DRAFT ENVIRONMENTAL IMPACT REPORT

YOLO COUNTY CENTRAL LANDFILL SOIL BORROW SITE PROJECT

JANUARY 2015

SCH #:2014102015

Prepared for:

County of Yolo

Prepared by:

BASELINE ENVIRONMENTAL CONSULTING

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NOTICE OF AVAILABILITY AND PUBLIC HEARING for the
DRAFT ENVIRONMENTAL IMPACT REPORT on the
CENTRAL LANDFILL
SOIL BORROW SITE PROJECT

DATE: January 2015

TO: Interested Agencies and Individuals

FROM: Yolo County Planning, Public Works, and Environmental Services Department

The Draft Environmental Impact Report (Draft EIR) (SCH #2014102015) for the above project is now available for review. Public comment on this document is invited for a 45-day period extending from January 23, 2015 through March 9, 2015. Information about the proposed project is provided below.

The Yolo County Planning, Public Works and Environmental Services Department, Division of Integrated Waste Management, is proposing to develop a soil borrow site on a 323-acre property (collectively referred to as the "project") located approximately 3.4 miles from the southeastern portion of the City of Woodland and adjacent to, and west of, the existing Yolo County Central Landfill (YCCL or landfill) at the intersection of County Roads 28H and 104. The project site consists of two parcels (APN 042-100-017 and APN 042-100-18) that are currently designated as Agriculture (AG) in the 2030 Countywide General Plan for Yolo County and are zoned as Public and Quasi-Public (PQP). The project includes an application for a minor General Plan Amendment, to change the land use designation of the project site to Public and Quasi-Public (PQ), to be consistent with the PQP zoning.

The YCCL needs a steady supply of soil to support a variety of operations, including daily and intermediate cover, final closure of individual landfill modules, and construction of new modules. These activities are generally required to ensure continued compliance with state requirements. In the past, this soil has been acquired from a variety of sources, including on-site and off-sites soil borrow areas (where native soil materials are excavated and trucked to where it is needed within the YCCL). This project is proposed to provide a new source of soil for the YCCL.

The proposed project would excavate and transport soils to the YCCL to support the ongoing landfill operations. The quantity of soil material needed at the YCCL depends on the operations being conducted at the landfill, but typically ranges from 50,000 to 100,000 cubic yards per year. During periods when landfill modules are being constructed or old ones are being closed, the soil needs increase, and may be up to 300,000 cubic yards per year (equal to approximately 8 to 10 acres each year) It is estimated that typical daily excavation and transportation rates would range from 150 to 500 cubic yards per day, but could be as much as 3,000 cubic yards per day. Soil excavation and transportation activities would occur primarily during the dry months. The project site would be excavated to a total depth of approximately 12 to 20 feet.

The overall final slopes would be approximately 3:1 (horizontal:vertical), but may include steeper and gentler areas locally to improve habitat opportunities. Temporary slopes would not be steeper than 2:1. Excavation and grading would occur such that the disturbed areas would be internally drained (i.e., all drainage of the disturbed areas would be toward the newly created lowered surface). The proposed southern boundary of the soil borrow site would have a setback of approximately 600 feet from the top of

the bank of the Willow Slough Bypass drainage channel. Following completion of soil excavation activities, the soil borrow site would be reclaimed as a seasonal and perennial open water body and wildlife habitat.

The County and its consultant, BASELINE Environmental Consulting, have prepared a Draft Environmental Impact Report (Draft EIR) 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 the project. Following certification of the Final EIR, the County may take action to adopt the proposed project.

The Draft EIR analyzes impacts in the areas of Agricultural Resources, Air Quality, Biological Resources, Cultural Resources, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, and Noise. The potential for significant impacts to occur in each of those topical areas is evaluated in this document.

The Draft EIR is now available for public review on the County website at http://www.yolocounty.org/community-services/planning-public-works/planning-division/current-projects and at the public counter of the County Planning Division at 292 West Beamer Street, Woodland, CA 95696. The document is available for purchase in hard copy or in electronic format (CD ROM). The document is also available for public review at the Woodland Public Library at 250 First Street, Woodland, CA 95695. Please contact Eric Parfrey, Principal Planner, at (530) 666-8043 or Eric.Parfrey@yolocounty.org for more information or should you wish to purchase a copy.

You may submit comments on the Draft EIR during the 45-day public review period which begins January 22, 2015 and ends March 9, 2015 at 5:00pm. All comments on the Draft EIR Will be responded to in writing in the Final EIR. Comments must be directed to:

Eric Parfrey, Principal Planner
Yolo County Planning, Public Works, and Environmental Services Department
292 West Beamer Street
Woodland, CA 95695
Eric.Parfrey@yolocounty.org
(530) 666-8043

A public hearing at the Yolo County Planning Commission will be held on February 12, 2015 in the Board of Supervisors Chambers (Room 206) at 625 Court Street, Woodland, to accept oral comments on the Draft EIR.

There will be no transcription of oral comments at these meetings. 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 County Planning, Public Works, and Environmental Services Department at (530) 666-8811. Please make your request as early as possible and at least one-full business day before the start of the meeting.

