFW requires a Lake or Streambed Alteration Agreement (LSAA) permit for these activities. Requirements to protect the integrity of biological resources and water quality often are conditions of LSAA. CDFW may establish conditions that include avoiding or minimizing vegetation removal, using standard erosion control measures, limiting the use of heavy equipment, limiting work periods to avoid impacts on fisheries and wildlife resources, and restoring degraded sites or compensating for permanent habitat losses. Waters of the state that would be regulated by CDFW are present adjacent to the Project area (i.e. Willow Slough Bypass). Because the project could result in modification of the bed, bank, or channel of a canal, an LSAA would be required.

Protection of Birds and Raptors (Sections 3503 and 3503.5)

Section 3503 of the California Fish and Game Code prohibits killing of birds and destruction of bird nests. Section 3503.5 prohibits killing of raptor species and destruction of raptor nests. Typical violations include destruction of active bird and raptor nests as a result of tree removal, and failure of nesting attempts (loss of eggs or young) as a result of disturbance of nesting pairs caused by nearby human activity. YCCL will avoid violation of California Fish and Game Code Sections 3503 and 3503.5 by implementing measures described in this report to avoid take of protected birds and raptors.

Fully Protected Species (Sections 3511, 3513, 4700, and 5050)

California Fish and Game Code Sections 3511, 3513, 4700, and 5050 pertain to fully protected wildlife species (birds in Sections 3511 and 3513, mammals in Section 4700, and reptiles and amphibians in Section 5050) and strictly prohibit take of these species. CDFW cannot issue a take permit for fully protected species, except under narrow conditions for scientific research or the protection of livestock, or the adoption of a Natural Community Conservation Plan (NCCP). Specifically, Section 3513 prohibits any take or possession of birds designated by the MBTA as migratory nongame birds except as allowed by federal rules and regulations pursuant to the MBTA.

One fully protected bird species, white-tailed kite, has the potential to nest adjacent to the Project area and could be impacted by the Project.

Porter-Cologne Water Quality Control Act

The California Water Code addresses the full range of water issues in the state and includes Division 7, known as the Porter-Cologne Water Quality Control Act (Porter-Cologne Act) (California Water Code Sections 13000–16104). Section 13260 requires “any person discharging waste, or proposing to discharge waste, in any region that could affect the waters of the state to file a report of discharge (an application for waste discharge requirements [WDRs])” with the appropriate regional water board. Under this act, each of the nine regional water boards must prepare and periodically update Water Quality Control Basin Plans (Basin Plans). Each Basin Plan sets forth water quality standards for surface water and groundwater, as well as actions to control nonpoint and point sources of pollution. Projects that affect waters of the state must meet the WDRs of the regional water board.

Section 13050 of the Porter-Cologne Act authorizes the State Water Board and the relevant regional water board to regulate biological pollutants. Pursuant to CWA Section 401, an applicant for a Section 404 permit to conduct any activity that may result in discharge into navigable waters must provide a certification from the regional water board that such discharge will comply with state water quality standards. The California Water Code generally regulates more substances contained in discharges and defines discharges to receiving waters more broadly than does the CWA. As part of the aquatic resources permitting process under Section 404, YCCL may be required to apply for water quality certification from the Central Valley Water Board.

Local Regulations

Yolo County Habitat Conservation Plan

The Yolo Habitat Conservation Plan/Natural Communities Conservation Plan (Yolo HCP/NCCP) is a comprehensive, county-wide plan to provide for the conservation of 12 sensitive species and the natural communities and agricultural land on which they depend, as well as a streamlined permitting process to address the effects of a range of future anticipated activities on these 12 species. The Yolo HCP/NCCP details existing land use conditions and land use plans in Yolo County to help identify projects and activities that will have direct or indirect effects on covered species and natural communities. These activities and projects are the covered activities for which incidental take authorization from USFWS and CDFW will be obtained. The Yolo HCP/NCCP moves compliance with state and federal endangered species laws for public and private activities

from state and federal agencies to the local level. The Yolo Habitat Conservancy, a joint powers agency comprised of the County of Yolo and the cities of Davis, West Sacramento, Winters, and Woodland, will administer permits with oversight from USFS and CDFW to streamline the existing process while still providing comprehensive regulatory coverage for currently listed species and those that may be listed in the future. The HCP/NCCP includes avoidance and minimization measures to minimize impacts on habitat, as well as mitigation for the adverse effects of these activities and projects on covered species and natural communities.

Covered activities under the Yolo HCP/NCCP include public and private operations and maintenance activities. This category covers activities that are necessary for the ongoing operation and maintenance (O&M) of existing and planned land uses, facilities, and services in both urban and rural planning units throughout the Yolo HCP/NCCP plan area. The covered O&M activities include those necessary for general rural and urban development; public services, infrastructure and utilities; roads, bridges, bike lanes, and multi-use pathways; flood control facilities; solar energy facilities; and utilities.

Covered species identified in or near the YCCL project include palmated-bracted bird's beak, white-tailed kite, western burrowing owl, western pond turtle, giant garter snake, Swaison's hawk, and tricolored blackbird.

3.4.4 IMPACTS AND MITIGATION MEASURES

This section describes the CEQA impact analysis relating to biological resources for the proposed project. This section contains the methods used to determine the project's potential impacts and lists the criteria thresholds used to conclude whether an impact would be significant. Measures to mitigate (avoid, minimize, or compensate for) significant impacts accompany each impact discussion where applicable.

Methods for Analysis

The impact analysis for biological resources was conducted by evaluating the potential changes to existing biological communities based on the anticipated project construction activities listed below that could cause direct and indirect impacts of varying degrees on sensitive biological resources present in the Project area:

- Vegetation removal.
- Grading, excavating, compacting, and fill placement during construction.
- Discharge to off-site streams during construction.
- Temporary stockpiling and side-casting of soil, construction materials, or other construction wastes.
- Runoff of herbicides, fertilizers, diesel fuel, gasoline, oil, raw concrete, or other toxic materials used for project construction and maintenance into sensitive biological resource areas.

The following assumptions were used in assessing the magnitude of possible impacts on biological resources:

- No protected riparian habitat or protected trees that would be removed as part of the proposed project.
- Impacts on land cover types and associated wildlife habitat were determined by overlaying preliminary footprints for permanent project features onto an aerial photograph base map with mapped habitats.
- Activities to connect to the SMUD pipeline would be temporary and occur over one season.
- Disturbance to suitable upland and aquatic giant garter snake habitat would be temporary and restored within one season.
- Loss of annual grassland vegetation in the Project area is not considered a significant impact from a botanical standpoint because this habitat is common and is not considered a sensitive natural community. Annual grassland vegetation also reestablishes more easily after disturbance than do riparian or wetland communities. However, the loss of annual grassland habitat could result in impacts on special-status wildlife species habitat, and these habitat impacts are discussed in this analysis.
- Construction best management practices (BMPs) would be implemented to ensure that indirect effects on habitats are avoided or minimized.
- The proposed project would not result in impacts on special-status fish because none occur in the Project area. Therefore, a discussion of these species is not included in this section.

Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means.
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.

- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- 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 3.4.1: Temporary disturbance of potential giant garter snake habitat. (Significant)

The Project area could result in temporary disturbance of aquatic and upland habitat for the federal and state threatened giant garter snake. Project construction could also potentially cause injury or mortality of giant garter snakes.

Giant garter snakes require aquatic habitat during their active phase, extending from spring until fall. During the winter months, giant garter snakes are dormant and occupy burrows in upland habitats that do not typically flood. Giant garter snakes also use upland habitats during the active season for basking and refuge from hot weather. Suitable aquatic and upland giant garter snake habitat are present within open water and grassland habitat in the Project area and giant garter snakes are known to occupy similar habitats throughout the agriculture areas around the Project area in addition to Willow Slough Bypass. Giant garter snakes could also bask on or disperse across unvegetated/graded areas within the Project area including gravel staging areas and access roads that are located adjacent to suitable aquatic habitat. Giant garter snakes have the potential to be affected by the proposed future projects during construction if these activities would occur within suitable habitat during the snake's active season. Construction activities that involve ground disturbance could result in mortality, injury, or decreased fitness of giant garter snakes that are occupying aquatic or upland habit in the Project area. Giant garter snakes could also be run over by vehicles and heavy equipment if they are actively moving through the work area or across access roads. Individuals could fall into trenches, pits, or other excavations and be directly killed, unable to escape, or be killed by desiccation, entombment, or starvation. This impact would be significant.

Mitigation Measures

Mitigation Measure 3.4.1a: Install and Maintain Exclusion and Construction Barrier Fencing between the Construction Area and Suitable Giant Garter Snake Habitat

The construction specifications shall require that YCCL retain an agency-approved biologist to identify the suitable giant garter snake aquatic and upland habitat that are to be avoided during construction. To reduce the likelihood of giant garter snakes entering the construction area, YCCL shall install exclusion fencing to the extent practicable along the boundary of the Project area and around the proposed staging area. The exclusion fencing shall be installed during the active period for giant garter snakes (May 1–October 1) to reduce the potential for injury and mortality during construction activities. Where access is required into and out of the Project area and staging areas the fencing shall be opened to allow traffic in and out but shall be closed at the end of each workday. The exclusion fencing shall be installed the maximum distance practicable from the aquatic habitat areas and shall be in place before construction activities (including any vegetation removal or equipment staging) are initiated.

The exclusion fencing shall consist of 3-foot-tall silt fencing buried 4–6 inches below ground level. The exclusion fencing shall ensure that giant garter snakes are excluded from the construction area and that suitable upland and aquatic habitat is protected throughout

construction. In addition to the exclusion fencing, orange construction barrier fencing shall also be installed that is commercial-quality, 4-foot-high, woven polypropylene (Tensor Polygrid or equivalent) or signs indicating a sensitive resource area placed approximately every 10 feet along exclusion fencing. The construction barrier fencing shall be tightly strung on posts with a maximum of 10-foot spacing. The orange construction barrier fencing can be attached to the exclusion fencing or the exclusion fencing can double as construction barrier fencing if it is orange in color and at least 4 feet tall.

The fencing requirements shall be included in the construction specifications, and an agency-approved biological monitor shall be onsite to direct and monitor exclusion fence installation.

The biological monitor shall be responsible for ensuring that the contractor maintains the protective fencing around giant garter snake habitat throughout construction. Weekly monitoring summary reports shall be provided to YCCL and applicable wildlife agencies, as necessary.

Mitigation Measure 3.4.1b: Conduct Environmental Awareness Training for Construction Employees

YCCL shall retain a qualified biologist to conduct environmental awareness training for construction crews before project implementation. The awareness training shall be provided to all construction personnel and shall brief personnel on the need to avoid effects on sensitive biological resources (i.e., non-wetland waters, giant garter snake and other special-status species habitats in and adjacent to the construction area, and active bird nests). The education program shall include a brief review of the special-status species with the potential to occur in the Project area (including their life history, habitat requirements, and photographs of the species). The training shall identify the portions of the Project area in which the species may occur, as well as their legal status and protection. The program also shall cover the relevant permit conditions and mitigation measures that must be followed by all construction personnel to reduce or avoid effects on these resources during project implementation through completion. The training shall emphasize the role that the construction crew plays in identifying and reporting any special-status species observations to the onsite biologist. Training shall identify the steps to be taken if a special-status species is found within the construction area (i.e., notifying the crew foreman, who would call the designated biologist).

An environmental awareness handout that describes and illustrates sensitive resources to be avoided during project construction and identifies all relevant permit conditions shall be provided to each crew member. The crew foreman shall be responsible for ensuring that crew members adhere to the guidelines and restrictions. Education programs shall be conducted for appropriate new personnel as they are brought on the job.

Mitigation Measure 3.4.1c: Minimize Potential Impacts of Dewatering on Giant Garter Snake

YCCL shall implement the following measures to minimize potential impacts from dewatering aquatic giant garter snake habitat.

- Areas with sufficient standing water shall be inspected for the presence of giant garter snakes by the agency-approved biologist immediately prior to dewatering. The approved biologist shall monitor the dewatering activity until the biologist determines that monitoring is no longer needed (e.g. once the work area is fully dewatered and once exclusion fencing has been installed).

- Work areas shall be sufficiently dry (no standing water) prior to excavating or filling of the dewatered habitat. Dewatered habitat must remain dry, with no water puddles remaining, for at least 15 consecutive days prior to excavating or filling of the habitat. If a site cannot be completely dewatered, netting and salvage of giant garter snake prey items may be necessary to discourage use by snakes.
- If the work areas are not fully drained prior to construction due to existing site conditions (e.g., low water table that causes infiltration back into the work area), the approved biologist shall survey the work area for snakes each morning prior to construction activities in the channel.

Mitigation Measures 3.4.1d: Minimize Potential Impacts on Giant Garter Snakes and their Habitat

YCCL shall implement the following measures to minimize potential impacts on giant garter snakes and their habitat. These measures are consistent with the avoidance and minimization measures (AMMs) identified in the Yolo HCP/NCCP.

- All construction activities that involve disturbance within giant garter snake habitat shall be confined to the snake's active season, May 1 through October 1. During this period, the potential for direct mortality is reduced because snakes are expected to move and avoid danger.
- Construction vehicles shall observe the posted speed limit on hard-surfaced roads and a 10-mile-per-hour speed limit on unpaved roads during travel in the Project area.
- Construction vehicles and equipment shall restrict off-road travel to the designated construction areas.
- Construction vehicles and equipment left onsite overnight shall be thoroughly inspected each day for snakes (both underneath the vehicles and in open cabs) before they are moved.
- All food-related trash shall be disposed of in closed containers and removed from the construction area daily during the construction period. Construction personnel shall not feed or otherwise attract fish or wildlife to the construction site.
- No pets or firearms shall be allowed in the construction area.
- To avoid entrapment of wildlife, all excavated steep-walled holes or trenches more than one foot deep shall either be properly covered or provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each workday. If left open overnight, the hole or trench shall be inspected by the onsite biological monitor prior to it being backfilled.
- To prevent possible resource damage from hazardous materials such as motor oil or gasoline, construction personnel shall not service vehicles or construction equipment within 200 feet of wet canals. If servicing is required, the area shall be properly contained to prevent runoff of contaminants.
- Maintain water quality and limit construction runoff into wetland areas through the use of hay bales, filter fences, vegetative buffer strips, or other accepted practices. No plastic,

monofilament, jute, or similar erosion-control matting that could entangle snakes or other wildlife shall be permitted.

Mitigation Measure 3.4.1e: Conduct Preconstruction Surveys and Monitoring for Giant Garter Snake

YCCL shall conduct preconstruction surveys and monitoring for giant garter snake and shall implement the following measures:

- Within 24 hours prior to ground-disturbing activities within suitable giant garter aquatic and upland habitat (undeveloped areas within 200 feet of suitable aquatic habitat), an agency-approved biologist shall conduct a preconstruction clearance survey for giant garter snake. If construction activities stop for a period of two weeks or more, conduct another preconstruction clearance survey within 24 hours prior to resuming construction activity.
- A USFWS-approved biologist shall be onsite during initial ground disturbing activities within suitable aquatic and upland habitat to monitor construction activities and ensure that giant garter snake protection measures are being implemented properly. Once the Project area has been graded and ground disturbance has been completed, monitoring shall continue on a weekly basis, unless otherwise specified by project permits.
- YCCL shall prepare a giant garter snake relocation plan which must be approved by the appropriate resource agencies prior to work in giant garter snake habitat. If a live giant garter snake is encountered during construction activities, immediately notify the project's biological monitor and USFWS and CDFW. The monitor shall stop construction in the vicinity of the snake, monitor the snake, and allow the snake to leave on its own. The monitor shall remain in the area for the remainder of the workday to ensure the snake is not harmed or, if it leaves the site, does not return. If the giant garter snake does not leave on its own, the qualified biologist shall relocate the snake consistent with the relocation plan described above.
- The biological monitor shall prepare daily monitoring logs that include a description of construction activities; areas surveyed and monitored; communication with construction personnel, YCCL, and wildlife agencies; noncompliance issues and resolutions; and a list of all wildlife species observed during monitoring activities. The biological monitor shall also record all observations of Federally and State-listed species on CNDDDB field sheets and submit to CDFW.

Mitigation Measure 3.4.1f: Restore Temporarily Disturbed Aquatic and Upland Habitat to Pre-project Conditions

Upon completion of proposed project, YCCL shall restore temporarily disturbed habitat for giant garter snake to pre-project conditions. Habitat shall be restored within one construction season.

Level of Significance After Mitigation

Implementation of Mitigation Measures 3.4.1a through 3.4.1f, consistent with the Yolo HCP/NCCP avoidance and minimization measures (AMMs) would reduce the potential impacts to giant garter snakes to a less than significant level.

Impact 3.4.2: Disturbance to special-status species and removal of their suitable habitat from development of a new off-site borrow site. (Significant)

The YCCL has identified a need to purchase an additional borrow site to meet the soil needs of the landfill operations. This site has not been identified. Impacts to special-status species from use of the off-site borrow area would be significant.

Mitigation Measures

Mitigation Measure 3.4.2: Conduct biological and wetland surveys of off-site borrow area and apply mitigation measures based on survey results.

YCCL County shall conduct a biological resource survey of any Project area to be disturbed and nearby areas (e.g., including a 250-foot. buffer surrounding proposed borrow site), and/or enlarged buffer sufficient to comply with survey protocols (0.5-mile buffer for Swainson's hawk) that may be affected by the construction. At a minimum, each survey shall include the following:

- A database search for occurrence of special status species within a 5-mile radius of the borrow site,
- A site reconnaissance by a qualified biologist to identify occurrence or potential occurrence of special-status species and habitats on and around the development site, and
- Consultation, as appropriate, with regulatory agencies regarding the results and incorporation of appropriate mitigation measures identified in this section for impacts to those sensitive resources.

Level of Significance After Mitigation

Implementation of Mitigation Measure 3.4.2 would ensure this impact is less than significant.

Impact 3.4.3: Loss of western pond turtle habitat. (Significant)

Project implementation could result in temporary disturbance of potential aquatic and upland habitat for western pond turtle. Project construction could also cause direct mortality to western pond turtles during construction vehicle traffic and placement of equipment and materials into suitable habitat. Areas of open water in the Project area provide potential aquatic habitat that could be impacted from dewatering as part of work requirements.

Construction activities, including noise and visual disturbance, could temporarily discourage pond turtles from foraging and basking near the work area. Pond turtles could also be run over by vehicles and heavy equipment if they are actively moving through the work area or across access roads. Loss of individuals and/or habitat of a state species of special concern would be significant.

Mitigation Measures

Mitigation Measure 3.4.3: Conduct Preconstruction Surveys for Western Pond Turtle and Allow Turtles to Leave Work Area Unharmmed

To avoid potential injury to or mortality of western pond turtles, YCCL shall retain a qualified biologist to conduct a preconstruction survey for western pond turtles immediately prior to construction activities (including vegetation removal) along suitable habitat and adjacent uplands. The biologist shall survey the aquatic habitat, canal banks, and adjacent upland habitat within the construction area immediately prior to disturbance.

If a western pond turtle is found within the immediate work area during the preconstruction survey or during project activities, work shall cease in the area until the turtle is able to move out of the work area on its own. If the turtle does not move out of the area, the biologist shall coordinate with YCCL and CDFW to create and implement a live trapping plan and relocation effort. Information about the location of turtles seen during the preconstruction survey shall be included in the environmental awareness training (Mitigation Measure 3.4.1b) and provided directly to the construction crew working in that area to ensure that areas where turtles were observed are inspected each day prior to the start of work to ensure that no turtles are present.

If a western pond turtle nest is discovered during the preconstruction survey or during project construction, YCCL's biologist would coordinate with CDFW to determine whether additional avoidance measures (e.g., no-disturbance buffer or monitoring) is prudent.

Level of Significance After Mitigation

Implementation of Mitigation Measures 3.4.1a through 3.4.1f (described above for giant garter snake) and 3.4.3 (consistent with the Yolo HCP/NCCP AMMs) would reduce potentially significant impacts on western pond turtle to a less than significant level.

Impact 3.4.4: Disturbance of nesting Swainson's hawks, white-tailed kite, tricolored blackbird, and other protected birds and raptors. (Significant)

Project implementation could disturb active nests of Swainson's hawk, white-tailed kite, tricolored blackbirds, and other nesting birds and raptors protected under CESA, the MBTA and California Fish and Game Code. Construction activity could disturb active nests in or near the construction area, potentially resulting in nest abandonment by the adults and mortality of chicks and eggs.

Project implementation, including vegetation removal, associated with construction of future projects that occurs during the breeding season (generally February 1 through August 31) could remove or disturb active nests of Swainson's hawk, white-tailed kite, tricolored blackbird, or other nesting birds and raptors, if present in or near construction areas. There are currently no trees in the Project area that could be directly impacted or removed during project construction; however suitable habitat for ground nesting tricolored blackbird colonies is present in the Project area and large trees are located adjacent to the work area that could be affected by construction noise and visual disturbances. Noise and visual disturbances associated with project construction

during the nesting season may disrupt nesting behavior to the point of nest abandonment neglect or forced fledging that results in young mortality.

Although there is an existing level of noise from existing landfill operation, agricultural and roadway disturbance, activities within YCCL, noise levels and human presence in the Project area and along access roads could substantially increase during construction.

These activities could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. These impacts could violate the MBTA and CFGC Section 3503, 3503.5, and 3511. Impacts on the state listed Swainson's hawk and tricolored blackbird could also violate CESA. These potential impacts would be significant. Implementation of Mitigation Measure 3.4.1b (described above) and 3.4.4 (described below) (consistent with the Yolo HCP/NCCP AMMs) would reduce potentially significant impacts on Swainson's hawks, white-tailed kite, and other tree and shrub-nesting protected birds and raptors to a less than significant level.

Mitigation Measures

Mitigation Measure 3.4.4: Conduct Vegetation Removal during the Non-Breeding Season and Conduct Pre-Construction Surveys for Nesting Migratory Birds and Raptors

Where vegetation removal is required to construct project features, YCCL shall conduct this activity during the non-breeding season for birds and raptors (generally between September 1 and February 28), to the extent feasible.

If construction activities are planned during the nesting season (March 1– August 31), prior to the start of construction activities (including equipment staging and site preparation), YCCL shall retain a qualified wildlife biologist with knowledge of the relevant bird species to conduct nesting bird surveys. The surveys shall include a minimum of two separate surveys to look for active bird and raptor nests. Surveys shall include a search of all trees, shrubs, wetlands, and grassland vegetation that provide suitable nesting habitat in the Project area. In addition, nesting habitat within 1,320 feet from the Project area shall be surveyed for Swainson's hawk and a 500-foot radius around the Project area shall be surveyed for other nesting raptors, and a 100-foot radius around the Project area shall be surveyed for passerines. One survey should occur within 15 days prior to construction and the second survey should occur within 48 hours prior to the start of construction or vegetation removal (including grubbing). If no active nests are detected during these surveys, no additional measures are required.

If an active nest is found in the survey area, a no-disturbance buffer shall be established around the nest site to avoid disturbance or destruction of the nest until the end of the breeding season (August 31) or until after a qualified wildlife biologist determines that the young have fledged and moved out of the Project area (this date varies by species). The extent of the nesting buffers shall be 1,300 feet for active tricolored blackbird colonies, 500-feet for Swainson's hawk, 300 feet for nesting raptors and 50-feet for passerine birds. The buffers may be adjusted based on environmental factors through coordination between the YCCL biologist and CDFW. Factors that may influence an adjusted buffer shall include the bird species, level of construction disturbance, line-of-sight between the nest and the disturbance, ambient levels of preexisting noise and other disturbances, and other topographical or artificial barriers.

Level of Significance After Mitigation

Implementation of Mitigation Measure 3.4.4 would reduce the Project impacts to a less than significant level.

Impact 3.4.5: Removal of suitable foraging habitat for Swainson's hawk. (Significant)

Implementation of Project elements at YCCL would remove up to 112.18 acres of suitable foraging habitat for Swainson's hawk within the landfill expansion areas (**Figure 3.4-3**). This impact would be significant.

Mitigation Measures

Mitigation Measure 3.4.5: Prior to commencing any phase involving ground disturbance for facilities developed in Swainson's hawk foraging habitat as shown on Figure 3.4-3, YCCL shall compensate for the loss of Swainson's hawk foraging habitat through the preservation of appropriate acreage of suitable Swainson's hawk foraging habitat for that phase by participating in the Yolo HCP/NCCP.

Solar panel development of the three sites may reduce the value of the areas for foraging potential by Swainson's hawk, however there would still be some habitat value to the sites for Swainson's hawks. The YCCL will work with CDFW and the administrator of the Yolo HCP/NCCP to identify the appropriate acreage based on the value of the grassland habitat after placement of the solar panels.

Level of Significance After Mitigation

Implementation of Mitigation Measure 3.4.5, consistent with the Yolo HCP/NCCP, would reduce the potentially significant impact on Swainson's hawks to a less than significant level.

Impact 3.4.6: Disturbance of nesting and wintering burrowing owls. (Significant)

Project implementation would result in loss of suitable nesting, wintering, and foraging habitat for burrowing owl. Project construction could disturb active nests on or near the construction area, potentially resulting in nest abandonment by the adults and mortality of chicks and eggs, or displacement of wintering owls resulting in their mortality or loss of reproductive potential.

Project construction activities, such as grading access roads and pipeline work, during the breeding season (generally February 1-August 31) for burrowing owls could result in the excavation or collapse of occupied burrows containing adults, nestlings, or eggs. Additionally, construction-generated noise and increased human presence have the potential to disturb burrowing owls nesting near construction activities. Disturbance of active breeding owls could result in nest abandonment or direct loss of adults, fledglings, or eggs. Burrowing owls using burrows, culverts, or other cover habitat during the wintering season could also be directly affected by construction activities if those areas are disturbed. These activities could result in the incidental loss of burrowing owl fertile eggs or nestlings, or otherwise lead to nest abandonment.

These impacts could violate the MBTA and CFGC Section 3503, 3503.5, and 3511. These impacts would be significant.

Mitigation Measures

Mitigation Measure 3.4.6: Conduct Pre-Construction Surveys for Burrowing Owl and Establish Exclusion Zones, if Necessary

YCCL shall retain a qualified biologist to conduct two separate pre-construction surveys for burrowing owl: no more than 30 days prior to initiating ground-disturbing activities (including grubbing and grading) within grassland habitat and then again within 3 days prior to construction. The preconstruction burrowing owl surveys shall be conducted in conjunction with the nesting bird surveys described under Mitigation Measure-3.4-3a and shall encompass the designated work area and a 500-foot buffer around this area where access is permitted. Areas where access is not permitted or is not accessible shall be surveyed using binoculars or a spotting scope.

If burrowing owls are identified during the survey area, YCCL shall minimize activities that shall affect occupied habitat as follows. Occupied habitat is considered fully avoided if the project footprint does not impinge on a non-disturbance buffer around the suitable burrow. For occupied burrowing owl nest burrows, this non-disturbance buffer could range from 150 to 1,500 feet (Table 3.4-3, Recommended Restricted Activity Dates and Setback Distances by Level of Disturbance for Burrowing Owls), depending on the time of year and the level of disturbance, based on current guidelines (California Department of Fish and Game 2012).

TABLE 3.4-3. RECOMMENDED RESTRICTED ACTIVITY DATES AND SETBACK DISTANCES BY LEVEL OF DISTURBANCE FOR BURROWING OWLS

Time of Year	Level of Disturbance (feet) from Occupied Burrows		
	Low	Medium	High
April 1–August 15	600	1,500	1,500
August 16–October 15	600	600	1,500
October 16–March 31	150	300	1,500

SOURCE: Yolo Habitat Conservancy 2018

The Yolo HCP/NCCP generally defines low, medium, and high levels of disturbances of burrowing owls as follows.

- **Low:** Typically, 71-80 decibels, generally characterized by the presence of passenger vehicles, small gas-powered engines (e.g., lawn mowers, small chain saws, portable generators), and high-tension power lines. Includes electric hand tools (except circular saws, impact wrenches and similar). Management and enhancement activities would typically fall under this category. Human activity in the immediate vicinity of burrowing owls would also constitute a low level of disturbance, regardless of the noise levels.
- **Moderate:** Typically, 81-90 decibels, and would include medium- and large-sized construction equipment, such as backhoes, front end loaders, large pumps and generators, road graders, dozers, dump trucks, drill rigs, and other moderate to large diesel engines. Also includes power saws, large chainsaws, pneumatic drills and impact wrenches, and

large gasoline-powered tools. Construction activities would normally fall under this category.

- **High:** Typically, 91-100 decibels, and is generally characterized by impacting devices, jackhammers, compression (“jake”) brakes on large trucks, and trains. This category includes both vibratory and impact pile drivers (smaller steel or wood piles) such as used to install piles and guard rails, and large pneumatic tools such as chipping machines. It may also include large diesel and gasoline engines, especially if in concert with other impacting devices. Felling of large trees (defined as dominant or subdominant trees in mature forests), truck horns, yarding tower whistles, and muffled or underground explosives are also included. Very few covered activities are expected to fall under this category, but some construction activities may result in this level of disturbance.

The buffer size may be reduced based on existing vegetation, human development, and land use, as determined during coordination with CDFW.

If the biologist finds the site to be occupied by western burrowing owls during the breeding season (February 1 to August 31), the project proponent shall avoid all nest sites, based on the buffer distances described above, during the remainder of the breeding season or while the nest is occupied by adults or young (occupation includes individuals or family groups that forage on or near the site following fledging). Construction may occur inside of the disturbance buffer during the breeding season if the nest is not disturbed and the YCCL develops an avoidance plan that is approved by all applicable resource agencies (i.e., Yolo Conservancy, CDFW) prior to project construction, based on the following criteria:

- The avoidance plan is approved by all applicable resource agencies (i.e., CDFW, Yolo Conservancy).
- A qualified biologist monitors the owls for at least three days prior to construction to determine baseline nesting and foraging behavior (i.e., behavior without construction).
- The same qualified biologist monitors the owls during construction and finds no change in owl nesting and foraging behavior in response to construction activities.
- If the qualified biologist identifies a change in owl nesting and foraging behavior as a result of construction activities, the qualified biologist shall have the authority to stop all construction related activities within the non-disturbance buffers described above. The qualified biologist shall report this information to YCCL and the applicable resources agencies within 24 hours, and the Conservancy shall require that these activities immediately cease within the non-disturbance buffer. Construction cannot resume within the buffer until the adults and juveniles from the occupied burrows have moved out of the Project area.
- If monitoring indicates that the nest is abandoned prior to the end of nesting season and the burrow is no longer in use by owls, YCCL may remove the non-disturbance buffer, only with concurrence from applicable resource agencies. If the burrow cannot be avoided by construction activity, the biologist shall excavate and collapse the burrow in accordance with CDFW’s 2012 guidelines to prevent reoccupation after receiving approval from the wildlife agencies.

If evidence of western burrowing owl is detected outside the breeding season (September 1 to January 31), the project proponent shall establish a non-disturbance buffer around occupied burrows, consistent with Table 3.4-3, as determined by a qualified biologist. Construction activities within the disturbance buffer are allowed if the following criteria are met to prevent owls from abandoning important overwintering sites:

- A qualified biologist monitors the owls for at least three days prior to construction to determine baseline foraging behavior (i.e., behavior without construction).
- The same qualified biologist monitors the owls during construction and finds no change in owl foraging behavior in response to construction activities.
- If there is any change in owl roosting and foraging behavior as a result of construction activities, these activities shall cease within the buffer.
- If the owls are gone for at least one week, YCCL may request approval from the applicable resource agencies for a qualified biologist to excavate and collapse usable burrows to prevent owls from reoccupying the site if the burrow cannot be avoided by construction activities. The qualified biologist shall install one-way doors for a 48-hour period prior to collapsing any potentially occupied burrows. After all usable burrows are excavated, the buffer shall be removed, and construction may continue.

Monitoring must continue as described above for the nonbreeding season if the burrow remains active.

A qualified biologist shall monitor the site, consistent with the requirements described above, to ensure that buffers are enforced, and owls are not disturbed. Exclusion and burrow closure shall not be conducted during the breeding season for any occupied burrow. If YCCL determines that passive relocation is necessary, they shall develop a burrowing owl exclusion plan in consultation with CDFW and Yolo Conservancy, as applicable. The methods shall be designed as described in the species monitoring guidelines (California Department of Fish and Game 2012) and consistent with the most up-to-date checklist of passive relocation techniques. This may include the installation of one-way doors in burrow entrances by a qualified biologist during the nonbreeding season. These doors shall be in place for 48 hours and monitored twice daily to ensure that the owls have left the burrow, after which time the biologist shall collapse the burrow to prevent reoccupation. Burrows shall be excavated using hand tools. During excavation, an escape route shall be maintained at all times. This may include inserting an artificial structure, such as piping, into the burrow to prevent collapsing until the entire burrow can be excavated and it can be determined that no owls are trapped inside the burrow. Other methods of passive or active relocation may be used, based on best available science, if approved by the applicable resource agencies.

Level of Significance After Mitigation

Implementation of Mitigation Measure 3.4.1b and 3.4.6, consistent with the Yolo HCP/NCCP AMMs, would reduce potentially significant impacts on burrowing owls to a less than significant level.

Impact 3.4.7: Disturbance of nesting northern harrier and other protected ground-nesting birds and raptors. (Significant)

Project implementation could disturb active nests of northern harrier and other ground-nesting common birds and raptors protected under the MBTA and California Fish and Game Code. Construction activity could disturb active nests in or near the construction area, potentially resulting in nest abandonment by the adults and mortality of chicks and eggs.

Annual grassland in the Project area provides suitable nesting habitat for northern harrier, and other ground-nesting protected birds and raptors. Project implementation, including vegetation removal, associated with construction associated with Project area enhancement and maintenance that occurs during the breeding season (generally February 1 through August 31) could remove or disturb active nests of northern harrier and other protected birds and raptors, if present in or near construction areas. Removal of suitable nesting habitat associated with vegetation removal, including mowing, could result in the incidental loss of fertile eggs or nestlings, or lead to nest abandonment. Increased levels of noise and human activity in the vicinity of an active nest could result in nest abandonment or forced fledging and subsequent loss of fertile eggs, nestlings, or juveniles.

These impacts could result in the loss of many active nests, particularly for colonial nesting birds, and would violate the MBTA and CFGC Section 3503 and 3503.5. These impacts would be significant.

Level of Significance After Mitigation

Implementation of Mitigation Measures 3.4.1b and 3.4.4 (described above) would reduce the potential impacts to nesting northern harrier and other protected ground nesting birds and raptors to a less than significant level.

Impact 3.4.8: Potential adverse effects to special-status plants. (Significant)

All 11 special status plants with potential to occur in the Project area have low quality suitable habitat on alkaline soils of the artificial seasonal wetland, the non-native annual grassland, and the eastern detention basin. These species include federally and state endangered palmate-bracted bird's beak, CRPR 1B.1 Ferris' milk-vetch, and nine CRPR 1B.2 species (Table 3.4-2). The December reconnaissance survey was conducted outside of the blooming/identifiable period for the special-status species with potential to occur in the Project area. Therefore, the 11 special-status plants with potential to occur in the Project area could be damaged or removed by paving and development of the buildings and facilities for the Potential Transfer Station, Waste Gasification, Fertilizer Facility, Pellet Facility, and Wastewater Reservoir/Floating Solar areas.

Parry's rough tarplants (*Centromadia parryi ssp. rudis*), a CRPR 4.2 species, grows along the grassy margins of the artificial seasonal wetland in the northeastern portion of the Project area. Parry's rough tarplant was identified from the remains of some very-late blooming flowers. The CRPR 4.2 ranking of Parry's rough tarplant indicates the species is a "Watch List" species of

limited distribution that is moderately threatened (California Native Plant Society 2020). The CRPR 4.2 ranking can be attributed to the loss of the suitable alkali wetland habitat from agricultural development and urbanization. However, Parry's rough tarplant has many occurrences in the Central Valley and San Joaquin Valley. In fact, there is a 1985 occurrence reported approximately 1.8 miles southeast of the Project area on the west edge of the Yolo Causeway between Interstate 80 and the Davis-Sacramento railroad tracks; an additional occurrence from 1999 is approximately 2.9 miles southeast of the Project area in a low area between Frontage Road and Interstate 80 (Consortium of California Herbaria 2021). Therefore, given Parry's rough tarplant is not provided protection in the Yolo HCP/NCCP (Yolo Habitat Conservancy 2018) nor the Yolo County *2030 Countywide General Plan* (County of Yolo 2009), and there are multiple occurrences in Yolo County, the subspecies does not warrant local significance or impact assessment in this EIR.

If the project results in a substantial disturbance or loss of habitat or populations of special-status plants, it would be a significant impact.

Mitigation Measures

Mitigation Measure 3.4.8a: Conduct appropriately timed floristic surveys

A qualified botanist shall conduct protocol-level floristic surveys of the Project area. The floristic surveys shall be appropriately timed to coincide with the blooming/identifiable period of the special status plants with potential to occur in the Project area and follow methods described in *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2018) and *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (USFWS 2002).

Mitigation Measure 3.4.8b: Avoid special-status plant populations, minimize and/or compensate for substantial impacts

If special-status plants are detected in the Project area, the YCCL shall identify the populations with orange fencing for avoidance and notify CDFW and USFWS as appropriate. If the special-status plants cannot be avoided, additional minimization and mitigation measures shall be developed by the applicant and CDFW and USFWS prior to construction. These measures may include, but would not be limited to:

- Minimizing impacts to the population(s) by restricting impacts to a few individuals.
- Developing a transplantation plan that involves relocating plants to suitable habitat approved by CDFW and/or USFWS.
- Monitoring affected populations for a minimum of 3 years to document success of transplantation efforts.
- Restoring or enhancing the occupied habitat onsite or in the project region. The seasonal wetlands and non-native annual grassland have potential to be restored and/or enhanced. If mitigation is required, the applicant shall consult with CDFW and/or USFWS on constraints and opportunities for appropriate on-site habitat enhancement and/or creation for the affected species.

- Protecting occupied habitat at another location in the region.

Level of Significance After Mitigation

Implementation of Mitigation Measures 3.4.8a and 3.8.4b (if special-status plants are detected in the Project area) would reduce the potential impacts to less than significant level.

Impact 3.4.9: Potential inadvertent loss or disturbance of riparian habitat located near the Project area. (Significant)

The Project area does not contain sensitive natural communities because of ongoing landfill operations and associated disturbance. However, Willow Slough Bypass is close to the SMUD gas pipeline. Willow Slough Bypass flows into the Yolo Basin and ultimately the Sacramento River and is regulated by the Central Valley Flood Protection Board. Should the Expanded Biogas Utilization Options result in injection into the SMUD gas pipeline, the riparian habitat along Willow Slough Bypass could be impacted through equipment staging and excavation which could result in a significant impact.

Mitigation Measures

Mitigation Measure 3.4.9: Avoid Willow Slough Bypass and obtain permits as needed and comply with permit requirements

Project activities shall be designed to avoid surface activities within 300 feet of Willow Slough Bypass. If pipeline activities cannot be avoided within 300 feet of Willow Slough Bypass, the riparian corridor shall be delineated by a qualified biologist and orange construction fencing shall be installed along the outline of the corridor. Impacts to the Willow Slough Bypass shall be avoided through directional boring beneath the bypass. Should directional bores bore under Willow Slough Bypass, consultation with CDFW shall be required and if necessary, a Lake or Stream Bed Alteration Permit would be obtained. The levee along Willow Slough Bypass is regulated by the Central Valley Flood Protection Board and any work within 300 feet of the levee of designated floodways or regulated streams would require an Encroachment Permit.

Level of Significance After Mitigation

Implementation of Mitigation Measure 3.4.8a and 3.4.8b, would ensure the Willow Slough Bypass is fenced off for avoidance and appropriately permitted. Further, the future project design would accommodate directional boring to avoid impacting Willow Slough Bypass the gas pipe would be placed at a minimum of 5 feet under the bottom of the bypass. Implementation of Mitigation Measure 3.4.9 would further reduce the potential impacts to a less than significant level.

**Impact 3.4.10: Placement of fill material into Waters of the U.S. or Waters of the State.
(Significant)**

Aquatic resources in the Project area not likely under the jurisdiction of USACE because the features are artificial and isolated from jurisdictional waters. Aquatic resources in the Project area are not likely under the jurisdiction of the RWQCB because they are artificial and used for ongoing operations and maintenance, including municipal wastewater treatment. However, only USACE and RWQCB can determine the jurisdictional status. The project's proposed stormwater discharge into Willow Slough Bypass is likely an action that would be regulated by both agencies. Therefore, jurisdictional aquatic resources could be impacted by fill and paving associated with the proposed project facilities and discharge into aquatic resources offsite, which would be a significant impact.

Mitigation Measures

Mitigation Measure 3.4.10: Conduct protocol aquatic resources delineation and compensate for substantial adverse effects on state or federally protected wetlands and non-wetland waters

Prior to construction, a delineation of aquatic resources shall be conducted and submitted to USACE along with a request for verification. The delineation shall follow routine methods described in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), *Regional Supplement to the Corps of Engineers Wetland Delineation Manual for the Arid West Region* (U.S. Army Corps of Engineers 2008), *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Lichvar and McColley 2008), and the State Water Board's *Dredged and Fill Procedures* (State Water Resources Control Board 2019). The delineation shall be submitted to RWQCB if there are aquatic resources that are not waters of the United States, but still regulated by the State pursuant to the Porter Cologne Water Quality Control Act.

If waters of the United States are determined to be present in the Project area and would be filled by the proposed project, the applicant shall be required to obtain a Section 404 permit from USACE and a Section 401 permit from RWQCB. If the project would impact aquatic resources that are not regulated by USACE, the applicant shall be required to obtain Waste Discharge Requirements from the RWQCB. The USACE and/or RWQCB may require compensatory mitigation for impacts to jurisdictional aquatic resources. Should compensatory mitigation be required, it could be achieved by wetland enhancement or restoration in the Project area, which could be done in combination with the upland enhancement for special-status plant habitat discussed in Mitigation Measure 3.4.6b. If onsite mitigation is not available or feasible, the applicant shall purchase mitigation credits from a USACE/RWQCB-approved mitigation bank that services project's region.

Level of Significance After Mitigation

Implementation of Mitigation Measures 3.4.1b and 3.4.10 would reduce project impacts to a less than significant level.

Impact 3.4.11: Potential interference with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impediment of the use of native wildlife nursery sites. (Less than Significant)

The project would not have a significant effect on the movement of native fish and wildlife in the area. Most of the areas that would be developed have reduced wildlife habitat value due to the proximity to the developed landfill and the current high level of disturbance generated by the daily activity of the landfill operations. Therefore, the Project would have a less-than-significant impact.

Mitigation Measures

None required.

Impact 3.4.12: Potential for conflicting with local policies or ordinances protecting biological resources. (Less than Significant)

Within the County of Yolo *2030 Countywide General Plan*, there are policies which encourage habitat restoration, land conservation, and species preservation including the policies listed in Section 3.4.1 *Existing Conditions*. Project impacts and mitigation measures would be in compliance with Yolo County policies under the *2030 Countywide General Plan*.

The project would not conflict with any local policies through implementation of the mitigation measures and associated permitting measures listed above. Tree removal is not proposed. Therefore, the Project would have a less-than-significant impact.

Mitigation Measures

None required.

Impact 3.4.13: Potential conflict with provisions of an adopted HCP/NCCP. (Less than Significant)

The Yolo HCP/NCCP includes biological objectives for the following covered species which have the potential to occur in the Project area: western pond turtle, giant garter snake, Swainson's hawk, white-tailed kite, western burrowing owl, tricolored blackbird, and palmate-bracted bird's beak (Yolo Habitat Conservancy 2018, Section 6.3.4. *Covered Species Biological Goals and Objectives*).

With the mitigation identified for the special-status species above, the project would not significantly impact any biological resources covered under the Yolo County Habitat Conservation Plan/Natural Community Conservation Plan (Yolo Conservancy 2018)

Potential impacts on covered species that have the potential to occur in the Project area would not conflict with Yolo HCP/NCCP species objectives, nor would they preclude the projections for

species habitat protection, restoration, or management (Yolo Habitat Conservancy 2018). Mitigation for impacts on covered species for the Yolo HCP/NCCP would be purchased at an existing conservation bank or through onsite restoration and would, therefore, not conflict with conservation easement acquisition through the Yolo Habitat Conservancy. Therefore, the Project would have a less-than-significant impact.

Mitigation Measures

None required.

3.4.5 REFERENCES

- Catlin, D. H. 2004. Factors affecting within-season and between-season breeding dispersal of Burrowing Owls in California. M.S. thesis, Oregon State Univ., Corvallis.
- California Department of Fish and Wildlife. 2018. *Protocols Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities*. March 20, 2018.
- _____. 2020a. California Natural Diversity Database, RareFind 5, Version 5.2.14. Accessed: December 2020 and January 2021.
- _____. 2020b. California Natural Community List. 2020. Available at: <https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities>. Accessed December 2020.
- California Native Plant Society, Rare Plant Program. 2020. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Accessed December 2020 and January 2021. Available at: <http://www.rareplants.cnps.org>
- Consortium of California Herbaria. 2021. *Data provided by the participants of the Consortium of California Herbaria for Centromadia parryi ssp. rudis*. Accessed January 2021. Available at: ucjeps.berkeley.edu/consortium/
- County of Yolo. 2004. *Yolo County Central Landfill Permit Revision EIR*, SCH No. 1991073040. Prepared for Yolo County Public Works and Planning Department Division of Integrated Waste Management. Prepared by ESA. September 2004.
- _____. 2009. *2030 County Wide General Plan*. Last Revised: November 10, 2009. Accessed January 2020. Available at: <https://www.yolocounty.org/general-government/general-government-departments/county-administrator/general-plan/adopted-general-planDunk>,
- J. R. 1995. White-tailed Kite (*Elanus leucurus*). In *The Birds of North America*, No. 178 (A. Poole and F. Gill, eds.). The Academy of Natural Sciences, Philadelphia, and The American Ornithologists' Union, Washington, D.C.
- Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. (Technical Report Y-87-1.) U.S. Army Waterways Experiment Station. Vicksburg, MS. Available at: http://wetland-plants.usace.army.mil/nwpl_static/home/home.html.

- Eriksen, C. and D. Belk. 1999. Fairy shrimps of California's puddles, pools, and playas. Mad River Press, Inc.; Eureka, California. 196 pp.
- Estep, J. A. 1989. Biology, Movements, and Habitat Relationships of the Swainson's Hawk in the Central Valley of California. California Department of Fish and Game, Wildlife Management Division. Sacramento, CA. Figuerola, J. and A.J. Green. 2002. Dispersal of aquatic organisms by waterbirds: a review of past research and priorities for future studies. *Freshwater Biology*: 47:483-494.
- Google Earth. 2020. Yolo County Central Landfill. 38.590637°, -121.691394°. Accessed December 2020 and January 2021.
- Green, G. A., and Anthony, R. G. 1989. Nesting success and habitat relationships of Burrowing Owls in the Columbia basin, Oregon. *Condor* 91:347-354.
- Grinnell, J., and Miller, A. H. 1944. The distribution of the birds of California. *Pac. Coast Avifauna* 27. Halstead. B.J., G.D. Wylie, and M.L. Casazza. 2010. Habitat Suitability and Conservation of the Giant Garter snake (*Thamnophis gigas*) in the Sacramento Valley of California. *Copeia* 4: 591-599.
- Hamilton, W. J., III. 1998. Tricolored Blackbird itinerant breeding in California. *Condor* 100: 218-226.
- Hansen, G.E. 1988. Review of the status of the giant garter snake (*Thamnophis gigas*) and its supporting habitat during 1986-1987. Unpublished (final) report for CDFG, Contract C-2060. Rancho Cordova, California. 31pp.
- Hansen, G. E. and J. Brode. 1980. Status of The Giant Garter Snake, *Thamnophis couchi gigas* (Fitch). California Department of Fish and Game Inland Fisheries Endangered Species Program Special Publication Report 80-5: 1-14.
- Hansen, G.E. and J.M. Brode. 1993. Results of relocating canal habitat of the giant garter snake (*Thamnophis gigas*) during widening of State Route 99/70 in Sacramento and Sutter counties, California. Unpublished (final) report for Caltrans Interagency Agreement 03E325 (FG7750) (FY87/88-91-92). Rancho Cordova, California. March 3, 1993. 36pp.
- Helm, B. 1998. Biogeography of eight large branchiopods endemic to California. Pages 124- 139. In *Ecology, conservation, and management of vernal pool ecosystems – proceedings from a 1996 conference*, C. W. Witham, E.T. Bauder, D. Belk, W.R. Ferren, Jr., and R. Ornduff, eds. California Native Plant Society, Sacramento, California. 285 pp.
- Helm, B. P. and J. E. Vollmar. 2002. Chapter 4: Vernal Pool Large Branchiopods. In J.E. Vollmar, ed. *Wildlife and Rare Plant Ecology of Eastern Merced County's Vernal Pool Grasslands*. Vollmar Consulting, Berkeley, California.
- Haug, E. A., Millsap, B. A., and Martell, M. S. 1993. Burrowing Owl (*Speotyto cunicularia*), in *The Birds of North America* (A. Poole and F. Gill, eds.), no. 61. Acad. Nat. Sci., Philadelphia.
- Jennings, M. R., M. P. Hayes, and D. C. Holland. 1992. A petition to the U.S. Fish and Wildlife Service to place the California red-legged frog (*Rana aurora draytonii*) and the western pond turtle (*Clemmys marmorata*) on the list of endangered and threatened wildlife and plants.

- Jennings, M. R. and M. P. Hayes. 1994. Amphibian and Reptile Species of Special Concern in California. Rancho Cordova, CA: California Department of Fish and Game, Inland Fisheries Division.
- Lichvar, R and McColley, S. 2008. *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States*. ERDC/CRREL TR08-12. Hanover, NH. U.S. Army Engineer Research and Development Center.
- MacWhirter, R. B. and K. L. Bildstein. 1996. Northern Harrier, *Circus cyaneus*. In A. Poole and F. Gill (eds.), *The Birds of North America*, No. 210. The Academy of Natural Sciences, Philadelphia, and The American Ornithologists' Union, Washington, DC.
- Natural Resources Conservation Service. 2020. Custom Soil Resource Report for Yolo County, California. Web Soil Survey. Accessed December 2020. Available at: <https://websoilsurvey.sc.egov.usda.gov>.
- Pilliod, D.S., J. L. Welty, and R. Stafford. 2013. Terrestrial movement patterns of western pond turtles (*Actinemys marmorata*) in central California. *Herpetological Conservation and Biology* 8: 207-221.
- Rosenberg, D. K., Gervais, J. A., Ober, H., and DeSante, D. S. 1998. An adaptive management plan for the Burrowing Owl population at Naval Air Station Lemoore, California. Publication 95, Institute for Bird Populations, P.O. Box 1346, Pt. Reyes Station, CA 94956.
- Rosier, J. R., Ronan, N. A., and Rosenberg, D. K. 2006. Post-breeding dispersal of Burrowing Owls in an extensive California grassland. *Am. Midland Nat.* 155:162–167.
- State Water Resources Control Board. 2019. *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State*. April 2019.
- Trulio, L. 1997. Burrowing owl demography and habitat use at two urban sites in Santa Clara County, California. *Raptor Res. Rep.* 9:84–89.
- U.S. Army Corps of Engineers. 2008. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)*, ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- U.S. Fish and Wildlife Service. 1996. *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants*. September 1996.
- U.S. Fish and Wildlife Service. 2017. Revised Recovery Plan for Giant Garter Snake (*Thamnophis gis*). Region 8 Sacramento Fish and Wildlife. Sacramento, CA.
- Vollmar, J.E. 2002. Chapter 2: Landscape Setting. In J.E. Vollmar (editor). *Wildlife and Rare Plant Ecology of Eastern Merced County's Vernal Pool Grasslands*. Vollmar Consulting, Berkeley, California.
- Williams, D. F. 1986. Mammalian Species of Concern in California. California Department of Fish and Game Report 86-1. California Department of Fish and Game, Sacramento, CA.

Wylie, G. D., M. L. Casazza, and N. M. Carpenter. 2000. Monitoring giant garter snakes at Colusa National Wildlife Refuge: 2000 report. USGS, Biological Resources Division, Dixon Field Station, Dixon, CA.

Yolo Habitat Conservancy. 2018. *Yolo Habitat Conservation Plan/Natural Community Conservation Plan*. Accessed January 2020. Available at: <https://www.yolohabitatconservancy.org/documents>

_____. 2020a. Information for Planning and Consultation. Sacramento Fish and Wildlife Office. Sacramento, CA. Available at: <http://ecos.fws.gov/ipac>. Accessed: December 2020 and January 2021.

3.5 CULTURAL RESOURCES AND TRIBAL CULTURAL RESOURCES

This section describes the cultural resources and tribal cultural resources (TCRs) setting, evaluates potential impacts to cultural resources and TCRs, and recommends mitigation measures to reduce impacts of the Project to a less-than-significant level. Cultural resources include sites, buildings, structures, or objects generally older than 50 years and considered to be important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. They include pre-historic resources, historic-era resources, and TCRs (the latter as defined by Assembly Bill (AB) 52, Statutes of 2014, in Public Resources Code [PRC] Section 21074). TCRs include site features, places, cultural landscapes, sacred places or objects, which are of cultural value to a tribe.

At the request of the County, the staff of the California Historical Resources Information System (CHRIS) Northwest Information Center completed a record search of the project area on November 23, 2020 (File No.:20-0907). The results of the CHRIS records search are outlined in this section.

One comment letter regarding cultural resources and TCRs was received in response to the NOP. The Native American Heritage Commission (NAHC) submitted a comment letter dated August 31, 2020 to the State Clearinghouse that provided background and regulatory information related to AB 52 and Senate Bill (SB) 18. The Project does not require SB 18 compliance because it does not include a General Plan Amendment. AB 52 compliance is required for the Project and is discussed in this section.

In accordance with AB 52, the County notified the representatives of California Native American tribes that have requested project notifications from the County. The Yocha Dehe Wintun Nation requested consultation and met with the County and its consultants on October 5, 2020. The representatives of the Yocha Dehe Wintun Nation had no specific concerns about the Project, but requested pre-construction cultural sensitivity training for the future construction of Project elements, which has been incorporated as a Mitigation Measure in this section.

3.5.1 SETTING

Physical Setting

The Yolo County Landfill is located northeast of the City of Davis and is situated within the greater Sacramento River Delta region along the northern edge of the Willow Slough Bypass and the western margin of the Yolo Bypass. The Willow Slough Bypass and the Yolo Bypass are part of an elaborate system to control flooding of 101,000 acres of the Sacramento Valley.

Paleoenvironment

Most of the western United States was subjected to a series of climatic fluctuations over the past several millennia; the central interior valley portion of California is no exception. Warm/dry episodes were followed by intermittent cool/moist periods (Yolo County, 2005). The Holocene or Recent Epoch has seen six cool periods followed by five warm periods. The Altithermal Period,

ending about 2,900 years ago, was a warm/dry episode which apparently had wide-ranging implications throughout the west, leading to changes in animal migrations and plant productivity and distribution. A cooler period followed for the next 1,400 years, followed by yet another warm/dry climate starting about 600 years ago, which remains to the present day.

Prior to the introduction of livestock to the region in the early 1800s, native grasses covered the upland environment throughout the area. Although the type of animals inhabiting the Central Valley before the influx of humans is largely known, the type of plants that may have occupied the valley grassland is not as well defined. Purple Needlegrass, a bunchgrass found only in California, may have been the dominant grass species. Truly purple in color, Purple Needlegrass's dried stalks would have lent a distinctive color to the valley grasslands in the summer (Yolo County, 2005).

Cultural Setting

Ethnography

The Yolo County Central Landfill (YCCL) project area was probably occupied, at the time of historic contact by Spanish missionaries and explorers, by the Wintuan-speaking *Patwin* Native American groups in Yolo and Solano Counties. The name Patwin (*patwin* 'people') was introduced by Powers and is synonymous with Southern Wintun (Yolo County, 2005). The Patwin have been the subject of several major cultural descriptions (Yolo County, 2005). Scholars have suggested the early California environment offered a large assortment of resources for use by native people, although acorns, fish, and game mammals provided the principal dietary staples (Yolo County, 2005). Some researchers have stressed the acorn, with various seeds, grasses, nuts, berries, and roots were of utmost importance (Yolo County, 2005). Kroeber, a noted ethnographer, pointed out plant food collection/preparation formed the center of Patwin technology (Yolo County, 2005).

Plant, animal and fish resources were available in unlimited quantities in the Sacramento and San Joaquin River Delta area. Tule Elk were common in the marshlands, as were rabbits and small game (Yolo County, 2005). The Delta also provided much of the natural resources necessary for production of the day-to-day material goods used by native populations. The Patwin comprised a group of people that were united by language but broken into smaller tribal entities (independent political groups) each occupying defined territories over which they controlled access to natural resources. Although each tribal group had one or more permanent villages, their territory contained numerous smaller campsites used as needed during a seasonal round of resource exploration.

Extended families lived in domed, conical structures built of thatched grass or earthen-covered limbs and branches. Semi-subterranean men's houses were built at the larger village sites, also using grass and earth cover (Yolo County, 2005). Given an abundant and continuous subsistence base, ceremony in both Patwin and Miwok life was fairly extensive, and scholars have written much about it based on early ethnographic accounts (Yolo County, 2005). Rituals associated with death were of great importance. Two forms of interment were practiced, and grave goods were often placed into the grave at the time of burial. Cremation was also occasionally practiced.

Regional History

Yolo County, located northwest of Sacramento, is well known for its fertile soil. The County's entire eastern boundary is the Sacramento River. The name Yolo is derived from the Patwin Indian word "Yoloy" which means place of the rushes. The entire west bank of the Sacramento River once had great fields of tule rushes with swamplands, marshes, and sloughs.

The California Gold Rush of 1848 and 1850 brought an increase in population to Yolo County. Although some prospecting for gold was done in the foothills, most immigrants realized that the fortune to be made in Yolo County was through farming and ranching. When California became a state in 1850, Yolo was one of the original 27 counties. Initially, the County seat was located in the town of Fremont (now Knights Landing), but moved to the town of Washington (later called Broderick and presently West Sacramento). However, the flood of 1862 prompted the voters to move the County seat to Woodland where it remains today (Yolo County, 2005).

Results of the Literature and Records Search

At the request of the County, the staff of the California Historical Resources Information System (CHRIS) Northwest Information Center completed a record search of the project area on November 23, 2020 (File No.:20-0907). They searched their files for information on previous archaeological surveys and recorded sites within a 1/2-mile radius of the project area to identify and evaluate the potential for the presence of cultural resources. Search of their files included a review of the *National Register of Historic Places*, the *California Register of Historical Resources*, the *California Inventory of Historic Resources* (1976), the *California Historical Landmarks* (1990), and the *California Points of Historical Interest* listing (May 1992 and updates), and other pertinent historic data available at the NWIC for Yolo County (California Historical Resources Information System, 2020).

Previous Surveys

A total of 12 previous archaeological surveys have been conducted within or adjacent to the project area (Berg and Bouey 1991; Derr 1991; Edgar and Griset 1991; Glover and Bouey 1990, 1994; Hale et al. 1995; Marvin and Davis-King 1995; Moratto, et al. 1991; Shapiro and Syda 1997; True 1976; Waechter 1993a and b). As a result of the surveys, one prehistoric human burial site (CA-YOL-171) and two isolates consisting of one obsidian, serrated biface and one small, flat-bottomed mortar uncovered during excavation of a trench in 1978 (ISO-2 and ISO-3) were recorded within the western section of the YCCL property. One historic resource consisting of a ranch house and associated farm buildings constructed in 1867 (HRI 6/188) was recorded by Historic Environment Consultants in 1980 outside of, but nearby, the southern boundary of the project area.