For more specific questions about the project please contact Eric Parfrey, Principal Planner at (530) 666-8043 or Eric.Parfrey@yolocounty.org.

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1 INTRODUCTION

1.1 BACKGROUND AND NATURE OF THE PROJECT

The Yolo County Central Landfill (YCCL) is a municipal solid waste landfill owned by Yolo County and operated by the County's Planning, Public Works and Environmental Services Department, Division of Integrated Waste Management. The YCCL needs a steady supply of soil to support a variety of operations, including daily and intermediate cover, final closure of individual landfill modules, and construction of new modules. These activities are generally needed to ensure continued compliance with state requirements. The County's Division of Integrated Waste Management owns a property adjacent to the existing YCCL and is considering using this property as a source of soil. The establishment of a new soil borrow site is considered a "project" under the California Environmental Quality Act (CEQA) and approval of the project is a discretionary action. The County Planning, Public Works and Environmental Services Department is the lead agency overseeing the preparation of this Environmental Impact Report (EIR) for the application regarding the Division of Integrated Waste Management's proposed soil borrow project.

1.2 PURPOSE AND SCOPE OF EIR

This project Draft EIR was prepared in compliance with CEQA (Public Resources Code Sections 21000, et seq.) and Title 14 of the California Code of Regulations Sections 15000, et seq. (the CEQA Guidelines). As described in Section 15121(a) of the CEQA Guidelines, an EIR is a public information document that assesses potential environmental impacts of a proposed project and identifies mitigation measures and alternatives to the project that could reduce or avoid adverse environmental impacts. CEQA requires that state and local government agencies consider the environmental consequences of projects over which they have discretionary authority. It is not the purpose of this Draft EIR to recommend either approval or denial of a project; rather, this Draft EIR provides full disclosure of potential environmental impacts of the proposed project for review and consideration.

This Draft EIR is public information for use by governmental agencies and the public to identify and evaluate the potential physical environmental impacts associated with implementation of the proposed project. This Draft EIR: describes the proposed project and the existing environmental setting; identifies potential physical environmental impacts; identifies mitigation measures for impacts found to be significant; and compares and evaluates project alternatives. Significance criteria have been developed for each environmental topic analyzed in this Draft EIR and are defined in the beginning of each impact analysis section in Chapter 4.

This Draft EIR will be available for a 45-day public review period, during which one public hearing will be held to receive oral comments at the Yolo County Planning Commission in Woodland, California. The purpose of the public hearing is to solicit comments from the public and from governmental agencies on the adequacy of the environmental analysis in this Draft

EIR. During the public review period, comments on the accuracy and completeness of the information presented in this document will be accepted. Following the public review period, responses will be prepared to written and oral comments from the public and governmental agencies. The Draft EIR will be revised, as appropriate, and a Final EIR (Response to Comments document) will be distributed to all commenters and individuals requesting a copy.

The Yolo County Planning Commission will then consider the project and provide a recommendation to the Board of Supervisors whether the Final EIR should be approved or not. Following action by the Planning Commission, the Board of Supervisors will take final action on the project. Approval of the project is a discretionary action under CEQA.

1.3 ENVIRONMENTAL IMPACT REPORT REVIEW PROCESS

1.3.1 Initial Study and Notice of Preparation

Pursuant to CEQA, the County prepared an Initial Study to identify and preliminarily evaluate the potential environmental impacts that could be associated with excavation and transport of soil and reclamation at the proposed borrow site. The Notice of Preparation (NOP) and Initial Study (Appendix A) for the project were released on October 7, 2014, beginning the 30-day public review period, which ended on November 7, 2014. A scoping meeting was held at the Division of Integrated Waste Management offices (44090 County Road 28H) on October 22, 2014 to obtain public and agency comments on the Initial Study and the scope of the EIR. No agency representatives or members of the public attended the scoping meeting.

1.3.2 EIR Review and Preparation of Final EIR

This Draft EIR was publicly circulated on the date listed in the Notice of Availability, for a minimum 45-day period of review and comment by the public and other interested parties, agencies, and organizations. A Yolo County Planning Commission hearing on the Draft EIR will be held at the Board of Supervisors Chambers at 625 Court Street, Woodland, CA 95695, for the purpose of obtaining public comments on this Draft EIR. The public review period for the Draft EIR concludes on the date listed in the Notice of Availability. All comments or questions about the Draft EIR should be addressed to:

Yolo County Planning, Public Works and Environmental Services Department
Attention: Eric Parfrey, Principal Planner
292 West Beamer Street
Woodland, CA 95695
Eric.Parfrey@yolocounty.org

Following receipt of comments on the Draft EIR, responses will be prepared and made available for public review a minimum of 10 days prior to consideration for final action. The Planning Commission will make a recommendation to the Board of Supervisors regarding the certification of the Final EIR, as adequate, and action on the project application.

1.3.3 Final Action on the Project

The Board of Supervisors will make the final decision regarding certification of the Final EIR. Upon review and consideration of the Final EIR, the Board of Supervisors will determine whether to approve or reject the proposed project.