Findings of the 1992 EIR

The 1992 YCCL Environmental Impact Report (EIR) evaluated the potential environmental effects of a lateral expansion of the landfill into what are now designated WMU 6 and 7. These areas had previously been used for agriculture, but not as landfill, and they were not as disturbed as the older, western part of the site. The 1992 YCCL EIR's cultural resources analysis was based on a records search and on a field survey conducted in November 1989. The records search

revealed the presence of a prehistoric burial site previously located within the now-filled Unit 3, at a depth of 9 feet below the surface. This site was excavated by Anthropology Professor Martin Baumhoff of the University of California at Davis in 1981, who determined a date of 3,895 +/- 800 years before present; the resources were thus considered to be early and very significant.

Although it was determined that the burials were part of a patterned cemetery deposit, the U.C. Davis Anthropology Department did not have the time or personnel to commit to excavating the site. Dr. Baumhoff recommended that the landfill operators avoid the area of the burial site in their excavation of Unit 3. No legislation protecting Native American cemeteries was in effect in 1981; the law merely required that the coroner be called to determine whether the body was prehistoric or recent, and if the former, no other action was required. The landfill personnel elected to continue with the project by agreeing to notify the Yolo County Coroner if further burials were located.

One historical artifact, a piece of construction or farm equipment apparently dating from World War II, was located in a field on the YCCL property during the 1989 cultural resources survey. No historical sites were located on or immediately adjacent to the property. The survey also located a fragment of ground stone, which was located in a crack in the surface soil at the wood recycling facility, but because of previous disturbance of the area, it could not be determined where this piece came from originally; it was assumed to be prehistoric. The 1989 field survey revealed no additional prehistoric sites or artifacts.

The 1992 YCCL EIR used the CEQA guidelines to set significance criteria for impacts on cultural resources. The 1992 YCCL EIR found that excavation, grading, and construction activities associated with the project then being evaluated had the potential uncover, disturb, and damage additional ancient archeological sites at a depth of 6 feet or greater.

Mitigation measures included recording the isolated finds of the 1989 survey; monitoring of all subsurface work of 6 feet or greater in “the areas in line with the original find” by a professional archaeologist with authority to halt work in the areas of any subsequent cultural resource find until that resource can be properly assessed, and related mitigation measures; restricting future borrow cuts on the site to a maximum depth of 6 feet; and monitoring by a professional archeologist of construction of future landfill modules where excavation would be below 6 feet depth.

The 1992 YCCL EIR identified no cumulative impacts on cultural resources, and concluded that the mitigation measures specified in the document would reduce any impacts on cultural resources to a less-than-significant level.

Findings of the 2005 EIR

The 2005 YCCL EIR evaluated the potential environmental effects of several changes to the YCCL. William Self Associates, Inc. (WSA) implemented a complete record search, archaeological field survey, and assessment of a 40-foot wide by approximately 4-mile-long area surrounding the existing YCCL parcel that was proposed as a new alignment for utility lines and/or for a paved perimeter access road. In addition, WSA examined approximately 20 acres of relatively undisturbed land that was proposed for use as a composting facility.

The 2005 YCCL EIR used the CEQA guidelines to set significance criteria for impacts on cultural resources. The 2005 YCCL EIR found that since project development and construction required surface and subsurface disturbance of the ground, construction within the 20-foot wide by approximately 4-mile-long utility/road alignment, as well as the approximately 20 acres of relatively undisturbed area that would be used for the composting facility, had the potential to adversely affect cultural resources.

Mitigation measures included halting or diverting work to allow archaeologists an opportunity to assess cultural resources encountered during project implementation, archaeological monitoring when subsurface construction excavation occurs within 300 feet of CA-YOL-171, and compliance with Section 7050.5(b) of the California Health and Safety code if human remains or possible human remains are discovered.

The 2005 YCCL EIR also found that since the off-site borrow area had not been selected and reviewed for cultural resources, it had the potential to adversely affect cultural resources. Mitigation measures for the future off-site borrow area included a cultural resources survey of the site once selected, halting or diverting work to allow archaeologists an opportunity to assess cultural resources encountered during soil borrow activities, and compliance with Section 7050.5(b) of the California Health and Safety code if human remains or possible human remains are discovered.

Regulatory Setting

Federal Regulations

Antiquities Act of 1906

Antiquities Act of 1906, Title 16, United States Code, Sections 431, 432, and 433, and subsequent related legislation, policies, and enacting responsibilities allows for the protection of any historic or prehistoric ruin or monument, or any object of antiquity situated on lands owned or controlled by the Government of the United States.

National Historic Preservation Act

The National Historic Preservation Act (NHPA), Title 16, United States Code, Section 470, establishes a national policy to preserve for public use historic sites, buildings, and objects of national significance for the inspiration and benefit of the people of the United States. The Secretary of the Interior is authorized to expand and maintain a National Register of Historic Places (NRHP) under the NHPA.

State Regulations

California Register of Historical Resources

The California Register of Historical Resources (CRHR) established a list of those properties which are to be protected from substantial adverse change (PRC Section 5024.1). A historical resource may be listed in the CRHR if it meets any of the following criteria:

- It is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage.
- It is associated with the lives of persons important in California’s past.
- It embodies the distinctive characteristics of a type, period, region or method of construction, or represents the work of an important creative individual, or possesses high artistic value.
- It has yielded or is likely to yield information important in prehistory or history.

The CRHR includes properties that are listed or have been formally determined to be eligible for listing in the NRHP, State Historical Landmarks, and eligible Points of Historical Interest. Other resources require nomination for inclusion in the CRHR. These may include resources contributing to the significance of a local historic district, individual historical resources, historical resources identified in historic resource surveys conducted in accordance with State Historic Preservation Office (SHPO) procedures, historic resources or districts designated under a local ordinance consistent with Commission procedures, and local landmarks or historic properties designated under local ordinance.

California Environmental Quality Act

CEQA requires public agencies to consider the effects of their actions on both “historical resources,” “unique archaeological resources,” and “tribal cultural resources.” Pursuant to PRC Section 21084.1, a “project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment” and PRC Section 21084.2, a “project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment.” Section 21083.2 requires agencies to determine whether projects would have effects on unique archaeological resources.

Historical Resources

“Historical resource” is a term with a defined statutory meaning (PRC, Section 21084.1; determining significant impacts to historical and archaeological resources is described in the State CEQA Guidelines, Sections 15064.5[a] and [b]). Under State CEQA Guidelines Section 15064.5(a), historical resources include the following:

- A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR (PRC, Section 5024.1).
- A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the PRC or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the PRC, will be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of

California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource will be considered by the lead agency to be historically significant if the resource meets the criteria for listing in the CRHR (PRC, Section 5024.1), including the following:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
 - Is associated with the lives of persons important in our past;
 - Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
 - Has yielded, or may be likely to yield, information important in prehistory or history.
- The fact that a resource is not listed in or determined to be eligible for listing in the CRHR, not included in a local register of historical resources (pursuant to Section 5020.1(k) of the PRC), or identified in a historical resources survey (meeting the criteria in Section 5024.1(g) of the PRC) does not preclude a lead agency from determining that the resource may be an historical resource as defined in PRC Section 5020.1(j) or 5024.1.

Unique Archaeological Resources

CEQA also requires lead agencies to consider whether projects will affect unique archaeological resources. PRC, Section 21083.2, subdivision (g), states that unique archaeological resource means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Tribal Cultural Resources

CEQA also requires lead agencies to consider whether projects will affect TCRs. PRC, Section 21074 states the following:

Tribal cultural resources are either of the following:

- Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
 - Included or determined to be eligible for inclusion in the CRHR.
 - Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.
- A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.
- A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a “nonunique archaeological resource” as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

Health and Safety Code, Section 7052 and 7050.5

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

California Native American Historical, Cultural, and Sacred Sites Act

The California Native American Historical, Cultural and Sacred Sites Act applies to both State and private lands. The Act requires that upon discovery of human remains, that construction or excavation activity cease and that the county coroner be notified. If the remains are of a Native American, the coroner must notify the NAHC. The NAHC then notifies those persons most likely to be descended from the Native American’s remains. The Act stipulates the procedures the descendants may follow for treating or disposing of the remains and associated grave goods.

Public Resources Code, Section 5097

PRC, Section 5097 specifies the procedures to be followed in the event of the unexpected discovery of human remains on nonfederal land. The disposition of Native American burial falls within the jurisdiction of the NAHC. Section 5097.5 of the Code states the following:

No person shall knowingly and willfully excavate upon, or remove, destroy, injure, or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

Assembly Bill 52

AB 52, signed by Governor Edmund G. Brown, Jr., in September of 2014, establishes a new class of resources under CEQA: “tribal cultural resources” (TCRs). AB 52, as codified in PRC Sections 21080.3.1, 21080.3.2, and 21082.3, requires that lead agencies undertaking CEQA review must, upon written request of a California Native American Tribe, begin consultation once

the lead agency determines that the application for the project is complete, prior to the issuance of an NOP of an EIR or notice of intent to adopt a negative declaration or mitigated negative declaration. AB 52 also requires revision to CEQA Appendix G, the environmental checklist. This revision would create a new category for TCRs. As defined in PRC Section 21074, to be considered a TCR, a resource must be either:

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

Local Regulations

2030 Countywide General Plan

The Conservation and Open Space Element of the 2030 Countywide General Plan contain the following goals and policies related to cultural resources that are applicable to the Project:

Goal CO-4: Cultural Resources. Preserve and protect cultural resources within the County.

Policy CO-4.1: Identify and safeguard important cultural resources.

Policy CO-4.12: Work with culturally affiliated tribes to identify and appropriately address cultural resources and tribal sacred sites through the development review process.

Policy CO-4.13: Avoid or mitigate to the maximum extent feasible the impacts of development on Native American archaeological and cultural resources.

3.5.2 IMPACTS AND MITIGATION MEASURES

Significance Criteria

Based on Appendix G of the State CEQA Guidelines, the Project would result in a potentially significant impact if it would:

- Cause a substantial adverse change in significance of a historical resource pursuant to Section 15064.5;

- Cause a substantial adverse change in significance of an archaeological resource pursuant to Section 15064.5;
- Disturb any human remains, including those interred outside of formal cemeteries; or
- Cause a substantial adverse change in the significance of a TCR, as defined by PRC Section 21074, and that is:
 - Listed or eligible for listing in the CRHR, or in a local register of historical resources as defined by PRC Section 5020.1(k), or
 - A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Impact Analysis

Impact 3.5.1: The Project could either directly or indirectly result in impacts to cultural resources or TCRs. (Significant)

Direct impacts are those which may result from the immediate disturbance of resources, whether from vegetation removal, vehicle travel over the surface, earth-moving activities, excavation or alteration of the setting of a resource. Indirect impacts are those which may result from increased erosion due to site clearance and preparation, or from inadvertent damage or outright vandalism to exposed resources due to improved visibility or access.

Exposure of cultural resources during pre-construction site preparation or during construction excavation can also have a beneficial effect by making the data accessible for research. If these resources and their temporal and spatial context receive proper protection and analysis, they can add to the understanding of human adaptation to the environment and their use of the land and its resources. Analysis of cultural resources also can provide a very important key to changes in population and human movement within and throughout a geographic region.

The potential for the Project to impact sensitive cultural resources is directly related to the likelihood that such resources are present and whether they are actually encountered during project development and construction activities. Development and construction of Project elements would be within the previously disturbed YCCL property. However, since one significant prehistoric cultural resource site and three isolated artifacts have been recorded in the vicinity of the Project site during previous surveys, there is a likelihood that cultural resources could be encountered during Project-related site clearance and excavation. Without mitigation, impacts to important cultural resource sites would be potentially significant.

Mitigation Measures

Mitigation Measure 3.5.1a: If cultural resources are encountered during Project implementation, construction (or Project actions) shall, in accordance with CEQA Section 15064.5, be halted or diverted to allow an archaeologist an opportunity to assess the resource.

Mitigation Measure 3.5.1b: Section 7050.5 and 7052 of the California Health and Safety Code and Section 5097 of the Public Resources Code shall be implemented in the event that human remains, or possible human remains are located.

Mitigation Measure 3.5.1c: Prior to Project ground disturbing activities, the County shall notify the Yocha Dehe Wintun Nation and arrange for a qualified personnel to conduct a cultural resources sensitivity training for all construction personnel who will be associated with the Project. The training shall be developed and conducted in coordination with a representative from the Yocha Dehe Wintun Nation. The training shall include relevant information regarding sensitive cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating State laws and regulations. The cultural sensitivity training shall also describe appropriate avoidance and minimization measures for resources that have the potential to be located on the Project site and shall outline what to do and whom to contact if any potential tribal cultural resources are discovered.

Level of Significance After Mitigation

Implementation of Mitigation Measures 3.5.1a, 3.5.1b, and 3.5.1c would ensure that this impact is less than significant.

Impact 3.5.2: Excavation of the non-specific future off-site borrow area could disturb previously unknown cultural resources or TCRs. (Significant)

One of the siting criteria for the proposed off-site borrow area is that this facility would not be located in an area that contains prehistoric or historic cultural resources that would be disturbed by soil borrow activities, unless the disturbance of such resources could be mitigated effectively. A cultural resources survey and records search must therefore be performed prior to selection of a proposed site for the off-site borrow area, to determine if such resources exist on site, and if so, what the appropriate mitigation measures would be. However, additional cultural resources could be unearthed and disturbed at the site once mining activities commence. This could potentially result in a significant impact.

Mitigation Measures

Mitigation Measure 3.5.2a: A cultural resources survey of the site selected for the off-site borrow area, including a site survey and records search, shall be conducted by a registered archeologist prior to commencement of soil borrow activities. Any potential disturbance of identified cultural resources on the site shall be properly mitigated on-site or through proper recording and removal of the artifacts.

Mitigation Measure 3.5.2b: If cultural resources are encountered during soil borrow activities, such activities shall, in accordance with CEQA Section 15064.5, be halted or diverted to allow an archaeologist an opportunity to assess the resource.

Mitigation Measure 3.5.2c: Section 7050.5 and 7052 of the California Health and Safety code and Section 5097 of the Public Resources Code shall be implemented in the event that human remains, or possible human remains are located at the site selected for the off-site borrow area.

Mitigation Measure 3.5.2d: Prior to ground disturbance at the future off-site borrow area, the County shall notify the Yocha Dehe Wintun Nation and arrange for a qualified personnel to conduct a cultural resources sensitivity training for all construction personnel who will be associated with the Project. The training shall be developed and conducted in coordination with a representative from the Yocha Dehe Wintun Nation. The training shall include relevant information regarding sensitive cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating State laws and regulations. The cultural sensitivity training shall also describe appropriate avoidance and minimization measures for resources that have the potential to be located on the Project site and shall outline what to do and whom to contact if any potential tribal cultural resources are discovered.

Level of Significance After Mitigation

Implementation of Mitigation Measures 3.5.2a, 3.5.2b, 3.5.2c and 3.5.2d would ensure that this impact is less than significant.

3.5.3 REFERENCES

California Historical Resources Information System. 2020. *LF2020-01 YCCL / 44090 County Road 28H (APN: 042-140-006) / Yolo County Central Landfill Permit*, File No.: 20-0907. November 23, 2020.

Yolo County. 2005. *Yolo County Central Landfill Permit Revisions Final Subsequent Environmental Impact Report SCH No. 1991073040*. May 2005.

Yolo County. 1992. *Final Environmental Impact Report Yolo County Central Landfill State Clearinghouse No. 91123015*. October 1992.

3.6 ENERGY

This section describes the energy setting and evaluates potential impacts to energy resources. This section was prepared pursuant to State CEQA *Guidelines* Section §15126 and State CEQA *Guidelines* Appendix F, which require that EIRs include a discussion of the potential energy impacts of projects. The analyses within this section consider whether the Project would result in inefficient, wasteful, and unnecessary consumption of energy.

Energy resources required for the Project would include electricity, natural gas and petroleum fuels. These energy resources would be required for Project element processes and increased vehicles with the Project. Energy resources would also be consumed by construction equipment and vehicles required for construction of Project elements.

3.6.1 SETTING

Regulatory Setting

Federal

Energy Policy and Conservation Act

The Energy Policy and Conservation Act of 1975 established nationwide fuel economy standards to conserve oil. Pursuant to this Act, the National Highway Traffic and Safety Administration, part of the U.S. Department of Transportation (DOT), is responsible for revising existing fuel economy standards and establishing new vehicle economy standards.

The Corporate Average Fuel Economy (CAFE) program was established to determine vehicle manufacturer compliance with the government's fuel economy standards. Compliance with the CAFE standards is determined based on each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the country. EPA calculates a CAFE value for each manufacturer based on the city and highway fuel economy test results and vehicle sales. The CAFE values are a weighted harmonic average of the EPA city and highway fuel economy test results. Based on information generated under the CAFE program, DOT is authorized to assess penalties for the Energy Independence and Security Act of 2007 (described below).

Energy Policy Act of 1992 and 2005

The Energy Policy Act of 1992 (EPAct) was passed to reduce the country's dependence on foreign petroleum and improve air quality. The EPAct includes several parts intended to build an inventory of alternative fuel vehicles in large, centrally-fueled fleets in metropolitan areas. The EPAct requires certain federal, state, and local government and private fleets to purchase a percentage of light-duty alternative fuel vehicles. In addition, financial incentives are also included in The EPAct. Federal tax deductions are allowed for businesses and individuals to cover the incremental cost of alternative fuel vehicles. States are also required by The EPAct to consider a variety of incentive programs to help promote alternative fuel vehicles. The Energy Policy Act of 2005 provides renewed and expanded tax credits for electricity generated by

qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 is designed to improve vehicle fuel economy and help reduce U.S. dependence on oil. It represents a major step forward in expanding the production of renewable fuels, reducing dependence on oil, and confronting global climate change. The Energy Independence and Security Act of 2007 increases the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.

By addressing renewable fuels and the CAFE standards, the Energy Independence and Security Act of 2007 builds on progress made by the Energy Policy Act of 2005 in setting out a comprehensive national energy strategy for the 21st century.

State

Integrated Energy Policy Report

Senate Bill (SB) 1389 (Chapter 568, Statutes of 2002) required the CEC to: “conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices. The Energy Commission shall use these assessments and forecasts to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the state’s economy, and protect public health and safety” (Public Resources Code Section 25301(a)). This work culminated in the Integrated Energy Policy Report (IEPR).

CEC adopts an IEPR every two years and an update every other year. The 2019 IEPR is the most recent IEPR, which was adopted February 20, 2020. The 2019 IEPR provides a summary of priority energy issues currently facing the State, outlining strategies and recommendations to further the State’s goal of ensuring reliable, affordable, and environmentally-responsible energy sources. The 2019 IEPR provides an analysis of Electricity sector trends building decarbonization and energy efficiency, zero-emission vehicles, energy equity, climate change adaptation, electricity reliability in Southern California, natural gas assessment, and electricity, natural gas, and transportation energy demand forecasts (CEC, 2020).

Senate Bill 1078, 350 and 100: California Renewables Portfolio Standard Program

SB 1078 (Chapter 516, Statutes of 2002) establishes a renewable portfolio standard (RPS) for electricity supply. The RPS required that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide 20 percent of their supply from renewable sources by 2017. The program was accelerated in 2015 with SB 350, which mandated a 50 percent RPS by 2030. SB 350 includes interim annual RPS targets with three-year compliance periods and requires 65% of RPS procurement to be derived from long-term contracts of 10 or more years. In 2018, SB 100 was signed into law, which again increases the RPS to 60% by 2030 and requires all the state's electricity to come from carbon-free resources by 2045.

Senate Bill X1-2: California Renewable Energy Resources Act

SB X1-2 of 2011 requires all California utilities to generate 33 percent of their electricity from renewables by 2020. SB X1-2 sets a three-stage compliance period requiring all California utilities, including independently-owned utilities, energy service providers, and community choice aggregators, to generate 20 percent of their electricity from renewables by December 31, 2013; 25 percent by December 31, 2016; and 33 percent by December 31, 2020. SB X1-2 also requires the renewable electricity standard to be met increasingly with renewable energy that is supplied to the California grid from sources within, or directly proximate to, California. SB X1-2 mandates that renewables from these sources make up at least 50 percent of the total renewable energy for the 2011-2013 compliance period, at least 65 percent for the 2014-2016 compliance period, and at least 75 percent for 2016 and beyond.

Energy Action Plan

The first Energy Action Plan (EAP) emerged in 2003 from a crisis atmosphere in California's energy markets. The State's three major energy policy agencies (CEC, CPUC, and the Consumer Power and Conservation Financing Authority [established under deregulation and now defunct]) came together to develop one high-level, coherent approach to meeting California's electricity and natural gas needs. It was the first time that energy policy agencies formally collaborated to define a common vision and set of strategies to address California's future energy needs and emphasize the importance of the impacts of energy policy on the California environment.

In the October 2005 Energy Action Plan II, CEC and CPUC updated their energy policy vision by adding some important dimensions to the policy areas included in the original EAP, such as the emerging importance of climate change, transportation-related energy issues and research and development activities. CEC recently adopted an update to the EAP II in February 2008 that supplements the earlier EAPs and examines the State's ongoing actions in the context of global climate change.

Assembly Bill 1007: State Alternatives Fuel Plan

AB 1007 (Chapter 371, Statutes of 2005) required the CEC to prepare a state plan to increase the use of alternative fuels in California. The CEC prepared the State Alternative Fuels Plan (SAF Plan) in partnership with the California Air Resources Board (CARB) and in consultation with other State, federal, and local agencies. The SAF Plan presents strategies and actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes the costs to California and maximizes the economic benefits of in-state production. The SAF Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuel use, reduce GHG emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Assembly Bill 32, Senate Bill 32, and Climate Change Scoping Plan and Update

Reducing GHG emissions in California has been the focus of the state government for approximately two decades. GHG emission targets established by the state legislature include reducing statewide GHG emissions to 1990 levels by 2020 (AB 32 of 2006) and reducing them to

40 percent below 1990 levels by 2030 (SB 32 of 2016). Executive Order S-3-05 calls for statewide GHG emissions to be reduced to 80 percent below 1990 levels by 2050.

California's 2017 Climate Change Scoping Plan (2017 Scoping Plan), prepared by CARB, outlines the main strategies California will implement to achieve the legislated GHG emission target for 2030 and "substantially advance toward our 2050 climate goals" (CARB, 2017). It identifies the reductions needed by each GHG emission sector (e.g., transportation, industry, electricity generation, agriculture, commercial and residential, pollutants with high global warming potential, and recycling and waste). In 2018, electricity generation accounted for 15 percent of the State's GHG emissions (CARB, 2020). California plans to significantly reduce GHG emissions from the energy sector through the development of renewable electricity generation in the form of solar, wind, geothermal, hydraulic, and biomass generation. The State is on target meet the SB X1-2-33 percent renewable energy target by 2020 and will continue to increase statewide renewable energy to 60 percent by 2030, as directed by SB 100. Additionally, the State will further its climate goals through improving the energy efficiency of residential and non-residential buildings by continual updates (i.e., every three years) to the Energy Code, which contains mandatory and prescriptive energy efficiency standards for all new construction.

Low Carbon Fuel Standard

Under the Climate Change Scoping Plan, the CARB identified the low carbon fuel standard (LCFS) as one of the nine discrete early action measures to reduce California's GHG emissions. The LCFS is designed to decrease the carbon intensity of California's transportation fuel pool and provide an increasing range of low-carbon and renewable alternatives, which reduce petroleum dependency and achieve air quality benefits.

In 2018, the CARB approved amendments to the regulation, which included strengthening and smoothing the carbon intensity benchmarks through 2030 in-line with California's 2030 GHG emission reduction target enacted through SB 32, adding new crediting opportunities to promote zero emission vehicle adoption, alternative jet fuel, carbon capture and sequestration, and advanced technologies to achieve deep decarbonization in the transportation sector.

The LCFS standards are expressed in terms of the "carbon intensity" (CI) of gasoline and diesel fuel and their respective substitutes. The program is based on the principle that each fuel has "life cycle" GHG emissions and the life cycle assessment examines the GHG emissions associated with the production, transportation, and use of a given fuel. The life cycle assessment includes direct emissions associated with producing, transporting, and using the fuels, as well as significant indirect effects on GHG emissions, such as changes in land use for some biofuels. The carbon intensity scores assessed for each fuel are compared to a declining CI benchmark for each year. Low carbon fuels below the benchmark generate credits, while fuels above the CI benchmark generate deficits. Credits and deficits are denominated in metric tons of GHG emissions. Providers of transportation fuels must demonstrate that the mix of fuels they supply for use in California meets the LCFS carbon intensity standards, or benchmarks, for each annual compliance period. A deficit generator meets its compliance obligation by ensuring that the amount of credits it earns or otherwise acquires from another party is equal to, or greater than, the deficits it has incurred.

California Building Energy Efficiency Standards (Title 24, Part 6)

The energy consumption of new residential and nonresidential buildings in California is regulated by the state's Title 24, Part 6, Building Energy Efficiency Standards (California Energy Code). The California Energy Code was established by CEC in 1978 in response to a legislative mandate to create uniform building codes to reduce California's energy consumption and provide energy efficiency standards for residential and nonresidential buildings. CEC updates the California Energy Code every 3 years with more stringent design requirements for reduced energy consumption, which results in the generation of fewer GHG emissions.

The 2019 California Energy Code was adopted by the CEC on May 9, 2018 and will apply to projects constructed after January 1, 2020. Nonresidential buildings are anticipated to reduce energy consumption by 30 percent compared to the 2016 standards primarily through prescriptive requirements for high-efficacy lighting. The building efficiency standards are enforced through the local plan check and building permit process. Local government agencies may adopt and enforce additional energy standards for new buildings as reasonably necessary in response to local climatologic, geologic, or topographic conditions, provided that these standards exceed those in the California Energy Code.

California Green Building Standards Code (Title 24, Part 11)

The California Green Building Standards Code (CALGreen) is part 11 of Title 24, California Code of Regulations. CALGreen is the first-in-the-nation mandatory green building standards code, developed in an effort to meet the goals of California's landmark initiative AB 32, which established a comprehensive program of cost-effective reductions of GHG emissions to 1990 levels by 2020. CALGreen includes a waste diversion mandate, which requires that at least 65 percent of construction materials generated during new construction or demolition projects are diverted from landfills.

Local

2030 Countywide General Plan

The Conservation and Open Space Element of the 2030 Countywide General Plan includes goals, policies and actions relating to energy production, usage and conservation with Yolo County. The Element includes the following policies pertaining to Energy that are relevant to the Project:

Goal CO-7: Energy Conservation. Promote energy efficiency and conservation.

Policy CO-7.1: Encourage conservation of natural gas, oil and electricity, and management of peak loads in existing land uses.

Policy CO-7.3: Require all projects to incorporate energy-conserving design, construction, and operation techniques and features into all aspects of the project including buildings, roofs, pavement, and landscaping.

Policy CO-7.9: Require that new site and structure designs maximize energy efficiency.

Goal CC-4: Project Design. Require project design that incorporates “smart growth” planning principles and “green” building standards that reflect the County’s commitment to sustainable development.

Policy CC-4.1: Reduce dependence upon fossil fuels, extracted underground metals, minerals and other non-renewable resources by:

- Requiring projects to take advantage of shade, prevailing winds, landscaping and sun screens to reduce energy use.
- Encouraging projects to use regenerative energy heating and cooling source alternatives to fossil fuels.
- Encouraging projects to select building materials that require less energy-intensive production methods and long-distance transport, in compliance with Leadership in Energy and Environmental Design (LEED) or equivalent standards.

Policy CC-4.4: Encourage all new construction to be zero net energy by combining building energy efficiency design features with on-site clean distributed generation so as to result in no net purchases from the electricity or gas grid.

Policy CC-4.7: Require energy efficient design for all buildings.

Policy CC-4.12: Require “green” design, construction and operation including:

- A. Site planning sensitive to the natural environment.
- B. Efficiency in resource use (including energy, water, raw materials and land).
- C. Building reuse and adaptive reuse.
- D. Selection of materials and products based on their life-cycle environmental impacts.
- E. Use of materials and products with recycled content.
- F. Use of materials provided from within the region.
- G. Recycling of construction and demolition waste.
- H. Reduction in the use of toxic and harmful substances in the manufacturing of materials and during construction.
- I. Use of passive and active solar strategies and efficient heating and cooling technologies.
- K. Reduction in water use for buildings and landscaping.
- L. Light pollution reduction to protect “dark skies.”
- M. Improvements to interior and exterior environments leading to increased health, comfort and productivity.
- N. Facility maintenance and operational practices that reduce or eliminate harmful effects on people and the natural environment during occupancy.
- O. Water reuse systems
- P. Other systems to capture energy sources that would otherwise be wasted.

Yolo County Climate Action Plan

Yolo County's Climate Action Plan (CAP) (adopted March 2011) is an implementation action of the Countywide 2030 General Plan. The CAP includes the following measures pertaining to Energy that are relevant to the Project:

Measure E-4: Increase On-Site Renewable Energy Generation to Reduce Demand for Grid Energy

Measure WR-1: Expand Landfill Methane Capture Systems

Supporting Measures for Solid Waste and Wastewater

- Reduce Waste Emissions from Organic Materials
- Reduce Disposal of Non-Organic Materials Through Increased Recycling
- Increase Construction and Demolition Waste Diversion Standards

Environmental Setting

Electricity and Natural Gas

Electricity service is provided to the Yolo County Central Landfill (YCCL) by Pacific Gas & Electric (PG&E). The YCCL has an existing landfill gas (LFG)-to energy facility south of WMUs 4 and 5, east of WMU 2 and west of the water storage and leachate disposal ponds. The LFG-to energy facility is owned by Yolo County and operated under contract by Ameresco, Inc. A PG&E gas line is directly next to the LFG-to energy facility and SMUD gas line runs past YCCL along County Road 29 just south of the landfill main entrance.

The LFG collection system routes the LFG-to energy facility where it is then burned in up to five internal combustion engines or a flare (permitted for five internal combustion engines but currently only four are installed). The facility currently has two Caterpillar G399, and two Caterpillar G3516 Internal Combustion engines installed. The four engines have a combined permitted capacity to burn up to 2,107 cubic feet per minute (CFM) of LFG and produce a maximum of 3,860 kW/hr. The flare is permitted to burn a maximum of 2,022 CFM, which is more than the landfill is currently producing. The electricity generated by LFG-to energy facility is sold to the Sacramento Municipal Utilities District (SMUD) under contract. When the engines cannot burn all of the gas, the excess is burned in the flare. (County of Yolo, 2018).

In 2019, statewide electricity generation was 200,475 gigawatt hours (GWh) of electric power (CEC, 2019) and statewide natural gas consumption totaled 2,217 trillion Btu (2,144 billion cubic feet) (U.S. EIA, 2019).

Petroleum Fuels

Petroleum fuels (diesel and gasoline) are currently consumed by the landfill operation by off-road equipment and on-road transportation sources such as waste hauling vehicles and employees. In 2018, California consumed approximately 681 million barrels (3,668 trillion Btu) of petroleum, with transportation sources consuming approximately 86 percent (U.S. EIA, 2018). In 2019,

California gasoline sales were approximately 38,534,000 gallons per day and diesel fuel sales were approximately 10,319,000 gallons per day (U.S. EIA, 2018).

3.6.2 IMPACTS AND MITIGATION MEASURES

Significance Criteria

For the purposes of the EIR, consistent with Appendix G of the *CEQA Guidelines*, impacts related to energy would be considered significant if the Project would:

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

Impact Analysis

Impact 3.6.1: Project construction or operation could result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources. (Less than Significant)

The Project would consume energy resources during temporary construction activities and long-term operations.

Construction

Construction activities are a temporary and one-time direct source of energy consumption. Construction activities would consume petroleum fuels (primarily diesel and gasoline) through the operation of heavy off-road equipment, trucks, and worker automobiles. Electricity could be used for lighting and other equipment such as air compressors, however the amount consumed would be minimal. Natural gas would not be consumed during construction activities.

Construction activities would occur intermittently over the next ten to twenty years as funding becomes available and equipment/technology manufacturers are selected. Construction of the Project would utilize fuel efficient equipment and trucks consistent with state regulations and would be consistent with state regulations intended to reduce the inefficient, wasteful, or unnecessary consumption of energy, such as anti-idling and emissions regulations. Furthermore, construction contractors are economically incentivized to employ energy efficient techniques and practices to reduce fuel use in order to lower overall construction costs.

For Project elements that are buildings, construction activities would comply with the California's Green Building Standards Code (CALGreen) waste diversion mandate, which requires that at least 65 percent of construction materials generated during new construction or demolition projects are diverted from landfills. In regard to this CALGreen requirement, Project construction would be very efficient because YCCL has an existing CDI recycling facility onsite where these materials would be sent, which would eliminate the need to export materials to an off-site facility, thus reducing fuel consumption. Project construction would also be energy efficient because it would not require the export of soil material resulting from grading and

excavation activities because these materials would be reused at YCCL for daily, intermediate and final cover material, which would also reduce fuel consumption.

Construction would result in the temporary consumption of energy resources in order to develop the Project that would increase waste diversion and efficiency and generate renewable energy (discussed further below). The consumption of energy resources during Project construction would not result in a wasteful, inefficient, or unnecessary consumption of energy resources. Therefore, Project construction would result in a less-than-significant impact.

Operation

Long-term energy consumption associated with the Project would include electricity, natural gas, and petroleum fuel consumption for operation of equipment and processes associated with individual Project elements. Operation of the new class 2 surface impoundment and storm water treatment system and discharge, would require a negligible amount of energy resources and are not discussed further. Many of the Project elements would operate to generate renewable energy and are discussed below.

Increased Daily Permitted Tonnage

To accommodate the increased daily permitted tonnage and the Project elements that require truck trips to export products generated from waste, YCCL proposes to increase its permitted vehicle limit to 1,305 waste hauling vehicles per day, which would result in an increase of 258 vehicles per day (or round trips). These waste hauling vehicles would mainly be importing additional liquid wastes and organics that would be used as feedstock at Project elements to generate renewable energy and exporting renewable energy products (i.e., hydrogen, methanol, pellets, fertilizer, etc.). These vehicles would consume petroleum fuels, primarily diesel, but would not result in a wasteful, inefficient, or unnecessary consumption of energy resources because they are necessary for operation of the Project elements discussed below.

Wood Pellet Facility

The proposed wood pellet facility would utilize biomass fuel (e.g., wood, woody fraction of green waste, compost overs) to create pellets as an energy source that could be sold. The facility would require electricity and petroleum fuel consumption for operation of stationary and mobile processing, material handling and storage equipment, as well as trucks for exporting finished pellets that are sold. The facility would not result in a wasteful, inefficient, or unnecessary consumption of energy resources because it would divert organic waste in accordance with state regulations and generate a renewable biomass fuel.

Large Scale Floating Solar PV System

The proposed Floating Solar Photovoltaic (PV) system would include a floating PV array on a large portion of the existing Water Storage Reservoir to address energy usage and demand on-site as well as selling electrical power off-site. The Floating Solar PV system would be part of a public-private partnership by the County to generate renewable energy locally. The floating PV panels would provide approximately 1 MW per 3 acres of Water Storage Reservoir area.

Therefore, the proposed Floating Solar PV system would not result in a wasteful, inefficient, or unnecessary consumption of energy resources.

Solar PV System on Closed Landfill Units

The proposed Solar PV System on closed landfill units would include ground mounted PV panels on closed landfill modules 1-5 to address energy usage and demand on-site as well as selling electrical power off-site. The Solar PV system would be part of a public-private partnership by the County to generate renewable energy locally. The ground mounted PV panels would provide approximately 1 MW per 2-3 acres of closed landfill unit area. Therefore, the proposed Solar PV system would not result in a wasteful, inefficient, or unnecessary consumption of energy resources.

Waste Gasification Facility

The proposed waste gasification facility would utilize waste as feedstock to produce hydrogen that would be sold and exported, or electricity that would be used onsite and sold when more electricity is produced than needed. The facility would require electricity and petroleum fuel consumption for operation of stationary and mobile processing, material handling and storage equipment, as well as trucks for exporting renewable hydrogen (if the facility is designed to generate hydrogen). The facility is estimated to require up to 3.5 MW of electricity but would produce approximately 11 tons per day of renewable hydrogen or 5 MW of electricity (if the facility is designed to generate electricity), which would assist the region in meeting renewable energy targets and requirements. In electrical terms, the energy density of hydrogen is equal to approximately 30.5 Megawatt hours (MWh) of usable energy per ton (ACT News, 2019). Assuming 330 days of hydrogen production per year, the facility would generate hydrogen equivalent to 110,715 MWh of usable electricity. In comparison, if the facility requires 3.5 MW of electricity for 24 hours per day over 330 days per year, it would consume approximately 27,720 MWh per year. Thus, the facility would result in a net energy benefit of approximately 83,000 MWh per year. Therefore, the proposed waste gasification facility would not result in a wasteful, inefficient, or unnecessary consumption of energy resources.

Expanded Biogas Utilization Options

The proposed expansion of biogas utilization options could include producing renewable compressed natural gas (RCNG) vehicle fuel or injecting RCNG into a pipeline. These processes would require electricity and petroleum fuels for cleaning and conditioning the biogas to meet the applicable fuel standards, but would produce a RCNG, which would assist the region in meeting renewable energy targets and requirements. Therefore, the proposed expanded biogas utilization options would not result in a wasteful, inefficient, or unnecessary consumption of energy resources.

Peaking Power Plant

The proposed peaking power plant would replace the existing LFG to Energy Facility. Stored LFG would be dispatched daily during peak hours to six 4.4 MW IC engines for electricity generation for sale, such as to the local Community Choice Aggregator (CCA), Valley Clean Energy. The new proposed engines would be more efficient than the older engines at the existing LFG to Energy Facility and would produce a greater amount of electricity. Therefore, the

proposed peaking power plant would not result in a wasteful, inefficient, or unnecessary consumption of energy resources.

Organic Waste Fertilizer Facility

The proposed organic waste fertilizer facility would utilize organic waste (compost, compost feedstock, liquid waste, and animal manures) and convert it into fertilizer. The facility would require electricity and petroleum fuel consumption for operation of stationary and mobile processing, material handling and storage equipment, as well as trucks for exporting finished fertilizer that is sold. The facility would not result in a wasteful, inefficient, or unnecessary consumption of energy resources because it would divert organic waste in accordance with state regulations and generate an organic fertilizer that provides energy benefits as commercial nitrogen fertilizers consume significant energy as feedstock.

Additional Groundwater Pumping (Possible Treatment and Discharge)

The proposed additional groundwater pumping and possible treatment and discharge is being analyzed because YCCL has naturally high groundwater, which creates a risk for groundwater contamination. The existing groundwater extraction system on site is not completely effective at lowering groundwater under several of the closed landfill units and the Central Valley Regional Water Quality Control Board (CVRWQCB) has directed the County to address the issue. The proposed groundwater pumping is estimated to consume between 900 to 3,000 kWh of electricity per million gallons (Water in the West, 2013). Since this Project element is being proposed to correct water quality issues at YCCL per the CVRWQCB's directive, it would not result in a wasteful, inefficient, or unnecessary consumption of energy resources.

Transfer Station

The proposed transfer station is being analyzed due to the increased soil needs and cost to develop new landfill modules as well as the associated air pollutant and GHG emissions. The facility would replace landfilling and soil borrow activities that require the consumption of petroleum fuels for mobile equipment and vehicles. Transfer stations ultimately result in the reduction of gross miles driven, fuel consumed, reduced traffic congestions on roadways, less road wear, less overall air emissions and improved waste system efficiency resulting in lower overall collection costs (Solid Waste Authority of Palm Beach County, 2013) Therefore, the proposed transfer station would not result in a wasteful, inefficient, or unnecessary consumption of energy resources.

Non-Specific Future Off-Site Borrow Area

The proposed non-specific future off-site borrow area would replace the existing borrow area, thus it is not expected to result in a wasteful, inefficient, or unnecessary consumption of energy resources. While the consumption of energy resources could increase dependent upon the property selected in the future, the County is incentivized to choose a location as close to the YCCL as possible to reduce operational costs. Furthermore, soil is imperative to the operation of the YCCL for daily, intermediate, and final cover material as well as for developing future landfill modules. Therefore, the non-specific future off-site borrow area would not result in a wasteful, inefficient, or unnecessary consumption of energy resources.

Thermal Pressure Hydrolysis System

The proposed thermal pressure hydrolysis (TPH) system would increase biogas production from anaerobic digestion of waste. The facility would require electricity and petroleum fuel consumption for operation of stationary and mobile processing, material handling and storage equipment. The facility would also require natural gas or heat recovered from adjacent facilities for operating a boiler. The facility is estimated to consume approximately 150,000 kWh of electricity annually, but would increase biogas production used by other Project elements to create renewable energy, which would assist the region in meeting renewable energy targets and requirements. Furthermore, the facility could be powered by the renewable electricity generated by other Project elements (i.e., large scale floating PV system, waste gasification facility, and peaking power plant). Therefore, the proposed TPH system would not result in a wasteful, inefficient, or unnecessary consumption of energy resources.

Biogas to Methanol Pilot Facility

The proposed biogas to methanol pilot facility would utilize LFG and digester gas from YCCL that is currently being flared, as well as City of Davis Wastewater Treatment Plant (WWTP) digester gas (adjacent to YCCL), as feedstock to produce 1,500 gallons per day of methanol and 300 gallons per day of ethanol. The facility would require approximately 300 kW of electricity to operate but would result in a significant reduction in flaring emissions at YCCL and would produce renewable methanol that can be converted into electricity and/or low carbon transportation fuels. Therefore, the proposed biogas to methanol pilot facility would not result in a wasteful, inefficient, or unnecessary consumption of energy resources.

Conclusion

While the Project would consume energy resources during construction and operation, the consumption of such resources would not result in a wasteful, inefficient, or unnecessary consumption of energy resources because the Project would increase waste diversion and efficiency, generate significant renewable energy resources, and landfilling would not be able to continue in the future without a non-specific future off-site borrow area. Therefore, the Project would result in a less-than-significant impact.

Mitigation Measures

None required.

Impact 3.6.2: The Project could conflict with or obstruct a state or local plan for renewable energy or energy efficiency. (Less than Significant)

The Project would increase waste diversion and efficiency, and generate significant renewable energy resources. Through the generation of renewable energy resources (electricity and fuels), the Project would support several state plans, programs and regulations such as SB 100, which increased the RPS to 60 percent by 2030 and requires all the state's electricity to come from carbon-free resources by 2045, and the LCFS which requires carbon intensity benchmarks

through 2030 in-line with the State's 2030 GHG emission reduction target enacted through SB 32. Furthermore, the Project would not conflict with 2030 Countywide General Plan goals and policies related to energy and would support Yolo County CAP measures related to CCA programs, on-site renewable energy generation, and landfill methane capture systems. Therefore, the Project would result in a less-than-significant impact.

Mitigation Measures

None required.

3.6.3 REFERENCES

- ACT News. 2019. Run on Less with Hydrogen Fuel Cells. September 25, 2019.
- California Energy Commission (CEC). 2020. *Final 2019 Integrated Energy Policy Report*. February 2020.
- California Energy Commission (CEC). 2019. *Electric Generation Capacity and Energy*. <https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/electric-generation-capacity-and-energy>. Accessed on February 7, 2021.
- California Air Resources Board (CARB). 2020. *California Greenhouse Gas Emissions for 2000 to 2018*. 2020.
- County of Yolo, 2018. Joint Technical Document, *Yolo County Central Landfill, Yolo County, California*. June 2018.
- California Air Resources Board (CARB). 2017. *California's 2017 Climate Change Scoping Plan*. November 2017.
- County of Yolo. 2009. *2030 Countywide General Plan, Conservation and Open Space Element*. November 10, 2009.
- County of Yolo. 2011. *Climate Action Plan*. March 15, 2011.
- Solid Waste Authority of Palm Beach County. 2013. Solid Waste Authority Transfer Station Overview. August 27, 2013. <https://swa.org/DocumentCenter/View/383/Transfer-Station-Overview-PDF?bidId=>. Accessed on May 3, 2021.
- U.S. Energy Information Administration (U.S. EIA). 2019. *Table F18: Natural Gas Consumption Estimates, 2019*. https://www.eia.gov/state/seds/data.php?incfile=/state/seds/sep_fuel/html/fuel_use_ng.html&sid=US&sid=CA. Accessed on February 7, 2021.
- U.S. Energy Information Administration (U.S. EIA). 2018. *Profile Data, Consumption & Expenditures*. <https://www.eia.gov/state/data.php?sid=CA#ConsumptionExpenditures>. Accessed on February 7, 2021.
- Water in the West. 2013. *Water and Energy Nexus: A Literature Review*. August 2013.

This page intentionally left blank

3.7 GREENHOUSE GAS EMISSIONS

This section describes the greenhouse gas (GHG) emissions setting and evaluates potential GHG emissions impacts. This section was prepared pursuant to California Environmental Quality Act (*CEQA*) *Guidelines* Section 15064.4 and *CEQA Guidelines* Appendix G, which requires a lead agency to make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of GHG emissions resulting from a project.

GHG emissions would be generated during Project operations from the consumption of electricity, natural gas and petroleum fuels, as well as landfill gas (LFG) and biogas. GHG emissions would also be temporarily generated by construction equipment and vehicles required for construction of Project elements.

3.7.1 SETTING

Environmental Setting

Global Climate Change

Climate is defined as the average statistics of weather, which include temperature, precipitation, and seasonal patterns such as storms and wind, in a particular region. Global climate change refers to the long term and irrevocable shift in these weather-related patterns. Using ice cores and geological records, baseline temperature and carbon dioxide (CO₂) data extends back to previous ice ages thousands of years ago. Over the last 10,000 years, the rate of temperature change has typically been incremental, with warming and cooling occurring over the course of thousands of years. However, scientists have observed an unprecedented increase in the rate of warming over the past 150 years, roughly coinciding with the global industrial revolution, which has resulted in substantial increases in GHG emissions into the atmosphere. The anticipated impacts of climate change in California range from water shortages to inundation from sea level rise. Transportation systems contribute to climate change primarily through the emissions of certain GHGs (CO₂, methane (CH₄), and nitrous oxide (N₂O)) from nonrenewable energy (primarily gasoline and diesel fuels) used to operate passenger, commercial and transit vehicles. Land use changes contribute to climate change through construction and operational use of electricity and natural gas, and waste production.

The Intergovernmental Panel on Climate Change (IPCC) has reached consensus that human-caused emissions of GHGs in excess of natural ambient concentrations are responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. It is "extremely likely" that more than half of the observed increases in global average surface temperature from 1951 to 2010 were caused by the anthropogenic increase in GHG concentrations and other anthropogenic forces together. The IPCC predicts that the global mean surface temperature increase by the end of the 21st century (2081–2100) relative to 1986–2005, could range from 0.5 to 8.7 degrees Fahrenheit. Additionally, the IPCC projects that global mean sea level rise will continue during

the 21st century, very likely at a faster rate than observed from 1971 to 2010. For the period 2081–2100 relative to 1986–2005, the rise will likely range from 10 to 32 inches (IPCC, 2013).

Greenhouse Gases

Gases that trap heat in the atmosphere are referred to as GHGs because they capture heat radiated from the sun as it is reflected back into the atmosphere, much like a greenhouse does. The accumulation of GHGs has been implicated as the driving force for global climate change. The six primary GHGs are:

- carbon dioxide (CO₂), emitted when solid waste, fossil fuels (oil, natural gas, and coal), and wood and wood products are burned;
- methane (CH₄), produced through the anaerobic decomposition of waste in landfills, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, incomplete fossil fuel combustion, and water and wastewater treatment;
- nitrous oxide (N₂O), typically generated as a result of soil cultivation practices, particularly the use of commercial and organic fertilizers, fossil fuel combustion, nitric acid production, and biomass burning;
- hydrofluorocarbons (HFCs), primarily used as refrigerants;
- perfluorocarbons (PFCs), originally introduced as alternatives to ozone depleting substances and typically emitted as by-products of industrial and manufacturing processes; and
- sulfur hexafluoride (SF₆), primarily used in electrical transmission and distribution.

Although there are other contributors to global climate change, these six GHGs are identified by the U.S. Environmental Protection Agency (U.S. EPA) as threatening the public health and welfare of current and future generations. GHGs have varying potential to trap heat in the atmosphere, known as global warming potential (GWP), and atmospheric lifetimes. GWP reflects how long GHGs remain in the atmosphere, on average, and how intensely they absorb energy. Gases with a higher GWP absorb more energy per pound than gases with a lower GWP, and thus contribute more to warming Earth. For example, one ton of CH₄ has the same contribution to the greenhouse effect as approximately 28 tons of CO₂; hence, CH₄ has a 100-year GWP of 28 while CO₂ has a GWP of 1. GWP ranges from 1 (for CO₂) to 23,500 (for SF₆).

In emissions inventories, GHG emissions are typically reported in terms of pounds or metric tons of CO₂ equivalents (CO₂e). CO₂e are calculated as the product of the mass emitted of a given GHG and its specific GWP. While CH₄ and N₂O have much higher GWP than CO₂, CO₂ is emitted in such vastly higher quantities that it accounts for the majority of GHG emissions in CO₂e.

Regional GHG Emissions Estimates

In 2019, the United States emitted about 6,577 million metric tons of CO₂. Emissions increased from 2018 to 2019 by 1.7 percent. GHG emissions in 2019 (after accounting for sequestration

from the land sector) were 12.9 percent below 2005 levels. This decrease was largely driven by a decrease in emissions from fossil fuel combustion, which was a result of decreased total energy use and reflects a continued shift from coal to less carbon intensive natural gas and renewables (U.S. EPA, 2021).

In 2018, California emitted approximately 425 million metric tons of CO₂e, about one million metric tons of CO₂e higher than 2017 levels and six million metric tons of CO₂e below the 2020 GHG Limit of 431 million metric tons of CO₂e established by Assembly Bill (AB) 32. Consistent with recent years, these reductions have occurred while California's economy has continued to grow and generate jobs. In 2018, California's gross domestic product (GDP) grew 4.3 percent while the emissions per GDP declined by 0.4 percent compared to 2017. The transportation sector remains the largest source of GHG emissions (40 percent) in the state, but transportation emissions decreased in 2018 compared to 2017, which is the first year over year decrease since 2013. The electricity sector and industrial sector account for 15 percent and 21 percent of California's GHG emissions, respectively. The residential/commercial sector and the agricultural sector account for 10 percent and eight percent of California's GHG emissions, respectively. High GWP gases (refrigerants), recycling/waste, and other emissions make up the final seven percent of California's GHG emissions (CARB, 2020).

In 2016, overall community-wide GHG emissions for unincorporated Yolo County was 1,082,801 metric tons of CO₂e. The largest proportion of GHG emissions in the County in 2016 came from the On-Road Transportation sector, followed by agriculture, energy consumption, off-road transportation, solid waste and wastewater treatment. The total GHG emissions for 2016 indicates a decrease of 96,052 metric tons of CO₂e or an approximately 8 percent decrease from the adjusted 2008 inventory. GHG reductions, compared to the 2008 inventory, occurred in the energy consumption, on-road transportation, agriculture, and wastewater treatment sectors. Solid waste and off-road transportation sectors experienced small increases in GHG emissions compared to 2008. Solid waste GHG emissions accounted for approximately 4.5 percent of the County's GHG emissions in 2016 (Ascent Environmental, 2018).

Regulatory Setting

Federal

The U.S. Supreme Court in *Massachusetts et al. v. Environmental Protection Agency et al.* ([2007] 549 U.S. 05-1120) held that the U.S. EPA has the authority to regulate motor-vehicle GHG emissions under the federal Clean Air Act. The U.S. EPA issued a Final Rule for mandatory reporting of GHG emissions in October 2009. This Final Rule applies to fossil fuel suppliers, industrial gas suppliers, direct GHG emitters, and manufacturers of heavy-duty and off-road vehicles and vehicle engines and requires annual reporting of emissions. In 2012, the U.S. EPA issued a Final Rule that establishes the GHG permitting thresholds that determine when Clean Air Act permits under the New Source Review Prevention of Significant Deterioration (PSD) and Title V Operating Permit programs are required for new and existing industrial facilities.

In 2014, the U.S. Supreme Court in *Utility Air Regulatory Group v. EPA* (134 S. Ct. 2427 [2014]) held that the U.S. EPA may not treat GHGs as an air pollutant for purposes of determining whether

a source is a major source required to obtain a PSD or Title V permit. The Court also held that PSD permits that are otherwise required (based on emissions of other pollutants) may continue to require limitations on GHG emissions based on the application of Best Available Control Technology (BACT).

Emissions Guidelines and Compliance Times for Municipal Solid Waste Landfills

The U.S. EPA published these guidelines to reduce both methane and non-methane organic compound (NMOC) emissions from existing municipal solid waste (MSW) landfills (81 Fed. Reg. 59275 [Aug. 29, 2019]). The guidelines apply to “existing” MSW landfills that commenced construction, modification, or reconstruction before July 17, 2014, and that have accepted waste at any time since November 8, 1987 or have additional capacity for future waste acceptance. The guidelines require the installation of a landfill gas collection and control system at larger MSW landfills that exceed a specified design capacity and NMOC emission threshold. The guidelines require that each state submit a plan to EPA that identifies how the state intends to meet the federal requirements contained in the guidelines. Further information regarding California’s State Plan to implement the guidelines is presented below. It was developed by the California Air Resources Board (CARB) with the assistance of the air quality management and air pollution control districts and others working together as an ad hoc Landfill 111(d) Workgroup.

Greenhouse Gas Emissions and Fuel Efficiency

In September 2011, U.S. EPA, in coordination with the National Highway Traffic Safety Administration (NHTSA), adopted fuel consumption and CO₂ emission standards to reduce GHG emissions of heavy-duty vehicles. These Phase 1 federal standards apply to model year 2014 and newer heavy-duty trucks, tractors, pick-up trucks, vans, and vocational vehicles. The category of specialized vocational vehicles includes delivery trucks, emergency vehicles, and refuse trucks such as the “packer” garbage collection trucks used to transport solid waste to transfer stations and landfills. The Phase 1 regulations do not include standards regarding the trailers pulled by these vehicles for improving aerodynamics and fuel efficiency.

In 2016, working together with NHTSA and CARB, U.S. EPA implemented the next phase of federal GHG emissions and fuel-efficiency standards for medium- and heavy-duty vehicles and associated trailers. These federal Phase 2 standards build on the improvements in engine and vehicle efficiency required by the Phase 1 emission standards and aim to achieve further GHG reductions for 2018 and later model year heavy-duty vehicles. The progressively more stringent federal Phase 2 standards are more technology-driven than the Phase 1 standards, in that they require manufacturers to improve existing technologies or develop new technologies for heavy-duty trucks, tractors, and vocational vehicles to achieve the stricter standards. The Phase 2 federal standards were jointly adopted by the U.S. EPA and NHTSA on October 25, 2016. California subsequently enacted its own Phase 2 standards for GHG emissions, which are discussed in further detail below.

State

Assembly Bill 1493

Assembly Bill (AB) 1493 (2002), California’s Advanced Clean Cars program (referred to as “Pavley”), requires CARB to develop and adopt regulations to achieve “the maximum feasible and cost-effective reduction of GHG emissions from motor vehicles.” On June 30, 2009, the U.S. EPA granted the waiver of Clean Air Act preemption to California for its GHG emission standards for motor vehicles beginning with the 2009 model year. Pavley I regulates model years from 2009 to 2016 and Pavley II, which is now referred to as “LEV (Low Emission Vehicle) III GHG” regulates model years from 2017 to 2025. The Advanced Clean Cars program coordinates the goals of the Low Emissions Vehicles (LEV), Zero Emissions Vehicles (ZEV), and Clean Fuels Outlet programs, and would provide major reductions in GHG emissions.

Executive Order S-3-05

Governor Schwarzenegger established Executive Order S-3-05 in 2005, in recognition of California’s vulnerability to the effects of climate change. Executive Order S-3-05 set forth a series of target dates by which statewide emissions of GHG would be progressively reduced, as follows:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

The executive order directed the Secretary of the California EPA (CalEPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. The Secretary will also submit biannual reports to the governor and California Legislature describing the progress made toward the emissions targets, the impacts of global climate change on California’s resources, and mitigation and adaptation plans to combat these impacts. To comply with the executive order, the secretary of CalEPA created the California Climate Action Team, made up of members from various state agencies and commissions. The team released its first report in March 2006. The report proposed to achieve the targets by building on the voluntary actions of California businesses, local governments, and communities and through state incentive and regulatory programs.

Assembly Bill 32 (California Global Warming Solutions Act of 2006)

California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500 - 38599). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions. AB 32 required that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction is accomplished by enforcing a statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs CARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating

that if the AB 1493 regulations cannot be implemented, then CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires CARB to adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrived at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the state reduces GHG emissions enough to meet the cap. AB 32 also includes guidance on instituting emissions reductions in an economically efficient manner, along with conditions to ensure that businesses and consumers are not unfairly affected by the reductions. Using these criteria to reduce statewide GHG emissions to 1990 levels by 2020 would represent an approximate 25 to 30 percent reduction in current emissions levels. However, CARB has discretionary authority to seek greater reductions in more significant and growing GHG sectors, such as transportation, as compared to other sectors that are not anticipated to significantly increase emissions. Under AB 32, CARB must adopt regulations to achieve reductions in GHG to meet the 1990 emissions cap by 2020.

Climate Change Scoping Plan

AB 32 required CARB to develop a Scoping Plan that describes the approach California will take to reduce GHG to achieve the goal of reducing emissions to 1990 levels by 2020. The Scoping Plan was first approved by CARB in 2008 and must be updated every five years. The initial AB 32 Scoping Plan contains the main strategies California will use to reduce the GHG that cause climate change. The initial Scoping Plan has a range of GHG reduction actions which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms such as a cap-and-trade system, and an AB 32 program implementation fee regulation to fund the program. In August 2011, the initial Scoping Plan was approved by CARB.

The 2013 Scoping Plan Update builds upon the initial Scoping Plan with new strategies and recommendations. The 2013 Update identifies opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon investments. The 2013 Update defines CARB climate change priorities for the next five years and sets the groundwork to reach California's long-term climate goals set forth in Executive Orders S-3-05 and B-16-2012. The 2013 Update highlights California progress toward meeting the near-term 2020 GHG emission reduction goals defined in the initial Scoping Plan. In the 2013 Update, nine key focus areas were identified (energy, transportation, agriculture, water, waste management, and natural and working lands), along with short-lived climate pollutants, green buildings, and the cap-and-trade program. On May 22, 2014, the First Update to the Climate Change Scoping Plan was approved by the Board, along with the finalized environmental documents. On November 30, 2017, the Second Update to the Climate Change Scoping Plan was approved by the CARB.

CARB's 2017 Scoping Plan acknowledges that greater waste diversion from landfills as a key measure for achieving statewide GHG emission targets. The 2017 Scoping Plan indicates that the recycling and waste sector generated two percent of the State's GHG emissions in 2015. The 2017 Scoping Plan goals for the recycling and waste sector are the following:

- Take full ownership of the waste generated in California.

- View waste as a resource and convert waste from all sectors to beneficial use.
- Develop a sustainable, low carbon waste management system that processes collected waste within California and generates jobs, especially in disadvantaged communities.
- Maximize recycling and diversion from landfills.
- Reduce direct emissions from composting and digestion operations through improved technologies.
- Build the infrastructure needed to support a sustainable, low carbon waste management system within California.
- Increase organics markets which complement and support other sectors.
- Capture edible food before it enters the waste stream and provide to people in need.
- Increase production of renewable transportation fuels from anaerobic digestion of waste.
- Recognize the co-benefits of compost application.

The 2017 Scoping Plan also includes potential additional or supporting actions that have the potential to reduce GHG emissions from the recycling and waste sector. The following are relevant to the Project:

- Increasing organics diversion from landfills, building on established mandates (AB 341's 75 percent by 2020 solid waste diversion goal, AB 1594, AB 1826, AB 876) and new short-lived climate pollutant targets for 2025 (SB 605, SB 1383) to be accomplished via prevention (including food rescue), recycling, composting/digestion, and biomass options.
- Addressing challenges and issues associated with significant expansion and construction of organics and recycling infrastructure in California that is needed to achieve recycling and diversion goals. Challenges and issues include permitting, grid/pipeline connection, funding, local siting, markets, and research.
- Providing incentives for expanded and new facilities to handle organics and recyclables to meet 2020 and 2030 goals
- Supporting existing and new clean technologies and markets for excess woody biomass from urban areas, forests, and agriculture.
- Supporting the development of transportation fuel production at digestion facilities to generate renewable transportation fuels.
- Resolving issues of pipeline injection and grid connection to make renewable energy projects competitive.