Approval of the project, as proposed or revised, would be accompanied by written findings for each significant environmental impact identified in the Final EIR. Findings must be accompanied by a brief explanation of the rationale for each finding and will indicate that: 1) mitigation measures to reduce significant impacts to less-than-significant levels have been adopted; 2) mitigation measures to reduce significant impacts to less-than-significant levels are within the jurisdiction of another public agency and either have been or should be adopted by that public agency; or 3) specific effects are unavoidable and substantially unmitigable but are considered acceptable because overriding considerations indicate that the benefits of the project outweigh the adverse effects.

1.3.4 Mitigation Monitoring

This Draft EIR presents mitigation measures for significant environmental impacts associated with the proposed project. CEQA requires that any state or local agency that imposes mitigation measures on a project adopt a monitoring program to ensure compliance with those measures (Public Resources Code Section 21081.6). The Mitigation Monitoring Program will specify the party responsible for implementation and monitoring of each mitigation measure.

1.3.5 Organization of Document

This Draft EIR consists of seven chapters. A summary of each chapter is provided below:

- Chapter 1.0 provides background and nature of the project, discusses the scope of the Draft EIR, an introduction and overview describing the intended use of the Draft EIR (including required approvals), and the review and certification process.

- Chapter 2.0 summarizes the Draft EIR findings, identifying potential impacts and proposed mitigation measures.

- Chapter 3.0 provides a description of the proposed project, its location, a site history, and details of the proposed excavation operation and reclamation plan.

- Chapter 4.0 presents a full discussion of the environmental effects of the project. Each section (e.g., Noise, Hydrology) summarizes the environmental setting, evaluates potential impacts resulting from implementation of the proposed project, and recommends feasible mitigation measures for the significant impacts.

- Chapter 5.0 provides CEQA-required discussions regarding cumulative effects and growth-inducing effects.

- Chapter 6.0 summarizes and discusses the three alternatives to the proposed project.
- Chapter 7.0 lists the authors of the Draft EIR and the document acronyms and abbreviations.

1.3.6 Summary of Initial Study/Notice of Preparation Conclusions: Issues Found Not To Be Significant

As described above, an NOP and Initial Study (Appendix A) were prepared to identify environmental issues associated with the proposed project. No significant impacts were identified for the following topics:

- Aesthetics
- Geology And Soils And Seismicity
- Land Use
- Mineral Resources
- Population and Housing
- Public Services
- Recreation
- Transportation and Circulation
- Utilities and Energy

This Draft EIR presents an analysis of impacts determined to be potentially significant in the areas of Agricultural Resources, Air Quality, Biological Resources, Cultural Resources, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, and Noise. Significant impacts identified for each resource area are summarized in Table 2-1 of the following chapter.

2 SUMMARY OF IMPACTS AND MITIGATION MEASURES

2.1 PROJECT UNDER REVIEW

The YCCL is a municipal solid waste landfill owned by Yolo County and operated by the County's Planning, Public Works and Environmental Services Department, Division of Integrated Waste Management; it has been in operation since 1975. The YCCL needs a steady supply of soil to support a variety of operations, including daily and intermediate cover, final closure of individual landfill modules, and construction of new modules. These activities are generally required to ensure continued compliance with state requirements. In the past, this soil has been acquired from a variety of sources, including on-site and off-sites soil borrow areas (where native soil materials are excavated and trucked to where it is needed within the YCCL).

The proposed soil borrow site consists of a portion of the 323-acre project site located adjacent to, and west of, the existing YCCL site at the intersection of County Roads 28H and 104. The quantity of soil material needed at the YCCL depends on the operations being conducted at the landfill, but typically ranges from 50,000 to 100,000 cubic yards per year. During periods when landfill modules are being constructed or old ones are being closed, the soil needs increase, and may be up to 300,000 cubic yards per year. It is estimated that typical daily excavation and transportation rates would range from 150 to 500 cubic yards per day, but could be as much as 3,000 cubic yards per day. Soil excavation and transportation activities would occur primarily during the dry months. The project site would be excavated to a total depth of approximately 12 to 20 feet.

The overall final slopes would be approximately 3:1 (horizontal:vertical), but may include steeper and gentler areas locally to improve habitat opportunities. Temporary slopes would not be steeper than 2:1. The proposed southern boundary of the soil borrow site would have a setback of approximately 600 feet from the top of bank of the Willow Slough Bypass drainage channel. Following completion of soil excavation activities, the soil borrow site would be reclaimed as a seasonal open water body and wildlife habitat.

2.2 AREAS OF CONTROVERSY

CEQA Guidelines Section 15123(b)(2) requires a discussion of areas of controversy known to the lead agency, including issues raised by agencies and the public. The following areas of controversy have been identified and are addressed in Chapter 4.0, Environmental Analysis, of the Draft EIR:

- **Loss of agricultural land.** The project would convert agricultural land to non-agricultural uses. The analysis included in this EIR found that implementation of the project could be mitigated by requiring the County to purchase agricultural easements on land of at least equal quality and size as compensation for the direct loss of agricultural land. However in conjunction with other planned development in the region, the project would

contribute cumulatively to loss of agricultural land, and which, even after implementation of required mitigation, the cumulative impact was found to be significant and unavoidable.