Low Carbon Fuel Standard

Under the Climate Change Scoping Plan, the CARB identified the low carbon fuel standard (LCFS) as one of the nine discrete early action measures to reduce California's GHG emissions.

The LCFS is designed to decrease the carbon intensity of California's transportation fuel pool and provide an increasing range of low-carbon and renewable alternatives, which reduce petroleum dependency and achieve air quality benefits.

In 2018, the CARB approved amendments to the regulation, which included strengthening and smoothing the carbon intensity benchmarks through 2030 in-line with California's 2030 GHG emission reduction target enacted through SB 32, adding new crediting opportunities to promote zero emission vehicle adoption, alternative jet fuel, carbon capture and sequestration, and advanced technologies to achieve deep decarbonization in the transportation sector.

The LCFS standards are expressed in terms of the "carbon intensity" (CI) of gasoline and diesel fuel and their respective substitutes. The program is based on the principle that each fuel has "life cycle" GHG emissions and the life cycle assessment examines the GHG emissions associated with the production, transportation, and use of a given fuel. The life cycle assessment includes direct emissions associated with producing, transporting, and using the fuels, as well as significant indirect effects on GHG emissions, such as changes in land use for some biofuels. The carbon intensity scores assessed for each fuel are compared to a declining CI benchmark for each year. Low carbon fuels below the benchmark generate credits, while fuels above the CI benchmark generate deficits. Credits and deficits are denominated in metric tons of GHG emissions. Providers of transportation fuels must demonstrate that the mix of fuels they supply for use in California meets the LCFS carbon intensity standards, or benchmarks, for each annual compliance period. A deficit generator meets its compliance obligation by ensuring that the credits it earns or otherwise acquires from another party is equal to, or greater than, the deficits it has incurred.

Senate Bill 97

Senate Bill (SB) 97, signed in August 2007, acknowledges that climate change is an environmental issue that requires analysis in California Environmental Quality Act (CEQA) documents. In March 2010, the California Resources Agency (Resources Agency) adopted amendments to the State *CEQA Guidelines* for the feasible mitigation of GHG emissions or the effects of GHG emissions. The adopted guidelines give lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHG and climate change impacts.

Senate Bill 375

SB 375, signed in August 2008, enhances the state's ability to reach AB 32 goals by directing CARB to develop regional GHG emission reduction targets to be achieved from passenger vehicles by 2020 and 2035. In addition, SB 375 directs each of the state's 18 major Metropolitan Planning Organizations (MPOs) to prepare a "sustainable communities strategy" (SCS) that contains a growth strategy to meet these emission targets for inclusion in the Regional Transportation Plan (RTP). On March 22, 2018, CARB adopted updated regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035.

Executive Order No. B-30-15

On April 29, 2015, Executive Order No. B-30-15 was issued to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. Executive Order No. B-30-15 sets a

new, interim, 2030 reduction goal intended to provide a smooth transition to the existing ultimate 2050 reduction goal set by Executive Order No. S-3-05 (signed by Governor Schwarzenegger in June 2005). It is designed so State agencies do not fall behind the pace of reductions necessary to reach the existing 2050 reduction goal. Executive Order No. B-30-15 orders “All State agencies with jurisdiction over sources of GHG emissions shall implement measures, pursuant to statutory authority, to achieve reductions of GHG emissions to meet the 2030 and 2050 targets.” The Executive Order also states that “CARB shall update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent.”

Senate Bill 32

On September 8, 2016, the governor signed Senate Bill 32 (SB 32) into law, extending AB 32 by requiring the State to further reduce GHGs to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged). On December 14, 2017, CARB adopted the 2017 Scoping Plan, which provides a framework for achieving the 2030 target. The 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program, as well as implementation of recently adopted policies and policies, such as SB 350 and SB 1383 (see below). The 2017 Scoping Plan also puts an increased emphasis on innovation, adoption of existing technology, and strategic investment to support its strategies. As with the 2013 Scoping Plan Update, the 2017 Scoping Plan does not provide project-level thresholds for land use development. Instead, it recommends that local governments adopt policies and locally-appropriate quantitative thresholds consistent with a statewide per capita goal of 6 metric tons of CO₂e by 2030 and 2 metric tons of CO₂e by 2050. As stated in the 2017 Scoping Plan, these goals may be appropriate for plan-level analyses (city, county, subregional, or regional level), but not for specific individual projects because they include all emissions sectors in the state.

Senate Bill 100

Adopted on September 10, 2018, SB 100 supports the reduction of GHG emissions from the electricity sector by accelerating the state’s Renewables Portfolio Standard Program, which was last updated by SB X 1-2 in 2011. SB 100 requires electricity providers to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045.

Executive Order B-55-18

On September 10, 2018, the governor issued Executive Order B-55-18, which established a new statewide goal of achieving carbon neutrality by 2045 and maintaining net negative emissions thereafter. This goal is in addition to the existing statewide GHG reduction targets established by SB 375, SB 32, SB 1383, and SB 100.

California Environmental Quality Act

Pursuant to the requirements of SB 97, the Resources Agency has adopted amendments to the *CEQA Guidelines* for the feasible mitigation of GHG emissions or the effects of GHG emissions. The adopted *CEQA Guidelines* provide general regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents, while giving lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHGs and climate

change impacts. To date, a variety of air districts have adopted quantitative significance thresholds for GHGs.

Landfill Methane Control Measures

The capture and control of methane from landfills was part of discrete early action measure in CARB's first Scoping Plan. CARB approved the Landfill Methane Control Measure in June 2010, with updates as recent as April 2017. This regulation reduces emissions of methane from municipal solid waste landfills in response to AB 32. The regulation requires owners and operators of municipal solid waste landfills to install gas collection and control systems and requires existing and newly installed gas and control systems to operate in an optimal manner. The regulation is overseen by CARB, with enforcement authority granted to local air districts through a memorandum of understanding (MOU).

In May 2017, CARB adopted the California State Plan for Municipal Solid Waste Landfills to implement the federal reporting and emissions compliance requirements of U.S. EPA's Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills (summarized above). The plan includes emission standards and compliance target dates, procedures used for determining compliance with the emissions standards, legally enforceable increments of progress towards compliance, source and emission inventories of designated facilities, and provisions for annual emission reporting and progress reports, and a description of public participation in implementation. Throughout the plan, CARB developed MOUs between CARB and air districts across the state regarding implementation and enforcement of regulation to reduce methane emissions from municipal solid waste landfills.

Assembly Bill 341

In 2011, the legislature established a 75 percent statewide solid waste recycling rate goal by 2020 with its passage of AB 341 (Chesbro, Chapter 476, Statutes of 2011). AB 341 directed CalRecycle to develop a strategy to achieve this 75 percent recycling goal. In response, CalRecycle developed the 75 Percent Strategy which includes five strategies and three additional focus areas for its pursuit to achieve the recycling goal. Strategies include moving organics out of the landfill; expanding the recycling/manufacturing infrastructure; exploring new models for state and local funding of materials management program; promoting state procurement of postconsumer recycle content products; and promoting extended producer responsibility. CalRecycle has provided updates to this strategy along with supporting documentation as recently as 2017, which tracks progress towards this goal and summarizes co-benefits from implementation of the 75 Percent Strategy.

Assembly Bill 1826

In October 2014, the governor signed AB 1826 (Chesbro Chapter 727, Statues of 2014), requiring local jurisdictions to implement an organic waste recycling program to divert organic waste generated by businesses. The law phases in the mandatory recycling of commercial organics over time. In 2020, CalRecycle is mandated to conduct a formal review of all jurisdictions to determine the total statewide disposal of organic waste. If CalRecycle finds that the statewide disposal of

organic waste has not been reduced by 50 percent of the disposal level in 2014, the requirements of this law will expand, and certain exemptions may be removed.

Senate Bill 1383

Adopted in September 2016, SB 1383 requires CARB to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants. The bill requires the strategy to achieve the following reduction targets by 2030:

- Methane – 40 percent below 2013 levels
- Hydrofluorocarbons – 40 percent below 2013 levels
- Anthropogenic black carbon – 50 percent below 2013 levels

SB 1383 also requires the California Department of Resources Recycling and Recovery (CalRecycle), in consultation with the state board, to adopt regulations that achieve specified targets for reducing organic waste in landfills.

California Phase 2 Standards Medium- and Heavy-Duty Engines and Vehicles

After U.S. EPA enacted its Phase 2 Standards for medium- and heavy-duty engines, as discussed in the federal regulatory setting above, California enacted its own Phase 2 standards for GHG emissions that align closely with the federal Phase 2 standards except for minor differences. California's Phase 2 standards were officially approved by CARB in February 2018, with the California Office of Administrative Law giving its final approval in February 2019. The California Phase 2 standards became effective April 1, 2019. Reductions in GHGs from California's Phase 2 standards are recognized in CARB's 2017 Scoping Plan

Local

2030 Countywide General Plan

The Conservation and Open Space Element of the 2030 Countywide General Plan includes goals, policies and actions related to climate change. The Element includes the following goal and policy pertaining to climate change that is relevant to the Project:

Goal CO-7: Energy Conservation. Promote energy efficiency and conservation.

Policy CO-7.1: Encourage conservation of natural gas, oil and electricity, and management of peak loads in existing land uses.

Policy CO-7.3: Require all projects to incorporate energy-conserving design, construction, and operation techniques and features into all aspects of the project including buildings, roofs, pavement, and landscaping.

Policy CO-7.9: Require that new site and structure designs maximize energy efficiency.

Goal CO-8: Climate Change. Reduce GHG emissions and plan for adaptation to future consequences of global climate change.

Policy CO-8.2: Use the development review process to achieve measurable reductions in greenhouse gas emissions.

Goal CC-4: Project Design. Require project design that incorporates “smart growth” planning principles and “green” building standards that reflect the County’s commitment to sustainable development.

Policy CC-4.1: Reduce dependence upon fossil fuels, extracted underground metals, minerals and other non-renewable resources by:

- Requiring projects to take advantage of shade, prevailing winds, landscaping and sun screens to reduce energy use.
- Encouraging projects to use regenerative energy heating and cooling source alternatives to fossil fuels.
- Encouraging projects to select building materials that require less energy-intensive production methods and long-distance transport, in compliance with Leadership in Energy and Environmental Design (LEED) or equivalent standards.

Policy CC-4.4: Encourage all new construction to be zero net energy by combining building energy efficiency design features with on-site clean distributed generation so as to result in no net purchases from the electricity or gas grid.

Policy CC-4.7: Require energy efficient design for all buildings.

Policy CC-4.12: Require “green” design, construction and operation including:

- A. Site planning sensitive to the natural environment.
- B. Efficiency in resource use (including energy, water, raw materials and land).
- C. Building reuse and adaptive reuse.
- D. Selection of materials and products based on their life-cycle environmental impacts.
- E. Use of materials and products with recycled content.
- F. Use of materials provided from within the region.
- G. Recycling of construction and demolition waste.
- H. Reduction in the use of toxic and harmful substances in the manufacturing of materials and during construction.
- I. Use of passive and active solar strategies and efficient heating and cooling technologies.
- K. Reduction in water use for buildings and landscaping.
- L. Light pollution reduction to protect “dark skies.”
- M. Improvements to interior and exterior environments leading to increased health, comfort and productivity.
- N. Facility maintenance and operational practices that reduce or eliminate harmful effects on people and the natural environment during occupancy.
- O. Water reuse systems

P. Other systems to capture energy sources that would otherwise be wasted.

Goal PF-9: Solid Waste and Recycling. Provide safe, cost-efficient, and environmentally responsible solid waste management.

Policy PF-9.1: Meet or exceed State waste diversion requirements.

Policy PF-9.5: Promote technologies, including biomass or biofuels, which allow the use of solid waste as an alternative energy source.

Policy PF-9.8: Require salvage, reuse or recycling of construction and demolition materials and debris at all construction sites.

Policy PF-9.11: Expand opportunities for energy and/or fuel production resulting from the solid waste disposal process.

Action PF-A54: Partner with the private sector to operate waste-related diversion, recycling facilities, LFG and energy production facilities or provide other landfill-related commodities and services at the landfill, or to agriculture-related facilities located on surrounding properties, whenever practicable. Evaluate potential for salvage of materials from the County landfill, or other closed landfill facilities, for sale as a future revenue source. (Policy PF-9.3)

Action PF-A55: Research technological strategies and implement the cost-effective strategies to reclaim and reuse capacity of the landfill facility. (Policy PF-9.2, Policy PF-9.3, Policy PF-9.4)

Yolo County Climate Action Plan

Yolo County's Climate Action Plan (CAP) (adopted March 2011) is an implementation action of the Countywide 2030 General Plan. The CAP includes the following measures pertaining to Energy that are relevant to the Project:

Measure A-1: Reduce Nitrogen Fertilizer Application Rates

Measure E-1: Pursue a Community Choice Aggregation Program

Measure E-4: Increase On-Site Renewable Energy Generation to Reduce Demand for Grid Energy

Measure WR-1: Expand Landfill Methane Capture Systems

Supporting Measures for Solid Waste and Wastewater

- Reduce Waste Emissions from Organic Materials
- Reduce Disposal of Non-Organic Materials Through Increased Recycling
- Increase Construction and Demolition Waste Diversion Standards

3.7.2 IMPACTS AND MITIGATION MEASURES

Significance Criteria

Because the issue of global climate change is inherently a cumulative issue, the contribution of Project-related GHG emissions to climate change is addressed as a cumulative impact.

CEQA Guidelines Section 15064 and Appendix G recommend that a lead agency consider a project's consistency with relevant, adopted plans, and discuss any inconsistencies with applicable regional plans, including plans to reduce GHG emissions.

For the purposes of the EIR, consistent with Appendix G of the *CEQA Guidelines*, GHG emissions generated by the Project could have a cumulatively considerable contribution to global climate change if the Project would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

Some counties, cities, and air districts have developed guidance and thresholds for determining the significance of GHG emissions that occur within their jurisdiction. Yolo County is the CEQA lead agency for the Project and is, therefore, responsible for determining whether GHG emissions with the Project would have a cumulatively considerable contribution to climate change.

Yolo County and the YSAQMD have not adopted thresholds or approaches for evaluating a Project's GHG emissions. CARB has suggested that "lead agencies have the discretion to develop evidence-based numeric thresholds consistent with the 2017 Scoping Plan, the State's long-term GHG goals, and climate change science" (CARB, 2017). Yolo County has developed a CAP which sets GHG reduction targets consistent with state GHG reduction policies for the year 2020. However, the County has not established quantitative thresholds applicable to a project-specific analysis. The County's CAP includes numerous measures and actions that would help reduce countywide emissions to meet the identified 2020 target, which is aligned with the 2020 statewide target mandated by AB 32 (i.e., reduce statewide emissions to 1990 levels by 2020). However, the County's CAP has not been updated to establish a countywide target that is aligned with the statewide target mandated by SB 32 (i.e., 40 percent below 1990 levels by 2030). For this reason, this analysis examines whether the Project would conflict with CARB's 2017 Scoping Plan.

Impact Analysis

Impact 3.7.1: Project construction or operation could conflict with CARB's 2017 Scoping Plan. (Less than Significant)

The Project would generate GHG emissions during temporary construction activities and long-term operations. The Project would also generate GHG emissions during the operation of Project

elements. However, operation of many of the Project elements would provide a GHG reduction benefit, which is discussed further below.

Construction

Construction activities would occur intermittently over the next twenty years as funding becomes available and equipment/technology manufacturers are selected. It is expected that some of the Project elements would be constructed as soon as 2023. Construction activities are a temporary and one-time release of GHG emissions. Construction activities would generate direct GHG emissions through the operation of heavy off-road equipment, trucks, and worker automobiles. Construction could also generate indirect GHG emissions from lighting and other equipment such as air compressors, however the amount generated would be negligible.

Construction of the Project would utilize fuel efficient equipment and trucks consistent with state regulations and would be consistent with state regulations. Construction activities would comply with the California's Green Building Standards Code (CALGreen) waste diversion mandate, which requires that at least 65 percent of construction materials generated during new construction or demolition projects are diverted from landfills. In regard to this CALGreen requirement, Project construction would be very efficient because Yolo County Central Landfill (YCCL) has an existing construction demolition and inerts (CDI) recycling facility onsite where these materials would be sent, which would eliminate the need to export materials to an off-site facility, thus limiting GHG emissions produced from haul trucks. Project construction would further limit GHG emissions produced from haul trucks because it would not require the export of soil material resulting from grading and excavation activities because any excess soils would be used at YCCL for daily, intermediate, or final cover material.

Construction would generate temporary GHG emissions in order to develop the Project that would increase waste diversion and efficiency at YCCL, and generate renewable energy (discussed further below), which would reduce GHG emissions. In addition, construction activities would utilize fuels that are subject to the State's LCFS, which addresses the carbon intensity of fuels in the State and is a key GHG reduction measure in CARB's 2017 Scoping Plan. Project construction would not conflict with CARB's 2017 Scoping Plan. Therefore, Project construction would result in a less-than-significant impact.

Operation

The Project would generate GHG emissions through the operation of equipment and processes associated with individual Project elements. Operation of the new class 2 surface impoundment and storm water treatment system and discharge would generate a negligible amount of GHG emissions and are not discussed further. Many of the Project elements would increase waste diversion and efficiency at YCCL, and generate renewable energy (discussed further below), which would reduce future GHG emissions.

Increased Daily Permitted Tonnage

To accommodate the increased daily permitted tonnage and the Project elements that require truck trips to export products generated from waste, YCCL proposes to increase its vehicle limit

to 1,305 waste hauling vehicles per day, which would result in an increase of 258 vehicles per day (or round trips). These waste hauling vehicles would mainly be importing additional liquid wastes and organics that would be used as feedstock at Project elements to generate renewable energy and exporting renewable energy products (i.e., hydrogen, methanol, pellets, fertilizer, etc.).

CARB's 2017 Scoping Plan does not include any measures that specifically address the GHG emissions associated with the hauling of solid waste to landfills by truck. GHG emissions from truck hauling are regulated by the State to achieve its mandated statewide GHG emission targets. For instance, packer trucks and transfer trucks would be subject to California's special Phase 2 standards of the federal GHG and fuel efficiency standards for medium- and heavy-duty engines, a set of standards that is recognized in CARB's 2017 Scoping Plan as important to helping achieve the statewide GHG emission targets (CARB, 2017). In addition, the vehicle increase associated with the Project would rely on fuels that are subject to the state's LCFS, which addresses the carbon intensity of fuels used in the State and is also recognized as a key GHG reduction measure in CARB's 2017 Scoping Plan (CARB, 2017).

Furthermore, by increasing the daily permitted tonnage, the YCCL would not have to turn away waste hauling vehicles once the YCCL reaches 1,800 TPD and would have the ability to accept up to 3,000 TPD while meeting a monthly average of 2,500 TPD. This would improve regional efficiency and reduce trip lengths for waste hauling vehicles that would otherwise have to go to a facility farther away than the YCCL, which would help reduce GHG emissions from waste hauling.

In summary, because the increased daily permitted tonnage and vehicle limit increase associated with the Project is necessary to accommodate additional feedstock for Project elements that are being developed to divert waste from landfilling and generate renewable resources, and Project vehicles would be subject to stringent engine emission standards and the LCFS, this Project element would not conflict with CARB's 2017 Scoping Plan.

Wood Pellet Facility

The proposed wood pellet facility would utilize biomass fuel (e.g., wood, woody fraction of green waste, compost overs) to create pellets as an energy source that could be sold. The facility would generate GHG emissions through electricity use and petroleum fuel consumption for operation of stationary and mobile processing, material handling and storage equipment, as well as trucks for exporting finished pellets that are sold. However, the facility would divert organic waste in accordance with state regulations and generate a renewable biomass fuel, which would provide a significant GHG reduction benefit. Page 84 of CARB's 2017 Scoping Plan states, "Finding productive ways to use this material [biomass] offers new opportunities to reduce GHG emissions, promote carbon sequestration, and generate economic resources for forest, agricultural, and waste sectors and communities" (CARB, 2017). Furthermore, CARB's 2017 Scoping Plan calls out biomass as one of the four options (along with prevention/food rescue, recycling, and composting/digestion) to increase organics diversion from landfills consistent with established State mandates (CARB, 2017). Therefore, this Project element would not conflict with CARB's 2017 Scoping Plan.

Large Scale Floating Solar Photovoltaic (PV) System

The proposed Floating Solar PV system would include a floating PV array on a large portion of the existing Water Storage Reservoir to address energy usage and demand on-site as well as selling electrical power off-site. The Floating Solar PV system would be part of a public-private partnership by the County to generate renewable energy locally, which would provide a significant GHG reduction benefit. Therefore, this Project element would not conflict with CARB's 2017 Scoping Plan.

Solar PV System on Closed Landfill Units

The proposed Solar PV System on closed landfill units would include ground mounted PV panels on closed landfill modules 1-5 to address energy usage and demand on-site as well as selling electrical power off-site. The Solar PV system would be part of a public-private partnership by the County to generate renewable energy locally, which would provide a significant GHG reduction benefit. Therefore, this Project element would not conflict with CARB's 2017 Scoping Plan.

Waste Gasification Facility

The proposed waste gasification facility would utilize waste as feedstock to produce hydrogen that would be sold and exported, or electricity that would be used onsite and sold when more electricity is produced than needed. The facility would generate GHG emissions through electricity use and petroleum fuel consumption for operation of stationary and mobile processing, material handling and storage equipment, as well as trucks for exporting renewable hydrogen (if the facility is designed to generate hydrogen). The facility would divert waste from landfilling and produce approximately 11 tons per day of renewable hydrogen or 5 megawatt (MW) of electricity (if the facility is designed to generate electricity), which would assist the region in meeting renewable energy and fuel targets and requirements, and provide a significant GHG reduction benefit.

If the facility is designed to generate hydrogen, current calculations show an overall carbon intensity of approximately -18 grams CO₂/Megajoule (MJ) for hydrogen fuel produced. For comparison, gasoline is estimated to be approximately +80 grams CO₂/MJ in 2030 and hydrogen-powered fuel vehicles are two to three times more efficient than internal combustion engines running on gasoline. For electricity generation, the facility is estimated to require up to 3.5 MW of electricity but would produce up to 5 MW of electricity (if the facility is designed to generate electricity). Furthermore, one of the goals for the transportation sector in CARB's 2017 Scoping Plan is to electrify the transportation sector using both electricity and hydrogen. Therefore, the proposed waste gasification facility would not conflict with CARB's 2017 Scoping Plan.

Expanded Biogas Utilization Options

The proposed expansion of biogas utilization options could include producing renewable compressed natural gas (RCNG) vehicle fuel or injecting RCNG into a pipeline. These processes would generate GHG emissions through electricity consumption and petroleum fuels for cleaning and conditioning the biogas to meet the applicable fuel standards, but would produce RCNG, which would assist the region in meeting renewable energy and fuel targets and requirements.

Furthermore, the production of renewable natural gas is one of the components of CARB's 2017 Scoping Plan that CARB states would help California achieve its 2030 climate target (CARB, 2017). Therefore, the proposed expanded biogas utilization options would not conflict with CARB's 2017 Scoping Plan.

Peaking Power Plant

The proposed peaking power plant would replace the existing LFG to Energy Facility. Stored LFG would be dispatched daily during peak hours to six 4.4-MW internal combustion engines for electricity generation for Community Choice Aggregation (CCA) purchase. The new proposed engines would be cleaner and more efficient than the older engines at the existing LFG to Energy Facility and would produce a greater amount of electricity. The proposed peaking power plant would assist the State in meeting mandates for renewable electricity generation. Therefore, the proposed peaking power plant would not conflict with CARB's 2017 Scoping Plan.

Organic Waste Fertilizer Facility

The proposed organic waste fertilizer facility would utilize organic waste (compost, compost feedstock, liquid waste, and animal manures) and convert it into fertilizer. The facility would generate GHG emissions from electricity consumption and petroleum fuel consumption for operation of stationary and mobile processing, material handling and storage equipment, as well as trucks for exporting finished fertilizer that is sold. Page 90 of CARB's 2017 Scoping Plan states, "the use of compost to increase soil organic matter in the agricultural sector provides other benefits, including reduced GHG emissions, conserved water, reduced synthetic (petroleum-based) fertilizer and herbicide use, and sequestered carbon." The facility would divert organic waste from landfilling in accordance with state regulations and generate an organic fertilizer that provides significant GHG reduction benefits as commercial nitrogen fertilizers produce significant GHG emissions from energy needs. Therefore, the proposed organic waste fertilizer facility would not conflict with CARB's 2017 Scoping Plan.

Transfer Station

The proposed transfer station is being analyzed due to the increased soil needs and cost to develop new landfill modules as well as the associated air pollution and GHG emissions. The facility would replace landfilling and soil borrow activities that generate GHG emissions from the consumption of petroleum fuels for mobile equipment and vehicles. The proposed transfer station would result in the hauling of non-organic, non-recyclable waste to a landfill in higher-capacity transfer trucks. The U.S. EPA states the following regarding waste transfer stations, "Consolidating smaller loads from collection vehicles into larger transfer vehicles reduces hauling costs by enabling collection crews to spend less time traveling to and from distant disposal sites and more time collecting waste. This also reduces fuel consumption and collection vehicle maintenance costs, plus produces less overall traffic, air emissions, and road wear" (U.S. EPA, 2002). Furthermore, transfer trucks would be subject to stringent engine emission standards and the LCFS. Therefore, the proposed transfer station would not conflict with CARB's 2017 Scoping Plan.

Non-Specific Future Off-Site Borrow Area

The proposed non-specific future off-site borrow area would replace the existing borrow area, thus it is not expected to result in a significant increase in GHG emissions. However, GHG emissions could increase dependent upon the property selected in the future, thus it would require separate project-level review.

Thermal Pressure Hydrolysis System

The proposed thermal pressure hydrolysis (TPH) system would increase biogas production from the existing anaerobic digestion facilities at YCCL (Anaerobic Compost Facility and In-Vessel Digester) and would also benefit the future Organic Compost Facility because the TPH process increases nitrogen and phosphorus solubilization. The facility would generate GHG emissions from electricity and petroleum fuel consumption for operation of stationary and mobile processing, material handling and storage equipment. The facility could also generate GHG emissions from natural gas consumption for operating a boiler, or it would utilize heat recovered from adjacent facilities. The facility would increase biogas production, thus increasing feedstock for other Project elements to create renewable energy and fuels, which would assist the region in meeting renewable energy and fuel targets and requirements. As stated previously, anaerobic digestion is one of the four options in CARB's 2017 Scoping Plan to increase organics diversion from landfills consistent with established State mandates (CARB, 2017). Therefore, the proposed TPH system would not conflict with CARB's 2017 Scoping Plan.

Biogas to Methanol Pilot Facility

The proposed biogas to methanol pilot facility would utilize LFG and digester gas from YCCL that is currently being flared, as well as City of Davis Wastewater Treatment Plant (WWTP) digester gas (adjacent to YCCL), as feedstock to produce 1,500 gallons per day of methanol and 300 gallons per day of ethanol. The facility would generate GHG emissions from the consumption of electricity to operate but would result in a significant reduction in flaring emissions at YCCL and would produce renewable methanol that can be converted into electricity and/or low carbon transportation fuels, both of which would provide significant GHG reduction benefits. Therefore, the proposed biogas to methanol pilot facility would not conflict with CARB's 2017 Scoping Plan.

Conclusion

While the implementation and operation of various Project elements would generate GHG emissions, the Project would not conflict with CARB's 2017 Scoping Plan because the Project elements would increase waste diversion and efficiency at YCCL, and generate significant renewable energy and fuel resources. The Project would provide significant GHG reduction benefits and would help the State achieve mandates for diverting organics from landfills, and renewable electricity and fuels. Therefore, the Project would result in a less-than-significant impact.

Mitigation Measures

None required.

3.7.3 REFERENCES

- Ascent Environmental. 2018. *Countywide Greenhouse Gas Emissions Inventory Update for the Yolo County Climate Action Plan – Technical Memorandum*. October 5, 2018.
- California Air Resources Board (CARB). 2020. *California Greenhouse Gas Emissions for 2000 to 2018, Trends of Emissions and Other Indicators*. 2020.
- California Air Resources Board (CARB). 2017. *California’s 2017 Climate Change Scoping Plan*. November 2017.
- County of Yolo. 2009. *2030 Countywide General Plan, Conservation and Open Space Element*. November 10, 2009.
- County of Yolo. 2011. *Climate Action Plan*. March 15, 2011.
- Intergovernmental Panel on Climate Change (IPCC). 2013. *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. 2013.
- U.S. Environmental Protection Agency (U.S. EPA). 2021. *Inventory of U.S. Greenhouse Gas Emissions and Sinks, 1990-2019*. April 2021.
- U.S. Environmental Protection Agency (U.S. EPA). 2002. *Waste Transfer Stations: A Manual for Decision Making*. June 2002.
-

3.8 PUBLIC HEALTH AND SAFETY

This section describes the regulatory setting that pertains to public health and safety issues at the Yolo County Central Landfill (YCCL) and analyzes potential impacts of the Project on public health and safety and identifies mitigation measures to reduce or eliminate those impacts.

3.8.1 SETTING

Regulatory Setting

The use, production, and disposal of hazardous materials and waste are regulated extensively by federal, State, regional, and local regulations, and guidance, with major objectives of protecting the public health and the environment. These regulations and guidance were developed primarily for application in industrial and manufacturing environments where worker health and safety and waste production as a byproduct of manufacturing occurs. A myriad of laws and regulations at the federal, State, and local levels affect the management of hazardous materials.

Federal

The U.S. Environmental Protection Agency (EPA or U.S. EPA) is the lead agency responsible for enforcing federal regulations that affect public health and the environment. The U.S. EPA designates much of its regulatory authority to the individual states. In California, the U.S. EPA has granted most enforcement authority over federal hazardous materials regulations to the California Environmental Protection Agency (CalEPA). CalEPA serves as the umbrella agency for six boards/departments: the California Air Resources Board (CARB), the Department of Pesticide Regulation (DPR), the Department of Toxic Substances Control (DTSC), the Department of Resources Recycling and Recovery (CalRecycle), the Office of Environmental Health Hazard Assessment (OEHHA), and the State Water Resource Control Board (SWRCB) and associated Regional Water Quality Control Boards (RWQCB).

The U.S. EPA is responsible at the federal level for enforcing regulations pertaining to solid waste management and hazardous substances and wastes. Principal federal statutes that affect solid waste management and the handling of hazardous waste include the Solid Waste Disposal Act of 1967, the Resource Recovery Act of 1970, the Resource Conservation and Recovery Act (RCRA) of 1976, the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) and the Superfund Amendment and Reauthorization Act of 1986.

State worker health and safety regulations related to construction activities are enforced by the California Division of Occupational Safety and Health (CalOSHA). Regulations include exposure limits and requirements for protective clothing and training to prevent exposure to hazardous materials. CalOSHA also enforces occupational health and safety regulations specific to asbestos investigations and abatement, which equal or exceed their federal counterparts.

CalOSHA regulations concerning the use of hazardous materials in the workplace, as detailed in Title 8 of the California Code of Regulations (CCR), include requirements for safety training, availability of safety equipment, implementation and maintenance of accident and illness

prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. Title 8 regulations (§3203) include requirements for worker safety training and injury/illness prevention programs contained in Senate Bill 198, which was adopted in 1990. CalOSHA enforces hazard communication program regulations that contain training and information requirements, including procedures for identifying and labeling hazardous substances, communicating hazard information related to hazardous substances and their handling, and preparation of health and safety plans to protect workers and employees at hazardous waste sites.

State

Under the authority of CalEPA, SWRCB and DTSC are responsible for overseeing the remediation of contaminated soil and groundwater sites. The provisions of Government Code 65962.5 (also known as the Cortese List) require the State Water Resources SWRCB, DTSC, the California Department of Health Care Services (CDHCS), and the California Department of Resources Recycling and Recovery (CalRecycle) to submit information pertaining to sites associated with solid waste disposal, hazardous waste disposal and/or hazardous materials releases to CalEPA.

The DTSC works in conjunction with the U.S. EPA to enforce and implement specific laws and regulations pertaining to hazardous wastes. California legislation, for which DTSC has primary enforcement authority, includes the Hazardous Waste Control Act and the Hazardous Substance Account Act. Most State hazardous waste regulations are contained in Title 27 of the CCR. The DTSC generally acts as the lead agency for soil and groundwater cleanup projects and establishes cleanup and action levels for subsurface contamination that are equal to, or more restrictive than, federal levels.

Local

Yolo County Environmental Health is the Certified Unified Program Agency (CUPA) for Yolo County. The Unified Program is a statewide program overseen by the CalEPA which delegates the responsibility of applying regulatory standards established by state agencies to local agencies through inspections, permitting, and enforcement activities. The Unified Program encompasses regulatory standards from the Governor's Office of Emergency Services (CalOES), DTSC, the Office of State Fire Marshal (OSFM), the State Water Board, and CalEPA (Yolo County, 2021).

Findings of the 1992 YCCL EIR

The 1992 YCCL Environmental Impact Report (EIR) evaluated the potential effects of previous changes to the landfill related to public health and safety.

Mitigation measures included site security, disposal site inspections, surface and subsurface control measures, a vector and disease control program, landfill gas (LFG) detection and emergency plan and compliance with proper measures for hazardous materials handling and storage. With the implementation of mitigation measures, the 1992 YCCL EIR determined all impacts would be less than significant.

Findings of the 2005 YCCL EIR

The 2005 YCCL EIR analyzed the potential public health and safety impacts from LFG, excavation of hazardous materials, operations of a materials recovery facility (MRF), exposure to *Aspergillus fumigatus* from composting operations and operations of a Hazardous Waste Collection Facility. The 2005 YCCL EIR determined that with implementation of mitigation measures, potential impacts to public health and safety would be less than significant.

Mitigation measures included meeting current state and federal requirements for LFG management, quarterly LFG monitoring and reporting, additional equipment to reduce gas levels below state requirements (if needed) (i.e., additional extraction wells), continuing to use the site-specific Health and Safety Plan (HASP) for landfill mining at YCCL, implementing Yolo County Illness and Injury Prevention Plan practices and policies at the new MRF and Salvaging facilities, submitting drawings showing the final facility layout to the local enforcement agency (LEA) for approval, following sound composting management practices (i.e., maintaining moisture, temperature and pH levels, and properly aerating, turning and mixing the composting materials), minimizing the generation and dispersal of dust and fungus spores during composting operations and thus limit exposure, continuing the load checking program to reduce or remove many hazardous substances that may be contained in municipal solid waste (MSW) loads.

2030 Countywide General Plan for Yolo County

The Yolo County General Plan's Health and Safety Element seeks to ensure safety from hazardous materials in the County. The element includes the following policies pertaining to hazardous materials that are relevant to the Project:

Goal HS-4: Protect the community and the environment from hazardous materials and waste.

Policy HS-4.1: Minimize exposure to the harmful effects of hazardous materials and waste.

Policy HS-4.2: Inspect businesses regularly for compliance with their Hazardous Materials Inventory and Hazardous Materials Business Emergency Response Plan.

Policy HS-4.3: Encourage the reduction of solid and hazardous wastes generated in the County.

Action HS-A46: Provide adequate separation between areas where hazardous materials are present and sensitive uses. The following land uses are considered sensitive receptors for the purpose of exposure to hazardous materials: residential uses, hospitals and nursing/convalescent homes, hotels and lodging, schools and daycare centers and habitat for species of concern.

Landfill Controls and Standards

Title 27 of the CCR contains regulations of the SWRCB and CalRecycle pertaining to the disposal of waste on land. Title 27, Division 2, Chapter 3, establishes minimum standards for solid waste handling and disposal. Articles 4 and 6 contain specific landfill disposal site controls that relate to public health and safety:

§20760. *Nuisance Control.* Each disposal site shall be operated and maintained so as to not create a public nuisance.

§20770. *Animal Feeding.* Feeding of refuse to animals which will be used for human consumption is expressly prohibited on disposal sites. Grazing of livestock away from operating areas is permitted.

§20790. *Leachate Control.* The operator shall ensure that leachate is controlled to prevent contact with the public.

§20800. *Dust Control.* The operator shall take adequate measures to minimize the creation of dust and prevent safety hazards due to obscured visibility.

§20810. *Vector and Bird Control.* The operator shall take adequate steps to control or prevent the propagation, harborage or attraction of flies, rodents, or other vectors and to minimize bird problems.

§20820. *Drainage and Erosion Control.* The drainage system shall be designed and maintained to:

- Ensure integrity of roads, structures, and gas monitoring and control systems;
- Prevent safety hazards; and
- Prevent exposure of water.

§20830. *Litter Control.* Litter shall be controlled, routinely collected, and disposed of properly. Windblown materials shall be controlled to prevent injury to the public and personnel. Controls shall prevent the accumulation, or off-site migration, of litter in quantities that create nuisance or cause other problems.

§20840. *Noise Control.* Noise shall be controlled to prevent health and safety hazards to persons using the site and to nearby residents.

§20860. *Traffic Control.* Traffic flow into, on, and out of the disposal site shall be controlled to minimize the following:

- a) Interference and safety problems with traffic on adjacent public streets or roads.
- b) On-site safety hazards, and
- c) Interference with site operations.

§20870. *Hazardous Wastes.* Owners or operators of all Municipal Solid Waste Landfill units must implement a program at the facility for detecting and preventing the disposal of regulated hazardous wastes as defined in 40 CFR Part 261 and polychlorinated biphenyls.

(PCB) wastes as defined in 40 CFR Part 761. This program must include, at a minimum:

- (a) Random inspections of incoming loads unless the owner or operator takes other steps to ensure that incoming loads do not contain regulated hazardous wastes or PCB wastes;
- (b) Records of any inspections;

- (c) Training of facility personnel to recognize regulated hazardous wastes and PCB wastes; and
- (d) Notification of the EA, the Director of the California Department of Toxic Substances Control (DTSC) or its delegated agent, and the Regional Water Quality Control Board (RWQCB), if a regulated hazardous waste or PCB waste is discovered at the facility.

The site shall not accept hazardous waste unless the site has been approved for the waste involved.

At sites where hazardous materials are processed, precautions must be taken to eliminate or control dusts, fumes, mists, vapors, or gases that may be produced in quantities and under conditions which may have harmful effects on site personnel, the public, or animals.

§20919. Gas Control. Where the enforcement agency, the local fire control authority, or the CIWMB has cause to believe a hazard or nuisance may be created by landfill decomposition gases, they shall so notify the owner. Thereafter, the site owner shall cause the site to be monitored for presence and movement of gases and shall take necessary action to control such gases. The site owner shall inform the operator of any actions ordered by the EA, the local fire control authority or the CIWMB concerning gas control methods. The monitoring program shall be developed pursuant to the specifications of the above agencies. The monitoring program shall not be discontinued until authorized to do so in writing by the requiring agency. Results of the monitoring shall be submitted to the appropriate agencies. If monitoring indicates methane gas movement away from the site, the owner shall, within a period of time specified by the requiring agency, construct a gas control system approved by that agency. The agency may waive this requirement if satisfactory evidence is presented indicating that adjacent properties are safe from hazard or nuisance caused by methane gas movement. The operator shall duly inform the disposal site owner of possible landfill gas problems.

CCR Title 14, Division 7, establishes minimum regulatory standards for solid waste management, handling and disposal (Chapter 3) and establishes guidelines for enforcement of solid waste standards and administration of solid waste facilities permits (Chapter 5). Article 6.2 of Chapter 3 establishes solid waste facility operating standards pertaining to health and safety, including the following:

§17407.1. Burning Wastes and Open Burning. Burning wastes received at a facility shall be separated from other wastes and deposited in a safe area, spread, and extinguished.

§17407.5. Hazardous, Liquid, and Special Wastes. A facility shall not intentionally accept or store hazardous wastes unless it has been approved to handle the particular waste by the appropriate regulatory agencies. At facilities where unauthorized hazardous wastes are discovered, control measures as are necessary to protect public health, safety and the environment shall be taken prior to isolation or removal from the operation or facility. Liquid wastes and sludges shall not be accepted or stored at an operation or facility unless the operator has written approval to accept such wastes from the appropriate agencies and the enforcement agency.

§17409.5. Loadchecking. The operator of an attended operation or facility shall implement a loadchecking program to prevent the acceptance of waste prohibited by this Article. This program must include at a minimum:

- (1) the number of random loadchecks to be performed;
- (2) a location for the storage of prohibited wastes removed during the loadchecking process that is separately secured or isolated;
- (3) records of loadchecks and the training of personnel in the recognition, proper handling, and disposition of prohibited waste.

A copy of the loadchecking program and copies of the loadchecking records for the last year shall be maintained in the operating record and be available for review by the appropriate regulatory agencies.

§17410.4. Vector, Bird and Animal Control. The operator shall take adequate steps to control or prevent the propagation, harborage and attraction of flies, rodents, or other vectors, and animals, and to minimize bird attraction.

Hazardous Waste Regulation

Definitions

Certain chemical and physical properties of substances cause them to be considered hazardous. The terms hazardous material and hazardous waste are legal terms defined in State regulations. CCR Title 22 defines hazardous material as a substance or combination of substances, which because of quantity, concentration, or physical, chemical or infectious characteristics, may either: (1) cause or significantly contribute to an increase in mortality or an increase in serious, irreversible, or incapacitating, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of, or otherwise managed (CCR, Title 22, Chapter 10, Article 2, §66260.10). Title 22 classifies hazardous substances according to four properties: toxicity, ignitability, corrosivity, and reactivity. Carcinogens (substances known to cause cancer) are a special class of toxic substances. Explosives, volatile fuels, and landfill gas are examples of reactive materials. Hazardous wastes are hazardous residues or discards that no longer have practical use, such as substances that have been discarded, spilled, contaminated, or disposed (CCR, Title 22, Chapter 11, Article 2, §66261.10).

The U.S. EPA considers Household Hazardous Waste (HHW) as products that can catch fire, react, or explode under certain circumstances, or that are corrosive or toxic as HHW. Products, such as paints, cleaners, oils, batteries, and pesticides can contain hazardous ingredients and require special care when disposed of (USEPA, 2020).

DTSC implements its Unified Program on hazardous materials and wastes locally through the CUPA for the city or county. Temporary and permanent household hazardous waste collection facilities (HHWCFs) operate under Permit by Rule authorization pursuant to CCR Title 22, §66270.60, and are overseen by the CUPA.

Hazard Exposure

Exposure to hazardous compounds or disease organisms could arise through transport by air of potentially toxic materials released in gaseous form or as smoke emitted by a fire; transport by animal vectors, such as scavenging birds, rodents, or insects; and transport by surface water or groundwater where hazardous materials leave the landfill site due to leaks, spills, or uncontrolled runoff. Pathways of exposure to a hazardous material or waste depend on the chemical and physical properties of the waste and the type of occurrence or accident that released it. The four common exposure pathways are inhalation, ingestion, direct contact (with skin or eyes), and injection (skin puncture or cut). Factors that influence the health effects of exposure to hazardous material include the dose to which the person is exposed, the frequency of exposure, the exposure pathway, and individual susceptibility. A material may be hazardous by one exposure pathway but not another; for example, a chemical might be toxic if ingested but not if touched.

Effects of Exposure

Health effects of exposure to hazardous chemicals can vary greatly and are specific to each chemical. Possible health effects of exposure may be acute (immediate, or of short-term severity) or chronic (long-term, recurring, or resulting from repeated exposure). Acute effects, usually resulting from a single exposure, might include burns or injury to body organs or systems such as from exposure to corrosive, reactive, or ignitable materials. Chronic effects, usually resulting from repeated or long-term exposure to a toxic material (as in a poorly ventilated workplace, for example), could also include systemic or organ damage. Chronic toxic effects of particular concern are birth defects and cancer.

Designated Waste

“Designated waste” is defined and regulated by the RWQCB. Designated waste is defined as either: (1) nonhazardous waste that consists of or contains pollutants that, under ambient environmental conditions at the landfill, could be released at concentrations in excess of applicable water quality objectives, or that could cause degradation of waters of the state; or (2) hazardous waste that has been granted a variance from hazardous waste management requirements pursuant to the CCR Title 22, §66310. Designated wastes in the latter category are similar to “Special Wastes,” which are defined in Title 22 (§66260.10) as wastes that are hazardous only because they pose a chronic toxicity hazard if managed improperly. While designated wastes are classified by the RWQCB, special wastes are classified by DTSC.

Sensitive Receptors

Regarding public health and safety, a sensitive receptor is an individual or population that resides near or encounters a potential health hazard. For example, an individual living near the landfill site would be subject to the greatest risk from a grass fire or landfill gas explosion occurring at the site, vectors, or a release that could contaminate air or water. Land uses surrounding the landfill are primarily agricultural or related to waste and wastewater treatment. Several residences are located within a mile of the Project site. The nearest residence is approximately 600 feet south of the Willow Pass Bypass channel and YCCL boundary. Two other residences are located south of the landfill, at distances of approximately 1,400 feet and 3,400 feet, and approximately six residences are located between 4,300 and 5,200 feet west of the site on County Road 103.

Existing Site Conditions

Existing Hazards

Public health and safety concerns associated with current landfill operations include exposure to household hazardous waste (HHW) in loads of incoming municipal solid waste, exposure to HHW at the HHW Collections Facility (HHWCF); exposure to sharp and hazardous materials at the unloading area; emissions of toxic air contaminants from landfill operations; releases of leachate to groundwater or nearby surface waters; the risk of landfill gas (LFG) explosion; the presence of vectors in the refuse or green waste; and the risk of fire from landfill operations.

Hazardous Waste Exclusion Program

The YCCL has an on-going Hazardous Waste Exclusion Program to continuously monitor the incoming waste for presence of hazardous waste. Wastes disposed of at the landfill will be monitored and controlled using a load checking program. The load checking program includes fact sheets and signs to notify landfill customers of acceptable and unacceptable materials, physical inspections of random loads, visual inspections at the scalehouse, and inspection at the landfill working face. If HHW is detected in a load by an attendant at the scalehouse, the attendant will inform the customer that the material may not be disposed at the landfill. The customer is then provided with information of proper disposal. As part of this program and a County agreement with the operations contractor, any HHW discovered at the active face will be removed. If the customer can be identified, the cost to manage those hazardous materials will be charged to them. If the customer cannot be identified, the material is removed and stored in the department HHW building. If hazardous waste is detected and it is determined that Department of Integrated Waste Management (DIWM) personnel are not qualified to handle the material, the County hazardous materials response team is notified and they provide proper handling and removal of the material (e.g., radiological spills, items with unusual and unidentifiable odors, and general unidentifiable items). The scalehouse is equipped with a radiological alarm to detect radioactive material entering the landfill (Yolo County, 2018).

Household Hazardous Waste Facility

The County currently uses a permanent HHW collection and storage building that has the capacity to store approximately 40 tons of HHW material. This building is designed to allow drop off of HHW during drop-off events as well as storage of HHW between events. The building is also used to store HHW collected at the active disposal area as part of the County's load check program. The permanent HHW facility is permitted to accept material during the normal business hours of the landfill, however it is currently only open Friday and Saturday (each week). In the future, the County may extend the open hours/day as demand and volume increases.

Designated Waste

The YCCL is currently permitted to accept liquid wastes classified as "designated" to the surface Class II impoundments. Liquid waste includes landfill leachate, gas condensate and cooling water from the LFG-to-energy facility, private septage, chemical toilet waste, water treatment lime sludge, and other liquid waste compatible with the surface impoundments. The YCCL also

accepts motor oil and vehicle batteries, which are hazardous wastes at the permanent HHW facility (Yolo County, 2018).

Landfill Gas

Natural processes in landfills (i.e., the decomposition of organic waste) generate carbon dioxide, a nontoxic gas, and methane, a non-toxic but flammable and explosive gas as well as other trace gasses. During the anaerobic phase of decomposition (i.e., without oxygen), if enough moisture is present, methane continues to be generated until all organic matter in the landfill has decomposed. The presence of an optimal moisture content within the landfill waste can speed waste decomposition and increases the rate of LFG generation. Landfill gas typically consists of about 50 percent methane (CH₄), the primary component of natural gas, and about 50 percent carbon dioxide (CO₂) and a small amount of non-methane organic compounds (U.S. EPA, 2002). Because of relatively impermeable liners, landfill gases tend to accumulate in landfills and gradually seep out along paths of least resistance, such as cracks or fissures. If methane gas enters confined spaces, such as buildings, it can become explosive and present a significant threat to health and safety. The lower explosive concentration limit for methane is 5 percent by volume and the upper explosive limit is 15 percent by volume (ATSDR, 2001). CCR Title 27, §21600 requires landfills to have and describe their systems for monitoring, venting, controlling, and possibly using, landfill gas.

An LFG-to energy facility is located just south of WMUs 4 and 5, east of WMU 2 and west of the water storage and leachate disposal ponds. The facility is owned by Yolo County and operated under contract by Ameresco Inc. The LFG collection system routes the LFG to the plant where it is then burned in up to five internal combustion engines or a flare (permitted for five internal combustion engines but currently only four are installed). The plant currently has two Caterpillar G-399, and two Caterpillar G-3516 Internal Combustion engines installed. The four engines have a combined permitted capacity to burn up to 2,107 cubic feet per minute (CFM) of LFG and produce a maximum of 3,860 kilowatts (kW). The flare is permitted to burn a maximum of 2,022 CFM, which is more than the landfill is currently producing (Yolo County, 2018).

A landfill gas control and recovery system is currently in use at the YCCL and consists of approximately 185 wells. A blower is used to apply a negative pressure to the system for extracting methane from the waste cells. Landfill gas is routed to the Methane Gas Recovery Facility where it is either burned in internal combustion engines or flared. The pipeline system consists of a network of piping ranging in diameter from 2 inches at the wellheads to 10 inches prior to the blower.

Horizontal extraction wells were installed during the active filling stages of Waste Management Units (WMUs) 6D1 and 6D2 and consist of windrows of piping and shredded tires placed between each lift of waste and a horizontal spacing of between 40 and 80 feet. Horizontal extraction wells have also been installed during the active filling stages of WMU 2 and WMU 3 and also consist of windrows of pipe and tires. These wells are spaced between 80 and 160 feet, however, only one layer of these wells was installed (between the older waste and new waste) because of the limited depth of waste fill remaining in these units. Horizontal extraction wells will continue to be installed as part of day-to-day operations in all existing and future waste

management units. These horizontal wells will provide early control on all the units which will then be supplemented, as necessary, with vertical wells once the module nears capacity (Yolo County, 2018).

The landfill gas collected at the site is used for electricity generation or flared. Currently, four, internal combustion engines are operational at the site. Two of the engines are caterpillar G-399 (805 Hp) rated at 512,000 cubic feet per day of landfill gas consumption. The other two engines are caterpillar G-3516 (1306 Hp) rated at 669,856 cubic feet per day of landfill gas consumption. A third G-399 engine is permitted but not currently installed. These ratings are based on an energy value of 450 British thermal unit (BTU) for landfill gas. The Caterpillar 399 engines can generate 580 kW each and the Caterpillar 3516 engines are capable of a maximum of 900 kW each. The electricity generated by these engines is currently sold to the Sacramento Municipal Utilities District (SMUD) under contract. When the engines cannot burn all the gas, the excess is burned in the flare. The flare can burn a maximum of 2022 CFM which is more than the landfill currently produces. Therefore, the flare can burn all the gas produced by the landfill when the engines are not running, thus assuring continued control during an engine breakdown. In the long term, the facility will be expanded (both engines and flare) to accommodate increased landfill gas production at the site.

The YCCL property boundary and its facilities are monitored quarterly for landfill gas (methane) migration. Perimeter monitoring consists of 11 gas monitoring wells along the western, eastern, and southern boundary at a spacing of less than 1,000 feet and extend to a depth of 10 feet. The probes were not needed at the north and northwest boundary because the slurry wall, which was constructed in 1988, provides an effective barrier to gas migration. Prior to placing waste in WMUs 6E-7P, additional monitoring probes may need to be installed. The County performs quarterly monitoring for methane, oxygen, and carbon dioxide using either a GEM-5000 or GEM-2000 Gas Analyzer (LANDTEC, Colton, CA) and includes monitoring of all on-site structures. The monitoring results indicate no subsurface methane migration or methane accumulation in site structures at the YCCL (Yolo County, 2018).

Vectors

As defined in CCR Title 14 §17225.73, a “‘vector’ includes any insect or other arthropod, rodent, or other animal capable of transmitting the causative agents of human disease or disrupting the normal enjoyment of life by adversely affecting the public health and well-being.” Pathogenic microorganisms (disease) potentially carried by vectors can originate from several sources in municipal solid waste, such as animal feces, human feces in diapers, septic waste, and even from contaminated materials such as glass, metal, plastic, paper, and yard wastes. The vectors of greatest concern are flies and rats because of their ability to reproduce rapidly and disperse from a site. Other vectors of concern include birds and other insects and arthropods. Birds such as seagulls are frequently found at the YCCL. Although birds generally are only a nuisance (especially when they defecate on property or people), they can be a serious concern for low-flying aircraft. The seagull population at the landfill varies during the summer and winter months. During the winter months (November through April), seagulls will generally be present at the landfill. In the summer months (May through October), however, the seagull population is less of a problem. Birds are a nuisance, and when present, are scared away by bird guns and other noise

makers. Thoroughly compacting the incoming wastes, covering wastes with soil or alternative daily cover, and minimizing the work area over which refuse is spread, also minimize the emergence of flies from eggs that are normally present in household waste.

Rodents normally cannot survive because the compaction and covering of refuse with soil eliminates both habitat and food. Site personnel inspect site areas for signs of rodent activity. If such activity is observed, site personnel will contact pest control specialists for professional advice and any services needed to ensure that a vector nuisance does not develop. Furthermore, weekly observations are conducted for the Groundwater Disposal System and Land Application area, which includes monitoring the ditches and ponds for mosquitoes and mosquito larvae. If mosquitoes are present, the Sacramento-Yolo Mosquito Abatement District is notified. Infected ditches and ponds are then treated with mosquito fish (Yolo County, 2018). The Sacramento-Yolo Mosquito Abatement District also comes to the YCCL annually without notification to proactively place mosquito fish.

Accidents

The YCCL Injury and Illness Prevention Program (IIPP) includes employee training on specific hazards, such as fire prevention and fire extinguisher use, obtaining emergency medical assistance and first aid, hazard communication, use of personal protective equipment and other topics relevant to specific departments. The program includes regular safety inspections to identify any unsafe conditions or practices, and regular safety meetings. Monthly safety meetings are held at the landfill and at County offices, and tailgate meetings are held as necessary for special projects. The landfill maintains on-site an inventory of necessary safety equipment. This equipment currently is kept in a storage container in the operations building.

3.8.2 IMPACTS AND MITIGATION MEASURES

Significance Criteria

Appendix G of the *CEQA Guidelines* states that a project would result in a significant impact to Hazards and Hazardous Materials if it were to:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- 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;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- 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 create a significant hazard to the public or environment;

- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard or excessive noise for people residing or working in the project area;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

As discussed above, the DTSC and SWRCB compile and update lists of hazardous material sites pursuant to Government Code §65962.5. The YCCL is not included on the databases maintained by the DTSC's Envirostor (DTSC, 2021) or the SWRCB's Geotracker (SWRCB, 2021).

Therefore, there are no impacts related to Government Code §65962.5. The Project is not located within an airport land use plan area or within two miles of a public airport or airstrip. Therefore, the Project would have no impact from safety hazards or excessive noise for people working at the YCCL. The Project could result in fire risk from wildland fires or fires on-site. **Sections 3.14 Public Services and Utilities and 3.15 Wildfire** discuss fire and wildfire risks in detail and provide Mitigation Measures to reduce fire related impacts to a less-than-significant level. These issues are not discussed further in this analysis.

Impact Analysis

Impact 3.8.1: Operation of new Project element facilities (e.g., wood pellet facility, waste gasification facility, organic waste fertilizer facility, transfer station, thermal pressure hydrolysis system, peaking power plant, expanded biogas utilization options, and biogas to methanol pilot facility) could pose health and safety threats to workers at the YCCL. (Significant)

The Project includes the design, construction and operation of landfill facilities that would manage incoming waste streams more efficiently. Without implementation of adequate safety protocols, the operation of these new proposed facilities would pose health and safety threats to workers and would be a significant impact.

The primary public health and safety concerns with operation of new facilities include but are not limited to air quality concerns related to dust control and ventilation; potential noise impacts; and safety concerns related to vehicular circulation, the separation of commercial and self-haul unloading areas, and the operation of or working near heavy equipment and industrial machinery and potential fire hazards (see **Section 3.14 Public Services and Utilities** for detailed fire hazard risks from new proposed facilities). The proposed facilities would be required to meet state minimum standards for solid waste handling facilities contained in California Code of Regulations (CCR) Title 14 as well as requirements of federal and state Occupational Safety and Health Acts (OSHA and CalOSHA, respectively), requirements of the state Department of Industrial Relations, the Yolo-Solano Air Quality Management District, and other applicable authorities. New Project element facilities would be required to implement practices and policies in a facility specific Injury, Illness, and Prevention Program (IIPP). Regardless, the Project element facilities could have unique health and safety effects that are not specifically addressed

by existing health and safety regulations and those new operations would pose a potentially significant impact to worker health and safety.

Mitigation Measures

Mitigation Measure 3.8.1: The Division of Integrated Waste Management (DIWM) (or the facility contractor) shall prepare a Health and Safety Plan (HASP) for all new Project Element facilities prior to commencement of new facility operations. Each HASP shall include staff training requirements, emergency procedures and equipment, personal protective equipment for facility staff, communications equipment and emergency contacts, hearing loss prevention, equipment maintenance, and other policies to ensure the protection of worker and public health and safety.

Level of Significance After Mitigation

Mitigation Measures 3.8.1, in conjunction with state and federal requirements for health and safety (i.e., California Code of Regulations (CCR) Title 14 minimum standards, federal and state Occupational Safety and Health Acts [OSHA and CalOSHA, respectively], and the Injury, Illness, and Prevention Program [IIPP]) would reduce potential health and safety impacts of new facility operations to a less-than-significant level.

Impact 3.8.2: Implementation of new facilities and increasing the daily permitted tonnage at the YCCL could result in increases in gulls and other scavenging birds at the site, thus increasing the risk of bird strikes for aircraft approaching or departing from nearby airports. (Less than Significant)

The nearest public airports are UC Davis University Airport, approximately 6.5 miles southwest of the Project, Sacramento International Airport, approximately 7 miles northeast of the Project, and Yolo County Public Airport, approximately 8.5 miles west of the project. The nearest private airport is Medlock Field approximately 2.9 miles northwest of the Project. At these distances, nearby airport flights are not a concern for bird strikes on the bird populations at the YCCL. The YCCL would continue to enforce their existing bird control program, as well as continue to comply with CCR standards for bird control. Therefore, impacts related to bird strikes from nearby airports would be less than significant.

Mitigation Measures

None required.

3.8.3 REFERENCES

- Department of Toxic Substances Control (DTSC). 2021. *DTSC's Envirostor Database*.
<https://www.envirostor.dtsc.ca.gov/public/>. Accessed January 13, 2021.
- State Water Resources Control Board (SWRCB). 2021. *Geotracker*,
<https://geotracker.waterboards.ca.gov/> Accessed January 13, 2021.
- United States EPA. 2021. *Household Hazardous Waste (HHW)*,
<https://www.epa.gov/hw/household-hazardous-waste-hhw>. Accessed January 13, 2021.
- Yolo County. 1992. *Final Environmental Impact Report Yolo County Central Landfill State Clearinghouse No. 91123015*. October 1992.
- Yolo County. 2005. *Yolo County Central Landfill Permit Revisions Final Subsequent Environmental Impact Report SCH No. 1991073040*. May 2005.
- Yolo County. 2009. *2030 Countywide General Plan, Health and Safety Element*. November 2009.
- Yolo County. 2018. *Joint Technical Document, Yolo County Central Landfill, Yolo County, California*. June 2018.
- Yolo County. 2020. *Environmental Health Division: Hazardous Materials Program*.
<https://www.yolocounty.org/community-services/environmental-health-services/hazardous-materials>. Accessed January 13, 2021.
-

3.9 GEOLOGY, SOILS, AND SEISMICITY

This section describes the existing geologic and seismic setting and evaluates the potential for construction and operation of the Project elements to cause adverse impacts associated with surface and subsurface geologic materials, seismic ground shaking, slope stability, soil conditions, and paleontological resources. The analysis and conclusions presented in this section are based in part on geotechnical studies prepared for previous Yolo County Central Landfill (YCCL) environmental documents¹, the Joint Technical Document (JTD) prepared by Yolo County (Yolo County, 2018), and published maps and geologic reports available through the California Geological Survey (CGS) and U.S. Geological Survey (USGS). The groundwater resources setting and the analysis of impacts relating to hydrogeology is provided in Section 3.10 Hydrology and Water Quality.

3.9.1 SETTING

Topography

The Project site lies within the Great Valley geomorphic province of California near the southern end of the Sacramento Valley. The Sacramento Valley is bounded by the Sierra Nevada to the east and the Dunnigan Hills, English Hills, and Coast Range to the west. Except for the Sutter Buttes, a discrete, hilly area approximately 40 miles north of the Project site, the regional topography of the Sacramento Valley is essentially flat, sloping very gently from the uplands that border the valley toward the river. The natural topography of the project site is also generally flat, sloping very gently toward the Sacramento River east of the site. The elevations at the YCCL range from approximately 18 to 25 feet above mean sea level (msl) (USGS, 1981).

Geology

The geologic structure of the Sacramento Valley is an asymmetrical basin- or trough-like fold, which is deepest on the west side of the valley near the base of the Coast Range. The basement rocks underlying the valley in the vicinity of the Project site, at a depth of approximately four miles, are granites and older metamorphic rocks of the Sierra Nevada and Franciscan Complex rocks of the Coast Range. Alluvial and marine sediments have filled the valley over time. Sedimentary units deposited over the basement rocks in the Sacramento Valley range in age from Cretaceous age (140 to 65 million years before present [mybp]) to Pleistocene (11-3 mybp) and consist of marine deposits, which grade to nonmarine sandstone and clay deposits overlain by Quaternary (0-3 mybp) continental deposits [i.e., volcanics (tuff, breccia, andesitic-rhyolitic, obsidian, pumice, basalt) and marine and non-marine sediments (conglomerate, sandstone, siltstone, claystone)]. The uppermost unit consists of young Holocene (0-8,000 years ago) basin alluvium. Surficial geologic materials are composed primarily of Quaternary alluvial deposits composed of levee, channel, and flood plain deposits (Yolo County, 2005).

¹ Since certain aspects of the geologic, soils, and seismic environmental conditions are similar to those presented in the 2005 YCCL Subsequent Environmental Impact Report (Yolo County, 2005), information from that EIR was cited herein.

Geologic units underlying the Project site consist of an upper unit of stiff clays and silts; a middle unit consisting of generally compact sands and silts; and a lower unit consisting of stiff hard clay. YCCL's Waste Discharge Requirements (WDRs) (Yolo County, 2005) note that subsurface materials consist predominately of low permeability clays and that laterally discontinuous sand layers up to 12 feet thick occur between 6 and 35 feet below ground surface (bgs). This interval is known as the Upper Sand. Materials below 35 feet bgs are mostly clays, interspersed with minor amounts of inter-bedded sand and gravel, to a depth of about 80 feet bgs. More abundant coarse-grained material is encountered below 80 feet bgs. Due to the discontinuities, neither the Upper nor Lower Sands have been reliably correlated from well to well (Yolo County, 2018).

Soils

The soil association that characterizes the Project site is the Capay-Clear Lake Association, which is a series of moderately well-drained to poorly drained, nearly level silty clays and clays. Capay silty clay, the predominant soil at the Project site, typically extends to a depth of more than 60 inches. A narrow strip of Clear Lake clay occurs along the southern boundary of the Project site and a small wedge of Willows clay occurs on the western boundary. Test borings also show an interval of laterally discontinuous silty fine sands up to 12 feet thick between 6 and 35 feet bgs. Deposits 35 feet bgs to a depth of about 80 feet bgs consist primarily of clays, interspersed with minor amounts of inter-bedded sand and gravel, with more abundant coarse-grained materials below 80 feet bgs (Yolo County, 2005).

The three soils found at YCCL (Capay silty clay, Clear Lake clay, and Willows clay) have fairly low permeability (infiltration rates of 0.06 to 0.2 inches per hour), have high shrink-swell potential, and are highly corrosive (Yolo County, 2005). Shrink-swell refers to the cyclic change in volume (expansion and contraction) that occurs in fine-grained sediments, as discussed below. Corrosive soils have the potential to induce electrochemical or chemical action that could dissolve or weaken uncoated steel or concrete. Capay silty clay and Clear Lake clay meet USDA criteria for Prime Farmland, and Willows clay meets USDA criteria for Farmland of Statewide Importance (CDOC, 2021).

Seismicity

The Project site lies within an area of relatively low seismic activity. There are few known active faults in the Sacramento Valley and no faults within Yolo County are zoned as active under the Alquist-Priolo Special Studies Zones Act (USGS, 2021). This Act requires the state to identify zones around "active" faults (those having evidence of surface displacement within Holocene time [about the last 11,000 years]) in which special studies are required prior to development (Hart, 1990). The Dunnigan Hills fault, approximately 16 miles northwest, is the nearest active fault to the Project site.

Although there are few active faults within the Central Valley itself, the valley lies between major fault zones associated with the Sierra foothills to the east and the Coast Range mountains to the west. The Foothills Fault Zone extends along the western edge of the Sierra Nevada and, although not necessarily inactive, faults in this zone experienced displacement more than 1.6 million years ago. The western edge of the Foothills Fault Zone is located approximately 36 miles east of the

Project site. The major faults within and parallel to the Coast Range in the San Francisco Bay Area are younger than those in the Foothills Fault Zone and include the Concord-Green Valley faults, the Rogers Creek/Hayward fault zones, and the San Andreas Fault zone. The Concord, Hayward, and San Andreas faults are strike-slip faults that have experienced movement within the last 150 years.² Depending on the magnitude of the earthquake and its intensity, a major seismic event on any of these active faults could cause moderate to strong ground shaking at the YCCL.

Geologic and Seismic Hazards

Fault Surface Rupture

In major earthquakes, fault displacement can cause surface rupture along the fault, leading to severe damage to any structures or other improvements located on the fault trace. Considering that no known active faults capable of causing surface ground rupture are identified and mapped in the County, the potential for fault surface rupture at the Project site is remote.

Ground Shaking

Earthquakes generated from seismically active faults in the northern areas of California could affect the YCCL during the life of the Project. Major factors that affect the severity (intensity) of ground shaking include the size (magnitude) of the earthquake, the distance to the fault that generated the earthquake, and the underlying geologic materials. Given similar subsurface conditions, the intensity of ground shaking decreases with distance from the causative fault. Thick, loose soils, such as non-compacted alluvium and artificial fill, tend to amplify and prolong the ground shaking, while bedrock is less susceptible to ground shaking. The alluvial soils beneath the Sacramento Valley in the Project vicinity could amplify ground shaking.

Liquefaction

Liquefaction is the sudden loss of strength in loose, saturated materials (predominantly sands) during an earthquake, which results in the temporary fluid-like behavior of those materials (much like quicksand). Liquefaction typically occurs in areas where groundwater is shallow and materials consist of poorly consolidated, well sorted³ sands. Regionally, the Sacramento Valley in the vicinity of the YCCL is underlain by saturated, recent alluvium that has a potential for liquefaction. Liquefaction can occur between 0 and 40 feet in depth. The presence of shallow groundwater and the loosely consolidated alluvium (fine to coarse sand) at the YCCL may increase the potential for localized liquefaction at either the surface or at depth. However, the presence of fine-grained clays and silts reduce liquefaction potential because finer grained materials tend not to liquefy during strong ground shaking.

Lurching

Lurching, or lurch cracking, is a general term for the formation of irregular ground surface cracks in response to earthquake-induced ground shaking. These features typically range in length from

² A strike-slip fault is a fault on which movement is parallel to the fault's strike.

³ Well sorted refers to sand grains that are all roughly the same size.

a few inches to many feet, have small displacements, and are usually localized. The potential for lurching is highest in areas underlain by soft, saturated materials, especially where bordered by steep banks or adjacent hard ground. Alluvial materials and artificial fill at the Project site could be subject to lurching.

Landslide Hazards

Landslides can result from static forces (gravity) as well as from seismically-induced ground shaking. The susceptibility of a slope to fail (landsliding) depends on the slope and underlying geology, the amount of rainfall that has occurred, change in slope geometry, and/or the magnitude of the seismic event. Because topographic relief of the Sacramento Valley is low and existing natural slopes are slight, the hazard of natural slope failure in the Project site vicinity is remote. Localized landsliding can occur in engineered graded slopes, such as those currently constructed at the Project site and on slopes anticipated for the future landfill modifications. The artificial slopes created by landfill activities could be susceptible to landslides unless properly designed and engineered.

Settlement

Settlement of the ground surface can be accelerated and accentuated by earthquake ground motion but can occur under non-seismic conditions due to excessive weight on underlying compressible clays. Settlement may not occur at the same rate in all locations (referred to as differential settlement), which most commonly occurs in loose, non-compacted materials of variable density and strength. Alluvial materials and artificial fill at the site could be subject to differential settlement.

Expansive Soils

Expansive soils possess a “shrink-swell” characteristic. Shrink-swell is the cyclic change in volume (expansion and contraction) that occurs in fine-grained clay sediments as they become saturated (swell) and then dry out (shrink). The cyclic shrinking and swelling can damage foundations and structures. Expansive soils in natural or engineered slopes can cause “soil creep” which can lead to severe cracking in dry soils and eventually result in damage to pavement and foundations. Cracking in the soil surface and in pavement can result in infiltration of surface water. The native soils at the Project site are composed of clays and silts, and can be highly expansive (Yolo County, 2005).

Paleontological Setting

Paleontological resources are the fossilized remains of plants and animals: vertebrates (animals with backbones; e.g., mammals, birds, fish), invertebrates (animals without backbones; e.g., starfish, clams, coral), and microscopic plants and animals (microfossils). Paleontological resources can include mineralized body parts, body impressions, or footprints and burrows. They are valuable, non-renewable, scientific resources, which are used to document the existence of extinct life forms and to reconstruct the environments in which they lived.

Fossils can be used to determine the relative ages of the depositional layers in which they occur and of the geologic events that created those deposits. The age, abundance, and distribution of fossils depend on the geologic formation in which they occur and the topography of the area where they are exposed. The geologic environments within which plants or animals became fossilized usually were quite different from the present environments in which the geologic formations exist.

The Project site is underlain by Pleistocene-age Riverbank and Modesto-Riverbank alluvial deposits. Vertebrate fossils in Late Pleistocene alluvium are representative of the Rancholabrean land mammal age, and many such taxa are now extinct. These fossils include, but are not limited to, bison, mammoth, ground sloths, saber-toothed cats, dire wolves, cave bears, rodents, birds, reptiles, and amphibians. Pleistocene alluvium in Yolo County is considered to have “high” sensitivity for paleontological resources.

Regulatory Setting

Alquist-Priolo Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (A-P Zoning Act) (Public Resources Code section 2621) was enacted by the State of California in 1972 to address the hazard of surface faulting to structures for human occupancy. The A-P Zoning Act was a direct result of the 1971 San Fernando Earthquake, which was associated with extensive surface fault ruptures that damaged homes, commercial buildings, and other structures. The primary purpose of the A-P Zoning Act is to prevent the construction of buildings intended for human occupancy on the surface traces of active faults. The A-P Zoning Act is also intended to provide the citizens with increased safety and to minimize the loss of life during and immediately following earthquakes by facilitating seismic retrofitting to strengthen buildings against ground shaking. The Project site is not located within an A-P Zone and is 16 miles southwest of the closest A-P Zone designated for the Dunnigan Fault.

Seismic Hazards Mapping Act

The State of California passed the Seismic Hazards Mapping Act of 1990 (Public Resources Code sections 2690–2699) to address the effects of strong ground shaking, liquefaction, landslides, and other ground failures due to seismic events. Under the Seismic Hazards Mapping Act, the State Geologist is required to delineate “seismic hazard zones.” Cities and counties must regulate certain development projects within these zones until the geologic and soil conditions of their project sites have been investigated and appropriate mitigation measures, if any, have been incorporated into development plans. The State Mining and Geology Board provides additional regulations and policies to assist municipalities in preparing the Safety Element of their General Plan and encourage land use management policies and regulations to reduce and mitigate those hazards to protect public health and safety. Under Public Resources Code section 2697, cities and counties must require, prior to the approval of a project located in a seismic hazard zone, submission of a Preliminary Geotechnical Report defining and delineating any seismic hazard.

State publications supporting the requirements of the Seismic Hazards Mapping Act include the CGS Special Publication (SP) 117A, *Guidelines for Evaluating and Mitigating Seismic Hazards in California*, discussed above, and SP 118, *Recommended Criteria for Delineating Seismic Hazard Zones in California* (2004). SP 117A provides guidelines to assist in the evaluation and mitigation of earthquake-related hazards for projects within designated zones requiring investigations and to promote uniform and effective Statewide implementation of the evaluation and mitigation elements of the Seismic Hazards Mapping Act. SP 118 provides recommendations to assist the CGS in carrying out the requirements of the Seismic Hazards Mapping Act to produce the Probabilistic Seismic Hazard Maps for the State. The Project site has not been evaluated by the CGS for landslides or liquefaction under the Seismic Hazard Mapping Act.

California Building Code

The California Building Code (CBC), which is codified in Title 24 of the California Code of Regulations, Part 2, was promulgated to safeguard the public health, safety, and general welfare by establishing minimum standards related to structural strength, means of egress facilities, and general stability of buildings. The purpose of the CBC is to regulate and control the design, construction, quality of materials, use/occupancy, location, and maintenance of all buildings and structures within its jurisdiction. Title 24 is administered by the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. Under State law, all building standards must be centralized in Title 24 or they are not enforceable. The provisions of the CBC apply to the construction, alteration, movement, replacement, location, and demolition of every building or structure, or any appurtenances connected or attached to such buildings or structures throughout California (DGS, 2020).

The 2019 edition of the CBC is based on the 2018 International Building Code (IBC) published by the International Code Council. The code is updated triennially, and the 2019 edition of the CBC, which was published by the California Building Standards Commission, took effect starting January 1, 2020. The 2019 CBC contains California amendments based on the American Society of Civil Engineers (ASCE) Minimum Design Standard ASCE/SEI 7-16, Minimum Design Loads for Buildings and Other Structures, provides requirements for general structural design and includes means for determining earthquake loads as well as other loads (such as wind loads) for inclusion into building codes. Seismic design provisions of the building code generally prescribe minimum lateral forces applied statically to the structure, combined with the gravity forces of the dead and live loads of the structure, which the structure then must be designed to withstand. The prescribed lateral forces are generally smaller than the actual peak forces that would be associated with a major earthquake. Consequently, structures should be able to: (1) resist minor earthquakes without damage, (2) resist moderate earthquakes without structural damage but with some nonstructural damage, and (3) resist major earthquakes without collapse, but with some structural as well as nonstructural damage. Conformance to the current building code recommendations does not constitute any kind of guarantee that substantial structural damage would not occur in the event of a maximum magnitude earthquake. However, it is reasonable to expect that a structure designed in accordance with the seismic requirements of the CBC should not collapse in a major earthquake (DGS, 2020).

California Code of Regulations Title 27, Environmental Protection

Title 27 Division 2 (Solid Waste) of the California Code of Regulations contains the regulations of the California Integrated Waste Management Board (CIWMB)⁴ and State Water Resources Control Board (SWRCB) pertaining to waste disposal on land. Title 27 regulates the siting, design, construction, operation, closure, and post-closure of MSW landfills in California.

Title 27 requires the collection of geologic and hydrologic information prior to the permitting of a new landfill in order to determine its suitability with respect to avoidance of geologic hazards. Title 27 requires that analyses be conducted regarding the geologic materials and structures at the site, soils, the maximum probable earthquake that could affect the site (for Class III landfills), and the presence or absence of Holocene faults in the vicinity. Provisions Pertaining to Geology, Soils, and Seismicity in Title 27 include the following (summarized):

Section 20820 requires that adequate drainage be provided, and that if erosion occurs, it be promptly repaired with steps taken to prevent further occurrences. Title 27 also establishes standards for grading, slope stability, drainage, and erosion control for closure and post-closure at solid waste landfills (Sections 21140 to 21150).

Section 21090 requires that the final topographic configuration of the landfill be designed to accommodate anticipated future settlement, meet minimum grading requirements of Title 27 and reduce run-off velocities to protect the final cover from soil erosion. A registered civil engineer or certified engineering geologist must develop final grading plans. The landfill operator is required to develop and implement quality control procedures to ensure that final grading takes place as designed and approved.

Section 21090 also requires that landfill settlement be monitored after closure. Monitoring techniques include the installation and periodic measurement of permanent survey monuments, an aerial photographic survey of the entire landfill area and repeat surveys every five years, and production of iso-settlement maps showing the change in elevation from the time of closure to the most recent topographic survey (at a minimum contour interval of 2 feet).

Section 21090 requires that the integrity of final slopes under both static and dynamic conditions be ensured. Final slopes are not permitted to exceed a horizontal to vertical ratio of 1.75:1, and a minimum of one 15-foot-wide bench for every 50 feet of vertical height is required. A slope or foundation stability report is required for final slopes that exceed a horizontal to vertical ratio of 3:1. A slope or foundation stability report is also required to assess the stability of landfill slopes in areas subject to liquefaction or unstable areas with poor foundation conditions. A registered civil engineer or a certified engineering geologist must prepare slope or foundation stability reports.

California Public Resources Code Sections 5097.5 and 30244

Other state requirements for paleontological resource management are included in Public Resources Code sections 5097.5 and 30244. Section 5097.5 prohibits the removal of any paleontological site or feature from public lands without permission of the jurisdictional agency. It defines the removal of paleontological sites or features as a misdemeanor, and requires

⁴ In January 2010, the functions of the CIWMB were taken over by the California Department of Resources Recycling and Recovery (CalRecycle).

reasonable mitigation of adverse impacts to paleontological resources from developments on public (state, county, city, district) lands. Section 30244 requires that, where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.

Local Regulations

The Yolo County 2030 Countywide General Plan (Yolo County, 2009) has established the following goal and policies regarding geologic hazards:

Goal HS-1: Geologic Hazards. Protect the public and reduce damage to property from earthquakes and other geologic hazards.

Policy HS-1.1: Regulate land development to avoid unreasonable exposure to geologic hazards.

Policy HS-1.2: All development and construction proposals shall be reviewed by the County to ensure conformance to applicable building standards.

Policy HS-1.3: Require environmental documents prepared in connection with CEQA to address seismic safety issues and to provide adequate mitigation for existing and potential hazards identified.

3.9.2 IMPACTS AND MITIGATION MEASURES

Significance Criteria

The following thresholds of significance are consistent with CEQA Guidelines Appendix G. A significant impact would occur if the Project would:

1. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
 - a. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. Refer to Division of Mines and Geology Special Publication 42;
 - b. Strong seismic ground shaking;
 - c. Seismic-related ground failure, including liquefaction; or
 - d. Landslides.
2. Result in substantial soil erosion or the loss of topsoil;
3. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;
4. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property;

5. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater; or
6. Directly or indirectly destroy a unique paleontological resource or site or unique geological feature.

Issue Areas Considered No Impact and Not Discussed Further

Certain potential issues that are identified in the Significance Criteria do not pertain to the Project or are considered to have no impact. These issue areas and the rationale for why they are not analyzed further are described below.

Surface Fault Rupture

[Significance Criteria 1a]. No known active, sufficiently active, or well-defined faults have been recognized as crossing or being immediately adjacent to the Project site. CGS does not delineate any part of the Project site within an Alquist-Priolo Earthquake Fault Zone. Further, there is no evidence that development of the Project would increase the frequency or effects of seismic activity in the area. There would be no impacts related to fault rupture and, thus, this surface fault rupture is not discussed further.

Soils Incapable of Adequately Supporting the Use of Septic Tanks

[Significance Criteria 5]. The Project does not propose developing domestic or industrial waste disposal through septic systems involving leachfields, so an analysis of whether underlying soils are capable of supporting these systems is not warranted. There would be no impacts associated with this issue area and thus leachfield soil suitability is not discussed further.

Impact Analysis

Impact 3.9.1: The Project could directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking. (Less than Significant)

Yolo County is not located in a seismically active region, however, seismic ground shaking from a regional fault zones, including those along the Foothills Fault Zone and major faults within the Coast Range in the San Francisco Bay Area, could affect the YCCL. The CGS identifies the Project site vicinity as an area that would experience lower levels of shaking, less frequently. In earthquakes in these areas, only weaker, masonry buildings would be damaged, however, very infrequent earthquakes could still cause strong shaking (CGS, 2016). The intensity of such an seismic event would depend on the causative fault and the distance to the epicenter, the strength and duration of shaking, and the nature of the underlying geologic materials.

The elements most susceptible to damage during an earthquake on the Project site would be the built structures. These elements include the wood pellet facility, waste gasification facility, peaking power plant, organic waste fertilizer facility, transfer station, thermal pressure hydrolysis system and biogas to methanol pilot facility. The structural elements (foundations, structural members) of the Project would be required to undergo appropriate design-level geotechnical evaluations prior to final design and construction in accordance with CBC Chapter 18.

Implementing the regulatory requirements of the most recent CBC, Title 27, the CGS Guidelines for Evaluating and Mitigating Seismic Hazards in California, and ensuring all buildings and structures are constructed in compliance with the law is the responsibility of the project engineers and building officials, as also detailed in CBC Chapter 18. Pursuant to Title 27, Class III landfills are required to be designed to withstand the maximum probable earthquake without damage to the foundation or to the structures, which control leachate, surface drainage, erosion, or gas.

Design-level geotechnical investigations would evaluate soil conditions underlying the proposed project elements and, if problematic geologic materials are identified, geotechnical recommendations would be implemented to improve the subsurface conditions so the foundations can adequately support the structures under seismic and non-seismic conditions. Geotechnical remedies for problematic materials could include removing, compacting, or replacing foundational soils, as necessary. In accordance with the CBC, all fill and backfill materials would be observed and tested by the geotechnical engineer prior to their use to evaluate their suitability.

Because the Project site is not within a seismically active area and the geologic conditions must be corrected prior to construction if they are found to be incapable of supporting structures, it is not likely that the Project would directly or indirectly expose people or structures to potentially substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking. Further, there is no evidence that development of the Project would increase the frequency or effects of seismic activity in the area. Therefore, impacts associated with seismic ground shaking would be less than significant.

Mitigation Measures

None required.

Impact 3.9.2: During the development and operation of the non-specific future off-site borrow area, soil excavation could directly or indirectly cause substantial erosion or loss of topsoil. (Less than Significant)

The majority of the YCCL property is developed with stormwater management mechanisms, which reduce the potential for concentrated stormwater flows that are capable of causing substantial onsite erosion. Section 3.10, Hydrology and Water Quality describes the surface water and stormwater management and the controls that the YCCL must comply with to reduce concentrated stormwater flow, erosion and sedimentation. Construction activities not covered under the Stormwater Pollution Prevention Plan (SWPPP) for operations associated with the Industrial General Permit (IGP) (Order 2014-0057-DWQ) would be required to comply with National Pollutant Discharge Elimination System (NPDES) regulations and obtain coverage under the State Construction General Permit (CGP), which regulates construction site stormwater management. The SWPPP and required best management practices (BMPs) under the CGP would also be in place and the YCCL would be required to comply with stormwater management controls during the construction and operation of the non-specific future off-site borrow area. The potential for the Project to cause substantial erosion would be less than significant.

Loss of topsoil is not a potential impact for the developed portions of YCCL property because most of the native soils have already been disturbed. Depending on the final location of the non-specific future off-site borrow area, its development and operation could remove up to 640 acres topsoil. However, topsoil retention is required per the future site reclamation plan. Therefore, impacts associated with topsoil loss would be less than significant.

Mitigation Measures

None required.

Impact 3.9.3: The Proposed Project could directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction, landslides, or is the Project site located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse. (Less than Significant)

The Project Site is not within a liquefaction area as mapped by the CGS. While groundwater is shallow, the soils underlying the Project site are characterized as stiff clays and silts, compact sand and stiff hard clay. These materials are fine grained and dense and, although some units may contain loose more granular material (i.e., sands and gravels), the extent of those materials are comparatively limited and typically occur at depth. As there is a relatively low potential for liquefaction, there is also a low potential for secondary effects of liquefaction, including lateral spreading, earthquake induced collapse and landsliding. As discussed above (Impact 3.9.1), the structural elements of the Project would be required to undergo appropriate design-level geotechnical evaluations prior to final design and construction in accordance with CBC Chapter 18 and Title 27. The geotechnical investigations would evaluate foundational soils beneath the proposed structures and determine their suitability to support the proposed structure. If it is determined that soils are incapable of supporting the proposed structure, the geotechnical engineer would identify the limitations and develop recommendations for improving the soils conditions (e.g., removal and replacement, soils conditioning, recompaction) or for alternative foundation designs (e.g., deep pile foundations). Considering that the Project site is developed, has been previously evaluated from a geotechnical standpoint, and additional proposed structures would be required by the CBC to undergo appropriate geotechnical evaluation, problematic soil conditions would be identified and remedied prior to construction. Therefore, impacts related to seismic and geologic ground failure would be less than significant.

Mitigation Measures

None required.

Impact 3.9.4: Elements of the Project could be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property. (Less than Significant)

The three soils found at YCCL (Capay silty clay, Clear Lake clay, and Willows clay) have fairly low permeability (infiltration rates of 0.06 to 0.2 inches per hour), have high shrink-swell potential, and are highly corrosive (USDA NRCS, 1972). Shrink-swell refers to the cyclic change in volume (expansion and contraction) that occurs in fine-grained sediments caused by wetting and drying. Expansive soils (i.e., ones that have shrink-swell potential) can damage foundations and structures. Expansive soils in natural or engineered slopes can cause “soil creep,” which can lead to severe cracking in dry soils and eventually result in damage to pavement and foundations. Cracking in the soil surface and in pavement can result in infiltration of surface water. The native soils at the Project site are composed of clays and silts, and are highly expansive.

The Project site includes areas that are underlain by clayey soils that could exhibit expansion potential when not properly addressed during site preparation during construction. However, the structural elements of the Project would be required to undergo design-level geotechnical evaluations prior to final design and construction as required by the CBC. These investigations would evaluate foundational soil conditions for structural design and would include soil testing for expansivity. If expansive soils are identified, the geotechnical engineer would provide recommendations to remedy the conditions, which could include removal and replacement of the expansive soil layer or soil conditioning that would reduce the potential for shrink-swell soil behavior. Expansive soils can be encountered at the Project site but prior to design and construction of structural foundations, these conditions would be identified and recommendations to remedy the condition would be implemented. Therefore, this impact would be less than significant.

Mitigation Measures

None required.

Impact 3.9.5: During the development and operation of the non-specific future off-site borrow area, soil excavation could directly or indirectly destroy a unique paleontological resource. (Significant)

Excavation activities at the non-specific future off-site borrow area could result in adverse impacts to paleontological resources. Regional geologic mapping indicates that the non-specific future off-site borrow area could be underlain by Pleistocene-age unconsolidated sediments. The Yolo County General Plan indicates that Pleistocene alluvium in Yolo County is considered to have “high” sensitivity for paleontological resources (Yolo County, 2005). However, site-specific information (age-dated burial remains) obtained during the 2015 investigation of the current YCCL borrow area indicates that at least the upper 8 feet of sediments in the vicinity of the borrow area are Holocene in age. Holocene alluvial deposits in Yolo County are generally not considered paleontologically significant. It is possible that the deeper sediments are older, potentially Pleistocene age, and therefore, without additional information, could be considered

paleontologically sensitive. Until additional information on location of the non-specific future off-site borrow area is available and the depth of that pit is defined, the potential impact to paleontological resources would be considered a significant impact.

Mitigation Measures

Mitigation Measure 3.9.5: Prior to initiation of any future off-site borrow area excavation activities 8 feet or more below the ground surface, the County shall provide pre-construction briefing(s) to supervisory personnel of any excavation contractor to alert them to the possibility of exposing significant paleontological resources within the Project area. The briefing shall discuss any paleontological objects that could be exposed, the need to stop excavation at the discovery, and the procedures to follow regarding discovery protection and notification of the County. An "Alert Sheet" shall be posted in conspicuous locations at the future off-site borrow area to alert personnel to the procedures and protocols to follow for the discovery of potentially significant paleontological resources. If unique and/or significant paleontological resources are discovered during soil management activities (as determined by a qualified paleontologist), the County shall allow excavation, identification, cataloging and/or other documentation by the qualified paleontologist. If appropriate, the County shall donate the resource to a local agency, state university, or other applicable institution, for curation and display for public education purposes.

Level of Significance After Mitigation

Mitigation Measure 3.9.5 would ensure that, prior to and during construction of the non-specific future off-site borrow area, excavation would be monitored to ensure that work would cease at the discovery of paleontological resources so that further disturbance would not occur and subsequent discoveries can be monitored and recovered. This mitigation measure reduces the potential for destruction and loss of paleontological resources and thus would reduce the impact to less than significant.

3.9.3 REFERENCES

- California Department of General Services (DGS). 2020. Building Standards Commission, California. Building Standards Code (California Code of Regulations, Title 24). <http://dgs.ca.gov/BSC/Codes>. Accessed March 31, 2020
- California Department of Conservation. 2021. Farmland Mapping and Monitoring Program, *Soil Candidate Listing for Prime Farmland and Farmland of Statewide Importance, Yolo County*, April 10, 2021; <https://www.conservation.ca.gov/dlrp/fmmp/Pages/Maps/Categories,-Criteria,-and-Data.aspx>
- California Geological Survey (CGS), 2016. Earthquake Shaking Potential for California. Prepared by Branum, D. Chen, R. Peterson, M, Wills C. Map Sheet 48 (Revised 2016).
- Hart, E.W. *Fault-Rupture Hazard Zones in California: Alquist-Priolo Special Studies Zones Act of 1972 with Index to Special Studies Zones Maps*, California Division of Mines and Geology, Special Publication 42, 1990, revised and updated 1997.

United States Department of Agriculture Natural Resource Conservation Service (USDA NRCS), Soil Survey of Yolo County, California, by Wells F. Andrews, Soil Conservation Service. U.S. Government Printing Office, 1972.

United States Geological Survey (USGS). 1981. *Davis Quadrangle, California*. 7.5 minute series (topographic) 1952, photorevised 1981.

USGS, 2021. U.S. Quaternary Faults. USGS Geological Hazards Science Center, Golden Colorado. <https://usgs.maps.arcgis.com/apps/webappviewer>, Accessed April 1, 2021.

Yolo County. 2005. *Yolo County Central Landfill Permit Revisions Final Subsequent Environmental Impact Report SCH No. 1991073040*. May 2005.

Yolo County. 2018. *Joint Technical Document, Yolo County Central Landfill, Yolo County, CA*. June 2018.

3.10 HYDROLOGY AND WATER QUALITY

This section describes the baseline conditions relating to surface water and groundwater hydrology and water quality for the Yolo County Central Landfill (YCCL) as well as the applicable water resources related federal, State, and local laws, ordinances, and regulations relevant to the Project. The physical setting and baseline conditions provide the basis for the analysis of surface water and groundwater hydrology and water quality impacts, which includes consideration of whether the Project would violate water quality standards or waste discharge requirements, alter existing drainage patterns of the site or area, contribute to or create polluted runoff, degrade surface and groundwater quality, or increase flood risks on- and off-site.

3.10.1 SETTING

Regional Setting

The Project site is located on the valley floor near the southern end of the Sacramento Valley. The Project site and the region slope slightly from west to east, toward the Sacramento River. The Sacramento Valley, which forms the northern half of California's Central Valley, is bounded by the Sierra Nevada to the east and, in the Project vicinity, the Dunning Hills, English Hills, and Coast Ranges to the west. The Project site is located in the Lower Sacramento River watershed, and in the Lower Putah Creek Hydrologic Area of the Putah-Cache Hydrologic Unit in the Sacramento Hydrologic Basin Planning Area (U.S. EPA, 2021). The Lower Putah Creek Hydrologic Area is approximately 225,301 acres and is bound by Putah Creek to the south and Cache Creek to the north. Water resources in this region include rivers, streams, sloughs, marshes, wetlands, channels, harbors, and underground aquifers. The topography in the vicinity of the Project is generally flat and is drained by the Sacramento River and the Yolo Bypass.

Climate

The region is characterized by hot, dry summer days, occasionally tempered by westerly breezes from the Sacramento-San Joaquin Delta, and somewhat cooler nights, and moderately cool and moist winters. Summers can be hot at times with weekly periods of 100-degree Fahrenheit temperatures, greatly increasing irrigation requirements in the area as well as evaporation rates. The Project site receives an average of 19.76 inches of precipitation per year. About 96 percent of annual precipitation occurs between the months of October and April. The 100-year wet season precipitation for the facility is 31.1 inches and the 100-year, 24-hour precipitation event is 5.1 inches (RWQCB, 2016; Yolo County, 2018).

Surface Water Hydrology

The Project site is located within the Tule Canal-Toe Drain watershed within the Lower Putah Creek Hydrologic Area. The Dry Slough and the Willow Slough watersheds are located to the west and north of the Project site and contribute flows to the Willow Slough Bypass channel. The Putah Creek-South Fork Putah Creek watershed is located to the south of the Tule Canal-Toe Drain watershed.

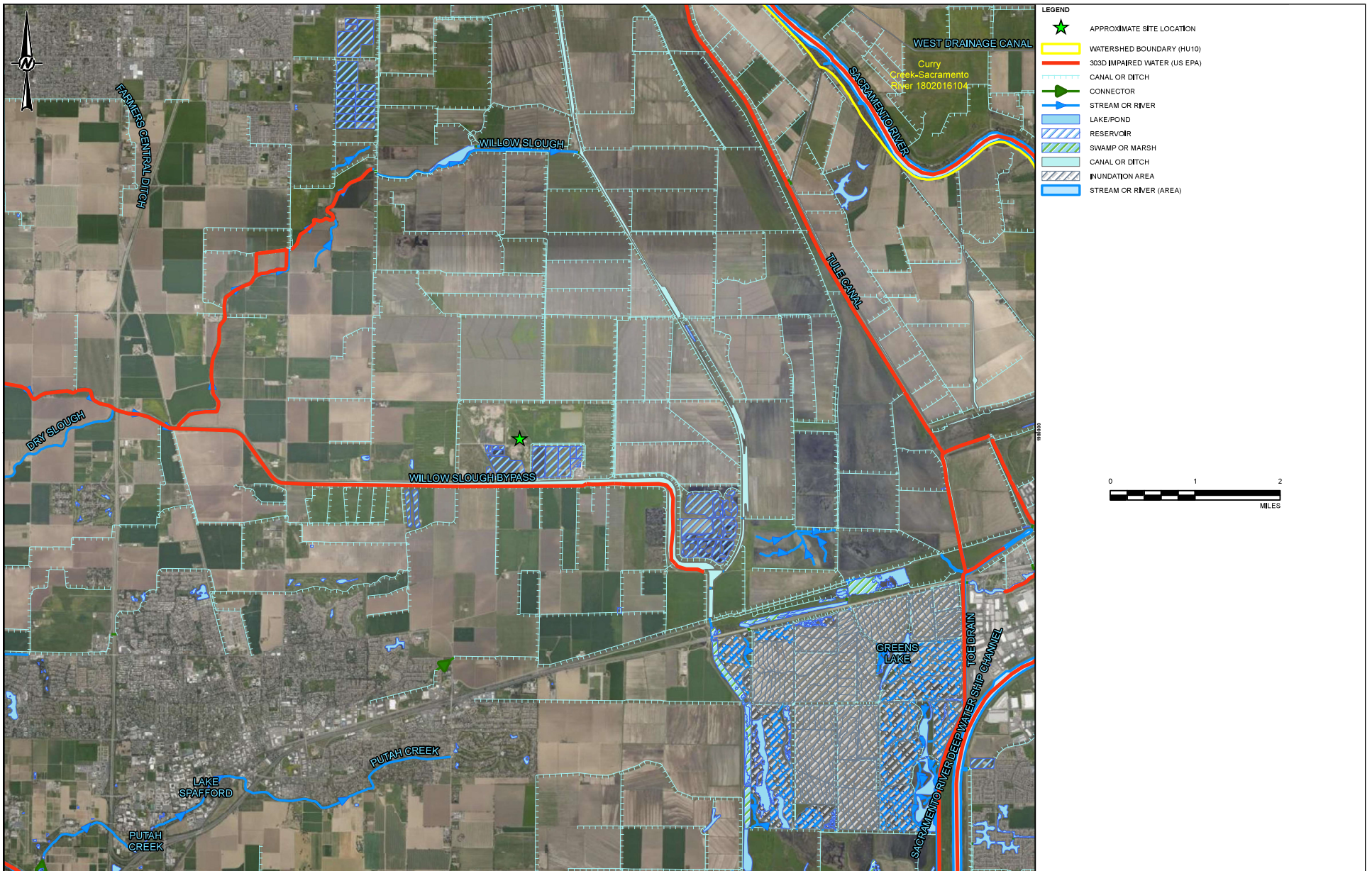
Major surface waters relevant to the Project site include Willow Slough Bypass on the southern property boundary, Willow Slough about two miles to the north, Putah Creek approximately four miles to the south, Cache Creek approximately six miles to the north, and the Yolo Bypass (an overflow conveyance of the Sacramento River) three miles to the east (**Figure 3.10-1**) (RWQCB, 2016). Willow Slough Bypass drains the southern portion of the Project site and an unnamed canal drains the northern part of the Project site (RWQCB, 2016). The Willow Slough Bypass and the unnamed canal empty into the Yolo Bypass to the east. These tributaries flow to the Sacramento River, which is located approximately six miles east of the Project site and drains to the Sacramento San Joaquin Delta. Willow Slough Bypass is a leveed channel that drains approximately 200 square miles and receives flows from Willow, Cottonwood, Chickahominy, and Dry Sloughs south of Cache Creek. Areas of heavy irrigation and/or seasonal ponding of water in the immediate area of the site are the irrigated rice and alfalfa fields to the north, and the holding ponds of the City of Davis Wastewater Treatment Plant (WWTP) to the east and southeast (Yolo County, 2018). Seasonal wetlands within large depressions as well as linear topographic depressions are located on adjacent lands as a result of topsoil scraping for borrow soil (see Section 3.4, Biological Resources for detailed discussion).

Land use within one mile of the landfill is predominantly agricultural (Yolo County, 2018). Adjacent land uses include the City of Davis WWTP and associated ponds immediately south and east, Willow Slough Bypass Channel and County Road 28H along the southern boundary of the Project site west of the WWTP,¹ the City of Davis overland flow treatment fields to the east, and croplands to the north. The property immediately west of the YCCL and on the opposite side of County Road 104 was purchased by the County in 2014 for use as a soil borrow site for YCCL (Yolo County, 2018).

Site Drainage

The 725-acre YCCL is generally flat with a natural grade of approximately one foot of fall from north to south and six feet of fall from west to east (RWQCB, 2016). The natural elevation of the site is approximately 21 to 25 feet above mean sea level (MSL) (Yolo County, 2018). Run-on from adjacent property on the north is prevented by an agricultural ditch along the northern site perimeter. Run-on from the west is prevented by a roadside ditch along County Road 104. No run-on occurs from the east because the surrounding topography results in an overall drainage pattern from west to east. There is some run-on from County Road 28H along the southern landfill boundary. Drainage ditches also exist along the eastern landfill boundaries adjacent to the City of Davis WWTP (Yolo County, 2018). Additionally, the In-Vessel Digester and Food De-Packaging area is bermed to reduce run-on from adjacent areas.

¹ Willow Slough Bypass Channel and County Road 28H are actually within the boundary of the YCCL site west of the WTP but could be considered “adjacent uses” relative to the active landfill site.



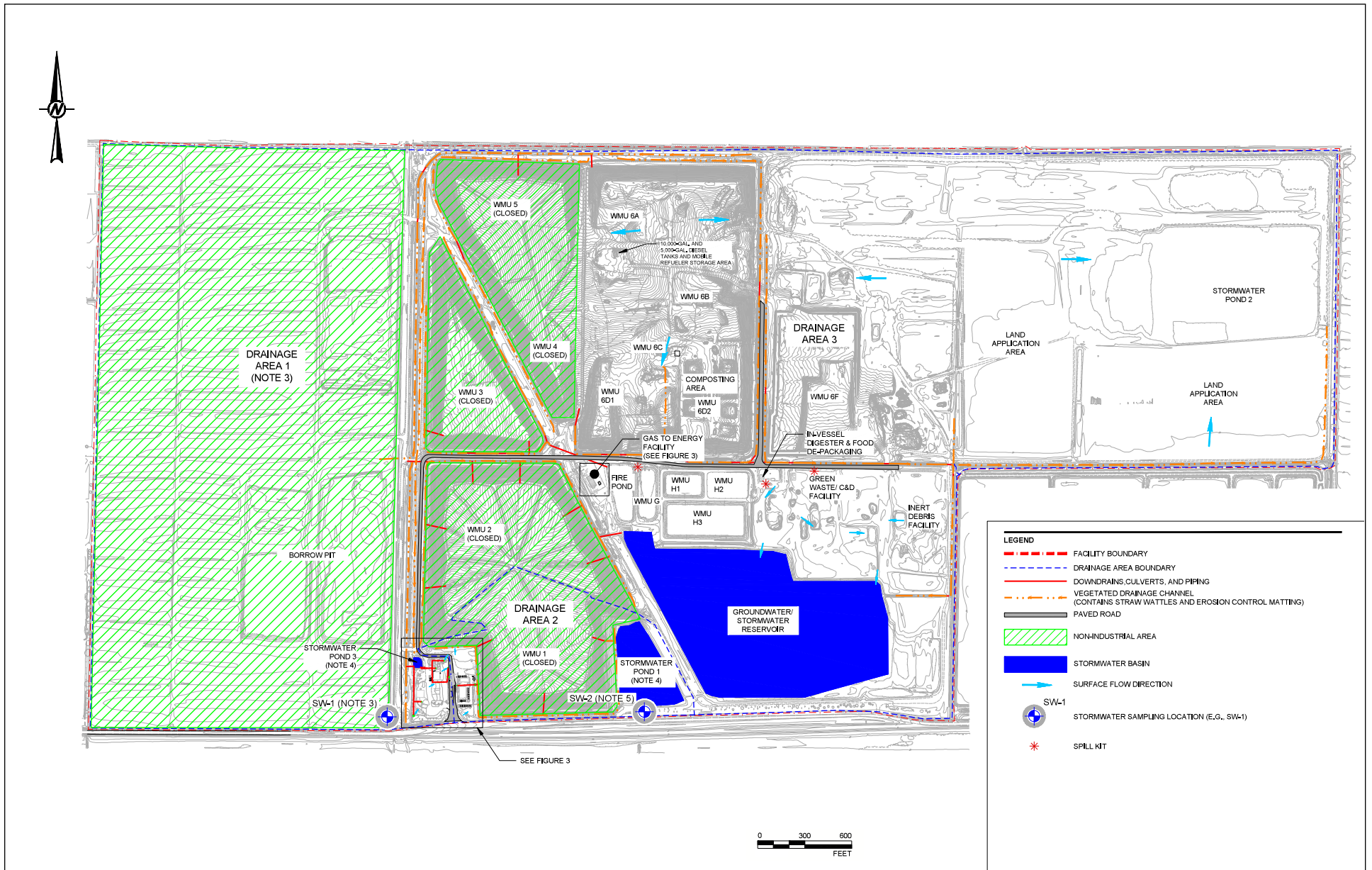
Source: Golder, 2020

Figure 3.10-1
Water Resources Map

As an active industrial site, stormwater is managed via the site's stormwater control system and stormwater collected and retained on site is managed and re-used such that it is not discharged off-site, although off-site discharge can occur, as described below. Rainfall that has not contacted waste (i.e., has only been in contact with an unfilled or covered section of a WMU or module, or that falls on other areas of the Project site) is managed as stormwater. There are no connections from drains of industrial process water or domestic wastewater to the stormwater conveyance system present at the facility and based on historical inspections and observations, no unauthorized non-stormwater discharges are present at the facility (Golder, 2021). Rainfall that has been in contact with refuse is managed as leachate. YCCL has four Class II surface impoundments for managing leachate and Class II liquid wastes, as discussed under "Leachate Management," below.

Stormwater runoff control and surface water drainage facilities at the Project site include drainage ditches, culverts, down-drain pipes and perimeter ditches at all waste management units (WMUs). Drainage ditches with flow velocities of 5 feet per second (fps) or less are lined with grass or erosion control matting. Drainage ditches with greater than 5-fps flow velocities are lined with concrete or equivalent protective material for protection against erosion. Pipe down-drains on landfill side slopes are provided to convey flow to perimeter drainage facilities. Cross-drains on landfill benches and access roads are constructed of metal, plastic or concrete pipe with minimum pipe cover for vehicular traffic (Yolo County, 2018). The stormwater control system is sized to accommodate the 100-year, 24-hour storm event (Golder, 2021). Three drainage ditches occur in the area proposed for the stormwater treatment system (**Figure 3.10-2**). Two of the ditches run parallel east to west and converge with an additional ditch orientated north to south. These artificial ditches are used for the YCCL's existing water treatment operations.

Stormwater runoff at YCCL generally flows from one of three drainage areas towards the perimeter drainage channels around each WMU and then into one of three stormwater ponds or to the 49-acre groundwater/stormwater reservoir (**Figure 3.10-2**) (Yolo County, 2018). Drainage area 1 includes the borrow pit and the surrounding area to the west and north of the borrow pit. If the borrow pit were to overflow (i.e., exceed retention capacity), stormwater would be discharged via the pump station to Willow Slough Bypass at an existing stormwater outfall (labeled SW-1 on **Figure 3.10-2**). Drainage area 2 includes the western and central areas of the facility and runoff is generally conveyed to vegetated drainage channels around the perimeter of the landfill modules and then to Stormwater Pond 1 and Stormwater Pond 3. Stormwater Pond 1 and Stormwater Pond 3 are typically managed such that when these ponds are full, stormwater is pumped to the groundwater/stormwater reservoir (Golder, 2021). However, if there is insufficient storage capacity in the groundwater/stormwater reservoir, Stormwater Pond 1 can discharge by gravity flow directly to Willow Slough Bypass via a gate valve connected to a 24-inch concrete culvert outlet located at the southern margin of the pond (labeled SW-2 on **Figure 3.10-2**). The gate valve is kept closed during normal operation. Drainage area 3, comprising the eastern portion of the facility, generally sheet flows east to Stormwater Pond 2 on the northeast corner of the facility. If Stormwater Pond 2 were to fill completely, it would backflow through the stormwater drainage channels to the groundwater/stormwater reservoir.



Source: Golder, 2020

Figure 3.10-2
SWPPP Overview Site Map

Under Waste Discharge Requirement (WDR) Order No. 98-197, treated groundwater was formerly discharged to an off-site agricultural ditch, which flows into the Yolo Bypass. This WDR also served as the National Pollutant Discharge Elimination System (NPDES) permit number CA0083119, which allowed the discharge of the effluent to the off-site ditch.

As of November 30, 2001, discharge to the ditch was discontinued in order to comply with the Cease and Desist Order (CDO) No. 98-198, which required the effluent to be treated for boron and selenium prior to off-site discharge. On June 7, 2002, the RWQCB rescinded the CDO No. 98-198 (and the WDR Order No. 98-197/NPDES Permit) for the air stripper treatment system (AST) since effluent will no longer be discharged to off-site waters. The effluent is instead now managed on site by the groundwater disposal system (GDS) under WDR R5-2002-078. Phytoremediation is used to reduce the boron and selenium levels from the AST effluent. The *Report of Waste Discharge, Groundwater Disposal System* (Geomatrix, September 2001) provides details for the GDS design. In summary, the GDS is made up of a water storage reservoir (reservoir) and a land application area (LAA). The treated AST effluent is piped to the reservoir or the water storage pond. The reservoir stores treated effluent from the air stripper during portions of the year where the quantity of collected groundwater exceeds the amount that can be used for on-site construction or for use in the LAA. Water from the reservoir is piped to the LAA, which consists of two parcels of land (approximately 45 acres each). The LAA is used for phytoremediation of the treated effluent from the AST. A known boron and selenium accumulator plant species is planted in one parcel while the other parcel remains fallow.

In October 2012, the YCCL's surface water drainage facilities were modified to eliminate stormwater discharge. A Notice of Termination under the General Industrial Storm Water Permit was filed with the California Regional Water Quality Control Board (RWQCB), effective November 1, 2012, and a Notice of Non-Applicability was filed related to the updated General Industrial Storm Water NPDES Permit in July 2015 (Yolo County, 2018). Due to the modifications to the drainage system, the groundwater/stormwater reservoir does not discharge offsite; the facility is permitted to discharge to land under WDR R5-2002-078 (see Regulatory Setting, below). Additionally, the facility uses groundwater extraction system water on-site for dust control on access roads. Dust control water is not sprayed during wet weather and has not observed any runoff to stormwater drainage channels.

Surface Water Quality

The quality of surface water is primarily a function of land uses in the Project area. Local land uses influence the quality of surface waters through point source discharges (i.e., discrete discharges from discharge pipes) and nonpoint source discharges (e.g., direct storm runoff from slopes). Surface water runoff is generated by precipitation that cannot be absorbed into the ground in the period following a storm. Pollutants and sediments are transported in watersheds by stormwater runoff that reaches streams, rivers, and storm drains. As described above, stormwater runoff from the landfill slopes and drainage ditches is conveyed into the landfill stormwater control system and ultimately into the groundwater/stormwater reservoir, following which it is discharged to land consistent with the landfill's WDRs. The amount of surface water runoff is a factor of precipitation, ground saturation, and available permeable or pervious ground surfaces. Permeability is a measure of how quickly water can penetrate a surface area.

Section 303(d) of the Clean Water Act (see Regulatory Setting) requires states, territories and authorized tribes to develop lists of impaired waters – waters that do not meet water quality standards even after point sources of pollution have been outfitted with the minimum required levels of pollution control technology. There are seventeen 303(d) impaired waterbodies in the Lower Putah Creek Hydrologic Area, including major rivers, creeks, and tributaries. Two of the impairments are located along Cache Creek, two are located along Putah Creek, three are located along the Sacramento River, and ten are located along the Delta Waterways. These water bodies are impaired by a variety of contaminants including mercury, chlorpyrifos, DDT, diazinon, total dissolved solids, exotic species, Group A pesticides, and unknown toxicities. Such constituents originate from a variety of sources, but generally include agricultural activities, resource extraction, urban runoff/storm sewers, and unknown sources (City of Davis, 2016).

Willow Slough Bypass is the most relevant surface water to the Project site as, although stormwater is typically retained onsite, in the event that a discharge occurs (such as that proposed under the Project), the discharge would flow to Willow Slough Bypass. Willow Slough Bypass is listed as an impaired water body (**Figure 3.10-1**) for boron, E. Coli, and fecal coliform (SWRCB, 2010). Both surface water and groundwater in Yolo County have relatively high concentrations of boron (Yolo County, 2009). As a result, the water is not considered optimal for irrigation, and water softening is considered desirable for domestic purposes.

The law requires jurisdictions to establish priority rankings for 303(d) listed waters and develop action plans, known as Total Maximum Daily Loads (TMDLs), to improve water quality. The TMDL is a tool that establishes the allowable loadings or other quantifiable parameters for a waterbody and thereby the basis for the States to establish water quality-based controls. The purpose of TMDLs is to ensure that beneficial uses are restored and that water quality objectives are achieved. The Central Valley Regional Water Quality Control Board (RWQCB) has assigned high priority to developing TMDLs to address the diazinon impairment, medium priority for mercury, and low priority to developing TMDLs for the unknown toxicity, for the Sacramento River (RWQCB, 2010). The TMDL for diazinon was adopted in 2003 and the *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins* (Basin Plan, discussed in Regulatory Setting, below) was amended to incorporate the TMDL (RWQCB, 2018). Because the Project site does not directly discharge into any of the regionally identified 303(d) listed impaired waterbodies (Golder, 2021) the TMDLs do not apply to the Project site. Additionally, diazinon is a pesticide used in agricultural operations and is not used at the YCCL site and the TMDL for diazinon does not affect operations at the Project site.

Beneficial Uses

The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters within the jurisdictional area covered by the Basin Plan. The Basin Plan does not specifically identify beneficial uses for the Willow Slough Bypass. However, the Yolo Bypass has beneficial uses identified (RWQCB, 2018). The Willow Slough Bypass is part of the Yolo Bypass flood protection structure, and therefore, the beneficial uses for the Yolo Bypass listed in the Basin Plan apply to the Willow Slough Bypass. The designated beneficial uses for the Yolo Bypass are agricultural supply, including irrigation and stock watering (AGR); water contact recreation (REC-1); non-contact water recreation (REC-2); warm freshwater

habitat (WARM); migration of aquatic organisms, warm and cold (MIGR); spawning, reproduction, and/or early development, warm (SPWN); and wildlife habitat (WILD). Yolo Bypass is also designated as having a potential beneficial use for cold freshwater habitat (COLD).

Water Quality Monitoring and Reporting

Current operation of the YCCL is governed by WDR Order No. R5-2016-0094, issued by the RWQCB, on December 14, 2016, and by CDO No. R5-2011-0076. The CDO is primarily related to updating the filling and closure schedule for the existing unlined waste management units. All activities and requirements related to the CDO have been completed and the CDO will be officially rescinded following RWQCB review. Additionally, a GDS is operated at the YCCL under WDR Order No. R5-2002-0078 issued on May 3, 2002 by the RWQCB.

Consistent with the landfill's WDR Order No. R5-2016-0094 (RWQCB, 2016), a Monitoring and Reporting Program (MRP; Order No. R5-2016-0094) is ongoing which requires quarterly groundwater level measurements and semi-annual sampling and analysis of groundwater, the unsaturated zone, leak detection sumps, and leachate (RWQCB, 2007). Semi-annually, the County prepares and submits to the RWQCB and Local Enforcement Agency (LEA) a water quality monitoring report for the YCCL and GDS to comply with WDRs and California Code of Regulations (CCR) Title 27 regulations. The monitoring reports are required to either state that no water quality compliance violations occurred during the reporting period or to identify any violations found since the last report was submitted, and if the violations were corrected as well as a description of the actions taken or planned for correcting those violations.

The landfill MRP specifies Water Quality Protection Standards (WQPS) for all water quality parameters and constituents monitored, including a list of specific Constituents of Concern (COCs) required under Title 27. If a WQPS is exceeded (i.e., a release is discovered), the impacted monitoring point becomes subject to corrective action implementation and reporting. Surface water monitoring is conducted from each drainage area at all discharge locations² from two Qualifying Storm Events³ (QSEs) occurring within the first half of the reporting year (July 1 through December 31) and two QSEs occurring within the second half of the reporting year (January 1 through June 30). As described above, surface water at YCCL drains to one of three stormwater ponds, or the water storage reservoir. There is no off-site discharge of surface water. There has been no evidence of release from the WMU to surface water since the current WDRs were approved and based on reporting under the MRP, YCCL has been in compliance with the provisions and prohibitions of WDRs for the prior reporting period.

Flooding

The 100-Year floodplain denotes an area that has a one percent chance of being inundated during any 12-month period. Floodplain zones (Special Flood Hazard Areas [SFHA]) are determined by the Federal Emergency Management Agency (FEMA) and used to create Flood Insurance Rate

² Exceptions include: (1) when the facility qualifies for Representative Sampling Reduction, and (2) when stormwater is stored or contained.

³ The General Permit describes a QSE as when stormwater discharge occurs from at least one drainage area when the discharge is preceded by at least 48 hours with no discharges from any of the drainage areas.

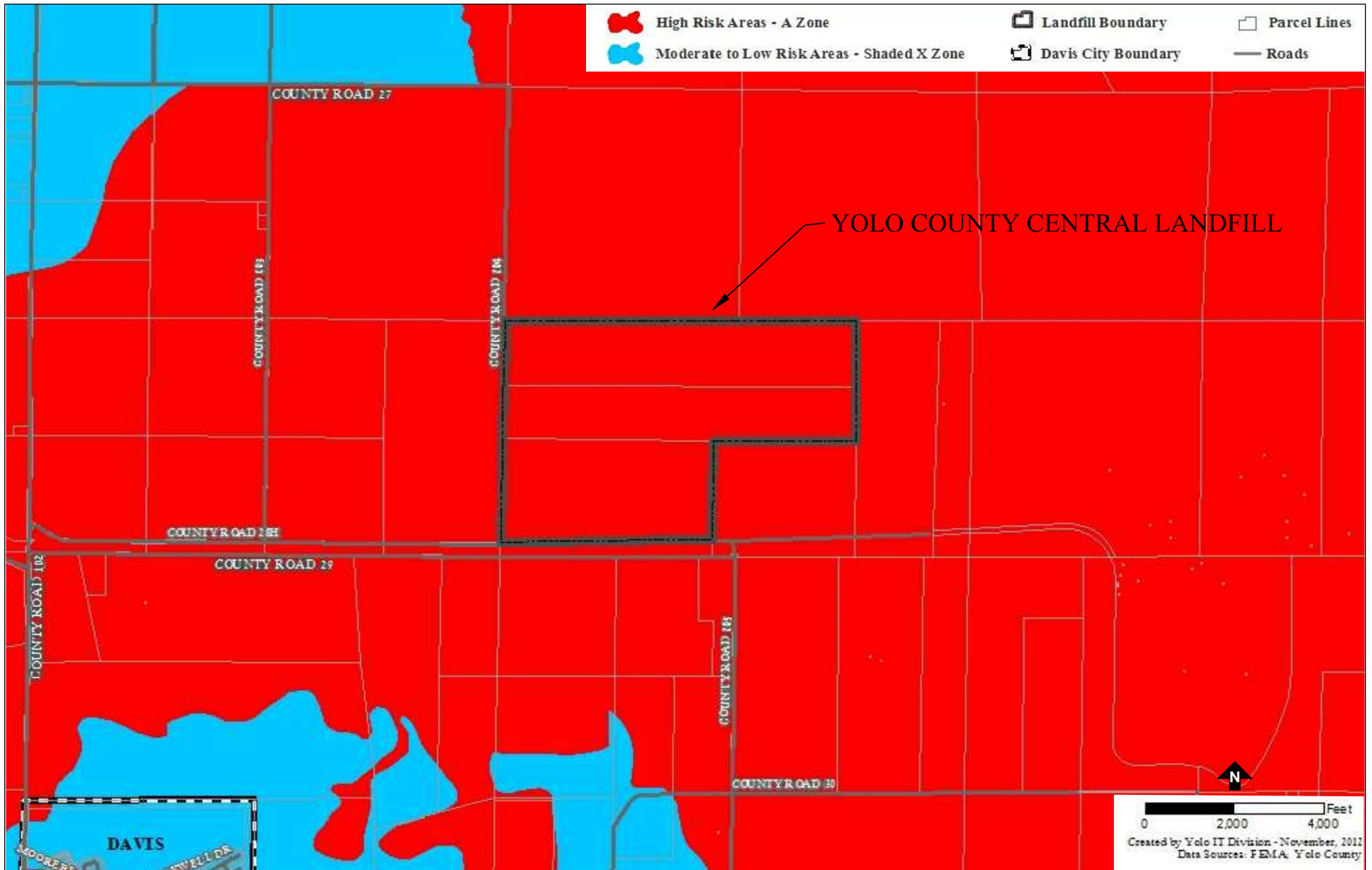
Maps (FIRMs). These tools assist communities in mitigating flood hazards through land use planning. FEMA also outlines specific regulations, intended to be adopted by the local jurisdictions, for any construction, whether residential, commercial, or industrial within 100-year floodplains.