- **Impacts to cultural resources.** The project could cause a substantial adverse change in the significance of archaeological resources. A nearby site has yielded subsurface Native American burials and artifacts and its presence near the project site suggests a high sensitivity for potential buried prehistoric archaeological resources. Even though a focused field investigation that included inspection of 20 soil pits identified no human remains, it is still possible that previously unknown archaeological and historical resources could be exposed during ground disturbing operations. However, after implementation of required mitigation, which includes worker training, notification and inspection of any finds by a qualified archaeologist, and consultation with the Yocha Dehe Wintun Nation, as needed, the potential impact was found to be less than significant.

2.3 ISSUES TO BE RESOLVED

CEQA Guidelines Section 15123(b)(3) requires a discussion of issues to be resolved, including a choice of alternatives and whether or how to mitigate the significant effects of the proposed action. The primary issues to be resolved for this project include the issues raised above, whether or not to approve the project, consideration of identified mitigation measures, and identification of appropriate conditions of operation.

2.4 SUMMARY OF REGULATORY/POLICY CONSISTENCY

CEQA Guidelines Section 15125(d) requires an EIR to discuss any inconsistencies between the proposed action and applicable general plans and regional plans. There are a number of plans and regulations that apply to the proposed action, including the 2030 Countywide General Plan for Yolo County. A discussion of the consistency of the proposed project with applicable regulations and plans is included in each of the resource sections of Chapter 4.0. With the exception of the stated requests for a minor General Plan amendment to change the land use designation of the project site to Public and Quasi-Public (PQ) to be consistent with the Public Quasi-Public (PQP) zoning, this project is consistent with the applicable County plans and regulations.

2.5 SUMMARY OF IMPACTS

2.5.1 Effects Found Not to Be Significant

Section 15128 of the CEQA Guidelines requires an EIR to contain a statement briefly indicating the reasons why various possibly significant effects of a project were determined not to be significant and were therefore not discussed in detail. The following issue summaries explain why various potential effects of the project were found not to be significant. The project site boundaries have been modified since the Initial Study (Appendix A) was prepared and

circulated with the Notice of Preparation. However, the limits of excavation at the soil borrow site have not changed. This change in project site boundaries was found to have no effect on the impact analysis of the Initial Study sections listed and described below.

Aesthetics

The project site is located in a rural landscape. The surrounding land uses to the north, west, and south include row crops, alfalfa, rice, and cattle grazing. To the east is the existing landfill, which appears above the treetops as a broad mound. The site is not visible from any unique or locally significant scenic area, vista, or view designated by Yolo County or any other public entity. The site is also not located near a scenic roadway designated by the County or any other public entity. The nearest residences are about 1,700 feet or more west of the project site. The nearest frequently travelled public roadway (County Road 28H) is located approximately 600 feet to the south of the borrow site. At these distances, earthwork moving equipment would not be highly visible to the public. In addition, at these distances, nighttime lighting at the soil borrow site, which would only occur every few years, would blend with existing lighting at the landfill. The Initial Study concluded that impacts to aesthetics would be less than significant and therefore no further analysis is included in this Draft EIR.

Geology, Soils, and Seismicity

The soil borrow site is not located within an Alquist-Priolo Earthquake Fault Zone. The soil borrow site is located in an area that may be subject to strong to very strong seismic ground shaking. However, structures that could be damaged by seismic ground shaking or by other forms of geologic hazards, such as liquefaction, landslides, lateral spreading, subsidence, or expansive soils, are not proposed as part of the project. The project operations would remove existing vegetation and increase slope gradients which could increase the overall susceptibility of soils to erosion. However, since excavation and grading would create an internally-drained basin, any increase in erosion would not result in an off-site transport and loss of sediment. Additionally, erosion would be minimized each fall by track-walking and hydroseeding the slopes. The project proposes temporary slopes no steeper than 2:1 (27 degrees from the horizontal) and reclaimed slopes ranging from 2:1 to 3:1 (27 to 18 degrees from the horizontal). The proposed temporary excavation and reclaimed slopes are less steep than existing Occupational Health and Safety Administration (OSHA) and the California Division of Occupational Safety and Health (Cal/OSHA) requirements, which were developed to ensure the safety of workers near potentially unstable slopes. The Initial Study concluded that impacts to geology, soils, and seismicity would be less than significant and therefore no further analysis is included in this Draft EIR.

Land Use

The project site is 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 designated as Agriculture (AG) in the 2030 Countywide General Plan. The proposed project includes 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.

Mineral Resources

There are no known regionally- or locally-important mineral resources at the project site and surrounding areas. Therefore, the Initial Study concluded that impacts to mineral resources would be less than significant and no further analysis is included in this Draft EIR.

Population and Housing

The project site is currently used for grazing and therefore the proposed project would not result in any displacement of people or of existing housing units. The proposed project would require one to three employees during the excavation and transportation of soils from the soil borrow site and during reclamation activities. During periods of module construction/closure or stockpile placement at the YCCL, the proposed project would require 9 to 27 employees. However, these activities are seasonal and would be expected to occur over the course of one to three months. Upon completion of the project, the reclaimed site would create a seasonal open water body and wildlife habitat; no jobs would be created. Because of the seasonal nature and limited number of additional jobs associated with the proposed project, a substantial increase in population growth in the vicinity of the soil borrow site would not be induced. Therefore, no further analysis is included in this Draft EIR.