On the latest FIRM for the Project site (FEMA, 2010), the Project site is identified in the 100-year flood zone (Zone A) (**Figure 3.10-3**) as a result of the decertification of the Willow Slough Bypass levee. Willow Slough Bypass is a part of the Yolo Bypass flood protection structure within the Sacramento River Watershed. WDR Order R5-2016-0094 requires YCCL to determine the required height to protect the WMUs from flooding events with a 100-year return period and demonstrate that WMUs are designed, constructed, and operated to prevent inundation or washout from this flood event. In compliance with WDRs, each WMU is protected from inundation by flood waters by perimeter soil levees around each cell at 33 feet MSL (Yolo County, 2018).

Leachate Management

YCCL generates approximately 6 million gallons of leachate per year which is collected and conveyed via the leachate collection and removal system (LCRS) to YCCL's Class II surface impoundments (Yolo County, 2004). The leachate and condensate collected in these ponds is disposed of through evaporation, as supplemental liquid injected into the bioreactors, or to the City of Davis WWTP, under an industrial discharge permit (YCCL, 2018). WMUs 1 through 4, which were constructed prior to adoption of current Subtitle D liner requirements, are underlain by native clay and were constructed on compacted subgrade that is graded to promote leachate runoff to a perimeter collection trench. From the perimeter trench the leachate is conveyed by a trunk line to Pump Station No. 1. WMU 5 is constructed on a two-foot compacted clay liner and has a dendritic LCRS consisting of lateral trenches containing gravel and perforated pipe that drain via longitudinal trenches and a trunk line to Pump Station No. 1. WMU 6 is comprised of multiple sub-modules that drain via longitudinal trenches to a perimeter trunk line and is conveyed to Pump Station No. 2 or Pump Station No. 4 (depending on the sub-module). Additionally, excess leachate from the Compost Facility is directed to Pump Station No. 3. The pump stations direct the leachate to YCCL's Class II surface impoundment. In addition to leachate collected in the landfill's LCRS, the Class II surface impoundments also receive gas condensate from the landfill gas (LFG) system, cooling water from the on-site LFG power plant, and any contact water (e.g., surface runoff that has contacted refuse at the working face) as well as non-hazardous liquid waste from the facility's trucked waste program.

The Class II surface impoundments consist of WMU G, which has a capacity of 1.5 million gallons, and WMU H, which is made up by two ponds, WMU H1 (3,418,000-gallon capacity) and WMU H3 (10,666,000-gallon capacity). WMU H1 and WMU H3 are hydraulically connected by overflow weirs and piping to form a single WMU. The largest of the WMU H ponds, WMU H3, is equipped with spray and drip facilities to enhance evaporation. Surface impoundments are used to store landfill leachate during the wet season and evaporate it during the dry season. The discharge of leachate or any other solid or liquid wastes to surface water drainage courses or groundwater is prohibited (Yolo County, 2004).



Source: Yolo County Community Services Department, 2018

Figure 3.10-3
FEMA Flood Zone Map

The County assesses the leachate monitoring and control facilities weekly when meter readings for the leachate sumps and pump stations are taken. Monitoring indicates that no problems with the facilities were noted during the year and the minimum freeboard of two feet was continuously maintained.

Groundwater

Regional Hydrogeology

YCCL is in the Yolo Subbasin (subbasin) southwest of the Sacramento Valley Groundwater Basin. The subbasin is contained within Yolo County, bounded on the east by the Sacramento River, on the west by the Coast Range, on the north by Cache Creek, and on the south by Putah Creek. The basin is gently sloping from west to east with elevations ranging from approximately 400 feet at the base of the Coast Range to the west to nearly sea level in the eastern areas. In Yolo County, groundwater flow is generally southeasterly towards the Sacramento Valley axis (Yolo County, 2018).

The primary water-bearing formations comprising the subbasin are Pliocene aged [3 to 11 million years ago (mya)] to Holocene aged (0.01 to 3 mya) continental sedimentary deposits. Fresh water-bearing units include younger alluvium, older alluvium, and the Tehama Formation. The cumulative thickness of these units ranges from a few hundred feet near the Coast Range on the west to nearly 3,000 feet near the eastern margin of the basin. Younger alluvium includes flood basin deposits and recent stream channel deposits. The quality of groundwater produced from the basin deposits is often poor. The younger alluvium is permeable, and where saturated, yields significant quantities of water to wells. Older alluvium consists of silt, sand, and gravel deposited in alluvial fans during the Pliocene and Pleistocene. Permeability of the older alluvium is highly variable. Well yields range from 50 gallons per minute (gpm) in wells completed in the fine-grained units of the older alluvium to 4,000 gpm in wells completed in the ancestral Sacramento River stream channel deposits. The Tehama Formation ranges in thickness from 1,500 to 2,500 feet and consists of moderately compacted silt, clay, and lenses of sand and gravel, silt and gravel, and cemented conglomerate. Permeability of the Tehama Formation is variable, however, wells completed in the unit can yield up to several thousand gallons per minute (DWR, 2004).

Groundwater Conditions at the YCCL

The groundwater table beneath the YCCL is naturally high, typically fluctuating between 4 to 10 feet below ground surface (bgs) during winter and spring months and 5 to 15 feet bgs during summer and fall months depending on winter weather patterns (Yolo County, 2018). Seasonal crop irrigation, spray disposal, and wastewater reclamation activities at the YCCL and adjacent lands also contribute to the elevated water table. The natural gradient of the shallow groundwater is to the south and southeast but is reversed under the YCCL site extraction well pumping. A capillary rise of 3 feet above the water table has been reported and led to the requirement of an Engineering Alternative (EA) consisting of a capillary fringe break component (40-mil geomembrane liner) in recently completed and future WMUs to mitigate any capillary rise (Yolo County, 2018).

In January of 1989, the YCCL constructed a soil/bentonite slurry cutoff wall to retard the flow of groundwater flow onto the landfill site from the area to the north. The cutoff wall was constructed along portions of the northern and western boundaries of the site to a maximum depth of 44 feet and has a total length of approximately 3,680 feet, 2,880 feet along the north side, and 800 feet along the west. Sixteen groundwater extraction wells were installed south of the cutoff wall to lower the water table south and east of the slurry wall. The purpose was to depress the water table sufficiently to provide the required vertical separation between the top of the water table and base of the waste in WMU 5. Prior to placement of the slurry wall and dewatering system, the groundwater flow direction beneath the YCCL mimicked the regional southeast gradient. Under current dewatering conditions, the groundwater flow paths tend toward the extraction wells. A difference in hydraulic head has been observed on either side of the cutoff wall since groundwater extraction began (Yolo County, 2018).

Extracted groundwater, as well as stormwater, is routed to the 49-acre groundwater/stormwater reservoir with an estimated storage capacity of approximately 77 million gallons. The retained water is used to cultivate a rotating 45-acre Fawn Tall Fescue field at a rate of approximately 30 million gallons per year.

5-Foot Groundwater Separation: Investigative and Regulatory Background

YCCL is regulated under WDR Order R5-2016-0094, which requires it to maintain a 5-foot separation between the shallow groundwater surface and the bottom of the waste unit pursuant to RWQCB Title 27 of the CCR, Section 20240(c). WMUs 1 through 5 are municipal solid waste (MSW) units that were constructed prior to the requirements for a composite impermeable liner and thus, are required by the WDRs to maintain a 5-foot separation from groundwater.

On November 30, 2018, the RWQCB issued YCCL a NOV based on the First Semester 2018 Monitoring Report, which showed groundwater separation under WMUs 1 through 3 did not comply with the 5-foot separation. The RWQCB stated that groundwater separation was not maintained by the groundwater extraction system and groundwater was less than 5 feet from the bottom of WMUs 1 through 5. The RWQCB stated that separation must be maintained throughout the year beneath all the units (RWQCB, 2018a). On January 11, 2019, as required by the RWQCB, the YCCL submitted a Corrective Action Plan (CAP), which included a work plan to address the expansion of the groundwater extraction and treatment system, including extraction wells capable of capturing onsite flow from the west and maintaining the required groundwater separation from waste (Yolo County, 2019).

In February 2019, YCCL submitted a work plan to the RWQCB, which proposed four tasks to evaluate various methods to increase control of groundwater elevations and increase separation between high water table and the waste. The four tasks outlined in the work plan included: 1) collecting groundwater elevation data from shallow and deep monitoring wells along the west and central portion of the site, 2) updating the groundwater model with the additional collected data, 3) evaluating the effectiveness of groundwater control methods, and 4) completing an engineering feasibility report (EFS) and cost estimate (Yolo County, 2019a).

In July 2019, YCCL submitted the EFS and cost estimate to the RWQCB, which evaluated the use of groundwater extraction wells and a slurry wall with 272 acres of land for disposal and extraction wells without the expansion of the slurry wall and 291 acres of land available for land disposal. YCCL concluded that, under either scenario, it was economically infeasible to implement additional measures to achieve the required 5-foot of groundwater separation. YCCL recommended development of an EA to Title 27 Section 20240(c) for the existing landfill WMUs. The EA included: 1) continued monitoring of groundwater conditions throughout the older WMUs, 2) maintaining water storage elevation in the reservoir below 16 feet msl, 3) maintaining the water storage elevation in the borrow site below 15 feet msl, 3) installing additional deep groundwater monitoring wells to further evaluate the vertical hydraulic conditions around the landfill and 4) evaluating the use of these operational measures to propose an alternative to the 5-foot separation requirement (Yolo County, 2019b).

In early August 2019, the RWQCB responded to the YCCL and concluded that the EFS report did not include an implementation strategy to comply with the groundwater separation requirement in the WDRs, and thus, the YCCL remained out of compliance with the WDRs. RWQCB staff, YCCL personnel, and their consultants met with to discuss the findings of the EFS report and to determine a path forward to compliance. The RWQCB informed the YCCL that while the RWQCB staff cannot change the requirements approved in the WDRs, RWQCB staff was willing to work with the YCCL toward achieving compliance (RWQCB, 2019c).

On August 27, 2019, YCCL provided the RWQCB a schedule of recommended actions to request the development of an alternative compliance option to Title 27 Section 20240(c) for the existing landfill WMUs with noncompliant 5-foot separations. The proposed actions for development of alternative options included 1) continued monitoring of groundwater conditions throughout the older WMUs, 2) installation of additional deep groundwater monitoring wells to further evaluate the vertical hydraulic conditions around the landfill, 3) evaluating the technical and economic issues to closing WMU 1, 2, and 3, 4) evaluating the use of operational measures to determine an enhanced strategy for achieving the separation requirement, 5) evaluating the availability of contiguous property for previously identified options, and 6) preparing an amended EFS on the various alternatives, including timelines to install and updating the site Joint Technical Document (JTD) with schedule to achieve separation (Yolo County, 2019c).

On October 2, 2019, the RWQCB staff and the YCCL met again to discuss how to achieve compliance and what actions could be taken by YCCL to move the toward compliance with the WDRs. As a result of the meetings, YCCL agreed to conduct certain actions that would further the understanding of the underlying hydrology, including installing new wells and conducting aquifer tests (Yolo County, 2019d).

On October 14, 2019, the YCCL submitted a work plan for installation of 3 deep zone groundwater monitoring wells, abandonment and replacement of one existing deep zone groundwater monitoring well, abandonment and replacement of one existing groundwater monitoring well, installation of two new groundwater monitoring wells, and abandonment of two groundwater wells (Yolo County, 2019d).

On November 4, 2019, the RWQCB responded that the actions YCCL proposed to address groundwater separation and detection monitoring appeared appropriate and concurred with the approach the YCCL had outlined. From November 2019 to June 2020, YCCL implemented the workplan and on June 30, 2020 submitted an investigation report, which described the field work, provided completed boring logs and included laboratory results (RWQCB, 2019a).

On November 15, 2019, YCCL submitted a work plan to update the EFS, which included additional investigation of groundwater conditions and to outline the investigation, evaluation, construction, and decision steps needed to maintain groundwater separation control in the older, closed waste management units (Yolo County, 2019e). The tasks of the workplan included: 1) longer term groundwater elevation monitoring of the deeper and shallower zones 2) updating the groundwater model, 3) aquifer testing to refine groundwater model information and 4) installing up to 10 additional groundwater extraction wells. In addition to the groundwater investigations, aquifer testing, and model update, YCCL also proposed several other items to investigate and evaluate groundwater separation control YCCL completed the tasks outlined in the November 15 workplan and submitted the investigation report to RWQCB on June 30, 2020 (Yolo County, 2020).

On August 31, 2020, YCCL submitted the updated EFS for groundwater separation control, which provided results of the groundwater monitoring and testing, updates to the groundwater modeling and water balance, (as described below) and presented the status of other updated activities related to groundwater separation issues (Yolo County, 2020a). The YCCL proposes to implement a phased approach to the groundwater extraction that is required maintain to the 5-foot separation between the water table and the bottom of the waste unit. Phase 1 of this plan would involve installing and operating 10 additional extraction wells at a rate of about 10 gpm and phasing in additional extraction wells over subsequent years. The elevated boron and selenium concentration in the water require that the extracted groundwater be stored onsite.

On September 24, 2020, the YCCL submitted a work plan for the installation of the first 10 extraction wells as proposed under the first phase (Yolo County, 2020b). As of March 2021, 6 of the ten wells have been completed and are currently extracting groundwater.

Updated YCCL Facility Groundwater Model

The YCCL facility groundwater model was updated and recalibrated in August 2020 to estimate the number of groundwater wells and pumping rates needed to achieve a 5-foot separation between the water table and WMU. The model results determined that a maximum of 39 groundwater extractions wells would be needed (one less than the number estimated in the 2019 EFS) and that the groundwater extraction rate would need to be about 530 gpm, rather than the previously calculated 700-gpm. Phase 1 would involve installing the first 10 extraction wells along the western perimeter of WMUs 1 and 2. The model projected that during wet years, the Phase 1 wells would operate primarily from January 1 through April 30 and to a lesser degree, during a run-up period in the fall. However, in average or below average rainfall years (i.e., less than 18-inches of rain), the model projected that groundwater levels would remain at or below 5-feet from the bottom of the WMU throughout the year, thereby achieving compliance with the

Order. Operating the 10 extraction wells under Phase 1 would extract an estimated 26 million gallons of additional groundwater each year (Yolo County, 2020a).

Updated YCCL Facility Water Balance

The updated YCCL facility water balance reflects the changes to proposed site operations and is based on the results of the updated groundwater model and revised extraction volumes.

The YCCL manages a 49-acre groundwater/stormwater reservoir located east of WMUs 1 and 2, which has an estimated storage capacity of approximately 77 million gallons. The landfill currently directs both stormwater run-off and groundwater to this reservoir. Water from the reservoir is then used to cultivate a rotating 45-acre Fawn Tall Fescue field with a rate of approximately 30 million gallons annually.

The updated water balance evaluated the facility's ability to manage extracted groundwater with operation of 10 Phase 1 extraction wells and also at build out, after the 39 wells were operational. The build-out scenario assumes that WMU 6E, 6F, 6G and 6H are developed and operational. The water balance considered the extremely wet year (100-year return period) and the average year. Available storage capacity was evaluated with and without stormwater management, which includes rerouting stormwater from the WMUs to the borrow pit instead of the water storage reservoir. The water balance evaluation concluded that after Phase 1 extraction is underway, the YCCL facility should have adequate storage capacity to maintain the additional extracted groundwater in years with average and below average rainfall (less than 17.6 inches of rain. Under wet year conditions (36.7 inches of rain) YCCL would be required to route a substantial portion to the borrow pit (Yolo County, 2020a).

Under full build-out conditions (39 operational extraction wells), the YCCL would not have adequate storage capacity to retain all the extracted groundwater water within the landfill using existing on-site storage infrastructure. As discussed further in Section 3.10.2, below, prior to implementation of latter phases of the groundwater extraction program, it would be necessary for YCCL to evaluate and identify alternate storage infrastructure or discharge strategies to contain pumped groundwater onsite. Potential options to manage and dispose of the combined volumes of stormwater and groundwater include selling water to neighbors for field irrigation, purchasing additional land for land application or storage basins, and/or developing evaporation technology (Yolo County, 2020a).

Groundwater Quality, Treatment and Disposal

Samples of extracted groundwater have been collected and analyzed as part of YCCL's regular water quality monitoring program since 1988. Groundwater pumped from the 16 existing extraction wells contains naturally-occurring boron and selenium and several volatile organic compounds (VOCs) have been detected during past sampling events. Groundwater quality degradation has not been observed in groundwater extracted from WMU 1 and 2, but low concentrations of VOCs have been detected in two interior wells near WMU 3 and WMU 5. For this reason, extracted groundwater (150,000 to 200,000 gallons per day) is treated through an air stripper treatment system (AST), which has been in place since 1993. The YCCL reports that

VOC or other constituents have not been observed in wells on the perimeter of the landfill. The existing extraction system keeps groundwater flow towards the extraction wells, and not off-site.

Post treatment, all extracted groundwater is stored on site in the existing on-site storage pond. Under the former permit, (WDR Order No. 98-197) the treated groundwater from the AST was discharged to either the on-site water storage pond or an off-site agricultural ditch, which flows into the Yolo Bypass. However, as of November 30, 2001, discharge to the ditch was discontinued to comply with the CDO No. 98-198, which required the effluent to be treated to identify releases from the WMU. YCCL has used variable WQPS for monitoring for releases from the WMUs.

Regulatory Setting

The existing YCCL and the proposed Project are subject to numerous regulations regarding landfill siting, design, operation, groundwater and surface water quality monitoring, corrective action, and closure and post-closure requirements. Regulations specifically related to water resources include California Water Code Section 13273; CCR Title 27, Chapter 3, Criteria for All Waste Management Units, evident Facilities, and Disposal Sites; 40 Code of Federal Regulations (CFR) parts 257 and 258 (also known as Subtitle D of the Resource Conservation and Recovery Act [RCRA]); and the NPDES, authorized by the Clean Water Act and federally administered by the U.S. EPA. MSW landfills also are subject to state and federal regulations contained in SWRCB Resolution No. 93-62. Key regulations related to water resources and relevant to the Project are described in more detail below.

The EPA also administers the Project XL program, which gives a limited number of regulated entities the opportunity to develop their own pilot projects and alternative strategies to achieve environmental performance that is superior to what would be achieved through reasonable compliance with current and reasonably anticipated future regulations. The County established bioreactor operation in WMUs 6D2 through 7P under the recently adopted Research, Development, and Demonstration (RD&D) regulations (40CFR258.4) and subsequent incorporation by the State under SWRCB Resolution No. 93-62, as Amended on July 21, 2005 and inclusion in 27 CCR Sections 20070 and 21595 on September 29, 2005. The U.S. EPA approved California to issue RD&D permits on October 19, 2007.

Federal Regulations

Clean Water Act

Under the Clean Water Act (CWA) of 1977, the U.S. EPA seeks to restore and maintain the chemical, physical, and biological integrity of the nation's waters. The statute employs a variety of regulatory and non-regulatory tools to reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. The CWA authorizes the U.S. EPA to implement water quality regulations. The relevant sections of the CWA are summarized below.

CWA Section 303: Water Quality Standards and Implementation Plans

Section 303 of the CWA requires states to designate beneficial uses for water bodies or segments of water bodies and to establish water quality standards to protect those uses for all waters of the U.S. under Section 303(d) of the CWA, states, territories, and authorized tribes are required to develop lists of impaired waters. Impaired waters are waters that do not meet water quality standards established by the state, even after point sources of pollution have been equipped with the minimum required levels of pollution control technology. The law requires that these jurisdictions establish a priority ranking for listed waters and develop action plans to improve water quality. Inclusion of a water body on the Section 303(d) List of Impaired Water Bodies triggers development of a TMDL for that water body and a plan to control the associated pollutant/stressor on the list. The TMDL is the maximum amount of a pollutant/stressor that a waterbody can assimilate and still meet the water quality standards. Typically, a TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. In accordance with Section 303(d), the RWQCB has identified impaired water bodies within its jurisdiction, and the pollutant or stressor responsible for impairing the water quality. Detailed discussion of impaired water bodies relevant to the Project, including the pollutants that cause the impairments, and the potential sources of the pollutants are discussed under “Surface Water Quality”, above.

CWA Section 401: Water Quality Certification

Section 401 of the CWA (33 U.S.C. §1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into navigable waters to obtain a certification from the State in which the discharge originates. The certification ensures that the discharge will comply with the applicable effluent limitations and water quality standards. The RWQCB is responsible for implementing section 401 of the CWA in California.

CWA Section 402: National Pollutant Discharge Elimination System

The NPDES permit program under section 402 of the CWA is one of the primary mechanisms for controlling water pollution through the regulation of sources that discharge pollutants into waters of the United States. The U.S. EPA has delegated authority of issuing NPDES permits in California to the SWRCB, which has nine regional boards. The Central Valley RWQCB regulates water quality in the Project area. The NPDES permit program is discussed in detail under State Regulations, below.

Section 404: Permits for Fill Placement in Waters of The United States (Including Wetlands)

Waters of the United States (including wetlands) are protected under Section 404 of the CWA. Any activity that involves a discharge of dredged or fill material into waters of the United States, including wetlands, is subject to regulation by the U.S. Army Corps of Engineers (USACE) (see Section 3.4, Biological Resources, for additional details).

California Toxics Rule, 40 CFR 131.38

On May 18, 2000, the U.S. EPA promulgated numeric water quality criteria for priority toxic pollutants and other provisions for water quality standards to be applied to waters within California. U.S. EPA promulgated this rule based on the Administrator’s determination that the

numeric criteria are necessary in California to protect human health and the environment. The rule fills a gap in California water quality standards that was created in 1994 when a state court overturned the state's water quality control plans containing water quality criteria for priority toxic pollutants. Thus, the state of California has been without numeric water quality criteria for many priority toxic pollutants as required by the CWA, necessitating this action by U.S. EPA. These federal criteria are legally applicable in the state of California for inland surface waters, enclosed bays, and estuaries for all purposes and programs under the CWA. The U.S. EPA and the SWRCB have the authority to enforce these standards, which are incorporated into the NPDES permits that regulate existing discharges in the project area.

State Regulations

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Division 7 of the California Water Code) provides the basis for water quality regulation within California. This Act establishes the authority of the SWRCB and the nine RWQCBs. The SWRCB administers water rights, sets State policy for water pollution control, and implements various water quality functions throughout the State, while the RWQCBs conduct planning, permitting, and most enforcement activities.

The Porter-Cologne Water Quality Control Act requires the SWRCB and/or the RWQCBs to adopt statewide and/or regional water quality control plans, the purpose of which is to establish water quality objectives for specific water bodies. The RWQCB has prepared the *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins* (Basin Plan) (RWQCB, 2018) that establishes water quality objectives and implementation programs to meet the stated objectives and to protect the beneficial uses of the water bodies (discussed under “Surface Water Quality”, above). The act also authorizes the NPDES program under the CWA, which establishes effluent limitations and water quality requirements for discharges to waters of the state. Most of the implementation of SWRCB’s responsibilities is delegated to the nine regional boards. Under the NPDES program, the Central Valley RWQCB has established permit requirements for stormwater runoff in the Project area (see below).

NPDES Waste Discharge Program

The federal CWA established the NPDES program to protect the water quality of receiving waters of the United States. Under the CWA, Section 402, discharging pollutants to receiving waters of the United States is prohibited unless the discharge is in compliance with an NPDES permit. Effluent limitations serve as the primary mechanism in NPDES permits for controlling discharges of pollutants to receiving waters both from construction activities and from discharges from operation of municipal or industrial facilities. When developing effluent limitations for an NPDES permit, a permit applicant must consider limits based on both the technology available to control the pollutants (i.e., technology-based effluent limits) and limits that are protective of the water quality standards of the receiving water (i.e., water quality-based effluent limits⁴ if

⁴ Water quality-based effluent limits specify the level of pollutant (or pollutant parameter), generally expressed as a concentration, that is allowable

technology-based limits are not sufficient to protect the water body.). For inland surface waters and enclosed bays and estuaries, the water-quality-based effluent limitations are based on criteria in the National Toxics Rule and the California Toxics Rule, and objectives and beneficial uses defined in the applicable Basin Plan. There are two types of NPDES permits: individual permits tailored to an individual facility and general permits that cover multiple facilities or activities within a specific category. The NPDES permits relevant to the Project are described below.

NPDES Construction General Permit

The State of California adopted a Construction General Permit on September 2, 2009 (Order No. 2009-0009-DWQ as amended by 2010-0014-DWQ and 2012-0006-DWQ) (General Construction NPDES Permit or CGP). The General Construction NPDES Permit regulates construction site stormwater management. Dischargers whose projects disturb one or more acres of soil, or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the general permit for discharges of stormwater associated with construction activity. The Project would be required to comply with the permit requirements to control stormwater discharges from the sites where Project elements are being constructed (such as the stormwater treatment system). Construction activity subject to this permit includes clearing, grading, and disturbances to the ground, such as stockpiling or excavation as would occur on the future off-site borrow area, as well as construction of buildings. Portions of the Project would fall under the Type 1 LUP category if the following conditions are met:

- Construction occurs on unpaved improved roads, including their shoulders or land adjacent to them;
- The areas disturbed during a single construction day are returned to their preconstruction condition, or to an equivalent condition (i.e., disturbed soils such as those from trench excavation are hauled away, backfilled into the trench, and/or placed in spoils piles and covered with plastic), at the end of that same day;
- Vegetated areas disturbed by construction activities are stabilized and revegetated at the end of the construction period; and
- When required, adequate temporary soil stabilization best management practices (BMPs) are installed and maintained until vegetation has reestablished to meet the permit's minimum cover requirements for final stabilization.

In the project area, the CGP is implemented and enforced by the RWQCB, which administers the stormwater permitting program. To obtain coverage under this permit, project operators must electronically file Permit Registration Documents, which include a Notice of Intent, a Stormwater Pollution Prevention Plan (SWPPP), and other compliance-related documents. An appropriate permit fee must also be mailed to SWRCB. The SWPPP identifies BMPs that must be implemented to reduce construction effects on receiving water quality based on potential pollutants. The BMPs identified are directed at implementing both sediment and erosion control measures and other measures to control potential chemical contaminants. In addition, the SWPPP is required to contain a visual monitoring program and a sediment monitoring plan if the site

discharges directly to a water body listed on the 303(d) list for sediment. Examples of typical construction BMPs include scheduling or limiting certain activities to dry periods, installing sediment barriers such as silt fence and fiber rolls, and maintaining equipment and vehicles used for construction. Non-stormwater management measures include installing specific discharge controls during certain activities, such as paving operations, vehicle and equipment washing and fueling. The SWPPP also includes descriptions of the BMPs to reduce pollutants in stormwater discharges after all construction phases have been completed at the site (post-construction BMPs). Dischargers are responsible for notifying the RWQCB of violations or incidents of non-compliance, as well as for submitting annual reports identifying deficiencies of the BMPs and how the deficiencies were corrected.

The CGP includes several new requirements (as compared to the previous CGP, 99-08-DWQ), including risk-level assessment⁵ for construction sites, an active stormwater effluent monitoring and reporting program during construction (for Risk Level II and III sites), rain event action plans for certain higher risk sites⁶, and numeric effluent limitations (NELs) for pH and turbidity as well as requirements for qualified professionals that prepare and implement the plan. The risk assessment and SWPPP must be prepared by a State-qualified SWPPP Developer and implementation of the SWPPP must be overseen by a State-qualified SWPPP Practitioner. Project construction activities would be consistent with the CGP; compliance is required by law and the provisions of the permit and BMPs for construction and post-construction phases have proven effective in protecting water quality at construction sites and downgradient receiving waters.

Landfill Discharge Requirements

In November 1990, as part of the Clean Water Act, the U.S. EPA published final regulations that establish application requirements for stormwater permits. The regulations require specific categories of industrial facilities which discharge stormwater to obtain coverage under the NPDES General Permit No. CAS000001 for Discharges of Storm Water Associated with Industrial Activities. The YCCL operates under the General Permit for Storm Water Discharges Associated with Industrial Activity Order 2014-0057-DWQ (Waste Discharge Identification Number [WDID] 5S57I029034). Included in these “industrial facilities” categories are landfills and recycling facilities. Facilities that discharge industrial municipal stormwater either directly to surface waters or indirectly through separate municipal storm sewers, must be covered by a permit. This includes the discharge of “sheet flow” through a drainage system or other conveyance. The permit also prohibits non-stormwater discharges into the industrial stormwater system and is intended to authorize discharges composed entirely of industrial stormwater.

The NPDES General Permit requires dischargers to file a Notice of Intent requesting coverage under this permit, which has been done for YCCL (SWRCB, 2021). The NPDES General Permit also requires dischargers to prepare and implement both a SWPPP and a SWPPP Monitoring and

⁵ The CGP defines three levels of risk (Risk Level I, II, and III) that may be assessed for a construction site. Risk is calculated based on the “project sediment risk”, which determines the relative amount of sediment that can be discharged given the project and location details, and the “receiving water risk” (the risk sediment discharges pose to the receiving waters).

⁶ Those sites that have a high potential for mobilizing sediment in stormwater and drain to a sediment-sensitive waterbody.

Reporting Program (MRP) and to submit these plans to the RWQCB. Consistent with NPDES requirements, a SWPPP and an MRP have been prepared (Golder, 2021) and implemented for YCCL.

In October 2012, the YCCL's surface water drainage facilities were modified to eliminate stormwater discharge; structural drainage modifications to retain all of the runoff from the 100-year, 24-hour storm event have been implemented. A Notice of Termination (NOT) under the General Industrial Storm Water Permit was filed with the RWQCB, effective November 1, 2012, and a Notice of Non-Applicability was filed related to the updated General Industrial Storm Water NPDES Permit in July 2015. Though not required after the NOT was approved, the YCCL maintained a SWPPP as a planning document to ensure proper stormwater management. Under the current NPDES Permit (Order 2014-0057-DWQ), stormwater discharges to Willow Slough Bypass are permitted from the existing borrow pit and Stormwater Pond 1 via stormwater outfalls SW-1 and SW-2, respectively, as described under "Site Drainage", above.

As described under "Water Quality Monitoring and Reporting", above, current operation of the YCCL is governed by WDR Order No. R5-2016-0094, issued by the RWQCB, on December 14, 2016, and by CDO No. R5-2011-0076. The CDO is primarily related to updating the filling and closure schedule for the existing unlined WMUs. Additionally, a groundwater treatment and disposal system is operated at the YCCL under WDR Order No. R5-2002-0078 issued on May 3, 2002 by the RWQCB.

Anti-Degradation Policy

The SWRCB Anti-Degradation Policy, formally known as the Statement of Policy with Respect to Maintaining High Quality Water in California (SWRCB Resolution No. 68-16), restricts degradation of surface and ground waters. Specifically, this policy protects water bodies where existing quality is higher than necessary for the protection of beneficial uses and requires that existing high quality be maintained to the maximum extent possible.

Under the Anti-Degradation Policy, any actions that can adversely affect water quality in all surface and groundwaters must: (1) be consistent with maximum benefit to the people of California; (2) not unreasonably affect present and anticipated beneficial use of the water; and (3) not result in water quality less than that prescribed in water quality plans and policies. Furthermore, any actions that can adversely affect surface waters are also subject to the federal Anti-Degradation Policy (40 CFR Section 131.12) developed under the CWA. Discharges from the Project that could affect surface water quality would be required to comply with the Anti-Degradation Policy, which is included as part of the NPDES permit requirements for point discharges.

Local Regulations

The Yolo County 2030 Countywide General Plan (Yolo County, 2009) has established the following water resource related conservation policies:

Goal CO-5 Water Resources: Ensure an abundant, safe, and sustainable water supply to support the needs of existing and future generations.

Policy CO-5.14: Require that proposals to convert land to uses other than agriculture, open space, or habitat demonstrate that groundwater recharge will not be significantly diminished.

Policy CO-5.15: Encourage new development and redevelopment to use reclaimed wastewater, where feasible, to augment water supplies and to conserve potable water for domestic purposes.

Policy CO-5.21: Encourage the use of water management strategies, biological remediation, and technology to address naturally occurring water quality problems such as boron, mercury, and arsenic.

Policy CO-5.23: Support efforts to meet applicable water quality standards for all surface and groundwater resources.

3.10.2 IMPACTS AND MITIGATION MEASURES

Significance Criteria

Consistent with CEQA Guidelines Appendix G, a project would have a significant impact on hydrology or water quality if it would:

- violate any water quality standards or waste discharge requirements, or otherwise substantially degrade surface or groundwater quality;
- substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;
- substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner which would:
 - result in substantial erosion or siltation on- or offsite;
 - substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;
 - create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
 - impede or redirect flood flows;
- in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation; or
- conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Methodology

Compliance with applicable federal, state, and local laws and regulations is assumed in the analysis of impacts because these regulatory requirements are mandatory and the application of the associated protective measures (such as BMPs, Monitoring and Reporting Plans, and the application of corrective actions) are non-discretionary, and are proven to minimize and/or avoid

hydrologic or water quality impacts. Further, regulatory agencies with technical jurisdiction and authority for oversight would require adherence to regulatory requirements as a condition of Project or permit approval and would continue to enforce applicable requirements throughout Project construction and operation phases.

State and federal standards have been established for the siting, design, construction, operation, closure, and post-closure maintenance of Class III landfills. These standards incorporate state-of-the-art engineering requirements that are intended to reduce the risks to water resources associated with waste disposal facilities to an acceptable level. The County would need to obtain an exemption to Subtitle D prohibitions against the addition of liquids to landfills, similar to US EPA's site-specific rule governing the current bioreactor demonstration project. To achieve optimal moisture levels within the waste mass additional approvals may be required to enable the County to add other types of liquids to the waste mass that are not approved for the current demonstration project. Such deviations from existing regulatory requirements (as approved by the appropriate authorities) would not of themselves constitute significant impacts.

Mitigation Measures Incorporated from the 2005 YCCL SEIR

The 2005 Yolo County Central Landfill Subsequent Environmental Impact Report (2005 YCCL SEIR) (Yolo County, 2005) identified various mitigation measures to reduce identified impacts related to hydrology and water quality to a less-than-significant level. The identified mitigation measures were adopted and formalized as part of the YCCL MMRP. The following previously adopted mitigation measures would continue to apply to the Project and are relevant to the analysis of water resources related impacts from implementation of the Project (Note, DIWM refers to the County's Division of Integrated Waste Management):

- **3.5.1c** requiring DIWM to maintain a response plan to address the contingency of leachate production level exceeding expected levels for future bioreactor units.
- **3.5.1d** requiring incorporation of containment features and engineering recommendations for leachate collection trench and sump areas.
- **3.5.6** requiring composting operations and public salvage area operations to be conducted on pads that are designed and constructed to limit infiltration and to control runoff. Runoff to be directed to a properly designed sump and pumped into a truck for disposal into the leachate ponds or the WWTP.
- **3.5.7a** requiring DIWM to update YCCL's Storm Water Pollution Prevention Plan (SWPPP), required under the NPDES General Industrial Storm Water Permit, to address pollution controls and the containment and control of runoff at non-erosive velocities from new and expanded site operations. The updated SWPPP will address composting facility operations.
- **3.5.7b** requiring DIWM to update its maintenance and operations plan (MOP) for YCCL. The revised MOP to include calculations as to the amount of leachate expected to be generated as a result of precipitation contacting compost feedstock and composting materials, as well as any runoff from application of quench water applied to the composting materials. The MOP will outline strategies for managing the collected leachate to ensure that adequate capacity is maintained.

- **3.5.8a** requiring the HHW facility incorporate double containment system to contain spills and water used for any fire control activities above ground and to limit excavations for MRF and HHWCF to surface grading.
- **3.5.8b** requiring DIWM to prepare a construction SWPPP prior to construction or grading activities that incorporates BMPs that addresses erosion, sediment transport, and construction related water quality degradation.
- **3.5.9a** requiring DIWM to implement a SWPPP for a new soil borrow area prior to commencement of any quarrying or excavation or if the site is adjacent, update YCCL’s existing SWPPP to include the new borrow area. The SWPPP will describe activities and potential pollution sources at the site and BMPs to limit soil erosion and prevent the sedimentation of nearby surface drainage channels and other surface waters. Control measures may include, but are not limited to, placement of hay bales, sediment fences, and other structures to limit erosion and the transport of sediments, and limiting the size of the area being cleared and excavated to the minimum needed for the operation. The revised SWPPP will provide for reseeded exposed areas when they are no longer actively being quarried, and include a monitoring program. Pursuant to NPDES General Permit requirements, the revised SWPPP will be implemented, and a copy of the SWPPP will be retained at the YCCL site and available for RWQCB review upon request.
- **3.5.9b** requiring DIWM to obtain a permit if required by SMARA prior to quarrying activities commence at a new soil borrow area. Permit approval requires submission of a plan for returning the land to a usable condition (known as a “reclamation plan”), and financial assurances to guarantee costs for reclamation.
- **3.5.9c** requiring drainage structures at the soil borrow site be designed and constructed to prevent offsite discharge of runoff.

Impact Analysis

Impact 3.10.1: The Project could violate any water quality standards or waste discharge requirements, or otherwise substantially degrade surface or groundwater quality. (Significant)

Construction of Facilities at YCCL Site

While some of the Project elements, such as the waste gasification facility, are entirely new, many of the Project elements are revisions or improvements to existing facilities and operations (see Chapter 2, Project Description, for details). Construction of new or alteration of existing Project facilities at the YCCL site would include earthwork activities (i.e., grading, excavation, and other soil-disturbing activities) and the placement of imported engineered soils.

Stormwater runoff from disturbed soils associated with construction activities is a common source of pollutants (mainly sediment) to receiving waters. Earthwork activities can render soils and sediments more susceptible to erosion from stormwater runoff and result in the migration of soil and sediment in stormwater runoff to storm drains and downstream water bodies. Excessive and improperly managed grading or vegetation removal can lead to increased erosion of exposed earth and sedimentation of watercourses during rainy periods. A critical period for surface water

quality is following a rainstorm which produces significant amounts of drainage runoff into streams during the seasonal low flow period. Such conditions are most frequent during the fall at the beginning of the rainy season when stream flows are near their lowest annual levels and contaminants have accumulated on impervious surfaces over the drier summer months. In slower moving water bodies these same factors can cause a buildup of sediment, which can lead to a reduction in conveyance capacity. In addition, construction would likely involve the use of various materials typically associated with construction activities such as paint, solvents, oil and grease, petroleum hydrocarbons, concrete and associated concrete wash-out areas. If improperly handled, these materials could result in pollutants being mobilized and transported offsite by stormwater runoff (nonpoint source pollution) and degrade receiving water quality.

Because the Project exceeds one acre in size, construction activities not covered under the SWPPP for operations associated with the IGP (Order 2014-0057-DWQ) would be required to comply with NPDES regulations and obtain coverage under the State CGP. Under the CGP, Yolo County or their contractor(s) would be required to implement construction BMPs as set forth in a detailed SWPPP. SWPPPs are a required component of the CGP and must be prepared by a Qualified SWPPP Developer (QSD) and implemented by a Qualified SWPPP Practitioner (QSP). SWPPPs must describe the specific erosion control and stormwater quality BMPs being implemented to minimize pollutants in stormwater runoff, and detail their placement and proper installation. The BMPs are designed to prevent pollutants from coming into contact with stormwater and to keep all products of erosion and stormwater pollutants associated with construction activities from moving offsite into receiving waters. Typical BMPs to be implemented at construction sites include placement of fiber rolls or gravel barriers to detain small amounts of sediment from disturbed areas, and temporary or permanent covering of stockpiles to prevent rainfall from contacting the stockpiled material. In addition to erosion control BMPs, SWPPPs also include BMPs for preventing the discharge of pollutants other than sediment (e.g. paint, solvents, concrete, petroleum products) to downstream waters. BMPs for pollutants include conducting routine inspections of equipment for leaks, maintaining containers of supplies such that the contents are clearly labeled, the integrity of the containers is not compromised, and ensuring that construction materials are disposed of in accordance with applicable regulations.

Under the provisions of the CGP, the State-certified QSD is responsible for determining site risk level for sediment transport, developing the SWPPP, and managing its implementation. Site risk level is determined using a combination of the sediment risk of the project and the receiving water quality risk. Projects can be characterized as Risk Level 1, Level 2, or Level 3, and the minimum BMPs (stormwater controls) and monitoring that must be implemented during construction are based on the risk level. Under the direction of the QSD, the QSP is required to conduct routine inspections of all BMPs, conduct surface water sampling, when necessary, and report site conditions to the State and/or Regional Water Quality Control Board as part of CGP compliance monitoring and reporting using the Stormwater Multi-Application Reporting and Tracking System (SMARTS). Compliance with the CGP is required by law and has proven effective in protecting water quality at construction sites.

Construction earthwork activities would mainly involve grading and shallow subsurface excavation. If shallow groundwater were encountered during excavation activities, it would have to be pumped out of the construction trench to create a dry work area. If excavations intersect shallow groundwater and dewatering activities are required, dewatering would be temporary, highly localized, and would typically involve the extraction of low volumes of shallow groundwater from excavation trenches. The components proposed to be constructed are generally outside of the areas of known contamination and dewatering discharges would be discharged to the existing landfill drainage system. In areas where potential contamination of shallow groundwater may be an issue (e.g., near the gas plant) water would be tested and, if no contaminants are identified, sent to drainage system. If contamination is present, or suspected to be present, dewatering effluent would be collected and trucked or otherwise conveyed to the surface impoundments.

Compliance with the requirements of the CGP, including the implementation of associated BMPs as part of the SWPPP, would prevent the discharge of pollutants to surface waters or groundwater and minimize or eliminate potential degradation of surface water or groundwater quality during construction of the Project. Additionally, direct impacts to major offsite receiving waters, such as Willow Slough Bypass, would be avoided through implementation of **Mitigation Measure BIO-3.4.9**, which requires that Project activities be designed to avoid or minimize surface activities within 300 feet of Willow Slough Bypass. Water quality impacts related to violation of water quality standards or degradation of water quality due to discharge of construction-related stormwater runoff from implementation of the Project would be less than significant.

Operation of Proposed On-Site Facilities

Following completion of construction, implementation of the proposed changes to the design and operation of the YCCL that constitute the Project would be required to adhere to the NPDES Permit for Industrial Activities, which includes a SWPPP and MRP. YCCL has completed and implemented an updated SWPPP and MRP (Golder, 2021), consistent with the requirements of the NPDES Industrial Permit (Order 2014-0057-DWQ) as well as the mitigation requirements contained in the 2005 YCCL SEIR (Mitigation Measure 3.5.7a, summarized above) to address pollution controls and the containment and control of runoff at non-erosive velocities from new and expanded site operations, including composting facility operations.

The SWPPP for industrial activities at the YCCL Project site specifies implementation of BMPs sufficient to reduce significant hydrologic and water quality impacts, including the concentration of pollutants found in Project site stormwater runoff. Erosion control measures are specified in the SWPPP, including BMPs to address sediments generated during the active phase of the landfill development. During the wet season, erosion and sediment control devices such as sediment traps and silt fences are used to minimize sediment transport to downstream drainage facilities and the retention pond. Additionally, sediment production is expected to decline on the Project site over time as portions of the landfill are closed and vegetated (Yolo County, 2018). The standards and specific BMPs required as part of the SWPPP are industry-accepted methods and proven effective at attenuating concentrated stormwater flows, reducing erosion, and minimizing or avoiding the transport of pollutants in stormwater. These BMPs are adequate to provide protection against water quality degradation provided they are maintained effectively and

monitored regularly. The SWPPP includes a monitoring and maintenance element with periodic scheduled monitoring of BMP performance. The performance of BMPs, including any related failures, improvements, and corrective actions taken as a result of periodic monitoring conducted by erosion control specialists are described in annual regulatory reports submitted to the RWQCB as required under the SWPPP.

YCCL is required to adhere to all water quality and hydrologic standards and monitoring requirements contained in the NPDES Discharge Permit (General Permit for Storm Water Discharges Associated with Industrial Activities, NPDES Order CAS000001) issued by the RWQCB, including routine scheduled water quality monitoring of specified pollutants and subsequent correction of any water quality exceedances indicated by sampling results. Consistent with the landfill's WDRs (see Section 3.10.1), the leachate, groundwater, and surface water monitoring program required under the MRP would continue to be conducted to ensure the landfill is in compliance with all water quality standards and Basin Plan water quality objectives. Monitoring under the MRP would minimize or avoid potential impacts on surface water and groundwater quality through the required implementation of corrective actions and additional targeted monitoring, if a WQPS exceedance is determined to have occurred.

During the initial operation of each waste module, the height of waste and cover may not be sufficient to shed rainfall runoff outside of each module. Special provisions with respect to the landfill operations are completed, consistent with BMP requirements, to prevent much of the stormwater from coming into contact with waste. These provisions allow much of the clean stormwater (i.e., stormwater that has not been in contact with solid waste) that enters the landfill module to be pumped out of the module and disposed of through the landfill drainage system. Pumping of the stormwater out of the landfill module area begins as soon as the depth of water is sufficient to operate the pump (Yolo County, 2018). Additionally, operations are conducted consistent with BMP requirements to ensure drainage of rainwater off and away from all wastes to minimize leachate generated in the area. As needed, v-ditches and berms are constructed to maintain positive drainage, minimize erosion around the working areas, and minimize infiltration and leachate generation in all areas of operation.

Compliance with the requirements of the NPDES Permit for Industrial Activities, including the implementation of associated BMPs as part of the associated SWPPP covering operations, as well as WDRs, including discharge prohibitions, monitoring, and corrective actions under the MRP, would prevent the discharge of pollutants to surface waters or groundwater and minimize or eliminate potential degradation of surface water or groundwater quality during operation of the Project. Further, YCCL's WDRs specify that any necessary erosion control measures and any necessary construction, maintenance, or repairs of precipitation and drainage control facilities needed to prevent erosion or flooding or to prevent surface drainage from contacting or percolating through wastes, is to be completed each year prior to the start of the rainy season, and no later than November 15th. Water quality impacts related to violation of water quality standards or degradation of water quality from implementation of the Project would be less than significant.

Stormwater Treatment and Discharge

The proposed stormwater treatment system would treat collected stormwater from the YCCL stormwater collection and retention facilities prior to discharge into Willow Slough Bypass. Discharges would continue to occur via SW-1 and SW-2 at the existing pump station located on YCCL's existing soil borrow site and at the southern boundary of Stormwater Pond 1, respectively (see **Figure 2-3**). Stormwater discharges off-site to Willow Slough Bypass could result in the discharge of pollutants associated with the YCCL stormwater. Increased concentrations of water quality constituents in receiving waters could degrade water quality and adversely affect the beneficial uses of the receiving waters and/or violate water quality standards or WDRs.

As described in Section 3.10.1, prior to 2012 YCCL discharged stormwater to Willow Slough Bypass. A Notice of Termination under the General Industrial Storm Water Permit was filed with the RWQCB, effective November 1, 2012, and a Notice of Non-Applicability was filed related to the updated General Industrial Storm Water NPDES Permit in July 2015. As described under the Regulatory Setting section, above, YCCL currently operates under an updated NPDES Permit (Order 2014-0057-DWQ), which includes coverage of stormwater discharges to Willow Slough Bypass via stormwater outlets SW-1 and SW-2. As described in Section 3.10.2 under "Site Drainage", above, stormwater collected and retained on site is managed and re-used such that it is not currently discharged off-site, although off-site discharge can occur if needed (i.e., should capacity not be available in the stormwater/groundwater reservoir).

Under the proposed Project, stormwater would be collected, retained, and re-used as currently occurs, but would also be conveyed to the borrow site excavation, which would be used as a retention basin, and from there be discharged via the existing pump station at the southeast corner of the borrow site following treatment, as needed. Discharges would occur using the existing outfall structures, as occurred prior to 2012 and as is currently permitted under Order 2014-0057-DWQ, but the stormwater would undergo additional treatment prior to release, consistent with water quality standards and WDRs. No modifications to the outfall facilities are proposed. The existing outfall is sized sufficiently to manage discharges associated with the 100-year, 24-hour storm, as required by the facility's WDRs, and the structure includes erosion control measures (i.e., armoring) that have historically mitigated erosion and scour of the Willow Slough Bypass channel bed and bank successfully.

The discharge of stormwater to Willow Slough Bypass would occur following on-site collection, retention, and testing of retained stormwater to determine if additional treatment is required prior to release. Stormwater would be treated prior to release to meet U.S. EPA benchmarks and water quality standards and objectives for receiving waters contained in the Basin Plan, including for Boron. The proposed stormwater treatment would achieve regulatory requirements for water quality through implementation of treatment methods such as bioswales and passive floc logs that are used to clarify stormwater by removing turbidity, sediment, heavy metals, and nutrients, thereby reducing the total suspended solids (TSS) concentrations in the discharges. Discharges would occur in a periodic and controlled way to recover storage capacity in YCCL stormwater retention ponds or be conducted to mitigate an anticipated rise in groundwater elevation. As such, discharges would occur in a manner that would not contribute increased flows to Willow Slough Bypass such that may result in hydromodification or flooding related impacts on-site or downstream.

As described in Section 3.10.1, Regulatory Framework, under “NPDES Waste Discharge Requirements”, regulations require that stormwater discharges from the Project be designed to ensure that operation of the Project would not violate WDRs defined in the NPDES permit, which incorporate the Basin Plan water quality objectives, upon discharge via the outfall. Further, the County would be required to comply with the MRP requirements of the NPDES Permit. Implementation of an MRP ensures technical and monitoring data is provided to the RWQCB to determine the Discharger’s compliance with NPDES effluent limitations and other requirements to assess the need for further investigation or enforcement action, and to protect public health and safety and the environment. Reports submitted under the MRP would contain a description of any noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

Discharges would not be allowed if they do not conform to the NPDES effluent limitations that are prescribed for the protection of receiving water quality and beneficial uses. Adherence to regulatory requirements would ensure that the proposed stormwater discharges do not degrade the quality of receiving waters in Willow Slough Bypass or impair designated beneficial uses. Given that the discharge of stormwater would adhere to NPDES effluent limits, the RWQCB Basin Plan water quality objectives, and would not substantially increase the concentration of constituents in receiving waters as compared to baseline conditions, the water quality impact associated with the discharge of stormwater would be less than significant.

Construction and Operation of Non-Specific Future Off-Site Borrow Area

As one component of the Project, the County proposes to identify and purchase land to be used as an off-site borrow area, or quarry, to provide cover material for landfill operations. A specific site has not yet been identified. Regardless of the specific location of such a site, excavation activities at a soil borrow area could result in adverse impacts to surface water or groundwater quality. Excavation would require removal of vegetative cover, which could result in increased erosion of the exposed soils and the transport of sediment and other pollutants associated with quarrying activities (such as oil and grease) to be transported offsite in stormwater runoff and degrade downgradient receiving waters.

The 2005 YCCL SEIR (Impact 3.5.9 in Section 3.5, Hydrology and Water Quality) assessed the potential for erosion and water quality impacts resulting from a non-specific future soil borrow site and determined that erosion, sedimentation, and transport of pollutants in stormwater could result in a significant impact to receiving waters. The 2005 YCCL SEIR included mitigation measures (summarized above) to ensure that the stormwater hydrologic, erosion control, and water quality control measures are maintained, remain effective throughout the operational life of the borrow site, and that they are kept current and in compliance with all RWQCB permit requirements, primarily through implementation of a SWPPP, with associated BMPs for water quality, for any future borrow site as well as drainage and runoff control features to ensure runoff does not leave the site (Mitigation Measures 3.5.9a, 3.5.9b, and 3.5.9c). These mitigation measures are currently implemented through the MMRP for YCCL. Further, YCCL is required to adhere to all water quality and hydrologic standards and monitoring requirements contained in the NPDES Discharge Permit (General Permit for Storm Water Discharges Associated with

Industrial Activities, NPDES Order CAS000001) issued by the RWQCB, including routine scheduled water quality monitoring of specified pollutants and subsequent correction of any water quality exceedances indicated by sampling results.

Implementation of the actions and BMPs required under the NPDES Permit, the SWPPP, as well as the mitigation requirements described above would prevent significant impacts to water quality associated with quarrying activities at a future off-site borrow area. With continued adherence to these requirements, the Project would not violate any water quality standards or WDRs, or otherwise substantially degrade surface or groundwater quality. The mitigation measures identified above would be sufficient to reduce water quality impacts associated with implementation of quarrying at a non-specific future off-site borrow area to less than significant.

Groundwater Quality

Shallow groundwater beneath the YCCL is generally poor and contains elevated concentrations of boron and selenium. The shallow groundwater is not suitable for domestic supply without treatment and softening. Groundwater for domestic and agricultural use is extracted from water-bearing sediments at considerable depths below the water table and is of higher water quality. In 1993, low concentrations of VOC's were detected in two interior wells at WMU 3 and 5 prompting the need to route extracted groundwater (150,000 to 200,000 gallons per day) through the AST system to remove/reduce the VOC concentrations. Detected concentrations of VOCs prior to treatment approach regulatory action levels and after treatment have been non-detectable at laboratory reporting limits.

The Project proposes to increase extraction of groundwater in phases to maintain the required 5-foot separation between the bottom of the WMUs (WMUs 1-5) and the surface of the shallow groundwater. Phase 1 of this program (10 wells) would involve the pumping an additional 26 million gallons of groundwater. The elevated boron and selenium concentration in the water require that the extracted groundwater be stored onsite. In years of average or below average precipitation, the additional groundwater would be stored in the on-site groundwater/surface water storage basins but in wet years, a substantial amount of stormwater would be routed to the borrow site to infiltrate and evaporate while the extracted groundwater would be routed and retained for onsite storage in the reservoir. Because the shallow groundwater extracted in the Phase 1 program would be stored onsite and not discharged off-site, it would not contribute to a water quality impact. The excess groundwater routed to the borrow pit during wet years would infiltrate into the same water bearing sediments it was extracted from and thus would not degrade a groundwater source. Extracted groundwater would continue to be routed to and treated by the AST then stored onsite with no offsite recharge.

As discussed in Section 3.10.1, the updated YCCL facility water balance determined that under full build-out conditions (39 operational extraction wells), the YCCL would not have adequate storage capacity to retain all the extracted groundwater and surface water within the landfill using existing on-site storage infrastructure, especially during periods of heavy rainfall during above normal and wet years. Potential adverse effects of inadequate onsite storage include overtopping of the storage reservoir or borrow site, localized onsite flooding, and/or inadvertent offsite

discharge of selenium- and boron-laden groundwater water. Flooding and potential threats to onsite and offsite water quality would be considered significant impacts of the Project.

Mitigation Measures

Mitigation Measure 3.10.1: The YCCL shall complete the following actions to monitor and evaluate groundwater extraction and retention during and following its Phase 1 groundwater extraction program (10 extraction wells):

- I. During the implementation period of the Phase 1 groundwater extraction program, YCCL shall continue to conduct regular groundwater level monitoring throughout each water year to assess the separation distance between the top of the groundwater table and bottom extent of the waste prism (5-foot separation) in WMUs 1-5. These data shall be reviewed annually to gauge the effectiveness of the groundwater extraction program. As required, water level monitoring data shall be submitted to the RWQCB.
- II. Within one year following the completion of the Phase 1 groundwater extraction well program, acquired annual groundwater elevation and extraction rate data shall be applied, as appropriate, to determine whether the 5-foot separation is adequately maintained, and to update and refine the site groundwater model and YCCL facility water balance.
- III. Groundwater level monitoring data, results of the updated groundwater model, and facility water balance shall be used to (a) determine the necessity and optimal location for additional extraction wells, (b) project the rate and quantity of extracted groundwater that would be necessary to maintain the 5-foot groundwater separation, and (c) determine whether storage area for that volume is available onsite.
- IV. If results of the updated groundwater model and updated facility water balance determine that additional extraction wells are necessary and would generate groundwater discharges in excess of onsite facility storage infrastructure available at that time, the County shall develop and implement alternative water storage strategies prior to installing and operating additional extraction wells. These alternatives could include:
 - Arrangements with neighboring properties to purchase excess stormwater for irrigation uses.
 - Acquiring additional property for land application of stored water or for construction of additional storage basins.
 - Developing technologies to enhance evaporative capacity of surface water.

Level of Significance after Mitigation

Mitigation Measure 3.10.1 would require the YCCL to determine the groundwater extraction rates and volumes that are necessary to maintain the 5-foot separation after the Phase 1 extraction well program is completed to ensure that the facility has adequate storage for the groundwater/surface water that could be generated as the extraction well program approaches the estimated build-out of 39 extraction wells. The measure requires YCCL to have additional storage strategies in place prior to installing and operating additional extraction wells, thus reducing the potential for flooding or water quality impacts that could occur due to inadequate onsite storage. The implementation of Mitigation Measure 3.10.1 would reduce this impact to less-than-significant.

Impact 3.10.2: The Project could substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin. (Less than Significant)

The YCLL would pump shallow groundwater to maintain the required 5-foot separation between the top of the water table and the bottom of the waste prism, as described above in Section 3.10.1. The YCCL proposes to develop the groundwater extraction system in phases. Phase 1 would involve 10 additional groundwater extraction wells near WMU 1 and 2. An estimated 26 million gallons of additional groundwater would be extracted each year.

The extracted groundwater is shallow groundwater with generally poor water quality, and thus is not considered a source of drinking water. In accordance with the significance criteria (Section 3.10.2), a significant impact would occur if groundwater pumping required as part of the Project substantially decreased groundwater supplies or if groundwater pumping interfered with groundwater recharge. Given that the groundwater originates in the shallow water table and is of poor quality, its removal from below the WMU would not decrease a viable domestic or irrigation water supply. Groundwater for irrigation and domestic use is pumped from confined water-bearing sediments located at much greater depths than the saturated near-surface sediments of the shallow unconfined groundwater.

Groundwater pumping necessary to maintain the 5-foot separation would occur throughout the year but could increase between January and the end of April when surface water recharge of the shallow water table is prevalent throughout the sub-basin. The proposed groundwater extraction under Phase 1 (10 wells) and eventual build-out phase (29 additional wells) is intended to reduce shallow groundwater levels (less than 5 feet), which would not hinder recharge but could enhance it locally by providing additional storage in the shallow sediments to accommodate additional infiltration. Furthermore, recharge would be additionally enhanced by allowing the extracted groundwater to infiltrate on 45-acre Fescue field and the through the base of the soil borrow area.

The Project would increase the volume of groundwater extracted from the shallow water table aquifer and would not interfere with neighboring domestic or irrigation wells that typically extract groundwater at greater depths. Additionally, the Project would not inhibit or eliminate groundwater recharge because the majority of pumping is proposed in the winter months when basin recharge is at its seasonal maximum. Therefore, the impacts to groundwater would be less than significant.

Mitigation Measures

None required.

Impact 3.10.3: The Project could substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site. (Less than Significant)

Implementation of the Project would not substantially alter the existing drainage pattern of Project site. The stormwater drainage system at YCCL would continue to collect, convey, and retain stormwater as described in Section 3.10.1 via the Project site stormwater runoff control and surface water drainage facilities, drainage ditches, culverts, down-drain pipes and perimeter ditches. Drainage ditches with flow velocities of 5 fps or less are lined with grass or erosion control matting to minimize and/or avoid erosion and sedimentation. Drainage ditches with greater than 5-fps flow velocities are lined with concrete or equivalent protective material for protection against erosion (Yolo County, 2018). The stormwater control system is sized to accommodate the 100-year, 24-hour storm event (Golder, 2021).

As described under Impact 3.10.1, above, implementing actions and BMPs required under the NPDES Permit and WDRs, the construction SWPPP, the industrial operations SWPPP, as well as those outlined in the MMRP associated with the 2005 YCCL SEIR, and **Mitigation Measure BIO-3.4-9**, would prevent significant water quality impacts associated with construction and operation activities, including those associated with discharges of treated stormwater to Willow Slough Bypass, and would minimize adverse water quality conditions (i.e., erosion and sedimentation) in on- and off-site receiving waters, resulting in less-than-significant water quality impacts. Additionally, the Project would not substantially increase impervious area within the non-specific future off-site borrow area compared to baseline conditions. As described in Chapter 2, Project Description, while some of the Project elements, such as the waste gasification facility, are entirely new, the majority of the Project elements proposed at the YCCL site are revisions or improvements to existing facilities and operations.

As described under Impact 3.10.1, treated stormwater would be discharged via the existing outfall structures, as occurs under the current IGP, and that occurred prior to 2012. The outfall structures are sufficiently armored to dissipate the energy of historic and planned discharges. Additionally, under the proposed Project, stormwater would also be conveyed to the borrow site excavation, which would be used as a retention basin, and from there be discharged via the existing pump station and outfall at the southeast corner of the borrow site following treatment, as needed. As such, no construction activities are required within Willow Slough Bypass that could result in altered drainage patterns, erosion, or sedimentation as a result of alteration of the bed or bank associated with new outfall construction. The discharge of stormwater to Willow Slough Bypass would occur following on-site collection, retention, and testing of retained stormwater to determine if additional treatment is required prior to release. Discharges would occur in a periodic and controlled way to recover storage capacity in YCCL stormwater retention ponds or conducted to mitigate an anticipated rise in groundwater elevation. As such, discharges would be conducted in a manner, and using appropriately sized and stabilized outfall facilities, to ensure erosion and scour of the Willow Slough Bypass channel bed and bank does not occur.

Off-site, implementation of the non-specific future off-site borrow area would locally alter existing drainage patterns and potentially expose soils to erosion, resulting in transport of sediment in

stormwater to off-site receiving waters as a result of quarrying and excavation activities. As described under Impact 3.10.1, mitigation requirements for the non-specific future borrow site specified in the 2005 YCCL SEIR and formalized in the MMRP ensure that the stormwater hydrologic, erosion control, and water quality control measures are implemented, maintained, and remain effective throughout the operational life of the borrow site, and that they are kept current and in compliance with all RWQCB permit requirements, primarily through implementation of a SWPPP, with associated BMPs for water quality, for any future borrow site as well as drainage and runoff control features to ensure runoff does not leave the site (2005 YCCL SEIR Mitigation Measures 3.5.9a, 3.5.9b, and 3.5.9c).

Implementation of the Project would not result in substantially altered existing drainage patterns of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site related to increased runoff volume and velocity or provide substantial additional sources of polluted runoff. Adherence to the provisions of regulatory requirements and permits, which would require source controls of stormwater volumes and implementation of BMPs for stormwater quality management would ensure impacts would be less than significant.

Mitigation Measures

None required.

Impact 3.10.4: The Project could substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite. (Less than Significant)

As described under Impact 3.10.3, the Project would not result in substantially altered drainage patterns at the Project site or a substantial increase in impervious surface area. As described under Impact 3.10.1, the discharge of treated stormwater to Willow Slough Bypass would be done in a managed way, with stormwater discharges conducted periodically to regain retention capacity in stormwater ponds or in anticipation of rising groundwater levels. Managed stormwater discharges to Willow Slough Bypass would not result in overtopping of channel banks on-site or downstream. WDR Order R5-2016-0094 (RWQCB) requires YCCL to determine the required height to protect the WMUs from flooding events with a 100-year return period and demonstrate that WMUs are designed, constructed, and operated to prevent inundation or washout from such a flood event. In compliance with WDRs, each WMU is protected from inundation by flood waters by perimeter soil levees around each cell at 33 feet MSL (Yolo County, 2018). The YCCL drainage system components are designed to accommodate 100-year, 24-hour precipitation conditions with sizing and capacity to safely convey storm flows associated with 100-year storm.

As described under Impact 3.10.3, implementation of the non-specific future off-site borrow area would not result in the addition of substantial areas of impervious surfaces but could alter existing drainage patterns at the site in a manner that increases surface runoff, such as through steepening

slopes during excavation activities. The 2005 YCCL SEIR mitigation measures formalized in the YCCL MMRP ensure that hydrologic, erosion control, and water quality control measures are maintained, remain effective throughout the operational life of the borrow site, and that they are kept current and in compliance with all RWQCB permit requirements, primarily through implementation of a SWPPP. The SWPPP would include BMPs for water quality as well as drainage and runoff control features to ensure runoff does not leave the site (2005 YCCL SEIR Mitigation Measures 3.5.9a, 3.5.9b, and 3.5.9c). Impacts related to flooding due to altered drainage patterns or the addition of impervious surfaces from implementation of the Project would be less than significant.

Mitigation Measures

None required.

Impact 3.10.5: The Project could substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner which would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. (Less than Significant)

As described above under Impact 3.10.4, the YCCL stormwater management system has been designed consistent with regulatory requirements, including those related to conveyance capacity for peak discharges associated with the 100-year/24-hour storm. Stormwater treatment measures are incorporated into the design of the stormwater management system to ensure pollutants are not mobilized and transported to downgradient waters, as required by NPDES and WDR permits. As described in detail under Impact 3.10.1 and Impact 3.10.3, the Project would not result in new sources of pollutants as a result of construction or operation that could be transported via storm runoff. Impacts related to exceeding stormwater conveyance infrastructure or creating additional sources of polluted runoff would be less than significant.

Mitigation Measures

None required.

Impact 3.10.6: The Project could substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows. (Less than Significant)

As described in Section 3.10.1, the Project site is located in the 100-year flood zone (Zone A). While some of the Project elements, such as the waste gasification facility, are entirely new, many of the Project elements are revisions or improvements to existing facilities and operations (see Chapter 2, Project Description, for details). Construction of new or alteration of existing Project facilities would all occur at the existing YCCL property, with the exception of the

non-specific future off-site borrow area. The drainage system can accommodate 100-year, 24-hour precipitation conditions with sizing and capacity to safely convey storm flows associated with 100-year storm. Run-on from adjacent properties would continue to be prevented by existing ditches and topography. Construction of new facilities or modifying existing facilities or operations would not alter on-site drainage patterns or result in the addition of impervious surfaces in a manner that would impede or redirect flood flows, either on- or offsite. The 2005 YCCL SEIR mitigation measures formalized in the YCCL MMRP ensure that hydrologic, erosion control, and water quality control measures are implemented at the non-specific future borrow site. Impacts related to impeding or redirecting flood flows would be less than significant.

Mitigation Measures

None required.

Impact 3.10.7: In flood hazard, tsunami, or seiche zones, the Project could risk release of pollutants due to inundation. (Less than Significant)

The Project site and non-specific future off-site borrow area are not located in areas at risk of inundation by tsunami or seiche. As described in Section 3.10.1, the Project site is located in the 100-year flood zone (Zone A) as a result of the decertification of the Willow Slough Bypass levee. WDR Order R5-2016-0094 requires YCCL to determine the required height to protect the WMUs from flooding events with a 100-year return period and demonstrate that WMUs are designed, constructed, and operated to prevent inundation or washout from this flood event. In compliance with WDRs, each WMU is protected from inundation by flood waters by perimeter soil levees around each cell between 26 and 33 feet MSL (Yolo County, 2018). Inundation of the non-specific future off-site borrow area could result in erosion of active quarrying and excavation areas and the transport of sediment to downgradient receiving waters. Mitigation Measure 3.5.9a from the 2005 YCCL SEIR MMRP requires, in addition to implementation of erosion and sedimentation control measures, that size of the area being cleared and excavated be limited to the minimum needed for the operation and that exposed areas be re-seeded when no longer being actively quarried to ensure vegetative cover is established to protect exposed soils from erosive forces. Impacts related to the release of pollutants from inundation by flood waters would be less than significant.

Mitigation Measures

None required.

Impact 3.10.8: The Project could conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. (Less than Significant)

As discussed above under Impacts 3.10.1, 3.10.2, and 3.10.3, no water quality degradation would occur as a result of the Project as compared to baseline conditions. As described under Impact 3.10.1, the Project would have a less-than-significant impact on surface water and

groundwater quality on-site and off-site. This includes the Willow Slough Bypass, which is subject to the RWQCB Basin Plan water quality objectives. The Basin Plan water quality objectives are designed to preserve and enhance water quality and protect the beneficial uses of all regional terrestrial surface water bodies (e.g., creeks, rivers, streams, and lakes) and groundwaters within the RWQCB's jurisdictional area. Willow Slough Bypass is currently classified as impaired for boron. As discussed under Impact 3.10.1, under the Project stormwater would be retained onsite in retention ponds, treated (such as through use of bioswales and floc logs) for boron and other pollutants, consistent with NPDES discharge requirements, and tested prior to release to ensure receiving water quality and beneficial uses are not degraded and/or impaired and that Basin Plan Water Quality Objectives are met.

The Project would comply with the requirements of the CGP and the YCCL Industrial NPDES Permit under the NPDES Permit program, including implementation of BMPs and other requirements of associated NPDES Permit required SWPPPs, as well as the WDRs and the associated MRP, all of which are designed to ensure stormwater discharges associated with construction, operation and maintenance activities at the Project site comply with applicable water quality standards. The Project would not result in impacts related to ongoing substantial groundwater withdrawals or reduce groundwater recharge, as discussed under Impact 3.10.2, and therefore would not conflict with or obstruct implementation of a sustainable groundwater management plan. Impacts relating to conflict or obstruction of implementing a water quality control plan or sustainable groundwater management plan would be less than significant.

Mitigation Measures

None required.

3.10.3 REFERENCES

- California Department of Water Resources (DWR). 2004. *California Groundwater Bulletin 118. Sacramento Valley Groundwater Basin – Yolo Subbasin*. Last Update: February 27, 2004.
- City of Davis. 2016. *Sterling 5th Street Apartments Project. Draft Environmental Impact Report (SCH: 2016022005), Prepared by DeNovo Planning Group*. September 2016.
- Federal Emergency Management Agency (FEMA). 2010. *National Flood Insurance Program, Flood Insurance Rate Map (FIRM). Yolo County California and Incorporated Areas. Panel 610, No. 060423. Map No. 06113C0610*. June 2010.
- Golder. 2021. *Stormwater Pollution Prevention Plan (SWPPP). Yolo County Central Landfill*. January 2021.
- Regional Water Quality Control Board (RWQCB). 2007. *California Regional Water Quality Control Board Central Valley Region Monitoring and Reporting Program No. R5-2007-0180 for County of Yolo Planning and Public Works Department Yolo County Central Landfill Class III Landfills & Class II Surface Impoundments Construction, Operation, Closure, Post-Closure Maintenance, And Corrective Action Yolo County*. 2007.

- RWQCB. 2010. Central Valley Region. 2010 CWA Section 303(d) List of Water Quality Limited Segment; Central Valley Regional Quality Control Board, approved by USEPA 2011. Accessed online on 3/1/21 at: https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml
- RWQCB. 2016. *Order No. R5-2016-0094 Waste Discharge Requirements for County of Yolo Department of Community Services, Yolo County Central Landfill Class III Landfills, Class II Surface Impoundments, and Composting Construction, Operation, Closure, Post-Closure Maintenance, and Corrective Action, Yolo County.* 2016.
- RWQCB. 2018. *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (Basin Plan). Fifth Edition.* Revised May 2018 (with Approved Amendments).
- RWQCB. 2018a. *Notice of Violation, Review of First Semester 2018 Monitoring Report and Site Inspection, Yolo Central Landfill, Yolo County. Letter to from Howard Holt, RWQCB to Ramin Yazdani Director Integrated Waste Management Division.* November 30, 2018.
- RWQC. 2019. *Requirement to Comply with Groundwater Separation, Waste Discharge Requirements Order R5-2016-0094, Yolo Central Landfill, Yolo County. Letter from Todd Del Frate, RWQCB to Ramin Yazdani Director Integrated Waste Management Division.* August 6, 2019.
- RWQCB. 2019a. *Review of Work Plan for Well Installation, Abandonment, and Groundwater Monitoring Changes for Investigation of Groundwater Separation Options, and Creation of Detection Monitoring Program of New WMU 6F, Yolo Central Landfill, Yolo County. Letter from Todd Del Frate to Ramin Yazdani, Director Integrated Waste Management Division.* November 4, 2019.
- State Water Resources Control Board (SWRCB). 2010. *Final California 2010 Integrated Report (303(d) List/ 305(b) Report).* Accessed online 3/1/21 at: https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml
- SWRCB. 2021. *Receipt of Notification of Intent (NOI), for Yolo County Central Landfill (WDID 5S57I029034).* March, 2021.
- U.S. EPA. 2021. *Feather and Sacramento Rivers Watersheds.* Accessed online on February 24 at: <https://www.epa.gov/sfbay-delta/feather-and-sacramento-rivers-watersheds>
- Yolo County. 2005. *Yolo County Central Landfill Permit Revisions Final Subsequent Environmental Impact Report SCH No. 1991073040.* May 2005.
- Yolo County. 2009. *2030 Countywide General Plan, Conservation and Open Space Element.* November 10, 2009.
- Yolo County. 2018. *Joint Technical Document, Yolo County Central Landfill, Yolo County, CA.* June 2018.
- Yolo County. 2019. *Response to Notice of Violation, Review of First Semester 2018 Monitoring Report and Site Inspection, WDR R5-2016-0094, Yolo County Central Landfill. Letter from Ramin Yazadani, Director Integrated Waste Management Division to Howard Holt, RWQCB.* January 11, 2019.

- Yolo County. 2019a. *Work Plan for Increasing Groundwater Elevation Control WDR R5-2016-0094. Yolo County Central Landfill. Letter from Ramin Yazadani, Director Integrated Waste Management Division to Howard Holt, RWQCB.* January 21, 2019.
- Yolo County. 2019b. *Engineering Feasibility Study for Groundwater Separation Control WDR R5-2016-0094 Yolo County Central Landfill. Letter from Ramin Yazadani, Director Integrated Waste Management Division to Todd Del Frate, RWQCB.* July 19, 2019.
- Yolo County. 2019c. *Requirement to Comply with Groundwater Separation WDR R5-2016-0094 Yolo County Central Landfill. Letter from Ramin Yazdani, Director Integrated Waste Management Division to Todd Del Frate, RWQCB.* August 27, 2019.
- Yolo County, 2019d. *Work Plan for Well Installation, Abandonment, and Groundwater Monitoring Changes Related to Investigation of Groundwater Separation Options, and Creation of Detection Monitoring Program of New WMU 6F Yolo County Central Landfill. Letter from John Borrega, P.G. and Ramin Yazdani Director, Integrated Waste Management Division to Todd Del Frate, RWQCB.* October 14, 2019.
- Yolo County. 2019e. *Work Plan for Investigations related to Updating the Engineering Feasibility Study for Groundwater Separation Control Yolo County Central Landfill. Letter from John Borrega, P.G. and Ramin Yazdani Director Integrated Waste Management Division to Todd Del Frate, RWQCB.* November 15, 2019.
- Yolo County. 2020. *Report on Well Installation, Abandonment, and Groundwater Monitoring Changes for Investigation of Groundwater Separation Options, and Creation of Detection Monitoring Program for New WMU 6F, Yolo County Central Landfill. Letter from John Borrega, P.G. and Ramin Yazdani Director Integrated Waste Management Division to Todd Del Frate, RWQCB.* June 20, 2020.
- Yolo County. 2020a. *Updated Engineering Feasibility Study for Groundwater Separation Control WDR R5-2016-0094 Yolo County Central Landfill, Yolo County Central Landfill. Letter from Ramin Yazdani, Director Integrated Waste Management Division to Todd Del Frate, RWQCB.* August 31, 2020.
- Yolo County. 2020b. *Workplan for Installation of Extraction Wells for Groundwater Separation Management, Yolo County Central Landfill. WDR R5-2016-0094. Letter from John Borrega, P.G. and Ramin Yazdani, Director Integrated Waste Management Division to Todd Del Frate, RWQCB.* September 24, 2020.
-

This page intentionally left blank

3.11 WILDFIRE

This section analyzes the potential impacts the Project elements would have on wildfires in the Project vicinity. The Project is in a Local Responsibility Area (LRA)¹ and is not in or near a State Responsibility Area (SRA)². The Project is not located on lands classified as Very High Fire Hazard Severity Zones (VHFHSZ) (CalFire, 2020). In addition to the Project vicinity, this evaluation considers at a programmatic or general level of analysis, the potential wildfire impacts of development of an off-site borrow area, one of the Project elements. The 1992 Yolo County Central Landfill (YCCL) Environmental Impact Report (EIR) and 2005 YCCL EIR prepared for the YCCL did not include Wildfire as a Section. Wildfire was added as a section in Appendix G in the 2019 update to the *CEQA Guidelines*.

3.11.1 SETTING

According to the 2030 Countywide General Plan, wildland fire danger varies throughout Yolo County. To quantify potential risk from wildland fire, Cal Fire has developed a Fire Hazard Severity Scale that uses three criteria (fuel loading, fire weather and topography) to determine fire hazard severity. As discussed above, the project is not located in a VHFHSZ. The high risk for wildland fires occurs in the western portion of Yolo County, west of Esparto and west of Winters. The County and its municipalities fight a large number of vegetation fires (mainly in the summer). These fires tend to occur along major highways and railroads, and usually do not damage structures (Yolo County, 2009). The YCCL is situated in an area dominated by agriculture, which is not prone to wildfires.

Regulatory Setting

2030 Countywide General Plan

The Health and Safety Element of the 2030 Countywide General Plan ensures that appropriate consideration of both natural and human-made hazards and risks are factored into land use decision-making. The element includes the following policies pertaining to Wildfire that are relevant to the project:

Goal HS-3: Wildland Fires. Protect the public and reduce damage to property from wildfire hazard.

Policy HS-3.1: Manage the development review process to protect people, structures, and personal property from unreasonable risk from wildland fires.

Policy HS-3.2: Encourage well-organized and efficient coordination between fire agencies and the County.

¹ Local Responsibility Area (LRA). LRAs are areas not protected by Cal Fire, generally they are densely populated areas, incorporated cities, and agricultural lands.

² State Responsibility Area (SRA). CAL FIRE has a legal responsibility to provide fire protection on all SRA lands, which are defined based on land ownership, population density and land use.

Action HS-A38: Require new and/or existing development to establish “defensible space” by providing for clearance around structures, using fire resistant ground cover, building with fire-resistant roofing materials, fuel load reduction, and taking other appropriate measures.

Action HS-A45: Coordinate with fire districts to ensure fire safe design and construction of new development.

3.11.2 IMPACTS AND MITIGATION MEASURES

Significance Criteria

Appendix G of the *CEQA Guidelines* states that a project would result in a significant impact to Wildfire if located in or near state responsibility areas or lands classified as very high fire hazard severity zones and would:

- Substantially impair an adopted emergency response plan or emergency evacuation plan;
- 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;
- 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 of that may result in temporary or ongoing impacts to the environment; or,
- Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

The Project is not within Very High Fire Hazard Severity Zones (VHFHSZ) (Cal Fire, 2020).

Impact Analysis

Impact 3.11.1: The Project could result in an increased risk in wildfires. (Less than Significant)

The Project would have the potential to result in wildfire through inadvertent events at the YCCL. However, as discussed above, the Project is not located in or near an SRA or within VHFHSZ. The YCCL is located in an LRA. The Davis Fire Department provides fire protection services to the YCCL. The risk of off-site wildfires reaching the YCCL is minimized by maintaining graded perimeter access roads that serve as fire breaks. Several off-site fires along County Road 104 have been stopped at the perimeter road in the past, along with the help from the on-site water truck. The YCCL would continue maintaining the graded perimeter access roads and continue to keep a water truck on-site for fire suppression and support. The Project would not conflict with an adopted emergency response plan or emergency evacuation plan. The Project would continue to follow existing fire control measures, emergency plans at the YCCL and continue to keep staff trained to detect and handle small on-site fires. The Project would continue to comply with the Davis Fire Department’s fire suppression requirements. The Project would not expose Project occupants to pollutants from wildfire or spread of wildfire including fire hazards from slope, prevailing winds,

and other factors that exacerbate wildfire risks. The Project would not require installation of associated infrastructure that may exacerbate wildfire risk. As discussed in **Section 3.14 Public Services and Utilities**, extensive fire control measures are implemented at the YCCL that have proven to be effective at minimizing fire risks. In addition, **Section 3.14** includes several mitigation measures intended for fire protection services at the landfill (including operational policies, temperature control, California Fire Code, and other applicable regulations) prior to development of future Project elements to reduce exposure of people or structures to significant risk from wildfire. The existing fire control and suppression measures at YCCL efficiently reduce the risk of wildfires at the Project site, thus implementation of the Project would not substantially increase the risk of wildfire and the impacts related to wildfire would be less than significant.

Mitigation Measures

None Required.

Impact 3.11.2: The non-specific off-site borrow area Project element could create impacts related to wildfire. (Less than Significant)

The proposed non-specific off-site borrow area has not yet been identified, and no parcel of land has been purchased for site development. As discussed above, there are areas in Yolo County that are classified as VHFHSZ. However, those zones are located in western Yolo County. The nearest VHFHSZ is located at least 16 miles west of the Project site. Therefore, it is unlikely that the future off-site borrow area would be in western Yolo County, as this distance would have high hauling costs that would discourage selection of an off-site borrow area this far from YCCL. A more feasible off-site borrow area would ideally be located near the YCCL in an LRA under the Davis Fire Department's jurisdiction for fire protection services. Depending on the location of the off-site borrow area and the existing site conditions, there could be a potential for wildfires from natural vegetation. However, soil borrow activities would include removal of any form of natural vegetation from the area in order to excavate soil. The future off-site borrow area is not anticipated to require any infrastructure or maintenance for fire suppression that would cause environmental impacts or development of permanent on-site structures that could be damaged during a wildfire. Further, the location of the off-site borrow area would likely not be located in an area where slope, wind, flooding, landslides, and drainage would exacerbate wildfire risks. The off-site borrow area would implement fire control measures, emergency plans, and staff training to detect and handle small on-site fires. Since fire control and suppression measures could efficiently reduce the risk of wildfires at the proposed off-site borrow area, it would not substantially increase the risk of wildfires and impacts related to wildfire would be less than significant. However, a more detailed, site-specific wildfire analysis should be part of project-level environmental review of this project component when a location for the off-site borrow area has been identified.

Mitigation Measures

None required.

3.11.3 REFERENCES

Cal Fire. *Fire Hazard Severity Zone Viewer*. <https://egis.fire.ca.gov/FHSZ/>. Accessed December 16, 2020.

Yolo County. 2009. *2030 Countywide General Plan, Health and Safety Element*. November 2009.

Yolo County. 2018. *Joint Technical Document, Yolo County Central Landfill, Yolo County, California*. June 2018.

3.12 NOISE

This section evaluates the potential noise impacts of the Project. This section provides a brief technical background on “sound”, as well as existing noise sources and levels in the Project vicinity. This evaluation reviews applicable State and local noise regulations followed by analysis of potential noise impacts of construction and operation of the Project.

3.12.1 SETTING

Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise is defined as unwanted sound. Sound pressure level has become the most common descriptor used to characterize the “loudness” of an ambient sound level. Sound pressure level is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain. Decibels are measured using different scales, and it has been found that A-weighting of sound levels best reflects the human ear’s reduced sensitivity to low frequencies, and correlates well with human perceptions of the annoying aspects of noise. The A-weighted decibel scale (dBA) is cited in most noise criteria. All references to decibels (dB) in this report will be A-weighted unless noted otherwise.

Several time-averaged scales represent noise environments and consequences of human activities. The most commonly used noise descriptors are the equivalent A-weighted sound level over a given time period (Leq)¹; average day–night 24-hour average sound level (Ldn)² with a nighttime increase of 10 dB to account for sensitivity to noise during the nighttime; and community noise equivalent level (CNEL)³, also a 24-hour average that includes both an evening and a nighttime sensitivity weighting. **Table 3.12-1** identifies decibel levels for common sounds heard in the environment. With regard to increases in A-weighted noise level, the following relationships occur (Caltrans, 1998):

- Under controlled conditions in an acoustics laboratory, the trained healthy human ear is able to discern changes in sound levels of 1 dB;
- Outside of such controlled conditions, the trained ear can detect changes of 2 dB in normal environmental noise;
- It is widely accepted that the average healthy ear, however, can barely perceive noise levels changes of 3 dB;
- A change in level of 5 dB is a readily perceptible increase in noise level; and
- A 10-dB change is recognized as twice as loud as the original source.

¹ The Equivalent Sound Level (Leq) is a single value of a constant sound level for the same measurement period duration, which has sound energy equal to the time-varying sound energy in the measurement period.

² Ldn is the day–night average sound level that is equal to the 24-hour A-weighted equivalent sound level with a 10-decibel penalty applied to night between 10:00 p.m. and 7:00 a.m.

³ CNEL is the average A-weighted noise level during a 24-hour day, obtained by addition of 5 decibels in the evening from 7:00 to 10:00 p.m., and an addition of a 10-decibel penalty in the night between 10:00 p.m. and 7:00 a.m.

TABLE 3.12-1. TYPICAL NOISE LEVELS

Noise Level (dB)	Outdoor Activity	Indoor Activity
90+	Gas lawn mower at 3 feet, jet flyover at 1,000 feet	Rock Band
80-90	Diesel truck at 50 feet	Loud television at 3 feet
70-80	Gas lawn mower at 100 feet, noisy urban area	Garbage disposal at 3 feet, vacuum cleaner at 10 feet
60-70	Commercial area	
40-60	Quiet urban daytime, traffic at 300 feet	Large business office, dishwasher next room
20-40	Quiet rural, suburban nighttime	Concert hall (background), library, bedroom at night
10-20		Broadcast / recording studio
0	Lowest threshold of human hearing	Lowest threshold of human hearing

SOURCE: (modified from Caltrans Technical Noise Supplement, 1998)

Noise Attenuation

Stationary point sources of noise, including construction equipment, attenuate (lessen) at a rate of 6 to 7.5 dB per doubling of distance from the source, depending on ground absorption. Soft sites attenuate at 7.5 dB per doubling because they have an absorptive ground surface such as soft dirt, grass, or scattered bushes and trees. Hard sites have reflective surfaces (e.g., parking lots or smooth bodies of water) and therefore have less attenuation (6.0 dB per doubling). A street or roadway with moving vehicles (known as a “line” source), would typically attenuate at a lower rate, approximately 3 to 4.5 dB each time the distance doubles from the source, that also depends on ground absorption (Caltrans, 1998). Physical barriers located between a noise source and the noise receptor, such as berms or sound walls, would increase the attenuation that occurs by distance alone. Noise from large construction sites (or a landfill with heavy equipment moving dirt and solid waste daily and trucks entering and exiting the main gate daily – activities similar to construction sites) would have characteristics of both “point” and “line” sources, so attenuation would probably range between 4.5 and 7.5 dB per doubling of distance.

Findings of the 1992 YCCL EIR

The 1992 YCCL EIR evaluated the potential noise effects of previous changes to the landfill. The analysis concluded that the County was committed to implementing hearing-protective devices on-site for persons working in the vicinity and there would be no significant effects on noise, and that no further mitigation measures were required.

Findings of the 2005 YCCL EIR

The 2005 YCCL EIR analyzed potential noise and vibration impacts that could result from the exposure of sensitive receptors to noise occurring at the landfill.

Mitigation measures included limiting construction activities for new facilities to 6:00 a.m. to 5:00 p.m., Monday through Saturday, and 7:00 a.m. to 6:00 p.m. on Sunday; stationary noise sources emitting noise levels greater than 80 dBA at 50 feet shall be oriented to contain the noise

within the YCCL boundary to the extent possible, keeping current operating hours: 6 a.m. to 5 p.m. Monday through Saturday and 7 a.m. to 6 p.m. on Sunday; locating the off-site soil borrow area in buffer zone of 2,000 feet to the nearest sensitive receptors, limiting heavy truck trips to no more than 25 passbys that are within approximately 50 feet of the roadway and limiting haul trips leaving the soil borrow area to 7 a.m. to 5 p.m. The 2005 EIR determined that with implementation of mitigation measures, noise impacts would be less than significant.

Sensitive Receptors

Some land uses are considered more sensitive to ambient noise levels than others due to the amount of noise exposure, in terms of both duration and insulation from noise, and the types of activities typically involved. The 2030 Countywide General Plan Health and Safety Element defines noise sensitive receptors as residentially designated land uses; hospitals, nursing/convalescent homes, and similar board and care facilities; hotels and lodging; schools and day care centers; and neighborhood parks. The nearest residentially designated land uses are approximately 1.75 miles to the southwest of the YCCL. **Table 3.12-2** summarizes the locations of residences on agricultural parcels within one mile of the YCCL.

TABLE 3.12-2. RESIDENCES ON AGRICULTURAL PARCELS WITHIN ONE MILE OF THE YCCL

Use/Location	Direction from the YCCL	Distance from YCCL Boundary (Feet)
Approximately six residences on Road 103	West of YCCL boundary	4,300 to 5,200
Residence south of Willow Slough By-Pass	South of southern YCCL boundary	600
Residence south of Willow Slough By-Pass	Southwest of the southwestern YCCL boundary corner	3,400
Residence south of Willow Slough By-Pass	South of the southeastern YCCL boundary corner	1,400

NOTE: Based on 2018 aerial and 2020 site reconnaissance.

SOURCE: RCH Group, 2020

Existing Noise Sources

To quantify existing ambient noise levels, RCH Group conducted 3 long-term (72-hour) and several short-term (10-minute) noise measurements on and nearby the Project site. Long-term noise measurements were made using Metrosonics db308 Sound Level Meters calibrated before and after the measurements. Short-term measurements were made using a Larson Davis SoundTrack LxT Sound Level Meter calibrated before and after measurements. **Table 3.12-3** summarizes the locations and results of the noise measurements. **Figure 3.12-1** shows the locations of the noise measurements.

The Noise Appendix includes 24-hour noise plots for each of the three days of measurements at Sites 1-3. Based on observations from the short-term measurements, the main source of noise in the Project vicinity is from landfill operational noise and traffic noise from Road 28H.

Figure 3.12-1: Noise Measurement Locations

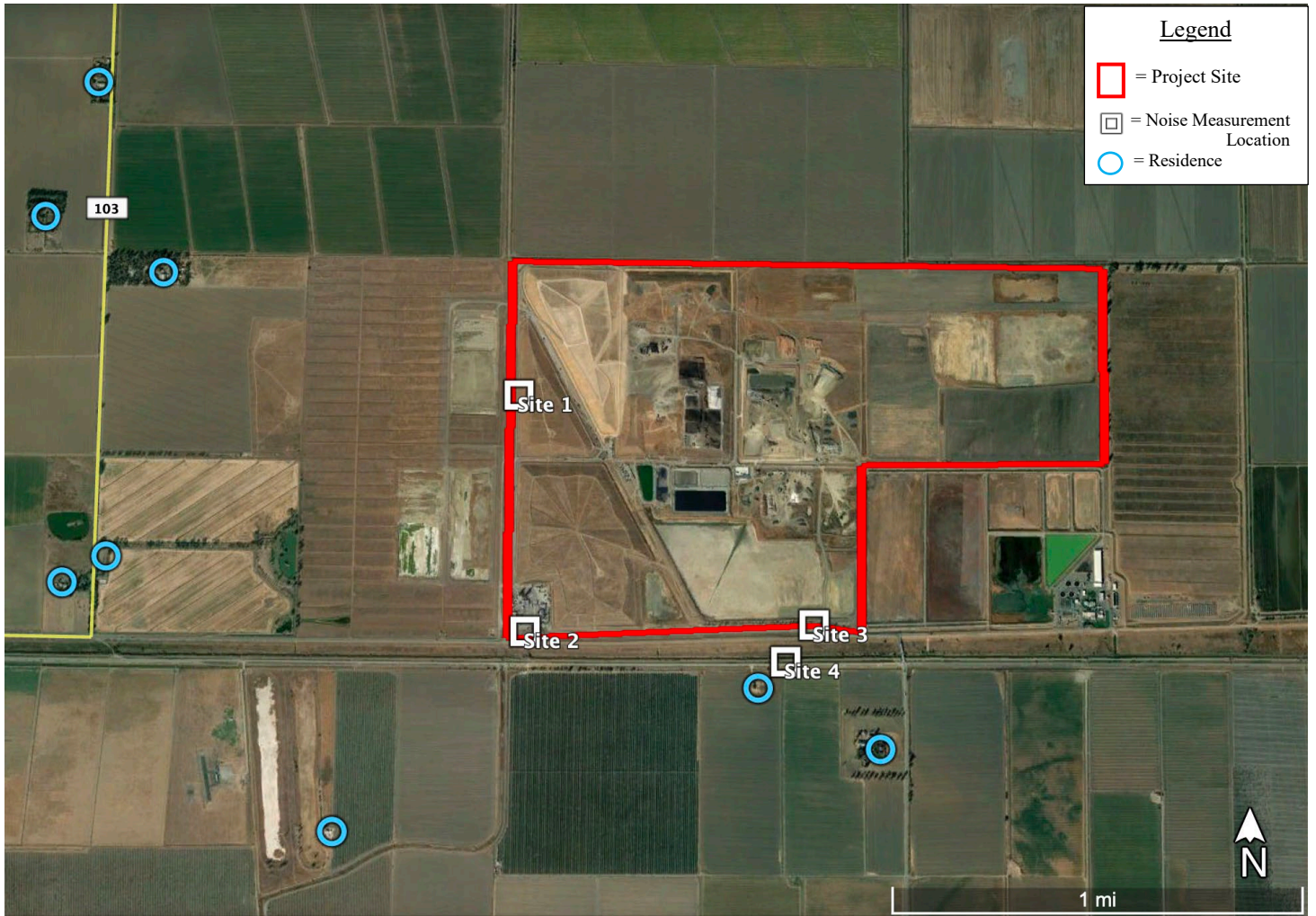


TABLE 3.12-3. EXISTING NOISE LEVELS

Location	Time Period	Noise Levels (dB)	Noise Sources
Site 1: Western boundary of YCCL – 300’ west of center of Unit 3	November 14, 12:00 a.m. Through November 16, 11:59 p.m., 2020 Saturday – Monday 72-hour measurement	Hourly Leq’s ranged from 43-50 CNELs: 52, 51, 51	Unattended noise measurements do not specifically identify noise sources
Site 1: Western boundary of YCCL – 300’ west of center of Unit 3	Tuesday November 17, 2020 9:35 a.m. to 9:45 a.m.	5-minute Leq’s: 50, 49	Maintenance truck passing by noise meter, 70 dB, distant backup beep 51 dB.
Site 2: Southwestern boundary of YCCL, 150’ west of entrance gate and 60’ north of centerline of Road 28H	November 14, 12:00 a.m. Through November 16, 11:59 p.m., 2020 Saturday – Monday 72-hour measurement	Hourly Leq’s ranged from 42-64 CNELs: 59, 54, 60	Unattended noise measurements do not specifically identify noise sources
Site 2: Southwestern boundary of YCCL, 150’ west of entrance gate and 60’ north of centerline of Road 28H	Monday November 17, 2020 10:09 a.m. to 10:19 a.m.	5-minute Leq’s: 59, 56	Traffic on Road 28H 55-72 dB, medium truck horn, 70 dB, distant landfill operations noise 53 dB.
Site 3: Southeastern boundary of YCCL, 50’ north of centerline of Road 28H	November 14, 12:00 a.m. Through November 16, 11:59 p.m., 2020 Saturday – Monday 72-hour measurement	Hourly Leq’s ranged from 42-65 CNELs: 62, 59, 65	Unattended noise measurements do not specifically identify noise sources
Site 3: Southeastern boundary of YCCL, 50’ north of centerline of Road 28H	Monday November 17, 2020 10:23 a.m. to 10:33 a.m.	5-minute Leq’s: 65, 62	Large truck 85 dB, Traffic on Road 28H 69-79 dB, distant landfill operations 45 dB.
Site 4: On Road 29 of Willow Slough Bypass, near the closest residential receptor on an agricultural parcel	Monday November 17, 2020 10:38 a.m. to 10:48 a.m.	5-minute Leq’s: 48, 63	Several medium trucks passing by noise meter 80-85 dB, distant traffic from Road 28H, 50-56 dB.

SOURCE: RCH GROUP, 2020

Regulatory Context

Pertinent local noise regulations are discussed within the following section. There are no applicable federal noise requirements.

State

The State Land Use Compatibility standards for Community Noise (**Table 3.12-4**) indicate that for Low Density Residential, a Community Noise Exposure up to 60 dB (Ldn or CNEL) is Normally Acceptable, and a Community Noise Exposure up to 70 dB (Ldn or CNEL) is Conditionally Acceptable. The standards also indicate that for Industrial, Manufacturing, Utilities, and Agriculture, a Community Noise Exposure up to 75 dB (Ldn or CNEL) is Normally Acceptable, and a Community Noise Exposure of up to 80 dB (Ldn or CNEL) is Conditionally Acceptable.

TABLE 3.12-4. LAND USE COMPATIBILITY NOISE STANDARDS

Land Use Category	Community Noise Exposure Ldn or CNEL, dB
Residential – Low Density Single Family, Duplex, Mobile Homes	50 to 60 = Normally acceptable 55 to 70 = Conditionally acceptable 70 to 75 = Normally unacceptable 75 to 85 = Clearly unacceptable
Residential – Multifamily	50 to 65 = Normally acceptable 60 to 70 = Conditionally acceptable 70 to 75 = Normally unacceptable 75 to 85 = Clearly unacceptable
Transient Lodging – Motels, Hotels	50 to 65 = Normally acceptable 60 to 70 = Conditionally acceptable 70 to 80 = Normally unacceptable 80 to 85 = Clearly unacceptable
Schools, Libraries, Churches, Hospitals, Nursing Homes	50 to 70 = Normally acceptable 60 to 70 = Conditionally acceptable 70 to 80 = Normally unacceptable 80 to 85 = Clearly unacceptable
Auditoriums, Concert Halls, Amphitheaters	50 to 70 = Conditionally acceptable 65 to 85 = Clearly unacceptable
Sports Arena, Outdoor Spectator Sports	50 to 75 = Conditionally acceptable 70 to 85 = Clearly unacceptable
Playgrounds, Neighborhood Parks	50 to 70 = Normally acceptable 67.5 to 75 = Normally unacceptable 72.5 to 85 = Clearly unacceptable
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 to 75 = Normally acceptable 70 to 80 = Normally unacceptable 80 to 85 = Clearly unacceptable
Office Buildings, Business, Commercial and Professional	50 to 70 = Normally acceptable 67.5 to 77.5 = Conditionally acceptable 75 to 85 = Normally acceptable
Industrial, Manufacturing, Utilities, Agriculture	50 to 75 = Normally acceptable 70 to 80 = Conditionally acceptable 75 to 85 = Normally unacceptable
Normally Acceptable	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
Conditionally Acceptable	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
Normally Unacceptable	New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design.
Clearly Unacceptable	New construction or development generally should not be undertaken.

SOURCE: Yolo 2030 Countywide General Plan, Figure HS-7, Noise Compatibility Guidelines.

Local

Yolo County 2030 Countywide General Plan

The Health and Safety Element of the 2030 Countywide General Plan for Yolo County describes the existing noise environment in Yolo County and presents goals, policies, and actions intended to control noise and to protect sensitive uses from excessive noise. Yolo County has not adopted a noise ordinance that sets specific noise limits for noisy activities.

The 2030 Countywide General Plan's Health and Safety Element Noise Compatibility Guidelines has adopted the State of California Department of Health Services recommended Community Noise Exposure standards for exterior noise (**Table 3.12-4**). These recommended standards are provided in acceptable decibel levels (dB). The noise levels are in the context of Community Noise Equivalent Level (CNEL), which reflect standard calculations for average noise levels over a 24-hour period.

The following goals, policies and actions related to noise from the 2030 Countywide General Plan Health and Safety Element are relevant to the Project:

Goal HS-7.1: Noise Compatibility. Protect people from the harmful effects of excessive noise.

Policy HS-7.1: Ensure that existing and planned land uses are compatible with the current and projected noise environment.

Policy HS-7.8: Encourage local businesses to reduce vehicle and equipment noise through fleet and equipment modernization or retrofits, use of alternative fuel vehicles and installation of mufflers or other noise reducing equipment.

Action HS-A62: Regulate the location and operation of land uses to avoid or mitigate harmful or nuisance levels of noise to the following sensitive receptors: residentially designated land uses; hospitals, nursing/convalescent homes, and similar board care facilities; hotels and lodging; schools and day care centers; and neighborhood parks. Home occupation uses are excluded.

Action HS-A63: Review proposed development projects for compatibility with surrounding and planned uses in accordance with the Noise Compatibility Guidelines; however, these guidelines shall not be applied to outdoor activity areas nor shall they be used to prohibit or preclude otherwise allowed density and intensity of development.

Action HS-A64: Require the preparation of a noise analysis/acoustical study, including recommendations for attenuation, for all proposed projects which may result in potentially significant noise impacts to nearby sensitive land uses.

3.12.2 IMPACTS AND MITIGATION MEASURES

Significance Criteria

Appendix G of the *CEQA Guidelines* states that a Project would result in a significant impact to noise if it would:

- Generate a substantial temporary or permanent increase in ambient noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Generate excessive groundborne vibration or groundborne noise levels; or
- 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, expose persons residing or working in the project area to excessive noise levels.

Yolo County has no established quantitative noise standards that are applicable to this Project. The Yolo County General Plan provides noise compatibility guidelines which provide compatibility of noise levels ranges (**Table 3.12-4**). The Project is located in a rural, agricultural area that is currently exposed to noise from landfill activities and could be exposed to noise from other agricultural activities. The YCCL is surrounded entirely by agriculturally-designated land uses, with the exception of the Davis Wastewater Treatment Plan to the east and off-site borrow area to the west, which are designated as Public/Quasi Public. There are several residences within 1-mile of the Project site, which are located on agriculturally-designated land. For agricultural land uses, exterior noise levels up to 75 dB, CNEL are normally acceptable and exterior noise levels up to 80 dB, CNEL are conditionally acceptable (see **Table 3.12-4**). Thus, this analysis will consider noise a significant impact if nearby residences on agriculturally-designated land would be exposed to an exterior noise level of greater than 75 dB, CNEL from YCCL operations.

Vibrational effects from typical construction activities are only a concern within 25 feet of existing structures (Caltrans, 2002). Project construction would utilize typical construction equipment and would occur at distances far greater than 25 feet of existing structures and would not result in any vibration impacts. Therefore, this impact is not evaluated further in this section.

The Project is not located within an airport land use plan area or within two miles of a public or private airport or airstrip. The nearest public airports are UC Davis University Airport, approximately 6.5 miles southwest of the Project, Sacramento International Airport, approximately 7 miles northeast of the Project, and Yolo County Public Airport, approximately 8.5 miles west of the Project. The nearest private airport is Medlock Field approximately 2.9 miles northwest of the Project. At these distances, aircraft noise would not be a significant source of noise at the Project and would have no impact. Therefore, this impact is not evaluated further in this section.

Impact Analysis

Impact 3.12.1: New on-site Project elements that are proposed (including increased daily permitted tonnage, a peaking power plant, a wood pellet facility, a large scale floating solar photovoltaic system, a solar photovoltaic system on closed landfill units, a waste gasification facility, expanded biogas utilization options, a new class 2 surface impoundment, an organic waste fertilizer facility, development of a storm water treatment and drainage system, additional groundwater pumping with possible treatment and discharge, a transfer station, a thermal pressure hydrolysis system, and a biogas to methanol pilot facility) could increase noise levels at off-site residences on agriculturally-designated land. (Significant)

Construction Related Noise Impacts

Construction would result in a temporary increase in ambient noise levels in the vicinity of the Project. The construction noise levels of primary concern are often associated with the site preparation phase (USEPA, 1973). Construction activities for the Project could include site grading, clearing and excavation work. Construction activities would require the use of numerous pieces of noise-generating equipment, such as excavating machinery (e.g., loaders, etc.) and other construction equipment (e.g., scrapers, dozers, compactors, trucks, etc.). The noise levels generated by construction equipment would vary greatly depending upon factors such as the type and specific model of the equipment, the operation being performed, the condition of the equipment and the prevailing wind direction.

The maximum noise levels for various types of construction equipment that could be used during Project construction are provided in **Table 3.12-5** below. Maximum noise levels generated by construction equipment used for the Project would range from 74 to 89 dB, L_{max} at a distance of 50-feet and 44 to 59 dB, L_{max} at 800-feet (the approximate distance between the nearest construction activity to the nearest residence on agriculturally-designated land). **Table 3.12-6** provides average typical construction activity noise levels at 50 feet and 800 feet.

Construction noise levels would fluctuate throughout the day depending on the equipment use, construction schedules, and location of construction during extended periods of time. The nearest proposed construction activity would occur approximately 800 feet from the nearest residence on agriculturally-designated land. However, the majority of construction activities would occur at distances much greater than 800 feet. The majority of construction related noise activities that would affect the nearest receptor would be construction-related truck traffic on Road 28H. This temporary increase in truck traffic would not be expected to exceed the 75 dB, CNEL.

The highest CNEL recorded at the YCCL was 65 dB, CNEL at the southeast boundary of the Project site. Noise generated from distant landfill construction activities and construction-related truck traffic on Road 28H would be effectively shielded to residences on agriculturally-designated land to the south by the levees that contain Willow Slough Pass. Furthermore, temporary construction noise would not be expected to increase exterior noise levels at off-site residences on agriculturally-designated land above the 75 dB, CNEL threshold unless intense nighttime construction operations were to take place. Therefore, without a restriction on hours of construction for Project elements, Project construction would be potentially significant.

TABLE 3.12-5. TYPICAL NOISE LEVELS FROM CONSTRUCTION EQUIPMENT (LMAX)

Construction Equipment	Noise Level (dB, Lmax at 50 feet)	Noise Level (dB, Lmax at 800 feet)
Dump Truck	76	46
Air Compressor	78	48
Backhoe	78	48
Dozer	82	52
Compactor (ground)	83	53
Crane	81	51
Excavator	81	51
Flat Bed Truck	74	44
Paver	77	47
Grader	85	55
Compressor (Air)	78	48
Generator	81	51
Roller	80	50
Vibratory Concrete Mixer	80	50
Concrete Mixer Truck	79	49
Jackhammer	89	59
Front End Loader	79	49

NOTES:

L_{max} = maximum sound level

An attenuation rate of 7.5 per doubling distance was used to convert the FHWA noise levels at 50-feet to the noise levels at 600-feet.

SOURCE: Federal Highway Administration (FHWA) Roadway Construction Noise Model User's Guide, 2006.

TABLE 3.12-6. TYPICAL CONSTRUCTION ACTIVITIES NOISE LEVEL

Construction Equipment	Noise Level (dB, Leq at 50 feet)
Ground Clearing	84
Excavation	89
Foundations	78
Erection	85
Finishing	89

NOTES:

Average noise levels correspond to a distance of 50 feet from the noisiest piece of equipment associated with a given phase of construction and 200 feet from the rest of the equipment associated with that phase.

Leq= equivalent sound level

SOURCE: U.S. Environmental Protection Agency, Legal Compilation, 1973.

Operational Noise Impacts

Noise from post-construction and operations of the proposed Project elements would not be expected to be significantly louder than activities that already occur at the Project site. As discussed above, the distance from the nearest residences on agriculturally-designated land to the location of the proposed Project element locations would be effectively minimized from the existing levees that contain Willow Slough Pass. Any permanent increase in ambient noise levels in the site vicinity would not be substantially greater than existing levels without the Project, and the Project would not result in any significant effects relating to operational noise. Therefore, Project operational noise would be less than significant.

Mitigation Measures

Mitigation Measure 3.12.1: Construction activities for new facilities shall be limited to 6:00 a.m. to 9:00 p.m., Monday through Saturday, and 7:00 a.m. to 7:00 p.m. on Sunday.

Level of Significance After Mitigation

Mitigation Measure 3.12.1 would reduce temporary construction noise impacts to less than significant.

Impact 3.12.2: Noise from activities at a future non-specific soil borrow site could affect sensitive receptors. (Significant)

The County may need to purchase a future, non-specific soil borrow site that would supply soil to the YCCL. At this time, the location of this proposed soil borrow site is not known. Soil mining activities are likely to have noise levels similar to noise levels shown in **Table 3.12-5**: Ground clearing (83 dB) and excavation (88 dB) at 50 feet. The excavation noise levels would be reduced to 75 dB at an approximate distance of 400 feet (using an attenuation of 4.5 dB per doubling of distance). Excavation activities could be a significant impact if they occur within 400 feet of residences on agriculturally-designated land. Since the future location of the soil borrow site is unknown, this impact would be significant.

Truck noise from hauling soil from the soil borrow area to YCCL could also be a significant noise impact depending upon the location of nearby sensitive receptors on the haul truck routes, the number of trucks per day and the time of day the hauling occurs. It is assumed that truck trips for hauling soil would be limited to primarily daytime hours. A residence on agriculturally-designated land with a setback of 50 feet would be subjected to an exterior level of 65 dB when the number of heavy truck trips exceeds 25 trips per hour. This would be well below the 75 dB CNEL standard and it is not expected that more than 25 soil borrow trips could occur in a given hour. Truck noise from hauling soil from the borrow area to YCCL would have a less-than-significant impact.

Mitigation Measures

Mitigation Measure 3.12.2a: Soil borrow activities shall be located in areas with a buffer zone of 400 feet to the nearest residence on agriculturally-designated land.

Mitigation Measure 3.12.2b: Soil borrow activities shall be limited to achieve a CNEL that does not exceed 75 dBA at the nearest residence on agriculturally-designated land.

Mitigation Measure 3.12.2c: To avoid effects of nighttime operations, haul trips leaving the soil borrow area shall be limited to 6:00 a.m. to 9:00 p.m., Monday through Saturday, and 7:00 a.m. to 7:00 p.m. on Sunday.

Level of Significance After Mitigation

Mitigation Measure 3.12.2a, 3.12.2b, and 3.12.2c would reduce future soil borrow site impacts to less than significant.

Impact 3.12.3: Truck trips to and from the YCCL could increase noise levels at residences on agriculturally-designated land. (Less than Significant)

The Project would result in an increase of 258 truck trips (258 round trips or 516 one-way trips) to accommodate the Project's increased daily permitted tonnage, soil import for the non-specific future borrow site, and other Project elements that require exporting products created from incoming waste.

The YCCL currently receives materials from 6:30 a.m. to 4:00 p.m., and no change to that schedule is proposed, however the YCCL is permitted to receive materials from 6:00 a.m. to 5:00 p.m. While some truck trips could occur outside of those hours (such as soil or products exported from Project elements), the vast majority of truck trip would occur between 6:30 a.m. and 4:00 p.m. (i.e., 9.5 hours). The 516 one-way truck trips would equate to approximately 54 truck trips per hour. A residence on agriculturally-designated land with a setback of 50 feet would be subjected to an exterior level of approximately 68 dB when the number of heavy truck trips exceeds 50 trips per hour. This would be well below the 75 dB CNEL standard. Therefore, this impact would be less than significant.

Mitigation Measures

None required.

3.12.3 REFERENCES

California Department of Transportation (Caltrans). 1998. *Technical Noise Supplement*.

California Department of Transportation (Caltrans). 2013. *Technical Noise Supplement*.

California Department of Transportation (Caltrans). 1998. *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects*.

California Department of Transportation (Caltrans). 2002. *Transportation Related Earthborne Vibrations*.

Federal Highway Administration (FHWA). 2006. *Roadway Construction Noise Model User's Guide*.

Federal Transit Administration (FTA). 2006. *Transit Noise and Vibration Impact Assessment* (FTA-VA-90-1003-06).

USEPA. 1973. *Legal Compilation*.

Yolo County. 1992. *Final Environmental Impact Report Yolo County Central Landfill State Clearinghouse No. 91123015*. October 1992.

Yolo County. 2005. *Yolo County Central Landfill Permit Revisions Final Subsequent Environmental Impact Report SCH No. 1991073040*. May 2005.

Yolo County. 2009. *2030 Countywide General Plan, Health and Safety Element*. November 2009.

Yolo County. 2015. *Draft Environmental Impact Report Yolo County Central Landfill Soil Borrow Site Project*. January 2015.

This page intentionally left blank

3.13 TRANSPORTATION

This section provides background information on the transportation system in the vicinity of the Project site, outlines potential impacts to transportation that may result from the Project, and proposes mitigation measures to reduce those impacts to a less-than-significant level. A discussion of federal, state, and local laws, policies, and regulations that influence transportation systems are also presented in this section. Much of the environmental setting and impact analysis information presented in this section was obtained from the Transportation Impact Analysis prepared for the Project (KDA, 2021; see Appendix H), which was peer reviewed by the County and found to be adequate for the purposes of incorporation into this environmental review.

3.13.1 ENVIRONMENTAL SETTING

Regionally, Yolo County Central Landfill (YCCL) is served by a variety of state highways, streets within incorporated cities, rural arterial roads, rural collector roads, and local rural roads. The following discussion provides information regarding the circulation system, alternative transportation modes, and collision history in this area of the County to provide a basis against which to evaluate the impacts of the Project.

Roadway Network

The roadway network within the unincorporated area of Yolo County is a grid-based system of rural two-lane roads that connect individual communities and provide access to agricultural fields. Urban development is mainly concentrated in the eastern, central, and southern portions of the County within the incorporated cities of Davis, West Sacramento, Winters, and Woodland. Interstate 80 (I-80), Interstate 5 (I-5), and Interstate 505 (I-505) are the primary transportation corridors extending through the County and serve all of the County's major population centers. Other state highways, such as State Route 113 (SR 113), County arterials, and a network of local public and private roads constitute the remainder of the roadway system. Of these roadways, I-80 and SR 113 provide regional access to YCCL (see Figure 2-1).

Interstate 80

I-80 is a principal east/west route in Yolo County, providing connections to the San Francisco Bay Area and Sacramento County. I-80 is a major commute route between residential areas in the greater Sacramento area and the San Francisco Bay Area employment centers and is a major truck route between the San Francisco Bay Area, Sacramento, and the Tahoe Basin and points east. From the Solano County line to the Sacramento County line, I-80 is a six-lane freeway that connects the City of Davis and the City of West Sacramento.

State Route 113

SR 113 serves as an important link for agricultural and commercial traffic to I-5 and I-80. The segment between Davis and Woodland is a four-lane freeway that terminates at I-5. SR 113 continues from I-5 in Woodland as a two-lane conventional highway north to the town of Knights Landing and continues into Sutter County.

County Routes

The County maintains an extensive roadway system that provides a high level of access compared to the relatively low levels of traffic on most roadways. Major County roads are also part of the regional roadway system and typically provide the connections to the highway and freeway system. County Road 102 (CR 102) is a key County roadway that is used by motorists traveling between Davis and Woodland. County Road 28H (CR 28H) extends east from CR 102 and provides direct access to the municipal solid waste facility. County Road 29 (CR 29) links SR 113 and CR 102. County Road 105 (CR 105) links CR 28H and County Road 32A (CR 32A) in the area near I-80 ramps. CR 28H to CR 105 to CR 32A is a route used to access I-80 from Woodland.

The County is aware of the existing pavement conditions of the roads that trucks utilize coming to and from the YCCL, specifically CR 28H and CR 105. The Transportation Impact Analysis prepared for the Project (KDA, 2021; see Appendix H) analyzed potential truck impacts to roadway structural sections and concluded that the Project's truck traffic could be expected to change (i.e., increase) the need for and nature of regular maintenance on CR 28H. Project traffic would not increase the TI index¹ on CR 105.

In June 2021 (EIR Appendix I), borings were drilled within the travel lanes of CR 28H and CR 105 to measure pavement thickness and assess existing conditions. County staff is continuing ongoing efforts to evaluate pavement data and the necessary maintenance/improvements and identify appropriate funding options for future maintenance. Implementation of the Project could increase wear and tear on the roadways and affect future maintenance of CR 28H and CR 105.

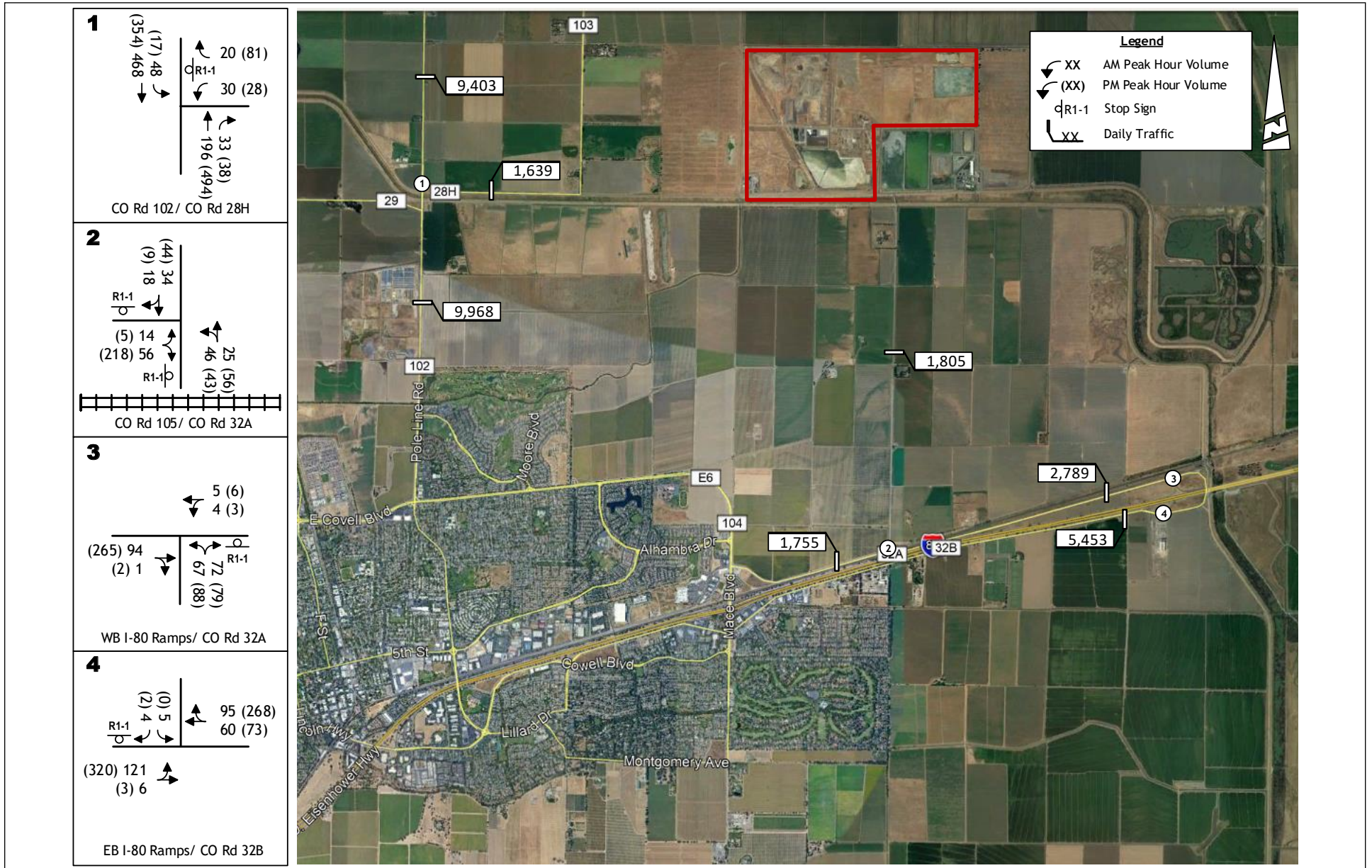
Existing Traffic Operating Conditions

Figure 3.13-1 identifies the study area roadways in the Project area addressed by the transportation analysis and provides the associated traffic volumes and lane configurations.

Traffic Volumes

Because of the effects of COVID-19-related shutdowns on local and regional travel, available data presented in other recent traffic studies were combined with new traffic counts to represent current traffic volumes levels without the effects of COVID-19. The sources of the data employed herein include the Davis Innovation Sustainability Campus Draft Environmental Impact Report (DEIR), Yolo County Cannabis Land Use Ordinance DEIR, and new data collected in February 2021. The 2021 traffic counts at the CR 102/CR 28H intersection were adjusted to pre-COVID levels based on the peak hour approach volume available from 24-hour counts on each roadway. Truck percentages on CR 105 were determined from the 2021 counts. For the details regarding the sources of data, refer to Appendix H.

¹ Traffic Index or "TI" is a measure related to pavement design, specifically related to traffic loading on the roadway for a design period (generally 20 years). The more traffic and heavy trucks, the higher the TI index.