Public Services

The proposed project would not significantly increase public services, including law enforcement, fire protection, school capacity, park, or postal services, as it would not require the construction of new facilities or, as discussed in Section 2.13 (Population and Housing), would not result in a significant increase in permanent jobs or population. The Initial Study concluded that impacts to public services would be less than significant and therefore no further analysis is included in this Draft EIR.

Recreation

The proposed project would not significantly increase the use of recreational facilities because it would not result in an increase in permanent jobs or population (see Section 2.13, Population

and Housing). The project does not propose any activities that would directly result in the construction or expansion of recreational facilities. The Initial Study concluded that recreation impacts would be less than significant and therefore no further analysis is included in this Draft EIR.

Transportation and Circulation

Various types of equipment and trucks would be used to excavate and haul soil depending on conditions and demand. During typical periods, soil would be transported using approximately 1 to 3 trucks. During periods of module construction/closure or stockpile placement at the YCCL, it is estimated that between 8 and 24 trucks would be used to transport soil over the course of 1 to 3 months per year. Excavated soil would be transported via new access routes along the eastern boundary of the project site. These access routes would cross a section of County Road 104, which is a lightly-travelled road that the County plans to abandon in the future. Based on the low amount of existing vehicle trips along Country Road 104, transportation of soils from the project site to the landfill would not affect public transportation. Daily vehicle trips related to project activities at the soil borrow site are anticipated to be largely comprised of smaller vehicles (e.g., passenger cars and pick-up trucks) used to transport workers to and from the project site. However, the project's increase in daily employee vehicle trips would also likely be offset or further reduced by the project's reduction in truck traffic related to travel to and from other soil borrow sites. The Initial Study determined that the project would result in a less-than-significant impact on regional traffic circulation relative to the existing conditions and therefore no further analysis is included in this Draft EIR.

Utilities and Service Systems

The project site is not served by a public wastewater treatment system and connection to an existing public system is not proposed by the project. The proposed project would not require or result in the construction of new public stormwater drainage facilities or expansion of existing public facilities, and would have no impact on public stormwater facilities. Additionally, the proposed project would not require water service from a public source. The water supply for dust control and irrigation for screening and reclamation plantings would be provided by existing on-site water supplies consisting of captured stormwater and pumped groundwater. The project does not propose to have any sanitary wastewater treatment on-site. Sanitary facilities for workers and visitors at the site would be provided by portable chemical toilets. The solid and liquid wastes generated at the project site would be managed at the adjacent YCCL. The Initial Study concluded that impacts to utilities and services would be less than significant and therefore no further analysis is included in this Draft EIR.

2.5.2 Mitigation Measures to Avoid or Reduce Identified Significant Impacts

This Draft EIR discusses mitigation measures that could be implemented to reduce significant impacts to a less-than-significant level. These mitigation measures are specific to the project, and they present actions for the County to perform before, during, or after soil borrow activities. The mitigation measures presented form the basis of the proposed Mitigation Monitoring Program discussed in Section 1.4.

2.5.3 Effects Found To Be Significant and Avoidable

Under CEQA, a significant effect on the environment is defined as a substantial, or potentially substantial, adverse change in any physical conditions within the area affected by the project. This includes both natural and man-made conditions. Project implementation would generate environmental impacts in several areas, as described in Chapter 4 and summarized in Table 2-1 at the end of this chapter.

2.5.4 Effects Found to Be Significant and Unavoidable

Under CEQA, a significant and unavoidable effect of a project is one that would cause a substantial adverse effect on the environment and for which no mitigation is available to reduce the impact to a less-than-significant level if the project is approved.

One significant and unavoidable impact was identified in this Draft EIR. This was a cumulative impact related to loss of agricultural land.

2.5.5 Cumulative Impacts

CEQA Guidelines require an analysis of cumulative impacts for a project which are defined as two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. Cumulative impacts may require additional mitigation measures, if project-specific mitigation would not reduce cumulative impacts. These impacts are discussed in Section 5.1 of this Draft EIR.

2.5.6 Growth Inducing Impacts

CEQA requires that the growth-inducing impacts of a project be addressed in an EIR. Specifically, an EIR must discuss the ways in which a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. These impacts are discussed in Section 5.2 of this Draft EIR.

2.6 SUMMARY OF ALTERNATIVES

Pursuant to CEQA Guidelines Section 15126(f) and 15126.6, this Draft EIR includes an analysis of a reasonable range of project alternatives, including the “no project” alternative. Alternatives to the project that have been analyzed in the Draft EIR are summarized below.

2.6.1 No Project Alternative

Under the No Project Alternative, no changes would occur at the project site. It would continue to be used for grazing. In order to keep the YCCL operating in accordance with required regulations, the County would be required to find an alternate source of soil borrow material.

2.6.2 Cache Creek Settling Basin Alternative

Under this alternative, excess sediment that accumulates in the Cache Creek Settling Basin (located approximately 6 miles to the north of the project site) would be excavated and transported to the landfill for use. This would extend the life of the settling basin without requiring the state to raise the levees and weir to reduce upstream flooding concerns. Sediment/soil would be transported from the basin to the YCCL in trucks using a combination of public County roads and private roads.