Source: KD Anderson & Associates, Inc., 2021

Figure 3.13-1
 Existing Traffic Volumes and Lane Configurations

Table 3.13-1 identifies daily traffic volumes on study area roads based on peak hour volume following the methods employed in the Countywide General Plan Environmental Impact Report (EIR). The highest volumes occur on CR 102.

TABLE 3.13-1. EXISTING ROADWAY SEGMENT TRAFFIC VOLUMES

Roadway	Segment	Existing Conditions (2019)	
		Daily	PM Peak Hour
Chiles Rd/CR 32B	Mace Blvd to Webster Rd	5,458	580
CR 28H	CR 102 to CR 105	1,639	171
CR 32A	Mace Blvd to CR 105	1,755	300
	CR 105 to Webster Rd	2,789	448
CR 105	Co Rd 32B to Co Rd 28H	1,805	123
CR 102	Covell Blvd to CR 29	9,968	940
	CR 29 to CR 27	9,403	960

SOURCE: KD Anderson & Associates, Inc., 2021; see Appendix H

Peak Period Queues

Table 3.13-2 presents 95th percentile vehicle queues in feet estimated for key left turn lanes and I-80 off ramps based on volume per hour for the a.m. and p.m. peak hours. As indicated, current peak period queues do not exceed available turn lane storage or extend down off ramps to the point that they might interfere with mainline I-80 traffic.

TABLE 3.13-2. EXISTING PEAK HOUR INTERSECTION QUEUES

Intersection	Lane	Storage (Feet)	AM Peak Hour		PM Peak Hour	
			Volume (Vph)	95th % Queue (Feet)	Volume (Vph)	95th % Queue (Feet)
CR 102 / CR 28H	Southbound left	150	48	<25	17	<25
	Westbound left	80	30	<25	28	<25
CR 32A / WB I80	Off ramp	1,175 ¹	139	<25	167	35
CR 32B / EB I-80	Off ramp	990 ¹	9	<25	2	<25

NOTE:

¹ distance to mainline I-80 ramp gore.

SOURCE: KD Anderson & Associates, Inc., 2021; see Appendix H

Current YCCL Operations

Activity records at the YCCL gate over the last four years were reviewed and summarized to provide perspective regarding the number of entering vehicles and permitted tonnage received. **Table 3.13-3** summarizes data for year 2017 through 2020 in terms of the number of entering vehicles and the tonnage under permit that was received. Data are presented for the three highest days in terms of both entering vehicles and tonnage under permit received, while the annual average value for each parameter is also noted.

TABLE 3.13-3. YCCL OPERATIONS SUMMARY (2017-2020)

Year	Condition	Day	Total Inbound Vehicles	Tons Subject to Limit
2017	Maximum three vehicle days	Friday	654	1,154
		Tuesday	646	1,224
		Monday	637	1,276
	Average Day		468	961
	Maximum three tonnage days	Monday	510	1,927 ¹
		Wednesday	494	1,749
Tuesday		530	1,716	
2018	Maximum three vehicle days	Friday	738	1,285
		Tuesday	737	1,397
		Tuesday	721	1,320
	Average Day		481	829
	Maximum three tonnage days	Friday	479	1,516
		Thursday	501	1,505
Tuesday		529	1,504	
2019	Maximum three vehicle days	Saturday	769	433
		Saturday	748	493
		Saturday	742	660
	Average Day		526	923
	Maximum three tonnage days	Monday	606	1,679
		Tuesday	556	1,661
Tuesday		526	1,653	
2020	Maximum three vehicle days	Saturday	1,050	423
		Saturday	995	505
		Saturday	994	453
	Average Day		630	921
	Maximum three tonnage days	Tuesday	650	1,538
		Wednesday	710	1,531
Tuesday		693	1,522	

NOTE:

¹ This value represents a one-time occurrence.

SOURCE: KD Anderson & Associates, Inc., 2021; see Appendix H

As shown, the instances when YCCL received tonnage that exceed or approached the current permit limit of 1,800 tons was rare. Regarding inbound vehicles, YCCL did not approach the 1,047 entering vehicles per day limit (except for one day, a Saturday, when the YCCL was closed on the following Sunday), and recently Saturdays have had the greatest number of arriving vehicles because residential self-haul is concentrated on that day with the landfill temporarily closed on Sundays from March 29, 2020 to November 22, 2020 due to COVID-19.

Alternative Transportation Modes

Public Transportation

Public transportation in Yolo County consists of the following services and facilities:

- public bus service,
- commercial bus service,
- taxi service,
- vanpools and carpools, and
- park-and-ride facilities.

Yolo County Transportation District

The Yolo County Transportation District (YCTD) operates YOLOBUS, which serves the residents of Yolo County and provides regional, intercity, and local fixed-route services throughout the County. For the fixed-route service, 10 routes are local (within Yolo County), and other routes provide commuter route service to Sacramento County and Solano County. The YOLOBUS System Overview map is included in Appendix H.

The YCTD also provides paratransit through YOLOBUS Special, which provides local city, intercity, and rural County service. These services provide on-demand, door-to-door transportation primarily for elderly and disabled passengers. The paratransit service is in addition to the approximate 0.75-mile route deviations that can be requested on some of the local fixed-routes.

Commercial bus service is provided by Greyhound, which provides over 3,600 service locations within North America. Greyhound provides limited-service bus stops with stops in Davis and Woodland. Service at these bus stops may vary by schedule, day, week, carrier, or season, and no Greyhound ticketing or baggage facilities are available at these locations. These limited-service bus stops provide connections to full-service stations located in the San Francisco Bay Area and the greater Sacramento area.

Taxi services are provided by several local companies located in Davis, Woodland, West Sacramento, and Knights Landing and are available on demand or by reservation. Park-and-ride lots provide a place for commuters in single-occupant vehicles to transfer to public transit or carpools. Yolo County has four park-and-ride facilities with three along I-80 and one near I-505 in the City of Winters.

Bicycle and Pedestrian Circulation

The bicycle and pedestrian transportation systems in Yolo County are composed of local and regional bikeways and trails. Yolo County is a favorable area for bicycling because of its flat terrain, mild climate, and relatively short distance between cities. In addition, the City of Davis and University of California, Davis have an extensive network of bicycle facilities with good connections to the County's bicycle network.

Bikeways are classified into the following three types:

- Class I – off-street bike paths;
- Class II – on-street bike lanes marked by pavement striping; and
- Class III – on-street bike routes that share the road with motorized vehicles.

The County of Yolo Bicycle Transportation Plan (BTP) was updated and adopted by the Board of Supervisors in March 2013. According to the Yolo County BTP, five major bikeways exist within the unincorporated area of the County (YCTAC, 2013):

- Class I path along I-80 and Russell Boulevard, and Class II bike lanes along CR 32A.
- Class II bike lanes along CR 102 from Knights Landing to eastern Woodland and on to nearby Davis.
- Class II bike lane along County Road 99 (CR 99) from the southern city limit of Woodland south to CR 29, then east one mile to County Road 99D (CR 99D), then south on CR 99D to the City of Davis.
- Class II bike lane along County Road 31 (CR 31), County Road 93A (CR 93A) and Russell Boulevard between Davis and Winters.
- Class I bike path along County Road 32 (CR 32) west from Davis to County Road 95A (CR95A).

The County has developed a Parks and Open Space Master Plan (September 2006) that includes descriptions and resources of hiking trails within the unincorporated parts of the County.

Collision History

Collision records maintained by Yolo County were obtained for the study area circulation system and reviewed to identify any locations where collision frequency was noteworthy. Information was assembled for the five years prior to the COVID-19 pandemic as shown in **Table 3.13-4**. As indicated, only five collisions were identified from County records. Three occurred at intersections, and two were at midblock locations. The equivalent collision frequency rate was determined for each facility type (i.e., collisions per million entering vehicles at intersections, and collisions per million vehicle miles on segments). The results were compared to current statewide averages for similar facilities, and as indicated in the table, the recent collision frequencies are less than the statewide averages, indicating that none of the locations would be considered a “high accident frequency” location.

TABLE 3.13-4. YEAR 2015-2019 COLLISION HISTORY

Location	Total Collisions	Predominate Collision Type	Frequency rate	State Average
Intersection of CR 105 / CR 28H	1	Hit object	0.16 / MV	0.25 / MV ¹
Intersection of CR 102 / CR 29	2	Hit object; broadside	0.09 / MV	0.25 / MV
CR 102 from CR 29 to CR 28H	1	Rear end (DUI)	0.33 / MVM	0.70 / MVM ²
CR 28H east of CR 102 to CR 105	1	Hit object	0.11 / MVM	0.70 / MVM
CR 105 from CR 28H to CR 29	0	none	none	0.70 / MVM

NOTE:

MV is million entering vehicles. MVM is million vehicle miles. DUI refers to driving under the influence collision type.

No collisions were reported for the Intersection of CR 102 and CR 28H.

¹ average for rural intersection with stop control

² average for conventional 2 lane highway in flat terrain

SOURCE: KD Anderson & Associates, Inc., 2021; see Appendix H

3.13.2 REGULATORY SETTING

Transportation policies, laws, and regulations that would apply to the General Plan Circulation Element are summarized below. This information provides a context for the impact discussion related to the plan's consistency with applicable regulatory conditions.

State

Senate Bill 743

Senate Bill 743 (SB 743; Steinberg, 2013) governs the application of new State CEQA *Guidelines* for addressing transportation impacts based on Vehicle Miles Traveled (VMT). It was codified in Public Resources Code §21099, required changes to the guidelines implementing CEQA (State CEQA *Guidelines*) (Cal. Code Regs., Title 14, Div. 6, Ch. 3, § 15000 et seq.) regarding the analysis of transportation impacts. The Governor's Office of Planning and Research (OPR) has proposed, and the California Natural Resources Agency (Agency) has certified and adopted, changes to the State CEQA *Guidelines* that identify VMT as the most appropriate metric to evaluate a project's transportation impacts. With the Agency's certification and adoption of the changes to the State CEQA *Guidelines*, automobile delay, as measured by "level of service" and other similar metrics, generally no longer constitutes a significant environmental effect under CEQA. (Pub. Resources Code, § 21099, subd. (b)(3).)"

The OPR document Technical Advisory on Evaluating Transportation Impacts in CEQA (OPR, 2018) provides general direction regarding the methods to be employed and significance criteria to evaluate VMT impacts, absent policies adopted by local agencies.

Caltrans LOS Criteria

With the implementation of SB 743, the California Department of Transportation (Caltrans) has indicated that for CEQA purposes LOS on State highways is no longer a significance criterion. Instead, Caltrans recommends that a project's impact on safety be evaluated. Caltrans recommends

that peak period queue lengths in comparison to available storage be the primary evaluation criterion.

Regional

The Sacramento Area Council of Governments (SACOG) is responsible for regional transportation planning in Yolo County. The 2020 Metropolitan Transportation Plan / Sustainable Communities Strategy (MTP/SCS) (SACOG, 2019) is a federally mandated long-range fiscally constrained transportation plan for the six-County area that includes El Dorado, Placer, Sacramento, Sutter, Yolo and Yuba counties.

Most of this area is designated a federal non-attainment area for ozone, indicating that the transportation system is required to meet stringent air quality emissions budgets to reduce pollutant levels that contribute to ozone formation. To receive federal funding, transportation projects nominated by cities, counties, and agencies must be consistent with the MTP/SCS. A project is considered consistent if it is contained in the MTP/SCS and is included in the computer modeling of transportation and air quality impacts by SACOG. In addition, any regionally significant transportation project planned for a City or County must be included in the MTP/SCS because of its potential effect on travel demand and air pollution.

The 2021/2024 Metropolitan Transportation Improvement Program (MTIP) (SACOG, 2021) is a list of transportation projects and programs to be funded and implemented over the three-year period. SACOG submits this document to Caltrans and amends the program on a quarterly cycle. The MTIP and its amendments are subject to air quality conformity analysis under federal regulations, which limits the use of federal funds for regionally significant, capacity-increasing roadway projects.

Local

Yolo County Transportation Impact Study Guidelines

The Yolo County Transportation Impact Study Guidelines (Yolo County, 2010) have been developed to provide a clear and consistent technical approach to transportation impact analysis for projects within Yolo County's jurisdiction. This document establishes protocol for transportation impact studies and reports based on the current state-of-the-practice in transportation planning and engineering. The County expects these guidelines to result in studies that provide comprehensive and accurate analysis of potential transportation impacts to County facilities and services. This information is essential for decision makers and the public when evaluating individual projects.

The County of Yolo Bicycle Transportation Plan

The County of Yolo Bicycle Transportation Plan (Yolo County, 2013) contains a system of existing and planned bikeway facilities to provide for transportation and recreational bicycle travel. Specific policies and implementation strategies were developed to accomplish the following overall goal:

It is the goal of Yolo County to provide for and encourage the development of an integrated system of bikeway facilities. These facilities would provide for safe and convenient travel for bicyclists throughout the County. The County recognizes the benefits of improved air quality, improved energy efficiency, reduced traffic congestion, and improved personal fitness that can be realized by encouraging bicycle travel for transportation and recreation.

Yolo County VMT Policy

At the time this analysis commenced, Yolo County had not adopted guidelines for analyzing VMT or determining the significance of a project's impact on VMT.

3.13.3 IMPACTS AND MITIGATION MEASURES

Significance Criteria

Based on Appendix G of the State CEQA *Guidelines*, implementation of the Project would have significant impacts and environmental consequences on transportation if it would:

- a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities;
- b) Conflict or be inconsistent with CEQA Guidelines §15064.3, subdivision (b);
- c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- d) Result in inadequate emergency access.

Impact Analysis

This analysis addresses the transportation effects that would be associated with implementation of the Project based on the potential truck and employee trips associated with individual Project elements that have been identified for implementation over the life of the proposed revision to the Solid Waste Facility Permit (SWFP). YCCL currently operates under the following two distinct transportation limitations included in the existing SWFP:

- No more than 1,047 vehicles per day; and
- No more than 1,800 tons of incoming waste per day.

Under the SWFP modification that would be associated with the Project, there would be no more than 3,000 tons of incoming waste per day and no more than 1,305 vehicles per day. In addition, Yolo County Department of Community Services, Division of Integrated Waste Management (DIWM) has identified specific development/operations that may occur at YCCL over the life of the Project. Some aspects of the travel associated with the operations would be governed by the modified permit. The truck loads associated with each of the proposed uses that may occur at the Project site, as well as other additional truck traffic that would be permitted are discussed below. The number of employees associated with each of the proposed uses is also identified.

Daily Trip Generation

Table 3.13-5 presents the estimated daily truck and automobile trip generation that would be associated with implementation of the modified permit under the Project. As indicated, the Project would be expected to generate 516 daily one-way truck trips and 70 daily one-way automobile trips in addition to the existing trips to and from the YCCL.

Because large trucks take up more space than automobiles and have different performance characteristics in terms of acceleration and deceleration, it is common practice to convert truck trips into a Passenger Car Equivalents (PCEs) for operational analysis. Trucks are assumed to represent 2.0 to 4.0 PCEs depending on the size of the truck. For this analysis, 12-ton trucks are assumed to be 3.0 PCEs and 20-ton tractor-trailer combinations are 4.0 PCEs. As indicated in **Table 3.13-5**, the Project trucks are assumed to generate 1,656 daily PCEs.

TABLE 3.13-5. DAILY TRIP GENERATION ESTIMATES

Proposed Uses	Forecasts				Employees	Employee Trips ¹
	Total Truck Loads	Total Truck Trips ¹	PCE / Truck	Total PCE's		
Increased Daily Permitted Tonnage	104	208	3 ²	624	5	10
Wood Pellet Facility	8	16	4 ³	64	5	10
Large Scale Floating Solar Photovoltaic System and Solar Photovoltaic System on Closed Landfill Units	0	0	0	0	0	0
Waste Gasification Facility	15	30	4	120	15	30
Expanded Biogas Utilization Options	0	0	0	0	0	0
Peaking Power Plant	0	0	0	0	0	0
New Class 2 Surface Impoundment	0	0	0	0	0	0
Organic Waste Fertilizer Facility	4	8	4	32	5	10
Stormwater Treatment System and Discharge	0	0	0	0	0	0
Additional Groundwater Pumping (Possible Treatment and Discharge)	0	0	0	0	0	0
Transfer Station	25	50	4	200	0	0
Non-Specific Future Borrow Site	100	200	3	600	0	0
Thermal Pressure Hydrolysis System	0	0	0	0	3	6
Biogas to Methanol Pilot Facility	2	4	4	16	2	4
Total	258	516		1,656	35	70

NOTE:

¹ Total trips are two times the vehicles (counted as 1 inbound trip and 1 outbound trip)

² 12 tons per vehicle

³ 20 ton Tractor / Trailer

⁴ PCE = Passenger Car Equivalents

SOURCE: KD Anderson & Associates, Inc., 2021; see Appendix H

Peak Hour Characteristics

The trips generated by Project trucks would be spread throughout the day, but based on the typical hours of operation, employee travel would likely fall into normal commute periods. YCCL currently receives materials from 6:30 a.m. to 4:00 p.m. (i.e., 9.5 hours), and no change to that schedule is proposed, however the YCCL is permitted to receive materials from 6:00 a.m. to 5:00 p.m. For this analysis it was assumed that the expansion of current permitted waste tonnage would follow the existing schedule, with no materials arriving during the p.m. peak hour. The truck trips associated with the other uses would similarly have relatively little truck traffic after 4:00 p.m.

The peak hour share of the daily employee traffic accompanying new proposed uses under the Project would be similar to the share identified for other employment related businesses. For example, Institute of Transportation Engineers (ITE) data indicates that a.m. or p.m. peak hour traffic associated with light industrial and manufacturing uses represents 12 percent to 17 percent of the daily trip generation. For this analysis it has been very conservatively assumed that employee commute traffic would represent 25 percent of the daily employee trip generation. Similarly, the directional distribution of peak hour trips would likely mimic the patterns of these uses. For industrial and manufacturing uses, 77 percent to 88 percent of the a.m. peak hour trips are inbound, and 69 percent to 87 percent of the p.m. peak hour trips are outbound. For this analysis it has been conservatively assumed that 90 percent of the a.m. employee trips would be inbound and 90 percent of the employee trips would be outbound in the p.m.

Estimated peak hour trip generation rates and forecasts are shown in **Table 3.13-6**. As shown in the table, the Project is estimated to generate 82 trips in the a.m. peak hour and 22 trips in the p.m. peak hour.

TABLE 3.13-6. PEAK HOUR TRIP GENERATION FORECASTS

Trip Type	Quantify	Trips/PCE's						
		Daily	AM Peak			PM Peak		
			Inbound	Outbound	Total	Inbound	Outbound	Total
Vehicle Trips								
Automobiles	1	2	90%	10%	0.501	10%	90%	0.501
	35	70	16	2	18	2	16	18
Truck Loads	1	2	50%	50%	0.25	50%	50%	0.01
	258	516	32	32	64	2	2	4
Total Vehicle Trips		586	48	34	82	4	18	22
PCE Trips								
Automobiles	35	70	16	2	18	2	16	18
Truck Loads	258	1,656	73	73	146	6	6	12
Total PCE Trips		1,726	89	75	164	8	22	30

NOTE:

¹ assumes 0.25 percent of employees arrive/depart during the peak hour.

SOURCE: KD Anderson & Associates, Inc., 2021; see Appendix H

Trip Distribution Assumptions

After estimating the number of vehicle trips that are expected to be generated by the Project, it is necessary to identify the directional distribution of Project-generated traffic in order to distribute these trips to the study area circulation system. For this analysis, the travel characteristics of trips associated with new employment were determined based on the general distribution of residents in Yolo County. The distribution of truck trips was estimated as a weighted average of the probable destination of the various potential development projects and current travel patterns. As noted in **Table 3.13-7**, the regional distribution of trips indicates that most truck traffic would use CR 29 to SR 113.

TABLE 3.13-7. PROJECT TRIP DISTRIBUTION ASSUMPTIONS

Direction	Route	Percent of Total	
		Trucks	Employees
North	CR 102	14%	3%
East	Sacramento via I-80 (CR 105 to I_80)	18%	32%
West	CR 29 to SR 113	60%	25%
South	Davis via Mace Blvd	6%	39%
	Davis Via CR 102	2%	1%
Total		100%	100%

SOURCE: KD Anderson & Associates, Inc., 2021; see Appendix H

Project Trip Assignment

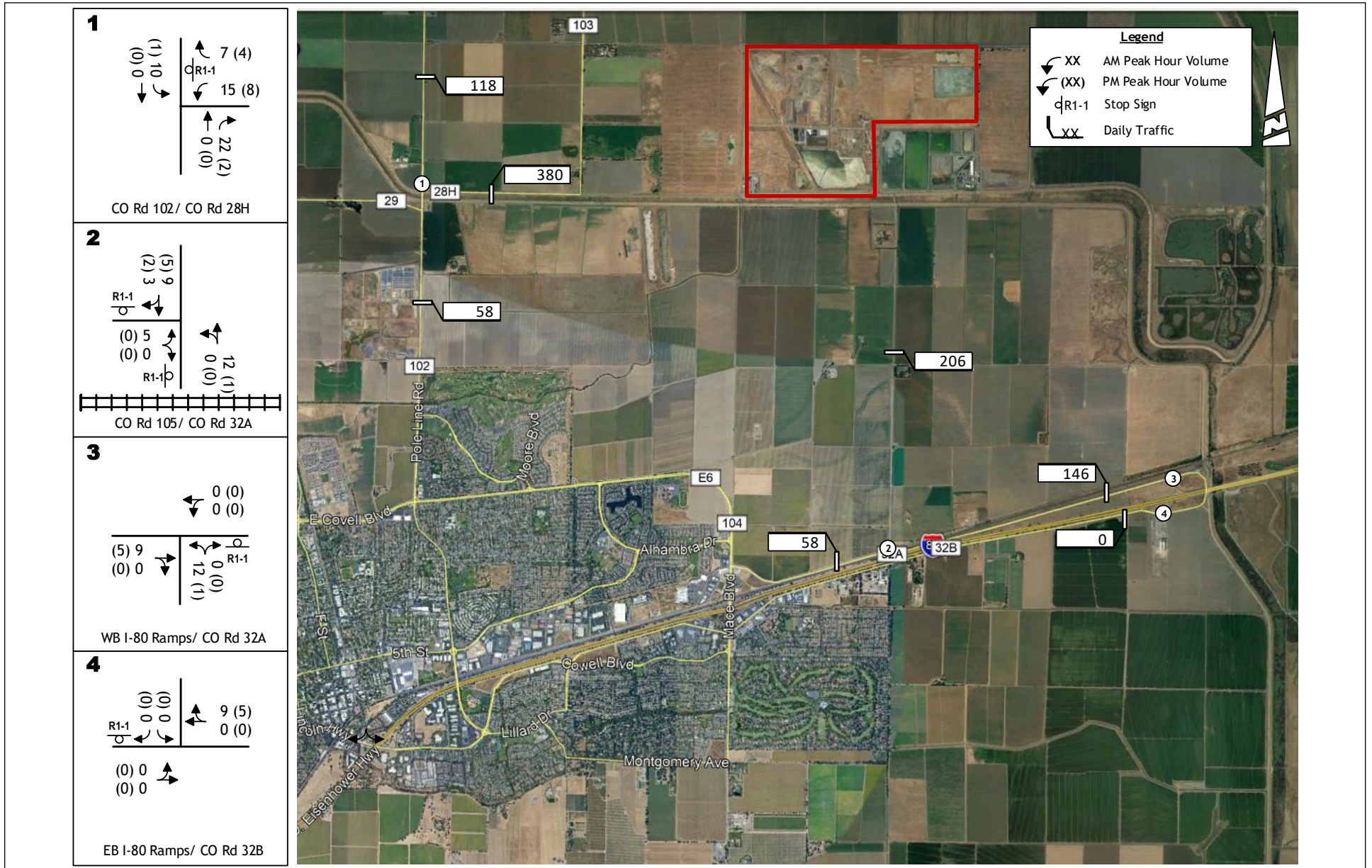
The assignment of daily and peak hour trip assumptions for the Project are presented in **Figure 3.13-2**. **Figure 3.13-3** presents the alignment of the Project’s Passenger Car Equivalents (PCEs), as noted in the Impact 3.13.3 discussion for trucks.

Impact 3.13.1: The Project could conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. (Less than Significant)

Transit Service and Facilities

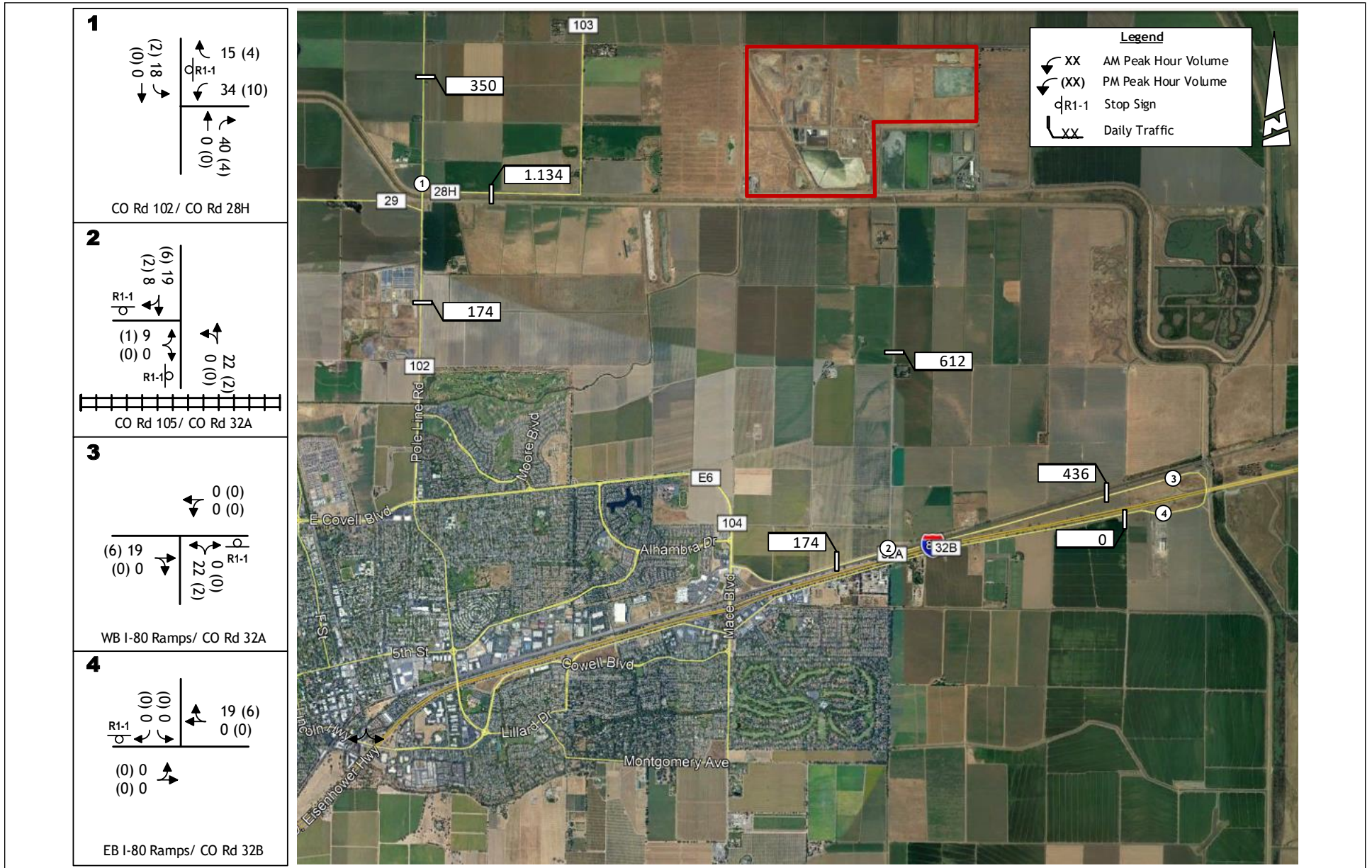
For transit services and facilities, the Project’s impact would be significant if:

- it creates demand for public transit services above the crush load capacity that is provided or planned; and/or
- it disrupts existing or planned transit facilities and services or conflicts with adopted County non-auto plans, guidelines, policies, or standards.



Source: KD Anderson & Associates, Inc., 2021

Figure 3.13-2
Project Only Traffic Volumes and Lane Configurations



Source: KD Anderson & Associates, Inc., 2021

Figure 3.13-3
Project Only (PCE) Traffic Volumes and Lane Configurations

As YOLOBUS does not operate on CR 102, CR 28H, or CR 105, nor is any route planned for those roadways in the future, the Project would not physically disrupt an existing transit service or facility, nor would it interfere with implementation of a planned transit service or facility. The Project's traffic contribution to roads that are used by YOLOBUS (e.g., I-80, SR 113) would be too small to result in increased travel time for busses that would adversely affect on-time performance. The Project would not result in increased transit ridership demands that would result in passenger loads that exceed vehicle loading standards. As YCCL's access location is not adjacent to any transit facility, the Project would not result in increased potential for safety conflicts involving transit vehicles and other modes of travel. The Project's impact to transit service and facilities would be less than significant.

Bicycle Facilities

For bicycle facilities, the Project's impact would be significant if:

- it disrupts existing or planned bicycle facilities or conflicts with adopted County non-auto plans, guidelines, policies, or standards; and/or
- it adds trips to an existing transportation facility or service (e.g., bike path) that does not meet current design standards.

The Project would not interfere with use of the Class I bike trail along CR 32A nor the Class II bike lanes on CR 102. The Project would not physically disrupt an existing bicycle facility or interfere with implementation of a planned bicycle facility. Some Project employees could elect to ride bicycles to the Project site. The Regional Bicycle, Pedestrian, and Trails Master Plan indicates that 10.1 percent of Yolo County commuters reported using bicycles. If 10 percent of the Project's employee trips were made by bicycle, then eight additional bicycle trips could be added to the area circulation system per day. With the presence of bike lanes on CR 102, this use would not result in a significant increase in bicyclists on a facility that does not have adequate bicycle facilities, such that conflicts between bicyclists and other travel modes would be likely to increase. The Project's impact to bicycle facilities would be less than significant.

Pedestrian Facilities

For pedestrian facilities and Americans with Disabilities Act (ADA) compliance, the Project's impact would be significant if:

- it fails to provide accessible and safe pedestrian connections between buildings and to adjacent streets and transit facilities;
- it disrupts existing or planned pedestrian facilities or conflicts with adopted County nonauto plans, guidelines, policies, or standards; and/or
- it adds trips to an existing transportation facility or service (e.g., sidewalk) that does not meet current design standards.

The Project would not physically disrupt an existing pedestrian facility, nor would it interfere with implementation of a planned pedestrian facility. There are no existing pedestrian facilities on

roadways leading to the YCCL. Though unlikely, some employees may walk to the site. The Regional Bicycle, Pedestrian and Trails Master Plan, indicates that 2.7 percent of Yolo County commuters reported walking. If three percent of the Project's trips were made on foot, then two additional pedestrians might be added to the area circulation system. The Project would not result in an increased presence of vehicles and/or pedestrians on a facility that would cause conflicts between pedestrians and other travel modes to likely increase. The Project's impact to pedestrian facilities would be less than significant.

Impact Conclusion

The Project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. The impact would be less than significant.

Mitigation Measures

None required.

Impact 3.13.2: The Project could generate vehicle miles travelled (VMT) that could conflict or be inconsistent with State CEQA Guidelines §15064.3, subdivision (b). (Less than Significant)

VMT refers to the amount and distance of vehicle travel attributable to a project. VMT generally represents the number of vehicle trips generated by a project multiplied by the average trip length for those trips. For CEQA transportation impact assessment, VMT is calculated using the origin-destination VMT method, which accounts for the full distance of vehicle trips with one end from YCCL.

The California Governor's OPR document Technical Advisory on Evaluating Transportation Impacts in CEQA provides general direction regarding the methods to be employed and significance criteria to evaluate VMT impacts, absent policies adopted by local agencies. The directive addresses several aspects of VMT impact analysis, and is organized as follows:

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

Screening Criteria

Screening criteria can be used to quickly identify whether sufficient evidence exists to presume a project would have a less-than-significant VMT impact without conducting a detailed study. However, each project should be evaluated against the evidence supporting that screening criteria to determine if it applies. Projects meeting at least one of the criteria below can be presumed to have a less than significant VMT impact, absent substantial evidence that the project will lead to a significant impact.

The extent to which the Project qualifies under each criterion is noted below.

- **Regional Truck Traffic:** The OPR directive specially focuses on the need to evaluate residential and employment-based travel, either from the standpoint of home-based trips or through evaluation of commute trips associated with employment centers. Consistent with Section 1564.3 of the State CEQA *Guidelines*, impacts from regional truck traffic are not included in the VMT estimates, but are considered from an operational standpoint as they relate to safety.
- **Small Projects:** Defined as a project that generates 110 or fewer average daily vehicle trips.
- **Affordable Housing:** Defined as a project consisting of deed-restricted affordable housing.
- **Local-Serving Non-Residential Development:** The directive notes that local serving retail uses can reduce travel by offering customers more choices in closer proximity. Local serving retail uses of 50,000 square feet or less can be presumed to have a less-than-significant impact.
- **Projects in Low VMT-Generating Area:** Defined as a residential or office project that is in a VMT efficient area based on an available VMT Estimation Tool. The project must be consistent in size and land use type (i.e., density, mix of uses, transit accessibility) as the surrounding built environment.
- **Proximity to High Quality Transit:** The directive notes that employment and residential development located within a half mile of a high-quality transit corridor can be presumed to have a less-than-significant impact.

Impact Conclusion

The extent to which the Project's VMT impacts can be presumed to be less than significant has been determined based on review of the OPR directive's screening criteria and general guidance. The OPR Small Project criteria is applicable to the Project. The Project is projected to generate 586 daily vehicle trips. Of that total, 70 trips would be made by employees commuting to and from the site via automobile, and 516 trips would be made by trucks hauling materials to and from the site. Because truck traffic is not applicable to VMT analysis, the employee trip generation estimate of 70 trips is compared to the OPR threshold of 110 daily trips. As the 110 ADT threshold for automobiles would not be exceeded, the Project's VMT impacts can be presumed to be less than significant.

Mitigation Measures

None required.

Impact 3.13.3: The Project could substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). (Less than Significant)

For trucks or other heavy vehicles, the Project's impact would be significant if:

- It fails to provide safe accommodation of forecast truck traffic or temporary construction-related truck traffic; and/or
- it adds 100 daily passenger vehicle trips (or equivalent truck trips) to an existing roadway that does not meet current County design standards (e.g., structural section, horizontal and vertical curves, lane and shoulder width).

Roadway Design and Users

The Project would not substantially increase hazards to vehicle safety due to increased traffic at locations with geometric design features (e.g., sharp curves or dangerous intersections). Regular site traffic and vehicles visiting the site during construction would be comprised of automobiles and trucks permitted under the California Vehicle Code (CVC) and no farm equipment would be expected. The Project would not introduce incompatible users (e.g., farm equipment) to a roadway or transportation facility not intended for those users. The Project's impact with regards to roadway design and users would be less than significant.

State Highways

The Project would add trips to I-80 and its ramps on CR 32A and CR 32B. However, the Project-related trips would not appreciably increase current peak period queuing on I-80 off-ramps (see Table 3.13-2), and as result the Project would not contribute to a safety problem on state facilities. The Project's impact with regards to state facilities would be less than significant.

Impact Conclusion

The Project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). The associated impact would be less than significant.

Mitigation Measures

None required.

Impact 3.13.4: The Project could result in inadequate emergency access. (Less than Significant)

The Project would not result in inadequate emergency access. As described in the Impact 3.13.3 discussion, the Project would not substantially increase hazards to vehicle safety due to increased traffic, which could result in inadequate emergency access. The impact would be less than significant.

Mitigation Measures

None required.

3.13.4 REFERENCES

- California Governor’s Office of Planning and Research (OPR). 2018. Technical Advisory on Evaluating Transportation Impacts in CEQA, April 2018.
- KD Anderson & Associates, Inc. (KDA). 2021. Transportation Impact Analysis for Yolo County Central Landfill Permit Revisions, Yolo County, California, May 14, 2021.
- Sacramento Area Council of Governments (SACOG). 2019. Metropolitan Transportation Plan/Sustainable Communities Strategy, Adopted November 18, 2019.
- SACOG. 2021. 2021-2024 Metropolitan Transportation Improvement Program.
- Yolo County Transportation Advisory Committee (YCTAC). 2013. County of Yolo Bicycle Transportation Plan, Bicycle Routes and Priorities, March 2013.
- Yolo County, 2010. Transportation Impact Study Guidelines, February 2010.

3.14 PUBLIC SERVICES, UTILITIES AND SERVICE SYSTEMS

This section evaluates potential impacts on public services and utilities that could result from the Project, including impacts to fire protection, water, wastewater, and power suppliers. Storm drainage at the site is addressed in Section 3.10, Hydrology and Water Quality.

3.14.1 SETTING

Public Service Providers

Fire Protection

The Davis Fire Department (DFD) provides fire protection for the Yolo County Central Landfill (YCCL). The Fire Station is approximately 4 miles southwest of the YCCL and is located at 530 5th Street in Davis, CA. In the event of a major fire, incident response is provided by the DFD, City of Woodland Fire Department, and University of California (UC) Davis Fire Department. All buildings, vehicles, and equipment at the YCCL are equipped with portable fire extinguishers. Approximately three water trucks, soil covers, a water tank, three stormwater ponds, a water storage reservoir and groundwater are used for dust control and are available for fire suppression. Front-end loaders and excavators are available to aid in the management of materials to combat fire or prevent its spread. Additional site requirements by the DFD include a water source for fire suppression at the landfill gas (LFG)-to-energy facility and wood facility (freshwater pond) and a water supply for the entrance facilities and household hazardous waste (HHW) facility (water supply well).

The YCCL is in an area dominated by agriculture, which in general is not prone to wildfires. Agricultural uses predominate for several miles in each direction from the Project site. The site has agricultural cropland to the north, open fields to the west (the 323-acre property directly west is the soil borrow site), City of Davis wastewater treatment ponds and wastewater reclamation fields to the east, and the Willow Slough Bypass Channel, an engineered waterway, located across County Road 28H to the south of the YCCL. Additional agricultural cropland is located on the other side of the Willow Slough Bypass Channel.

History of Surface Fires on or Near the Site

Historically, several off-site fires along County Road 104 have been stopped at the perimeter road, with the additional help from water applied by the water truck. There has been one surface fire recently at the YCCL. Early morning October 1, 2020 there was a fire at the YCCL in the shredded tire layer of a new landfill cell. The fire was put out by the DFD, who responded to the 0.5-acre fire at 1 a.m. and 25 firefighters battled the fire throughout the early morning hours. Mutual aid fire personnel brought additional water trucks to the scene. The fire created large plumes of smoke into the air. By 6 a.m., the fire had calmed down but was still smoldering (Sacramento CBS, 2020). It was reportedly caused by an improperly disposed lithium battery. YCCL staff reported that there have been no other recent fires at the YCCL.

Subsurface Fires

Subsurface fires occur when excessive oxygen is drawn into decomposing waste through improper operation of the landfill gas extraction system. The ignition and spread of subsurface fires are a function of several factors, including waste composition and moisture content, available oxygen, and ambient pressure in the area of combustion. Subsurface landfill fires occur by the heating of combustible refuse through biological decomposition or chemical oxidation. Subsurface fires generally manifest themselves as localized areas of severe settlement and possibly small amounts of smoke emanating from the landfill surface. The process requires a continuous source of oxygen; oxidation of the refuse materials can generate enough heat to cause combustion.

The following mechanisms may trigger subsurface refuse fires:

- Burial of “hot loads” with other refuse materials. Loads are examined as they are received to make sure this is minimized.
- Improper operation of landfill gas recovery or migration control systems. Air can be inadvertently drawn into the refuse mass by overdrawing LFG extraction wells, especially those installed near the landfill perimeter or slope face, or by breaks in the subsurface collection header pipe that could occur due to landfill settlement. Open cracks and fissures in the landfill site surface may aid in the pulling of air through the site cover.
- Burial of household hazardous waste. An explosion hazard or subsurface temperature increase could arise from the corrosion and/or rupture of buried containers used to store incompatible or reactive materials. The landfill has a hazardous materials exclusion program in place to reduce the occurrence of such materials in the landfill.
- In the case of aerobic bioreactor technology, the process requires forcing air through the waste mass. The introduction of air and the resulting onset of aerobic activity serve to increase the temperature of the waste mass rapidly and consequently could set off a subsurface refuse fire. However, in addition to the introduction of air, significant amounts of liquid will have already been added and will continue to be added to the refuse during bioreactor operations. This significantly reduces the fire potential.

Generally, there is little concern that a surface fire will ignite a subsurface fire. The potential for a subsurface fire to start from a surface fire is remote for several reasons:

- Cover materials create a barrier, preventing the surface fire from igniting subsurface waste;
- The amount of subsurface waste materials available above the surface is limited to the daily deposit of waste materials; and
- Landfill personnel can utilize earth moving equipment and/or water trucks to quickly extinguish surface fires before there is a high potential for ignition of subsurface materials.

History of Subsurface Fires

Historically, there have been subsurface fires at the site. These fires were treated by elimination of the oxygen supply to the fire and allowing the waste to extinguish itself, and if practical, water addition to the area. The YCCL has not had any subsurface fires in the past three years.

Utilities

Water Supply

Potable water is supplied from an on-site well. Sufficient sanitary facilities are provided on-site for YCCL employees and customers (including facilities in the old landfill operations building and the newer landfill office building).

Wastewater

Wastewater at the YCCL drains to an on-site pump station and is then pumped to Waste Management Unit (WMU) G. It is combined and treated along with other septic waste liquid received for disposal.

Stormwater

There are two locations for storm water to drain off-site, although these have not been used in recent years, as stormwater is contained on-site and not discharged off-site. They include a discharge pipeline from Stormwater Pond 1 to Willow Slough Bypass and a pump station at the borrow site that also discharges to Willow Slough Bypass. The stormwater is monitored at each location for potential contamination as required under YCCL's industrial stormwater permit.

Electricity and Natural Gas

PG&E supplies the electricity used on-site. YCCL equipment and vehicles, including compactors, tractors, loaders, water trucks, truck tippers, and the power generators used for portable lighting at the working face, consume energy in the form of diesel fuel.

Telecommunication System

Communications are handled through cell phones, regular phones, and 2-way radios. In the event of an emergency, either or both means can be used to alert the management team or safety personnel (Fire, Police, Hazmat).

Findings of the 1992 YCCL EIR

The 1992 YCCL Environmental Impact Report (EIR) evaluated the potential effects of expansion of the landfill. The analysis concluded that there would be no significant effects on solid waste disposal or electric services, and that no mitigation measures were required.

Findings of the 2005 YCCL EIR

The 2005 YCCL EIR determined that there would not be any significant impacts related to public services, utilities, and energy.

Mitigation measures to reduce potential significant impacts to a less than significant level included continuing to comply with Title 14, California Code of Regulations (CCR) for regulatory requirements of composting facilities and fire prevention, protection and control measures, continuing to adhere to composting management practices established by the Yolo

County Environmental Health Division, continuing to implement standard composting facility management practices (i.e., proper windrow distance, aeration, temperature and moisture monitoring), continuing to reduce impacts associated with surface fires, continuing to follow existing operational policies at YCCL (i.e., employee training, water tanker, heavy equipment for fire suppression, fire extinguishers), monitoring the temperature of the excavation face, proper aerobic bioreactor cell temperature, moisture and oxygen control, and monitoring.

Regulatory Setting

2030 Countywide General Plan for Yolo County

The 2030 General Plan's Public Facilities and Services Element seeks to establish County service standards and policy guidance to ensure that infrastructure and services will be sufficient to support existing and new development in Yolo County. The element includes the following policies pertaining to Utilities and Public Services that are relevant to the Project:

Goal PF-1: Wastewater Management. Provide efficient and sustainable solutions for wastewater collection, treatment, and disposal.

Policy PF-1.7: Require wastewater treatment facilities that remove or destroy pathogens while minimizing or eliminating contaminated discharge.

Goal PF-2: Stormwater Management. Provide efficient and sustainable stormwater management to reduce local flooding in existing and planned uses.

Policy PF-2.1: Improve stormwater runoff quality and reduce impacts to groundwater and surface water resources.

Policy PF-2.4: Encourage sustainable practices for stormwater management that provide for groundwater recharge and/or improve the quality of runoff through biological filtering and environmental restoration.

Action PF-A14: Minimize pollution of stormwater, receiving water bodies and groundwater, and maximize groundwater recharge potential by:

- Implementing planning and engineering design standards that use low impact development techniques and approaches to maintain and mimic the natural hydrologic regime.
- Utilizing “infiltration” style low-impact development technologies.
- Following stormwater Best Management Practices during and after construction. (Policy PF-2.1)

Goal PF-5: Fire and Emergency Medical Services. Support fire and emergency service providers to enhance the protection of life and property.

Goal PF-9: Solid Waste and Recycling. Provide safe, cost-efficient, and environmentally responsible solid waste management.

Policy PF-9.1: Meet or exceed State waste diversion requirements.

Policy PF-9.2: Manage property to ensure adequate landfill space for existing and planned land uses.

Policy PF-9.3: Employ innovative strategies to ensure efficient and cost-effective solid waste and other discarded materials collection, disposal, transfer and processing.

Policy PF-9.4: Prioritize disposal and processing capacity at the landfill for waste materials generated within Yolo County, but accept waste materials from outside the county when capacity is available and the rates cover the full cost of disposal and processing.

Policy PF-9.5: Promote technologies, including biomass or biofuels, which allow the use of solid waste as an alternative energy source.

Policy PF-9.6: Treat waste materials as potential revenue sources for the County, and maximize the revenue potential associated with the waste stream as new products, economies, needs, and technologies emerge.

Policy PF-9.8: Require salvage, reuse or recycling of construction and demolition materials and debris at all construction sites.

Policy PF-9.11: Expand opportunities for energy and/or fuel production resulting from the solid waste disposal process.

Action PF-A50: Acquire sufficient land to maintain long-term landfill operations, including property for mitigation and soil cover. (Policy PF-9.2)

Action PF-A53: Evaluate the need for and economics of solid waste transfer or processing facilities located in other areas of the county. Consider the option of partnering with private waste companies for construction and operation of the additional facilities. This could support use of smaller collection trucks, and allow for consolidation of loads into large transfer trucks which would reduce truck traffic to the landfill. (Policy PF9.3)

Action PF-A54: Partner with the private sector to operate waste-related diversion, recycling facilities, LFG and energy production facilities or provide other landfill-related commodities and services at the landfill, or to agriculture-related facilities located on surrounding properties, whenever practicable. Evaluate potential for salvage of materials from the County landfill, or other closed landfill facilities, for sale as a future revenue source. (Policy PF-9.3)

Action PF-A55: Research technological strategies and implement the cost-effective strategies to reclaim and reuse capacity of the landfill facility. (Policy PF-9.2, Policy PF-9.3, Policy PF-9.4)

Action PF-A57: Reduce methane emissions from the landfill by closing the filled units, expanding bioreactor operations and the landfill gas collection system to future landfill units; and continuing the use of the landfill gas for energy or fuel. (Policy PF-9.3)

3.14.2 IMPACTS AND MITIGATION MEASURES

Significance Criteria

Appendix G of the *CEQA Guidelines* states that a project would result in a significant impact to Public Service Systems and Utilities if it would:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection;
- Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects;
- Have insufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years;
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- 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; or
- Not comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

The Project elements would extend the life of YCCL and reduce landfill disposal of waste, reducing greenhouse gas (GHG) emissions. The Project also proposes to increase the County's ability to divert waste from the landfill and continue to meet state-mandated diversion goals provided in SB 1383, and other state-mandates (AB 341 and AB 32). Therefore, impacts related to solid waste reduction goals and compliance with regulations related to solid waste are negligible and are not discussed further. The Project elements would require an increase in staff members on-site to operate new future facilities. However, the amount of increase in staff members would not result in inadequate capacity to serve the YCCL's wastewater demand for wastewater services. Therefore, impacts related to wastewater treatment are considered less than significant and not discussed further. Because of the nature of the Project, there would be no population increase and it is assumed the Project would not have an impact on police protection, schools, parks, or other public facilities, so these elements are not discussed further.

Impact Analysis

Impact 3.14.1: The increased daily permitted tonnage (TPD) could increase the risk of fire occurring at the YCCL. (Less than Significant)

The Project would involve expanding the overall permitted tonnage for the YCCL to a monthly average of 2,500 TPD with a daily peak of 3,000 TPD. Currently, the YCCL Solid Waste Facilities Permit limits YCCL incoming waste tonnage (disposed and recycled) to a maximum of 1,800 TPD. Increasing the overall tonnage of waste processed at the YCCL would increase demand for fire protection services.

While the need for fire protection services would increase, the YCCL would continue to follow existing operational policies, as follows:

- Landfill personnel are trained to combat refuse fires and to detect trucks with “hot loads.” If a hot load is deposited in the active face, personnel are instructed to move all equipment and trucks away from the burning refuse, spread the burning refuse over a large area using dozers, douse the refuse with water from the water truck, cover it with soil, and leave it overnight.
- A water tanker and sufficient cover material are maintained at a convenient location for use in fire suppression.
- Groundwater is used as the main water supply, and there is a sufficient quantity stored on-site.
- Heavy equipment would be called upon for fire suppression.
- A fire extinguisher (trigger in the cab) is located in the cab of each vehicle. All landfill personnel carry cellular phones.

The existing YCCL operational policies listed above would ensure that impacts related to fire and fire protection services from the increase in maximum daily tons of wastes would be less than significant.

Mitigation Measures

None required.

Impact 3.14.2: The Project element facilities (e.g., waste gasification facility, thermal pressure hydrolysis system, transfer station, peaking power plant, wood pellet facility, organic waste fertilizer facility, biomass to methanol pilot facility, and expanded biogas utilization options) could increase the risk of fire occurring at the YCCL. (Significant)

The Project includes the design, construction and operation of landfill facilities that would be dedicated to addressing incoming waste streams more efficiently and to conserve energy. The operation of these facilities could increase potential for fires and thus increase demand for fire protection services and therefore may be considered a significant impact.

Waste Gasification Facility

The waste gasification facility would consist of various equipment and processes to produce hydrogen or electricity. Potential fire risks include but are not limited to dust explosions from material handling inside buildings, fire and/or deflagration within process equipment, instantaneous combustion of pyrophoric materials, and fire and/or deflagration of process gases during a loss of containment.

Thermal Pressure Hydrolysis System

The thermal pressure hydrolysis equipment would consist of pressurized autoclave vessels that are fed steam. The potential fire risks include but are not limited to the potential use of a gas-fired boiler. Although the plan is to use thermal heat that is generated in the combined heat and power unit to produce steam, a gas-fired boiler would be used as a back-up (C. Ramos, Electronic Correspondence, December 2, 2020).

Transfer Station

The transfer station would be designed to handle the YCCL's current and future waste flow and would transfer solid waste to an off-site landfill. There is a wide array of potential fire risks at transfer stations. Some of those risks include but are not limited to spreading fire from incoming "hot loads", build-up of debris, frictional generated heat from mechanical equipment, misuse of electrical equipment, spontaneous ignition, and self-heating of stockpiles (EPA Ireland, 2013). Aside from a functional sprinkler system, due to high ceilings in transfer stations, additional fire protection measures are required (e.g., fire hoses for small fire containment) (EPA, 2000).

Peaking Power Plant

A peaking power plant would operate using LFG-fired engine(s). Internal combustion engines, whether fueled by gasoline, diesel, propane, natural gas and/or other fuels can act as ignition sources. Therefore, engines require a specific fuel-to-air ratio to work properly to avoid any sparks, overspeed and control engine operating temperatures (OSHA, 2012).

Wood Pellet Facility

The wood pellet facility would utilize biomass fuel to create pellets as an energy source that could be sold. The facility would also include outdoor storage. Fires from wood pellet facilities are most commonly from the combustion of wood pellet dust clouds (dust fires), storage fires, and combustion of self-heating fuel piles. Lack of safeguards increase the fire potential in these facilities (e.g., lack of adequate spark detection devices, lack of fire suppression systems, and lack of explosion venting/protection within the dust collection system). Inherent problems with these facilities can be minimized with improvements to equipment design and proper storage of wood pellets (Dafnomilis et al., 2018).

Organic Waste Fertilizer Facility

The organic waste fertilizer facility would utilize organic waste and convert it to fertilizer. Specific fertilizers would be stored at the YCCL and later sold. Potential fire risks from storing organic waste fertilizers comes from storage of fertilizers containing ammonium nitrate.

Ammonium nitrate is a combustible chemical and can create explosive reactions when exposed to a strong initiating source or when confined at high temperatures and when it is not properly stored or processed (EPA, 2015).

Biogas to Methanol Pilot Facility

The Biogas to Methanol Pilot facility would convert methane directly into methanol (specific process of conversion depends on the manufacturer of the facility equipment). Potential fire risks could include but are not limited to the combustion from storage of methanol fuels. Methanol fuels require a high volume of vapor to burn. When ignited, methanol fire is generally not volatile and can be confined to small areas when ignited (EPA, 2001).

Expanded Biogas Utilization Options

The Expanded Biogas Utilization Options would convert biogas into Renewable Compressed Natural Gas (RCNG) vehicle fuel or inject RCNG into a high-pressure gas line, either the Sacramento Metropolitan Utility District (SMUD) or Pacific Gas and Electric Company (PG&E). Potential fire risk could include but are not limited to fire and explosion hazards from methane (the main constituent of biogas). If a spark is present and enough Methane is mixed into the air, fires and explosions can occur. When biogas containment equipment is not properly maintained, biogas can collect in shaft and cavities and potentially form an explosive atmosphere that can be detonated by gas burn-offs, biogas compressors, open fires, or hot surfaces (Khanal and Nitayavardhana, 2019).

Conclusion

Development of the proposed facilities would be designed to meet NFPA regulations, the California Fire Code and all applicable standard building codes that help minimize the possibility and effects of fire related risks at the YCCL. As discussed above, the proposed facilities at the YCCL would all introduce potential fire hazards. Each potential fire risk would be specific to the type of proposed facility components including but not limited to facility design, facility materials storage and facility operational purposes at the YCCL. Thus, this impact would be significant.

Mitigation Measures

Mitigation Measure 3.14.2: As part of the standard review process, the County shall review and approve a *Fire Prevention Control and Mitigation Plan* that shall be developed for each applicable Project element, which shall include but not be limited to:

- Description of the measures the operator will take to prevent fires and to control and extinguish fires.
- Identification and description of the equipment the operator will have available (on-site) to control and extinguish fires.
- Description of the measures the operator will take to mitigate the impacts of any fire at the site to the public health and safety and the environment.

- Description of the arrangements the operator has made with the local fire control authority to provide fire prevention, control, and suppression in the event of a fire.

Level of Significance After Mitigation

Implementation of Mitigation Measure 3.14.2 would reduce the potential impacts related to fire and fire protection services from the development of the Project element facilities to a less-than-significant level.

Impact 3.14.3: The Project facilities could have water demands greater than water supplies. (Less than Significant)

Substantial amounts of water could be required for various operation of the Project elements. YCCL currently maintains a supply of groundwater that exceeds the demands for water supplies on-site. Based on the existing water storage, it is assumed that there is a sufficient amount of water supplies to accommodate all future water needs. As discussed in Chapter 2, Project Description, the Project is proposing to increase groundwater pumping at the site (in accordance with the Central Valley Regional Water Quality Control Board standards) to lower groundwater under several modules as well as treat volatile organic compounds (VOC's) in several wells. This proposed increase in groundwater pumping would add additional water supply to the YCCL that could be used for operational purposes (depending on water quality requirements of the Project elements). Therefore, the YCCL would have sufficient water supplies to accommodate future water demands for the Project elements, and impacts related to water supplies are less than significant.

Mitigation Measures

None required.

Impact 3.14.4: The Non-Specific Future Off-Site Soil Borrow Area could create impacts related to public services and utilities. (Less than Significant)

The location of the Non-Specific Future Off-Site Soil Borrow Area (Off-Site Borrow Area) has not yet been identified, and no parcel of land has been purchased for site development. Development of the Off-Site Borrow Area would not increase population and thus would not create a demand for schools, parks, or other public facilities. The Off-Site Borrow Area would not increase demand for fire or police protection services and would only require police/fire department services in the event of an emergency. The Off-Site Borrow Area would not require new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities. The Off-Site Borrow Area would only require water supplies for dust control during soil excavation and transportation activities. The amount of water supply needed for dust control would vary depending on the weather and soil conditions. The Off-Site Borrow Area would provide portable toilet facilities available to workers on-site. No off-site stormwater drainage facilities would be required. Stormwater would likely remain on-site, and

any off-site discharge would be in accordance with State Water Resources Control Board's regulations and applicable permits. The Off-Site Borrow Area would not generate a significant amount of solid waste or violate any applicable solid waste standards. Minor amounts of municipal waste would be generated by workers on-site and the waste would ultimately be disposed of at the YCCL. Therefore, impacts related to public services and utilities from the development of the Off-Site Borrow Area would be less than significant.

Mitigation Measures

None required.

3.14.3 REFERENCES

- Dafnomilis, et al., *Biomass and Bioenergy: Evaluation of wood pellet handling in import terminals*. 2018. <https://www.sciencedirect.com/science/article/pii/S0961953418301697>. Accessed December 10, 2020.
- EPA Ireland. 2013. *Guidance Note: Fire Safety at Non-Hazardous Waste Transfer Stations*. https://www.epa.ie/publications/compliance--enforcement/waste/EPA_Fire_Safety_Guidance_Note_WEB_FINAL_2.pdf. Accessed December 10, 2020.
- Intelligent Energy Europe. 2009. *Guideline for Safe and Eco-Friendly Biomass Gasification*. <https://www.osti.gov/etdeweb/servlets/purl/1000226>. Accessed December 11, 2020.
- OSHA. 2012. *Internal Combustion Engines as Ignition Sources*. <https://www.osha.gov/sites/default/files/publications/osha3589.pdf>. Accessed January 15, 2021.
- Ramos, Carlos, President of Operations, NOWON, LLC. Electronic Correspondence regarding the thermal pressure hydrolysis fire risks, December 2, 2020.
- Sacramento CBS, <https://sacramento.cbslocal.com/2020/10/01/yolo-county-landfill-tire-fire/>. Accessed May 3, 2021.
- USEPA. 2000. *Waste Transfer Stations: A Manual for Decision Making*. <https://www.epa.gov/sites/production/files/2016-03/documents/r02002.pdf>. Accessed December 11, 2020.
- USEPA. 2001. *Risk Burn Guidance for Hazardous Waste Combustion Facilities*. <https://nepis.epa.gov/Exe/ZyPDF.cgi/10000049.PDF?Dockey=10000049.PDF>. Accessed December 11, 2020.
- USEPA. 2015. *Chemical Advisory: Safe Storage, Handling, and Management of Solid Ammonium Nitrate Prills*. https://www.epa.gov/sites/production/files/2015-06/documents/an_advisory_6-5-15.pdf. Accessed December 12, 2020.
- Yolo County. 1992. *Final Environmental Impact Report Yolo County Central Landfill State Clearinghouse No. 91123016*. October 1992.

Yolo County. 2005. *Yolo County Central Landfill State Clearinghouse No. 91123015*. May 2005.

Yolo County. 2009. *2030 Countywide General Plan, Public Facilities and Services Element*.
November 2009.

CHAPTER 4

IMPACT OVERVIEW

4.1 GROWTH-INDUCING EFFECTS OF THE PROPOSED PROJECT

4.1.1 INTRODUCTION

Section 15126.2(e) of the *California Environmental Quality Act (CEQA) Guidelines* requires that an EIR discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. This discussion should include an analysis of how the proposed project might remove barriers to population growth and characteristics of the project that might encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. In discussing potential growth it should not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

A project can have direct and/or indirect growth inducement potential. Direct growth inducement would result if a project, for example, involved construction of new housing. A project would have indirect growth inducement potential if it established substantial new permanent employment opportunities (e.g., commercial, industrial, or governmental enterprises) or if it would involve a construction effort with substantial short-term employment opportunities that would indirectly stimulate the need for additional housing and services to support the new employment demand. Similarly, a project would indirectly induce growth if it would remove an obstacle to additional growth and development, such as removing a constraint on a public service that otherwise limits growth.