2.6.3 City of Davis Wastewater Ponds

The City of Davis operates a wastewater treatment facility adjacent to the YCCL (to the east). Due to operational changes at the treatment facility, the City is planning to decommission one or more of the existing wastewater ponds. Under this alternative, the County would purchase the decommissioned ponds from the City and excavate soils from these locations for use at the landfill.

2.7 SUMMARY TABLE

The following table (Table 2-1) has been organized to correspond with environmental issues discussed in Chapter 4.0 of this Draft EIR. The summary table is arranged in four columns:

- Environmental Impacts
- Level of Significance before Mitigation
- Mitigation Measures
- Level of Significance after Mitigation

A series of mitigation measures is recommended to reduce an impact to a less-than-significant level in some instances; in those cases, all mitigation measures would be required to reduce the impact to a level of less than significant. Refer to Chapter 4.0 for a complete impact analysis.

2-1: Summary Table

Environmental Impacts		Level of Significance before Mitigation	Mitigation Measures		Level of Significance after Mitigation
AGRICULTURAL RESOURCES					
AG-1	The project would convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a non-agricultural use.	S	AG-1		LTS
			AG-1a	As required by Mitigation Measure 3.6.1e in the adopted 2005 Permit Revision EIR, "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."	
			AG-1b	To comply with Mitigation Measure AG-1a, the project may purchase and dedicate a conservation easement or pay an in-lieu fee, according to the Agricultural Conservation and Mitigation Program Ordinance. A conservation easement may be dedicated or the project may pay an in-lieu fee on an annual or biannual basis that is equivalent to the amount of agricultural land (in acres) that is excavated during the applicable time period and which is not reclaimed to a viable agricultural use such as grazing. The project is anticipated to excavate approximately 8 to 10 acres per year.	
AG-2	The project would convert agricultural land to a non-agricultural use.	S	AG-2	Implement Mitigation Measure AG-1.	LTS

Environmental Impacts		Level of Significance before Mitigation	Mitigation Measures		Level of Significance after Mitigation
CUMULATIVE AG-1	Implementation of the project and the 2030 Countywide General Plan for Yolo County in conjunction with other planned development in the region would contribute cumulatively to loss of agricultural land.	SU	CUMULATIVE AG-1	None available.	SU
AIR QUALITY					
AQ-1	The project could conflict with or obstruct implementation of the applicable air quality plan.	LTS		None required.	
AQ-2	The project could violate air quality standards or contribute substantially to an existing or projected air quality violation.	S	AQ-2	The landfill's existing Joint Technical Document (JTD) requirements for dust mitigation using a water truck to saturate exposed surface soils along unpaved haul roads shall be applied to the soil borrow site. Under dry conditions, soils on the soil borrow site shall be watered at least once every 2 to 3 hours to reduce any visible emissions of fugitive dust.	LTS
AQ-3	The project could result in a cumulatively considerable net increase in criteria pollutants for which the project region is non-attainment.	S	AQ-3	Implement Mitigation Measure AQ-2.	LTS
BIOLOGICAL RESOURCES					
BIO-1	The proposed project may have significant adverse impacts, either directly or through habitat modifications, to special status bird species.	S	BIO-1		LTS

Environmental Impacts		Level of Significance before Mitigation	Mitigation Measures		Level of Significance after Mitigation
			BIO-1a	For any earthmoving activities that will occur between March 15 and September 15 of any given year, the County shall conduct preconstruction surveys for suitable nesting habitat within 0.5 mile of the excavation for Swainson's hawk and within 1,000 feet of the excavation site for tree-nesting raptors. Surveys shall be conducted by a qualified biologist and will conform to the Swainson's Hawk Technical Advisory Committee (2000) guidelines. If nesting raptors are recorded within their respective buffers, the County will consult with CDFW regarding suitable measures to avoid impacting breeding efforts. Measures may include, but are not limited to: • Maintaining a 500-foot buffer around each active raptor nest; no construction activities shall be permitted within this buffer except as described below in this mitigation measure. This buffer may be reduced in consultation with CDFW; • Depending on conditions specific to each nest, and the relative location and rate of earthmoving activities, it may be feasible for activities to occur as planned within the buffer without impacting the breeding efforts. In this case (to be determined in consultation with CDFW), the nest(s) shall be monitored by a qualified biologist during project activities within the buffer. If, in the professional opinion of the monitor, the project would impact the nest, the biologist shall immediately inform the project manager and CDFW. The project manager shall stop earthmoving activities within the buffer until either the nest is no longer active or the project receives approval to continue from CDFW.	

Environmental Impacts		Level of Significance before Mitigation	Mitigation Measures		Level of Significance after Mitigation
			BIO-1b	In order to mitigate the loss of wildlife habitat and existing open space as required in the conservation and open space policies of the Yolo County General Plan, and the pending Yolo County NCCP/HCP, the County shall purchase and dedicate a conservation easement or pay an in-lieu fee. The County may purchase shares in an appropriate mitigation bank, make a payment to the Swainson's hawk mitigation fee program if is still in effect, or purchase comparable raptor foraging area in consultation with the CDFW at a ratio of 1:1 (1 acre conserved for every acre that is lost). A conservation easement may be dedicated or the project may pay an in-lieu fee on an annual or biannual basis that is equivalent to the amount of habitat land (in acres) that is excavated during the applicable time period and which is not reclaimed to a viable habitat use such as grazing. The project is anticipated to excavate approximately 8 to 10 acres per year. The County shall consult with CDFW to fulfill appropriate mitigation acreage and/or ratio requirements in consideration of the anticipated phased excavation of grasslands on the project site.	