The *CEQA Guidelines* further explains that the environmental effects of induced growth may be indirect impacts of the proposed action. These indirect impacts or secondary effects of growth may result in significant, adverse environmental impacts. Potential secondary effects of growth include increased demand on other community and public services and infrastructure, increased traffic and noise, and adverse environmental impacts such as degradation of air and water quality, degradation or loss of plant and animal habitat, and conversion of agricultural and open space land to developed uses.

Growth inducement may constitute an adverse impact if the growth is not consistent with or accommodated by the land use plans and growth management plans and policies for the area affected, would exceed available services, or otherwise result in an identifiable secondary impact as discussed above. Local land use plans provide for land use development patterns and growth policies that allow for the orderly expansion of urban development supported by adequate urban public services, such as water supply, roadway infrastructure, sewer service and solid waste service.

Components of Growth

The timing, magnitude, and location of land development and population growth in a community or region are based on various interrelated land use and economic variables. Key variables include regional economic trends, market demand for residential and non-residential uses, land availability and cost, the availability and quality of transportation facilities and public services, proximity to employment centers, the supply and cost of housing, and regulatory policies or conditions. Since the general plan of a community, including an unincorporated area of a county, defines the location, type, and intensity of growth, it is the primary means of regulating development and growth in California.

4.1.2 GROWTH EFFECTS OF THE PROJECT

The Project consists of several changes to Yolo County Central Landfill's (YCCL's) existing operations. The Project would probably result in an increase in YCCL staff to accommodate the development of Project elements. The Project probably would not attract housing or commercial development to the Project vicinity. Few people choose to work or live in close proximity to an active sanitary landfill. Furthermore, the Project vicinity is primarily agricultural.

The Project would not directly or indirectly remove barriers to population growth and/or encourage and facilitate other activities that could significantly affect the environment. Since there is sufficient landfill capacity throughout the region, and since the availability of landfill capacity is not frequently cited as a constraint to the development of new housing or commercial areas, the Project is not anticipated to induce additional growth in the region. Further, the Project would not involve expansion or extension of infrastructure outside of the footprint of the landfill or expansion or extension of roadways that could induce unplanned growth adjacent to the landfill.

4.2 CUMULATIVE IMPACTS

4.2.1 INTRODUCTION

The *CEQA Guidelines* (Section 15355) define cumulative impacts as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.” This section of the *CEQA Guidelines* further notes that:

- a) *The individual effects may be changes resulting from a single project or a number of separate projects.*
- b) *The cumulative impact from several projects is the change in the environment, which results in the incremental impacts of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.*

2030 Countywide General Plan

The 2030 Countywide General Plan provides for the long-range direction and development of land within the County. The land surrounding YCCL is utilized for either agricultural activities or wastewater treatment operations. The existing landfill site is designated as “Public and Quasi-

Public” (PQ) while the majority of the land around the site is designated as “Agriculture” (AG), with the exception of the adjacent borrow site and Davis Wastewater Treatment Plant, which are also designated PQ.

Projects Potentially Having Related or Cumulative Effects

There are no planned or approved development projects in the vicinity of YCCL. Therefore, there are no local projects that could have the potential to combine with the Project to create cumulative effects.

On-site Projects Potentially Having Cumulative Effects

In addition to off-site projects, previously permitted projects at YCCL that could contribute to cumulative impacts include the project evaluated in the 2005 YCCL EIR.

4.2.2 CUMULATIVE IMPACT DISCUSSION

Aesthetics

Cumulative aesthetics impacts are limited to the immediate project vicinity. The Project would not result in significant and unavoidable impacts to aesthetics. The Project would introduce new sources of light and glare at the Project site, which would combine with existing sources of light and glare at YCCL. However, the implementation of mitigation measures identified in Section 3.1 and adherence to the General Plan and County Code would ensure the Project would not result in a significant cumulative aesthetics impact.

Air Quality

Cumulative air quality impacts are limited to the region (for regional pollutants) and the immediate project vicinity (for localized pollutants). The Project would not result in significant and unavoidable impacts on air quality.

Regional Air Pollutants

With respect to regional pollutants, the Yolo-Solano Air Quality Management District’s (YSAQMD’s) *Handbook for Assessing and Mitigating Air Quality Impacts* states that project emissions that are not consistent with the Air Quality Attainment Plan, State Implementation Plan, or exceed YSAQMD thresholds will have a significant cumulative impact unless offset (YSAQMD, 2007). Mobile sources associated with construction and operation of the Project would not exceed the YSAQMD’s significance thresholds with the implementation of mitigation measures identified in Section 3.3. Stationary sources would be subject to YSAQMD’s permitting requirements and, per YSAQMD’s *Handbook for Assessing and Mitigating Air Quality Impacts*, stationary sources complying with applicable YSAQMD regulations pertaining to Best Available Control Technology (BACT) and offset requirements are not considered a significant impact to air quality. Therefore, the Project would not result in significant cumulative air quality impacts within the region.

Localized Air Pollutants

With respect to localized pollutants, the Project would allow for more waste processing at YCCL which would create more sources of potential odors. However, the YCCL has not had any odor complaints or violations in the past five years and the Project elements would provide more options for processing organics, wood waste, and liquid waste at YCCL in a timely manner and would reduce the amount of waste that is buried at the active face, which would help reduce the likelihood of potential odor impacts at YCCL. Mobile sources associated with increased heavy truck trips which emit toxic air contaminants (TACs) would result in health impacts below YSAQMD significance thresholds. Stationary sources of TACs require a permit from the YSAQMD and would not be permitted if they do not comply with YSAQMD regulations and health risk thresholds during air quality permitting. Therefore, the Project would not result in significant cumulative air quality impacts within the immediate vicinity of the Project.

Biological Resources

Cumulative biological resources impacts are limited to the region. The Project would not result in significant and unavoidable impacts on biological resources. The implementation of mitigation measures in Section 3.4 would ensure that the Project does not have a considerable contribution to regional cumulative impacts on biological resources. Those mitigation measures include a measure to compensate for loss of Swainson's hawk foraging habitat by participating in the Yolo HCP/NCCP. Therefore, the Project would not result in significant cumulative biological resources impacts.

Cultural and Tribal Cultural Resources

Cumulative cultural and tribal cultural resources (TCRs) impacts are limited to the region. The Project would not result in significant and unavoidable impacts to cultural and TCRs. The implementation of mitigation measures identified in Section 3.5 would ensure that the Project would not have a considerable contribution to regional impacts on cultural and TCRs. Therefore, the Project would not result in significant cumulative cultural and TCRs impacts.

Energy

Cumulative energy impacts are limited to the region and the state. The Project would not result in significant and unavoidable impacts to energy resources. The Project would not result in wasteful, inefficient, or unnecessary consumption of energy resources. Furthermore, the Project would not conflict with any state or local plans for renewable energy. Therefore, the Project would not result in a considerable contribution to regional or statewide cumulative impacts to energy and would not result in significant cumulative energy impacts.

Geology, Soils and Seismicity

The Project would not result in significant and unavoidable impacts to geology and soils. The Project area is not within a seismically active region, but the region has a wide range of geologic and soil conditions, which can vary greatly within a short distance. Accordingly, geologic, soils, and seismic impacts tend to be site-specific and depend on the local geology and soil conditions. For these reasons, the geographic scope for cumulative impacts of geology, seismic hazards, and soil

resources is contained within the boundaries of the YCCL property, specifically the area supporting the Project elements. The temporal scope for the cumulative analysis extends from Project initiation to build out.

Significant cumulative impacts occur only if the incremental impacts of the Project, combined with the incremental impacts of a cumulative project, within the defined geographic scope, increases the potential that people or the environment could be exposed to hazards associated with geologic or seismic conditions. This condition would not be met for seismic and geologic impacts because if there were impacts within the confines of the YCCL facility, they would not affect areas outside the YCCL property and thus, could not combine with incremental impacts of other regional projects. For example, an unstable soil condition (e.g., expansive soils) specific to the YCCL would not combine with or worsen regional soil instability; the condition would be site specific and be corrected as necessary on the Project site. Similarly, impacts associated with seismic hazards on the Project site (e.g., liquefaction, settlement) may be similar at other sites during an earthquake but the cumulative effect would not increase liquefaction hazards regionally. In the case of the YCCL facility, potential seismic and geologic hazards would be identified and corrected, as required, prior to construction and thus the Project would not contribute cumulatively to a regional geologic and seismic hazard and would be less than significant and not cumulatively considerable.

Paleontological Resources

The Project could result in a significant paleontological resources impact during the development and operation of the non-specific future off-site borrow area depending on whether it is in an area with high, moderate, and unknown potential for paleontological resources. If the future off-site borrow area did occur in a paleontological sensitive area and fossil remains were encountered, implementation of mitigation in presented in Section 3.9 would reduce the potential loss of paleontological resources and result in the recovery of fossil remains. Therefore, the Project would not contribute to a regional loss of paleontological resources and would be less than significant and not cumulatively considerable.

Greenhouse Gas Emissions

The greenhouse gas (GHG) emissions impact analysis in Section 3.7 is inherently a cumulative impact analysis because GHG emissions are a global pollutant. As presented in Section 3.7, the Project would not conflict with California Air Resource Board's (CARB's) 2017 Scoping Plan because the Project elements would increase waste diversion and efficiency at YCCL and generate significant renewable energy and fuel resources. The Project would provide significant GHG reduction benefits and would help the State achieve mandates for diverting organics from landfills, and renewable electricity and fuels. Therefore, the Project would not result in significant cumulative GHG emissions impacts.

Hydrology and Water Quality

The geographic scope for assessing potential cumulative hydrology and water quality impacts consists of the Project site and surrounding lands within the Tule Canal-Toe Drain watershed that discharge to Willow Slough Bypass. As discussed in Section 3.10, the Project would not result in Project-specific significant impacts associated with hydrology and water quality. Continued

implementation of mitigation measures adopted in the Mitigation Monitoring and Reporting Program (MMRP) associated with the 2005 YCCL Subsequent Environmental Impact Report (SEIR) would, in combination with regulatory requirements, reduce all impacts identified for the Project to a less-than-significant level. Additionally, the adopted mitigation measures from the 2005 YCCL SEIR will continue to reduce all previously identified impacts in the 2005 YCCL SEIR to a less-than-significant level. As described below, the Project would not result in or contribute to cumulative impacts; cumulative impacts to hydrology and water quality would be mitigated on a project-by-project level in accordance with applicable regulatory requirements, and through the established regulatory review process.

The analysis of cumulative impacts considers that all future development with the potential to impact hydrology and water quality would be required to demonstrate compliance with applicable federal and state regulatory requirements, which are intended to reduce and/or avoid potential adverse environmental effects on surface and groundwater resources as a result of multiple actions, such as development projects within a watershed and associated direct or indirect discharges to receiving waters. Through implementing regulatory water quality and stormwater management requirements, surface water, groundwater, and aquatic habitats are protected from potential sources of degraded water quality, increased flow rates, and runoff volumes, which can result in downstream erosion, sedimentation, and other water quality and quantity impacts to a watershed system.

Construction of the Project would include preparation of a construction Stormwater Pollution Prevention Plan (SWPPP) and implementation of best management practices (BMPs) required under the Construction General Permit (CGP) as well as the SWPPP (Order 2014-0057-DWQ) covering operations and maintenance activities associated with the YCCL Industrial (National Pollutant Discharge Elimination System) NPDES Permit. Additionally, the Project would be required to adhere to provisions of the Regional Water Quality Control Board (RWQCB) Waste Discharge Requirements (WDRs) and associated Monitoring and Reporting Program (MRP) for the landfill site. The Project includes a stormwater management system which includes a series of drains, swales, conveyance pipes, and sediment ponds to treat stormwater (i.e., capture sediment) as well as use of existing outfall structures (i.e., no outfalls constructed as part of the Project) for stormwater discharges offsite that are designed and armored sufficiently to dissipate energy of discharges, avoid scour of the channel bed and bank, and avoid or minimize erosion and sedimentation in Willow Slough Bypass. Stormwater would be retained onsite in retention ponds, treated (such as through use of bioswales and floc logs) for boron and other pollutants, consistent with NPDES discharge requirements, and tested prior to release to ensure receiving water quality and beneficial uses are not degraded and/or impaired and that Basin Plan Water Quality Objectives are met. Implementation of the Project would not substantially increase the rate or amount of peak runoff discharged offsite to Willow Slough Bypass in a manner that would result in hydromodification impacts, increase flooding or flood risks, erosion, and/or sedimentation on- or off-site, or reduce groundwater recharge as stormwater would be retained on site in retention ponds and periodically discharged as managed flow in order to regain storage capacity or to mitigate a rise in groundwater elevation. Releases may also occur when storage capacity is exceeded, although the stormwater control system is sized to accommodate the 100-year, 24-hour storm event (Golder, 2021).

As discussed in Section 3.10.1, Willow Slough Bypass is listed as an impaired water body for boron, E. Coli, and fecal coliform (SWRCB, 2010). Prior to issuance of any NPDES permits for construction activities, operational discharges, or licenses, a review and authorization process by the RWQCB is required to ensure such permits and licenses are protective of designated beneficial uses and water quality and that water quality issues, such as impairments for boron and/or other pollutants are addressed in discharge Water Quality Protection Standards (WQPS) or discharge requirements and that Total Maximum Daily Load (TMDL) requirements are incorporated as permit conditions in a manner consistent with relevant plans, policies, and guidelines.

With adherence to the described regulatory requirements, as well as implementation of mitigation requirements under the existing MMRP associated with the 2005 YCCL SEIR, the effects of the Project would not combine with those of ongoing YCCL operations or other cumulative projects in the area to cause a cumulatively significant impact related to water quality, increased soil erosion and sedimentation, alterations to drainage patterns, or inadvertent releases of water quality pollutants. With implementation of regulatory requirements (see Impact 3.10.7), facilities would be protected from future flooding and flood hazards and impacts would be less than significant. Therefore, no cumulatively significant effect to surface water or groundwater quality or hydrology would occur, and the Project would not have a cumulatively considerable contribution to a significant cumulative effect.

Land Use, Planning and Agricultural Resources

Land Use, Planning and Agricultural impacts are limited to the region. The EIR for the 2030 Countywide General Plan discusses the cumulative impacts of agricultural lands being converted to non-agricultural uses. The EIR concluded that the cumulative impact would be significant and unavoidable. The EIR stated:

“The cumulative amount of agricultural lands that would be lost as a result of development through 2030 would be those lands contained within the urban growth boundaries, plus open space and trail conversions which the County has calculated to be 9,072 acres. While loss of agricultural land would not extend beyond this amount within the County, neighboring counties would also continue to lose agricultural land due to development in rural regions and urban fringe development, which would add to the cumulative conversion of agricultural lands in the region. As such, the cumulative loss of agricultural lands across the region would be significant.

Implementation of mitigation measures in Section IV.B, Agricultural Resources, would minimize Yolo County’s contribution to cumulative agricultural impacts, but would not reduce them to less-than-significant levels. Consequently, cumulative impacts of agricultural land conversion are considered significant and unavoidable.”

Since most of the non-urban land within the radius of the Project site is agricultural land, use of the off-site borrow area would most likely result in conversion of prime or non-prime agricultural farmland to a non-agricultural use. This would be a significant, unavoidable impact of the Project (see Impact 3.2.2 and Mitigation Measure 3.2.2). Consistent with the conclusion in the 2030 Countywide General Plan, use of soil from the off-site borrow area would contribute to the cumulative loss of agricultural lands in the County and across the region and would be a significant cumulative impact.

Noise

Noise impacts are limited to immediate vicinity of the Project. The Project would not result in significant and unavoidable impacts to noise. The mitigation measures in Section 3.12 would ensure that the Project would not have a considerable contribution to noise impacts in the immediate vicinity of the Project. There are no other major noise sources in the vicinity of YCCL, other than typical agricultural operations, that would contribute to a cumulative ambient noise impact. Therefore, the Project would not result in significant cumulative noise impacts.

Public Services, Utilities and Service Systems

Public services, utilities, and service systems impacts are limited to the region. The Project would not result in significant and unavoidable impacts to public services, utilities, and service systems. Implementation of the mitigation measures identified in Section 3.14 would reduce the risk of fire and thus the potential need for fire protection services to a less-than-significant level. Thus, the Project would not contribute to a cumulative impact on public services, utilities, and service systems. Therefore, the Project would not result in significant cumulative impacts to public services, utilities, and service systems.

Public Health and Safety

Public health and safety impacts are limited to the immediate vicinity of the Project. The Project would not result in significant and unavoidable impacts to public health and safety. Implementation of mitigation measures identified in Section 3.8 would ensure that the Project would not have a considerable contribution to public health and safety impacts in the immediate vicinity of the Project. Therefore, the Project would not result in significant cumulative impacts to public health and safety.

Transportation

Transportation impacts are limited to the region. The Project would not result in significant and unavoidable impacts to transportation. The Project is below the vehicle miles traveled (VMT) screening criteria provided in the California Governor's Office of Planning and Research (OPR) document Technical Advisory on Evaluating Transportation Impacts in CEQA and the Project's VMT impacts would be less than significant. Therefore, the Project would not result in significant cumulative transportation impacts.

Wildfire

Wildfire impacts are limited to the region. The Project would not result in significant and unavoidable impacts to wildfire. The Project is not located in an area classified as Very High Fire Hazard Severity Zones (VHFHSZ) and would not increase risk of wildfire through the implementation of existing fire control and suppression measures at YCCL. The Project would not have a considerable contribution to regional cumulative impacts on wildfire. Therefore, the Project would not result in significant cumulative wildfire impacts.

4.3 UNAVOIDABLE SIGNIFICANT ADVERSE IMPACTS

The Project could result in conversion of farmland (including Prime Farmland, and non-prime farmland mapped as Unique Farmland or Farmland of Statewide Importance) to non-agricultural use. This would be a significant and unavoidable project impact and a significant cumulative impact of the Project.

4.4 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

The Project could potentially result in an inappropriate use of prime agricultural farmland for the future off-site borrow area. If in the future a parcel designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance is used for the off-site borrow area, the loss of the agricultural farmland would be a significant irreversible environmental change.

Most of the air quality and GHG emissions – those related to increased daily tonnage limits or implementation of the transfer station for hauling to other landfills – would cease when or soon after landfill operations and transfer stations would cease. The landfill gas emissions, especially those related to fugitive landfill gas emissions, would decrease over time. None of the other impacts of the project are expected to result in irreversible environmental changes.

4.5 EFFECTS FOUND NOT TO BE SIGNIFICANT

4.5.1 MINERAL RESOURCES

The Project would not affect mineral resources or result in the loss of any mineral resource of local or statewide importance. Therefore, the Project would not affect mineral resources.

4.5.2 POPULATION AND HOUSING

The Project would not result in displacement of existing housing or induce population growth. As stated above, the YCCL would create employment opportunities, however, the Project is not anticipated to induce additional growth in the region. The facility could employ approximately 30 full time employees and some of these employees may move to the region because of specialized skills. Other jobs would likely be filled by existing residents in the region. The addition of perhaps 10-15 employees (and families) moving to the region would not substantially affect population and housing.

4.5.3 RECREATION

The Project would only affect recreation areas if the County sites the non-specific future off-site borrow area in an area close to recreational uses, which is not expected based on the location of YCCL. There are no recreational facilities in the vicinity of YCCL that would be affected by the Project. Therefore, the Project would not affect recreation.

4.6 REFERENCES

- Golder. 2021. *Stormwater Pollution Prevention Plan (SWPPP). Yolo County Central Landfill*. January 2021.
- State Water Resources Control Board (SWRCB). 2010. *Final California 2010 Integrated Report (303(d) List/ 305(b) Report)*. Accessed online 3/1/21 at: https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml
- Yolo County. 1992. *Final Environmental Impact Report Yolo County Central Landfill State Clearinghouse No. 91123015*. October 1992.
- Yolo County. 2005. *Yolo County Central Landfill Permit Revisions Final Subsequent Environmental Impact Report SCH No. 1991073040*. May 2005.
- Yolo County. 2009. *2030 Countywide General Plan*. November 2009.
- Yolo County. 2018. *Joint Technical Document, Yolo County Central Landfill, Yolo County, California*. June 2018.
- Yolo-Solano Air Quality Management District (YSAQMD). 2007. *Handbook for Assessing and Mitigating Air Quality Impacts*. July 11, 2007.

CHAPTER 5

ALTERNATIVES TO THE PROJECT

5.1 INTRODUCTION

The California Environmental Quality Act (CEQA) requires an evaluation of the comparative effects of a range of reasonable alternatives to the project that would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project (*CEQA Guidelines* Section 15126.6(a)). The range of alternatives is governed by the “rule of reason” that requires the Environmental Impact Report (EIR) to set forth only those alternatives necessary to permit a reasoned choice (Section 15126.6(f)). The significant effects of the alternatives shall be discussed, but in less detail than the significant effects of the project, and a matrix may be used to summarize the comparison of alternatives (Section 15126.6(d)).

The EIR must assess the identified alternatives and determine which among the alternatives (including the project as proposed) is the environmentally superior alternative. One of the alternatives to be assessed is the “No Project” alternative (see discussion below). If the No Project alternative is identified as the environmentally superior alternative, then another of the remaining alternatives must be identified as the environmentally superior alternative.

This chapter discusses the following alternatives to the project:

1. No Project Alternative
2. Reduced Tonnage Alternative
3. Reduced Footprint Alternative

The components of these alternatives are described below, including a discussion of their impacts and how they would differ from the significant impacts of the proposed Project. A discussion of the environmentally superior alternative is also included in this chapter.

The *CEQA Guidelines* require that an EIR briefly describe the rationale for selecting the alternatives to be discussed (Section 15126.6(a)) and suggest that an EIR also identify any alternatives that were considered by the lead agency but were rejected as infeasible (Section 15126.6(c)). This chapter of the EIR also addresses these issues.

5.2 FACTORS IN SELECTION OF ALTERNATIVES

The alternatives addressed in this EIR were selected in consideration of one or more of the following factors:

- the extent to which the alternative would accomplish most of the basic objectives of the project (see Chapter 2, Project Description);
- the extent to which the alternative would avoid or lessen any of the identified significant adverse environmental effects of the project;
- the feasibility of the alternative, taking into account site suitability, economic viability, availability of infrastructure, consistency with regulatory limitations, and whether the County can reasonably acquire, control, or otherwise have access to the site or off-site locations that could potentially be a project alternative;
- the appropriateness of the alternative in contributing to a “reasonable range” of alternatives necessary to permit a reasoned choice; and
- the requirements of *CEQA Guidelines* to consider a “no project” alternative and to identify an “environmentally superior” alternative in addition to the no-project alternative (*CEQA Guidelines*, Section 15126.6).

As stated in Chapter 2, Project Description, the project objectives are:

- Objective 1.* To decrease adverse environmental impacts of landfill development, operations, and final closure, and increase the environmental benefits that can be derived from certain aspects of existing Yolo County Central Landfill (YCCL) operations.
- Objective 2.* To increase the County’s ability to divert waste (including organics) from the landfill and continue to meet the state-mandated diversion goals provided in AB 1383, other state-mandates to reduce waste from landfill (AB 341) and reduce greenhouse gas (GHG) emissions (AB 32).
- Objective 3.* To increase efficiency, diversify operations, and operate more economically.
- Objective 4.* To extend the overall site life of the existing YCCL through new operational methodologies.

In consideration of the above factors, three alternatives (including the No Project Alternative) are analyzed in this EIR.

5.3 ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION

Several other alternatives were considered in the process of identifying a reasonable range of alternatives to the proposed Project.

5.3.1 OFFSITE TRANSFER STATION ALTERNATIVE

One of the Project elements is the development of a transfer station at the YCCL. The transfer station would consolidate incoming wastes for disposal from route trucks and re-load the wastes into larger transfer trucks that are maximized to haul longer distances (in this case the transfer would be to other landfills in the region). Development of the transfer station would allow the disposal materials to be efficiently transported to other landfills. The transfer station is included in the Project because of the increased soil needs and cost to develop new landfill modules. The transfer station would provide an option for waste disposal if new landfill modules are not developed. The Project plans are to develop a transfer station on an approximately 15-acre portion of the 41-acre north central area at the YCCL identified for future facility development (see **Figure 2-3**).

This alternative would develop a transfer station at another location or multiple locations in the County or in incorporated cities in the County. An offsite transfer station would eliminate the biological resource impacts to approximately 15 acres at YCCL. Offsite transfer stations would have the most positive benefit if they were closer to the sources of waste generation (i.e., in or near the cities of Davis, Woodland or West Sacramento). Being closer to residents would reduce the length of haul truck trips compared to the existing trips going to YCCL. Reducing the length of trips to the offsite transfer could potentially reduce air quality, GHG emissions, and energy use when compared to the trips to YCCL.

This alternative was rejected from further analysis for several reasons. Due to size requirements for such a facility, the offsite transfer station(s) would probably end up on agricultural land and have effects on agricultural land as well as Swainson's hawk foraging land, potentially far greater than at YCCL. Because of the central location of YCCL, most new transfer station locations would result in more hauling miles, unless multiple transfer stations were developed in different areas of the County. Development of multiple offsite transfer stations in the County would not be a feasible scenario. Finally, truck trips going to the new offsite transfer station would be considered new trips at that location, while development of a transfer station at YCCL would have less new trips, because the incoming trucks already travel to the YCCL with wastes for landfill disposal. For these reasons, this alternative was rejected from further consideration. Removal from this analysis does not eliminate the possibility that in the future, transfer stations might be proposed at other locations in the County.

5.3.2 RAIL HAUL ALTERNATIVE

One of the options to truck transport of wastes to landfills is rail cars (rail haul). That could be a long-term option in the future to reduce truck trips from a potential transfer station to distant landfills that might have excess waste disposal capacity and lower rates. However, rail haul is very expensive to develop and is generally only considered for major metropolitan areas such as San Francisco and the Los Angeles metro area. Rail haul was not further considered because there are no nearby rail lines that could feasibly be extended to the YCCL and the size of the County waste stream is not large enough to benefit from the potential benefits of rail haul when the costs are considered. If a rail line is located near the landfill in the future, this alternative would be revisited.

5.3.3 TRANSFER OF WOOD AND ORGANICS

Several of the Project elements would increase processing of wood and organic waste and increase the environmental benefits derived from the waste, such as the waste gasification facility, wood pellet facility, and organic waste fertilizer facility, which are all proposed to be located in the 41-acre north central area at the YCCL identified for future facility development. One alternative to developing these Project elements would be to develop a larger transfer station and to transfer wood and organic waste to other landfills in the region. This would reduce the footprint of development in the 41-acre north central area at the YCCL, which would reduce potential impacts to wetlands and biological resources. However, this alternative was not further considered because it would reduce the environmental benefits of the Project (i.e., renewable hydrogen and electricity, fertilizer produced from organic waste, and wood pellets produced from wood waste) and the hauling of the material to other landfills would increase impacts to air quality, GHG emissions, energy, and transportation.

5.3.4 FILL OF EXISTING WATER STORAGE RESERVOIR

Another alternative that was considered to reduce potential impacts to wetlands and biological resources by limiting development in the 41-acre north central area at the YCCL was to fill the existing Water Storage Reservoir at the YCCL and develop Project elements there. However, this alternative was not further considered because it would create additional challenges for the YCCL to store groundwater and stormwater and would remove the large scale floating solar photovoltaic (PV) system from the Project.

5.4 NO PROJECT ALTERNATIVE

5.4.1 NO PROJECT ALTERNATIVE DESCRIPTION

If the Project is not approved, the YCCL would continue to operate under its current Solid Waste Facilities Permit (SWFP) and the various Project elements would not have an approved California Environmental Quality Act (CEQA) review or Project approval from the County. The YCCL would continue to operate with a permitted tonnage of 1,800 tons per day and permitted traffic volume of 1,047 vehicles per day. The YCCL would continue to operate like the existing operations, including a continuation of challenges related to:

- Acquisition of soil to maintain current operations,
- Processing organic materials to meet state requirements, and
- Processing wood.

Under the No Project Alternative, minor operational changes could occur within the existing SWFP, but the scale of the changes would be limited compared to the various Project elements proposed by the Project. The No Project Alternative would continue to operate under the current SWFP limits. Therefore, under the No Project Alternative, the YCCL would have to reject loads that put daily totals above 1,800 tons per day or permitted traffic volume of 1,047 vehicles per day.

The No Project Alternative could partially meet each of the Project objectives through operational changes allowed under the current SWFP, but the Project has elements to better achieve the Project objectives, such as increasing the County's ability to divert waste from the landfill and meeting state-mandated diversion goals. Furthermore, without development of many of the Project elements the County would lose environmental benefits such as renewable fuels, renewable electricity, and organic fertilizer. Additionally, without the Off-Site Borrow Area that is part of the Project, the YCCL would be short of soil for landfill operations in the future, potentially resulting in elimination of landfill disposal at the Project site.

5.4.2 ENVIRONMENTAL IMPACTS

Aesthetics

Under the No Project Alternative an Off-Site Borrow Area would not be developed in the future. Therefore, the No Project Alternative would have less aesthetics impacts compared to the Project.

Land Use, Planning, and Agriculture

Under the No Project Alternative an Off-Site Borrow Area would not be developed in the future. Therefore, the No Project Alternative would have less land use, planning, and agricultural impacts compared to the Project.

Air Quality

Under the No Project Alternative, none of the Project elements would be constructed at the YCCL. Therefore, the No Project Alternative would have less air quality impacts related to construction activities compared to the Project.

Under the No Project Alternative, none of the Project elements would be operational and the YCCL's permitted daily tonnage would not be increased, thus there would be no increased emissions from on-site mobile equipment, heavy trucks, and employee vehicles. Therefore, the No Project Alternative would have less air quality impacts related to operational activities compared to the Project.

Biological Resources

Under the No Project Alternative, none of the Project elements would be constructed at the YCCL and an Off-Site Borrow Area would not be developed in the future. Since no new ground disturbing activities would occur, the No Project Alternative would avoid all potential impacts to biological resources associated with the Project. Therefore, the No Project Alternative would have less biological resources impacts compared to the Project.

Cultural and Tribal Resources

Under the No Project Alternative, none of the Project elements would be constructed at the YCCL and an Off-Site Borrow Area would not be developed in the future. Since no new ground disturbing activities would occur, the No Project Alternative would avoid all potential impacts to

cultural resources associated with the construction of the Project elements. Therefore, the No Project Alternative would have less cultural and tribal resources impacts compared to the Project.

Energy

Neither the Project nor the No Project Alternative would have significant impacts on energy resources. Under the No Project Alternative, none of the Project elements would be developed, thus the No Project Alternative would use less energy because many of the Project elements require the consumption of electricity and petroleum fuels to operate. However, the No Project Alternative would not have the same beneficial impact as the Project from renewable energy generation without Project elements such as the large scale floating solar PV system, solar PV system on closed landfill units, waste gasification facility, expanded biogas utilization options, peaking power plant, and biogas to methanol pilot facility. Therefore, the energy impacts of the Project and No Project Alternative would be approximately the same.

GHG Emissions

Neither the Project nor the No Project Alternative would have significant impacts on GHG emissions. Under the No Project Alternative, none of the Project elements would be developed and the YCCL's permitted daily tonnage would not be increased, thus there would be no increased GHG emissions from on-site mobile equipment, heavy trucks, and employee vehicles. However, the No Project Alternative would not have the same beneficial impact as the Project from renewable energy generation and increased organics diversion from landfills. Therefore, the GHG emissions impacts of the Project and No Project Alternative would be approximately the same.

Public Health and Safety

Under the No Project Alternative, none of the Project elements would be developed at the YCCL. Since no new facilities would be developed, the No Project Alternative would avoid potential impacts to public health and safety associated with the Project. Therefore, the No Project Alternative would have less public health and safety impacts compared to the Project.

Geology, Soils, and Seismicity

Under the No Project Alternative, none of the Project elements would be constructed at the YCCL and an Off-Site Borrow Area would not be developed in the future. Since no new ground disturbing activities would occur, the No Project Alternative would avoid potential impacts to geology, soils, and seismicity associated with the Project. Therefore, the No Project Alternative would have less geology, soils, and seismicity impacts compared to the Project.

Hydrology and Water Quality

Under the No Project Alternative, none of the Project elements would be constructed at the YCCL and an Off-Site Borrow Area would not be developed in the future. Since none of the Project elements would be developed such as additional groundwater pumping, the No Project Alternative would avoid potential impacts to hydrology and water quality associated with the Project. However, the County is proposing to increase groundwater pumping at the YCCL because the

existing groundwater extraction and treatment system is not completely effective at lowering groundwater under several of the closed landfill units and the Central Valley Water Quality Control Board (CVWQCB) has directed the County to address the issue. Therefore, the hydrology and water quality impacts of the Project and No Project Alternative would be approximately the same.

Noise

Under the No Project Alternative, none of the Project elements would be constructed at the YCCL and an Off-Site Borrow Area would not be developed in the future. Since none of the Project elements would be developed, the No Project Alternative would avoid potential impacts to noise associated with the Project. Therefore, the No Project Alternative would have less noise impacts than the Project.

Transportation

Neither the Project nor the No Project Alternative would have significant impacts on transportation. Under the No Project Alternative, none of the Project elements would be developed and the YCCL's permitted daily tonnage would not be increased, thus there would be no increased vehicles trips. Therefore, the No Project Alternative would have less transportation impacts than the Project.

Public Services and Utilities

Under the No Project Alternative, none of the Project elements would be constructed at the YCCL and an Off-Site Borrow Area would not be developed in the future. Since none of the Project elements would be developed, the No Project Alternative would avoid potential impacts to public services and utilities associated with the Project. Therefore, the No Project Alternative would have less public services and utilities impacts than the Project.

Wildfire

Neither the Project nor the No Project Alternative would have significant impacts on wildfire. Therefore, the wildfire impacts of the Project and No Project Alternative would be approximately the same.

5.5 REDUCED TONNAGE ALTERNATIVE

5.5.1 REDUCED TONNAGE ALTERNATIVE DESCRIPTION

The Reduced Tonnage Alternative would include all the elements of the Project, except there would be a reduction in the increased daily permitted tonnage and the resulting increase in the facility's permitted traffic volume compared to the Project. Under the Reduced Tonnage Alternative, the County would expand the overall permitted tonnage for the YCCL to a monthly average of 1,800 tons per day with a daily peak of 2,400 tons per day, which would limit waste hauling vehicles to 1,253 vehicles per day.

The Reduced Tonnage Alternative could meet each of the Project objectives because all the Project elements would still be developed, but the Reduced Tonnage Alternative would be limited in increasing the County's ability to divert waste (including organics) from the landfill compared to the Project because the YCCL would have to reject loads that put daily totals above 2,400 tons per day (or the monthly average of 1,800 tons per day) or the permitted traffic volume of 1,253 vehicles per day.

5.5.2 ENVIRONMENTAL IMPACTS

Aesthetics

Under the Reduced Tonnage Alternative, all the Project elements would be developed. Therefore, the potential aesthetics impacts of the Project and Reduced Tonnage Alternative would be the same.

Land Use, Planning, and Agriculture

Under the Reduced Tonnage Alternative, all the Project elements would be developed. Therefore, the land use, planning, and agricultural impacts of the Project and Reduced Tonnage Alternative would be the same.

Air Quality

Under the Reduced Tonnage Alternative, all the Project elements would be constructed at the YCCL. Therefore, the potential air quality construction impacts of the Project and Reduced Tonnage Alternative would be the same.

Under the Reduced Tonnage Alternative, all the Project elements would be operational but the YCCL's permitted daily tonnage and permitted traffic volume would increase less compared to the Project, thus there would be decreased emissions from heavy trucks compared to the Project. Therefore, the Reduced Tonnage Alternative would have less air quality impacts related to operational activities than the Project.

Biological Resources

Under the Reduced Tonnage Alternative, all the Project elements would be developed. Therefore, the biological resource impacts of the Project and Reduced Tonnage Alternative would be the same.

Cultural and Tribal Resources

Under the Reduced Tonnage Alternative, all the Project elements would be developed. Therefore, the impacts to cultural and tribal resources impacts under the Project and Reduced Tonnage Alternative would be the same.

Energy

Neither the Project nor the Reduced Tonnage Alternative would have significant impacts on energy resources. Under the Reduced Tonnage Alternative, less petroleum fuels would be consumed since the YCCL's permitted daily tonnage and permitted traffic volume would be less compared than

under the Project. However, the Reduced Tonnage Alternative may not have the same beneficial impact as the Project from renewable energy generation because less feedstock would be available for Project elements that produce renewable energy compared to the Project. Therefore, the energy impacts of the Project and Reduced Tonnage Alternative would be approximately the same.

GHG Emissions

Neither the Project nor the Reduced Tonnage Alternative would have significant impacts on GHG emissions. Under the Reduced Tonnage Alternative, less GHG emissions would be generated since the YCCL's permitted daily tonnage and permitted traffic volume would be increased less compared to the Project. However, the Reduced Project Alternative may not have the same beneficial impact as the Project from renewable energy generation and increased organics diversion from landfills because less feedstock would be available for Project elements that produce renewable energy compared to the Project, and the YCCL would have to reject loads that exceed the Reduced Tonnage Alternatives limits. Therefore, the potential GHG emission impacts of the Project and Reduced Tonnage Alternative would be approximately the same.

Public Health and Safety

Under the Reduced Tonnage Alternative, all the Project elements would be developed. Therefore, the public health and safety impacts of the Project and Reduced Tonnage Alternative would be the same.

Geology, Soils, and Seismicity

Under the Reduced Tonnage Alternative, all the Project elements would be developed. Therefore, the geology, soils, and seismicity impacts of the Project and Reduced Tonnage Alternative would be the same.

Hydrology and Water Quality

Under the Reduced Tonnage Alternative, all the Project elements would be developed. Therefore, the hydrology and water quality impacts of the Project and Reduced Tonnage Alternative would be the same.

Noise

Under the Reduced Tonnage Alternative, all the Project elements would be developed. Under the Reduced Tonnage Alternative, less heavy truck noise would be generated since the YCCL's permitted daily tonnage and permitted traffic volume would be increased less compared to the Project. Although the Reduced Tonnage Alternative would result in less heavy truck noise, all the Project elements would be developed including the Off-Site Borrow Area. Therefore, the potential noise impacts of the Project and Reduced Tonnage Alternative would be approximately the same.

Transportation

Neither the Project nor the Reduced Tonnage Alternative would have significant impacts on transportation. Under the Reduced Tonnage Alternative, the YCCL's permitted daily tonnage and

permitted traffic volume would be increased less compared to the Project. Therefore, the Reduced Tonnage Alternative would have less transportation impacts than the Project.

Public Services and Utilities

Under the Reduced Tonnage Alternative, all the Project elements would be developed. Therefore, the public services and utilities impacts of the Project and Reduced Tonnage Alternative would be the same.

Wildfire

Neither the Project nor the Reduced Tonnage Alternative would have significant impacts on wildfire. Therefore, the wildfire impacts of the Project and Reduced Tonnage Alternative would be approximately the same.

5.6 REDUCED FOOTPRINT ALTERNATIVE

5.6.1 REDUCED FOOTPRINT ALTERNATIVE DESCRIPTION

The Reduced Footprint Alternative would include most of the elements of the Project and there would be a reduction in the developmental footprint compared to the Project, specifically in the 41-acre north central area at the YCCL identified for future facility development (see **Figure 2-3**). Under the Reduced Footprint Alternative, the County would limit development in this area to 30 acres to avoid the potential wetland area to the northeast and limit potential impacts to biological resources. It is important to note that the north central area at the YCCL identified for future facility development was originally planned to be 80 acres, but the County reduced the footprint to 41-acres to avoid potential impacts to biological resources.

The Reduced Footprint Alternative could partially meet each of the Project objectives because most of the Project elements would likely still be developed. However, the Reduced Footprint Alternative would not meet each of the Project objectives as effectively as the Project because the Project elements proposed to be developed in the north central area at YCCL identified for future facility development (i.e., transfer station, waste gasification facility, organic waste fertilizer facility and wood pellet facility) would be unable to fit within a 30-acre area. Therefore, for the purposes of this alternatives analysis it is assumed that the organic waste fertilizer facility and wood pellet facility would not be developed under the Reduced Footprint Alternative.

5.6.2 ENVIRONMENTAL IMPACTS

Aesthetics

Under the Reduced Footprint Alternative, the organic waste fertilizer facility and wood pellet facility would not be developed. Therefore, the Reduced Footprint Alternative would have less impacts to aesthetics than the Project.

Land Use, Planning, and Agriculture

Under the Reduced Footprint Alternative, the organic waste fertilizer facility and wood pellet facility would not be developed. Since these facilities would be within the YCCL boundary under the Project, the potential land use, planning, and agricultural impacts of the Project and Reduced Footprint Alternative would be the same.

Air Quality

Under the Reduced Footprint Alternative, the organic waste fertilizer facility and wood pellet facility would not be developed. Therefore, the potential air quality construction impacts from the Reduced Footprint Alternative would be less than the Project.

Under the Reduced Footprint Alternative, there would be less on-site mobile equipment required and the YCCL's permitted traffic volume would be slightly less (since outgoing haul trips carrying wood pellets and organic fertilizer would no longer be required) compared to the Project. Therefore, the potential air quality operational impacts of the from the Reduced Footprint Alternative would be less than the Project.

Biological Resources

Under the Reduced Footprint Alternative, the County would limit development in the north central area at the YCCL identified for future facility development to 30 acres to avoid the potential wetland area to the northeast and limit potential impacts to biological resources. Therefore, the Reduced Footprint Alternative would have less impacts to biological resources than the Project.

Cultural and Tribal Resources

Under the Reduced Tonnage Alternative, less ground disturbance would take place in the north central area at the YCCL identified for future facility development. Therefore, the Reduced Footprint Alternative would have less impacts to cultural and tribal resources than the Project.

Energy

Under the Reduced Footprint Alternative, there would be less on-site mobile equipment required and the YCCL's permitted traffic volume would be slightly less (since outgoing haul trips carrying wood pellets and organic fertilizer would no longer be required) compared to the Project. However, the energy benefits from producing fertilizer and wood pellets from organic and wood waste would be lost. Therefore, the potential energy impacts of the Reduced Footprint Alternative would be greater than the Project.

GHG Emissions

Under the Reduced Footprint Alternative, there would be less on-site mobile equipment required and the YCCL's permitted traffic volume would be slightly less (since outgoing haul trips carrying wood pellets and organic fertilizer would no longer be required) compared to the Project. However, the GHG emissions benefits from producing fertilizer and wood pellets from organic

and wood waste would be lost, and the Reduce Footprint Alternative would be less than consistent with the California Air Resource Board's (CARB's) 2017 Scoping Plan. Therefore, the potential GHG emission impacts of the Reduced Footprint Alternative would be greater than the Project.

Public Health and Safety

Under the Reduced Footprint Alternative, the organic waste fertilizer facility and wood pellet facility would not be developed. Therefore, the potential public health and safety impacts of the Reduced Footprint Alternative would be less than the Project.

Geology, Soils, and Seismicity

Under the Reduced Footprint Alternative, the organic waste fertilizer facility and wood pellet facility would not be developed, and ground disturbance would be slightly reduced compared to the Project. The slight reduction in ground disturbance would likely not lessen impacts to geology, soils, and seismicity. Therefore, the potential geology, soils, and seismicity impacts of the Project and Reduced Footprint Alternative would be approximately the same.

Hydrology and Water Quality

Under the Reduced Footprint Alternative, the organic waste fertilizer facility and wood pellet facility would not be developed, and ground disturbance would be slightly reduced compared to the Project. The slight reduction in ground disturbance would not substantially reduce impacts to hydrology and water quality. Therefore, the potential hydrology and water quality impacts of the Project and Reduced Footprint Alternative would be approximately the same.

Noise

Under the Reduced Footprint Alternative, there would be less on-site mobile equipment required and the YCCL's permitted traffic volume would be slightly less (since outgoing haul trips carrying wood pellets and organic fertilizer would no longer be required) compared to the Project. Therefore, the potential noise impacts of the Reduced Footprint Alternative would be less than the Project.

Transportation

Under the Reduced Footprint Alternative, the organic waste fertilizer facility and wood pellet facility would not be developed and the traffic volume at YCCL would be slightly less (since outgoing haul trips carrying wood pellets and organic fertilizer would no longer be required) compared to the Project. Therefore, the potential transportation impacts of the Reduced Footprint Alternative would be less than the Project.

Public Services and Utilities

Under the Reduced Tonnage Alternative, the organic waste fertilizer facility and wood pellet facility would not be developed. Therefore, the potential public services and utilities impacts of the Reduced Footprint Alternative would be less than the Project.

Wildfire

Neither the Project nor the Reduced Footprint Alternative would have significant impacts on wildfire. Therefore, the potential wildfire impacts of the Project and Reduced Footprint Alternative would be the same.

5.7 SUMMARY COMPARISON OF ALTERNATIVES

The relative impacts of the various Project alternatives (in comparison to the proposed Project) are shown in **Table 5-1**.

TABLE 5-1. PROJECT ALTERNATIVES COMPARISON

EIR Chapter/Project Impact	No Project Alternative	Reduced Tonnage Alternative	Reduced Footprint Alternative
Aesthetics	L	E	L
Land Use, Planning, and Agriculture	L	E	E
Air Quality	L	L	L
Biological Resources	L	E	L
Cultural and Tribal Resources	L	E	L
Energy	E	E	G
GHG Emissions	E	E	G
Public Health and Safety	L	E	L
Geology, Soils, and Seismicity	L	E	E
Hydrology and Water Quality	E	E	E
Noise	L	E	L
Transportation	L	L	L
Public Services and Utilities	L	E	L
Wildfire	E	E	E

KEY:

L = Less impact than the Project

E = Equal or similar impacts as the Project

G = Greater impact than the Project

SOURCE: RCH Group, 2021

Table 5-2 shows the ability of each alternative to achieve the Project objectives. As shown by the table, the No Project Alternative fails to meet the Project objectives. The Reduced Tonnage Alternative and Reduced Footprint Alternative meet or partially meet all the Project objectives. As described in the Project Description (Chapter 2) and in Section 5.2 of this Chapter, the Project objectives are as follows:

- Objective 1.* To decrease adverse environmental impacts of landfill development, operations, and final closure, and increase the environmental benefits that can be derived from certain aspects of existing YCCL operations.

- Objective 2.* To increase the County’s ability to divert waste (including organics) from the landfill and continue to meet the state-mandated diversion goals provided in AB 1383, other state-mandates to reduce waste from landfill (AB 341) and reduce GHG emissions (AB 32).
- Objective 3.* To increase efficiency, diversify operations, and operate more economically.
- Objective 4.* To extend the overall site life of the existing YCCL through new operational methodologies.

TABLE 5-2. ALTERNATIVES ABILITY TO MEET PROJECT OBJECTIVES COMPARISON

Objectives	No Project Alternative	Reduced Tonnage Alternative	Reduced Footprint Alternative
Objective 1		✓	X
Objective 2		X	✓
Objective 3		✓	X
Objective 4		✓	X

KEY:

- ✓ = Alternative substantially achieves objective
X = Alternative partially achieves objective

SOURCE: RCH Group, 2021

5.8 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The Reduced Tonnage Alternative and Reduced Footprint Alternative meets or partially meets all the Project objectives (as depicted in **Table 5-2**). The Reduced Tonnage Alternative only partially meets Objective 2 since it would limit the County’s ability to divert waste (including organics) from the landfill compared to the Project and the YCCL would have to reject loads that put daily totals above the reduced tonnage limit. The Reduced Footprint Alternative only partially meets Objectives 1, 3, and 4 since not all the Project elements would be developed (the organic waste fertilizer facility and wood pellet facility would not be developed).

The Reduced Tonnage Alternative has no impacts that would be greater than the Project (as shown in **Table 5-1**). The Reduced Tonnage Alternative would result in less air quality and transportation impacts compared to the Project because of the reduced permitted tonnage increase and resulting permitted traffic volume increase.

The Reduced Footprint Alternative has energy and GHG emissions impacts that would be greater than the Project since the energy and GHG emissions benefits from the organic waste fertilizer facility and wood pellet facility would no longer be achieved. The Reduced Footprint Alternative would result in less biological resources and potentially less cultural and tribal resources impacts because the County would limit development in the north central area at the YCCL identified for future facility development to 30 acres to avoid the potential wetland area to the northeast and limit potential impacts to biological resources. The Reduced Footprint Alternative would also result in less aesthetics, air quality, public health and safety,

noise, transportation, and public services and utilities impacts since the organic waste fertilizer facility and wood pellet facility would not be developed and the YCCL's permitted traffic volume would be slightly less (since outgoing haul trips carrying wood pellets and organic fertilizer would no longer be required) compared to the Project.

Since the Reduced Tonnage Alternative substantially meets Project Objectives 1, 3 and 4 and partially meets Objective 2, while reducing impacts to air quality and transportation and having no impacts greater than the Project, the Reduced Tonnage Alternative is the environmentally superior alternative. However, the proposed Project meets all the objectives and could accept additional loads for processing (above the limit of the Reduced Tonnage Alternative).

This page intentionally left blank

CHAPTER 6

EIR AUTHORS, PERSONS AND ORGANIZATIONS CONTACTED

6.1 LEAD AGENCY EIR AUTHORS

Yolo County

Department of Community Services,
292 West Beamer Street
Woodland, CA, 95695

Stephanie Cormier, Principal Planner

Division of Integrated Waste Management
44040 County Road 28H
Woodland, CA, 95776-9101

Ramin Yazdani, Ph.D., P.E., Director
Rick Moore, P.E., Principal Civil Engineer
Jeff Kieffer, P.E., Senior Civil Engineer

6.2 EIR CONSULTANTS

RCH Group, Inc.

Project Manager

Deputy Project Manager

Project Description & Introduction

Aesthetics

Air Quality Section

Cultural and Tribal Cultural Resources

Energy Section

Land Use and Planning and Agricultural Resources

Noise Section:

Public Health and Safety Section:

Public Services, Utilities and Service Systems Section:

Paul Miller, M.S.

Daniel Jones

Daniel Jones

Paul Miller, M.S.

Luis Rosas

Daniel Jones

Michael Ratte

Daniel Jones

Daniel Jones

Laura Zuckerman, M.U.P

Luis Rosas

Paul Miller, M.S.

Luis Rosas

Paul Miller, M.S.

Luis Rosas

Paul Miller, M.S.

Luis Rosas

Wildfire Section
Alternatives Analysis

Luis Rosas
Paul Miller, M.S.

ICF

Wildlife Biology

Steve Avery, M.A.

Botany/Wetland Ecology

Stephen Barlow
Devin Jokerst, M.S.

Sutro Science LLC

Geology and Soils
Hydrology and Water Quality

Peter Hudson, PG, CEG, QSP
Peter Hudson, PG, CEG, QSP
Justin Taplin, M.S., FP-C

KD Anderson & Associates Inc.

Transportation Impact Analysis:

Kenneth Anderson, P.E.

6.3 PERSONS AND ORGANIZATIONS CONSULTED

List of other people and organizations consulted are provided in the references at the end of each section.

CHAPTER 7

ACRONYMS

7.1 ACRONYMS USED IN EIR

ug/m³: micrograms per cubic meter

AB: Assembly Bill

AD: anaerobic digestion or anaerobic digester

ADA: Americans with Disabilities Act

AF: acre-feet

AG: Agriculture

AMMs: avoidance mitigation measures

AOC: area of concern

APCD: Air Pollution Control District

AQAP: Air Quality Attainment Plan

AST: air stripper treatment system

ATC: Authority to Construct

BACT: Best Available Control Technologies

bgs: below ground surface

BMPs: Best Management Practices

BTP: Bicycle Transportation Plan

BTU: British thermal unit

CAFE: Corporate Average Fuel Economy

CalEEMod: California Emissions Estimator Model

CalEPA: California Environmental Protection Agency

CalFire: California Department of Forestry and Fire Protection

CALgreen: California Green Building Standards Code

CalOES: California Governor’s Office of Emergency Service

CalOSHA: California Division of Occupational Safety and Health

CalRecycle: California Department of Resources Recycling and Recovery

CARB: California Air Resources Board

CAAQS: California Ambient Air Quality Standards

CAP: Climate Action Plan

CAP: Corrective Action Plan

CCAA: California Clean Air Act

CCA: Community Choice Aggregation

CCR: California Code of Regulations

CDFW: California Department of Fish and Wildlife

CDHCS: California Department of Health Care Services

C&D Order: Cease and Desist Order

CDI: construction, demolition and inerts debris

CEC: California Energy Commission

CEQA: California Environmental Quality Act

CERCLA: Comprehensive Environmental Response, Compensation and Liability Act

CESA: California Endangered Species Act

CFM: cubic feet per minute

CFR: Code of Federal Regulations

CGP: General Construction Permit

CHRIS: California Historical Resources Information System

CI: carbon intensity

CNDDDB: California Natural Diversity Database

CNEL: Community Noise Equivalent Level

CNPS: California Native Plant Society

CO: carbon monoxide

COVID-19: Corona Virus Disease

CO₂: carbon dioxide

CO_{2e}: carbon dioxide equivalents

CPUC: California Public Utilities Commission

CR: County Road

CRHR: California Register of Historical Resources

CRPR: California Rare Plant Rank

CUPA: Certified Unified Program Agency

CVC: California Vehicle Code

CVRWQCB: Central Valley Regional Water Quality Control Board

CWA: Clean Water Act

CWC: California Water Code

dBA: A-weighted decibel scale

dB: decibel levels

DDT: dichloro-diphenyl-trichloroethane

DEIR: Draft EIR

DFD: Davis Fire Department

DIWM: Division of Integrated Waste Management

DMV: California Department of Motor Vehicles

DOT: United States Department of Transportation

DPR: California Department of Pesticide Regulation

DTSC: California Department of Toxic Substances Control

EA: Enforcement Agency

EA: Engineering Alternative

EAP: Energy Action Plan

ECOS: Environmental Conservation Online System

EDAPCD: El Dorado Air Pollution Control District

EIR: Environmental Impact Report

EFS: engineering feasibility report

EMFAC: emission factor model

EPA: Environmental Protection Agency

EPAct: National Energy Policy Act

ESA: Endangered Species Act

FCAA: Federal Clean Air Act

FEMA: Federal Emergency Management Agency

FIRMs: Flood Insurance Rate Maps

fps: feet per second

FR: Federal Register

GDS: Groundwater Disposal System

GHG: greenhouse gases

GPD: gallons per day

gpm: gallons per minute

GVWR: gross vehicle weight rating

GWh: gigawatt hour

GWP: global warming potential

H₂S: hydrogen sulfide

HAP: hazardous air pollutant

HASP: Health and Safety Plan

HCP: Habitat Conservation Plan

HDPE: high-density polyethylene

HFCs: hydrofluorocarbons

HHW: household hazardous waste

HHWCF: household hazardous waste collection facilities

HRA: health risk assessment

IC: internal combustion

IEPR: Integrated Energy Policy Report

IES: Illuminating Engineering Society

IIPP: Injury and Illness Prevention Program

IPCC: Intergovernmental Panel on Climate Change

JTD: Joint Technical Document

kW/hr: kilowatt hour

LCFS: low carbon fuel standard

LCRS: leachate collection and removal system

L_{dn}: Day-night Average Sound Level

LEA: Local Enforcement Agency (Yolo County Environmental Health Division)

L_{eq}: Equivalent Sound Level

LEV: low emissions vehicle

LFG: landfill gas

LOS: Level of service

LRA: Local Responsibility Area

LSAA: Lake or Streambed Alteration Agreement

MBTA: Migratory Bird Treaty Act

MEI: maximally exposed individual

MM: mitigation measures

MMRP: Mitigation Monitoring and Reporting Plan

MRP: Monitoring and Reporting Program

MOU: memorandum of understanding

MRF: material recovery facility

MSL: mean sea level

MSW: municipal solid waste

MTBE: Methyl tert-butyl ether

MTIP: Metropolitan Transportation Improvement Program

MTP/SCS: Metropolitan Transportation Plan/Sustainable Communities Strategies

MUTCD: Manual of Uniform Traffic Control Devices

MV: million entering vehicles

MVM: million vehicle miles

MW: megawatt

mya: million years ago

N₂O: nitrous oxide

NAAQS: National Ambient Air Quality Standards

NAHC: Native American Heritage Commission

NCCP: Natural Communities Conservation Plan

NHTSA: National Highway Traffic Safety Administration

NMFS: National Marine Fisheries Service

NMOC: non-methane organic compounds

NO₂: nitrogen dioxide

NOV: notice of violation

NO_x: nitrogen oxides

NOP: Notice of Preparation

NOT: Notice of Termination

NPDES: National Pollutant Discharge Elimination System

NRHR: National Register of Historic Places

O₃: ozone

O&M: operation and maintenance

OEHHA: Office of Environmental Health Hazard Assessment

OIMP: Odor Impact Minimization Plan

OPR: Governor's Office of Planning and Research

OSFM: Office of State Fire Marshal

OSHA: Occupational Safety and Health Administration

PCAPCD: Placer County Air Pollution Control District

PCEs: Passenger Car Equivalents

PF: Public Facilities

PFCs: perfluorocarbons

PG&E: Pacific Gas and Electric

PM: particulate matter

PM_{2.5}: fine particulate matter (less than 2.5 micrometers in diameter)

PM₁₀: particulate matter (less than 10 micrometers in diameter)

ppm: parts per million

PQP: Public and Quasi-Public

PRC: California Public Resources Code

PSD: Prevention of Significant Deterioration

PTO: Permit to Operate

PV: photovoltaic

QSD: Qualified SWPPP Developer

QSEs: Qualifying Stormwater Events

QSP: Qualified SWPPP Practitioner

RCNG: Renewable Compressed Natural Gas

RCRA: Resource Conservation and Recovery Act

ROG: reactive organic gases

RPS: renewable portfolio standard

RWQCB: Regional Water Quality Control Board

SACOG: Sacramento Area Council of Governments

SAFCA: Sacramento Area Flood Control Agency

SAF Plan: State Alternative Fuels Plan

SB: senate bill

SCFM: standard cubic feet per minute

SCH: State Clearinghouse

SF: square-feet

SFHA: Special Flood Hazard Areas

SHPO: State Historic Preservation Office

SJVAPCD: San Joaquin Valley Air Pollution Control District

SMAQMD: Sacramento Metropolitan Air Quality Management District

SMARA: State Surface Mining and Reclamation Act of 1975

SMARTS: Stormwater Multi-Application Reporting and Tracking System

SMUD: Sacramento Municipal Utility District

SO₂: sulfur dioxide

SQG: small quantity generator

SR: State Route

SRA: State Responsibility Area

SF₆: sulfur hexafluoride

SVAB: Sacramento Valley Air Basin

SWCV: solid waste collection vehicle

SWFP: solid waste facility permit

SWPPP: stormwater pollution prevention plan

TAC: toxic air contaminant

TCR: tribal cultural resources

TMDLs: Total Maximum Daily Loads

TI: Traffic Index

TPD: tons per day

TPH: thermal pressure hydrolysis

TSS: total suspended solids

UC: University of California

USACE: United States Army Corps of Engineers

USEIA: United States Energy Information Administration

U.S. EPA: United States Environmental Protection Agency

USFWS: United States Fish and Wildlife Service

USGS: United States Geological Survey

VHFHSZ: Very High Fire Hazard Severity Zones

VMT: Vehicle Miles Traveled

VOC: volatile organic compounds

V_{ph} : Vehicles Per Hour

WBWG: Western Bat Working Group

WDRs: Waste Discharge Requirements

WMU: Waste Management unit

WQPS: Water Quality Protection Standards

WWTP: wastewater treatment plant

YCCL: Yolo County Central Landfill

YCTD: Yolo County Transportation District

YSAQMD: Yolo-Solano Air Quality Management District

This page intentionally left blank