Environmental Impacts		Level of Significance before Mitigation	Mitigation Measures		Level of Significance after Mitigation
			BIO-1c	Surveys for other raptors and birds protected under the MBTA shall be conducted for possible nesting activities as part of the other bird surveys identified in Mitigation Measure BIO-1a. If the qualified biologist determines that other raptors or birds are nesting in areas where project activities could result in injury or failed reproductive success, construction disturbance shall be postponed in the immediate area until young have fledged. A nest avoidance zone shall be established by the qualified biologist based on the species and sensitivity to disturbance, based on coordination with CDFW, until the qualified biologist determines that the young-of-the-year are no longer reliant upon the nest. For raptors, the nest avoidance zone shall typically be at least 300 feet and for passerine and other birds, the nest avoidance zone shall typically be at least 75 feet. The surveys shall be repeated if soil borrow activities have been suspended for more than 14 days during any particular nesting season (i.e., during February 1 through August 31).	
BIO-2	The proposed project may have significant adverse impacts, either directly or through habitat modifications, on western burrowing owl.	S	BIO-2		LTS
			BIO-2a	For any earthmoving that will occur between February 1 through August 31 of any given year, the applicant shall conduct preconstruction surveys in suitable nesting habitat within the borrow site and within 500 feet of the borrow site, for burrowing owls prior to earthmoving activities. Surveys shall be conducted by a qualified biologist and will conform to the latest CDFW burrowing owl recommendations. Burrowing owl surveys shall be conducted in both the breeding and non-breeding season.	

Environmental Impacts		Level of Significance before Mitigation	Mitigation Measures		Level of Significance after Mitigation
			BIO-2b	If nesting burrowing owls are detected within the proposed excavation area, mitigation to avoid the active nests or compensate for the loss of the nest(s) shall be developed in coordination with CDFW. In general, no disturbance will occur within 160 feet of occupied burrows during the non-breeding season (September 1 - January 31) or within 250 feet during the breeding season (February 1 - August 31) without a detailed monitoring program that verifies disturbance is not adversely affecting the nest(s). Mitigation may include, but is not restricted to, delaying excavation activities in the vicinity of any active nest site until the young have fledged), creating new burrows for every nest lost at a 2:1 ratio, and the passive relocation of resident owls, if necessary. A qualified wildlife biologist shall be retained to monitor active nests during project activities. This biologist would have the authority to halt earthmoving activities if these activities would result in the abandonment of a nest.	
BIO-3	The proposed project may have significant adverse impacts, either directly or through habitat modifications, on giant garter snake.	S	BIO-3		LTS
			BIO-3a	Any grading or excavation within potential aquatic habitat for giant garter snake, and/or upland habitat within 200 feet of potential aquatic habitat (i.e., the western drainage ditches), shall conform to the latest USFWS guidelines for procedures and timing of activities in giant garter snake habitat.	
			BIO-3b	No grading, excavating, or filling may take place in or within 30 feet of the western drainage ditches considered to be potential aquatic habitat for giant garter snake between October 1 and May 1 (the active period for the giant garter snake) unless authorized by the USFWS and CDFW.	

Environmental Impacts		Level of Significance before Mitigation	Mitigation Measures		Level of Significance after Mitigation
			BIO-3c	Prior to initiation of earthmoving activities, all workers shall take part in a training program conducted by a qualified biologist (i.e., a biologist who has had prior experience with giant garter snake monitoring through USFWS-approved biological opinions and/or implemented HCPs). This training shall include, at a minimum, a description of giant garter snake, its habitat requirements, and a photograph or illustration of the species so that workers can recognize the species.	
			BIO-3d	A qualified biologist shall be present on site during the excavation or filling of giant garter snake habitat, including uplands, within 200 feet of aquatic habitat. Alternatively, 24-hours prior to initiating grading, the area within 200 feet of aquatic habitat shall be surveyed by a qualified biologist to confirm no giant garter snakes are present. The survey shall be repeated if a lapse in construction activities of two weeks or greater occurs. If a giant garter snake is found in the work area, all work shall cease, and the County shall retain a qualified biologist holding necessary permits to remove the snake(s) from the work area and to adequately secure the area to prevent other snakes from entering the work zone.	
BIO-4	The proposed project may affect regulated waters associated with the western drainage channels, which would be a potentially significant impact.	S	BIO-4	Proposed earthmoving and other activities associated with the proposed project shall be designed to avoid any indirect impacts to the potential jurisdictional waters associated with the seasonal wetlands along the north side of CR 28H and the drainage ditches along the western edge of the project site. If any future construction activities are proposed in these areas, a formal wetland delineation shall be prepared and submitted to the Corps for verification, and if necessary, authorizations shall be obtained from the appropriate regulatory agencies.	LTS

Environmental Impacts		Level of Significance before Mitigation	Mitigation Measures		Level of Significance after Mitigation
BIO-5	The proposed project would not conflict with any adopted Habitat Conservation Plans, although the County is participating with preparation of the Yolo Natural Heritage Program Habitat Conservation Plan/Natural Community Conservation Plan.	LTS		None required.	
CULTURAL RESOURCES					
CUL-1	The project could cause a substantial adverse change in the significance of archaeological and historical resources pursuant to §15064.5 of CEQA.	S	CUL-1		LTS
			CUL-1a	The project proponent shall note on any plans that require ground disturbing excavation that there is a potential for exposing buried cultural resources including prehistoric Native American burials.	
			CUL-1b	The project proponent shall retain a Professional Archaeologist to provide pre-construction briefing(s) to supervisory personnel of any excavation contractor to alert them to the possibility of exposing significant prehistoric archaeological resources within the project area. The briefing shall discuss any archaeological 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 project proponent and archaeological team. Briefings shall be conducted annually, at minimum, and before any periods of intense excavation activity (e.g., excavation for landfill cell creation or closure). An "Alert Sheet" shall be posted in conspicuous locations at the project location to alert personnel to the procedures and protocols to follow for the discovery of potentially significant prehistoric archaeological resources.	

Environmental Impacts		Level of Significance before Mitigation	Mitigation Measures		Level of Significance after Mitigation
			CUL-1c	The project proponent shall retain a Professional Archaeologist on an "on-call" basis during ground disturbing construction for the project to review, identify and evaluate cultural resources that may be inadvertently exposed during construction. The archaeologist shall review and evaluate any discoveries to determine if they are historical resource(s) and/or unique archaeological resources under the California Environmental Quality Act.	
			CUL-1d	If the Professional Archaeologist determines that any cultural resources exposed during construction constitute a historical resource and/or unique archaeological resource, he/she shall notify the project proponent and other appropriate parties of the evaluation and recommended mitigation measures to mitigate to a less-than significant level. Mitigation measures may include avoidance, preservation in-place, recordation, additional archaeological testing and data recovery among other options. The completion of a formal Archaeological Monitoring Plan may be developed if extensive archaeological deposits are exposed during borrow operations. Treatment of any significant cultural resources shall be undertaken with the approval of the project proponent and the County of Yolo Planning, Public Works, and Environmental Services Department in consultation with the Yocha Dehe Wintun Nation.	
			CUL-1e	A Monitoring Closure Report shall be filed with the County of Yolo Planning, Public Works, and Environmental Services Department at the conclusion of ground disturbing construction if archaeological and Native American monitoring of excavation was undertaken.	

Environmental Impacts		Level of Significance before Mitigation	Mitigation Measures		Level of Significance after Mitigation
CUL-2	Soil excavation could directly or indirectly destroy a unique paleontological resource.	S	CUL-2	Prior to initiation of any 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 project location 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.	LTS
CUL-3	The project could disturb human remains, including those interred outside of formal cemeteries.	S	CUL-3		LTS

Environmental Impacts		Level of Significance before Mitigation	Mitigation Measures		Level of Significance after Mitigation
			CUL-3a	Pursuant to State Health and Safety Code Section 7050.5(e) and Public Resources Code Section 5097.98, if human bone or bone of unknown origin is found at any time during on - or off-site construction, all work shall stop in the vicinity of the find and the County of Yolo Coroner shall be notified immediately. If the remains are determined to be Native American, the Coroner shall notify the California State Native American Heritage Commission, who shall identify the person believed to be the Most Likely Descendant. The archaeologist, project proponent, and Most Likely Descendant shall make all reasonable efforts to develop an agreement for the treatment of human remains and associated or unassociated funerary objects with appropriate dignity (CEQA Guidelines Sec. 15064.5(d)). The agreed upon Treatment Plan shall address the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. California Public Resources Code allows 48 hours to reach agreement on a Treatment Plan. If the Most Likely Descendant and the other parties do not agree on the reburial method, the project shall follow PRC Section 5097.98(b) which states that ". . . the landowner or his or her authorized representative shall reinter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance."	

Environmental Impacts		Level of Significance before Mitigation	Mitigation Measures		Level of Significance after Mitigation
			CUL-3b	The Treatment Plan shall be implemented and any findings shall be submitted by the archaeologist in a professional report submitted to the County of Yolo Planning, Public Works, and Environmental Services Department, and Environmental Services Department, the Yocha Dehe Wintun Nation, and the California Historical Resources Information System, Northwest Information Center.	
CUL-4	The project could cause a substantial adverse change in religious or sacred sites, or unique ethnic-cultural resources.	LTS		None required.	
GREENHOUSE GAS EMISSIONS					
GHG-1	The project's GHG emissions would impact the environment.	LTS		None required.	
GHG-2	The project would conflict with an applicable plan, policy or regulation for reducing GHG emissions.	LTS		None required.	
HAZARDS AND HAZARDOUS MATERIALS					
HAZ-1	Routine project earthwork operations could result in the accidental release of fuels or lubricants.	S	HAZ-1	The Spill Prevention, Control and Countermeasures plan for the YCCL shall be amended to include accidental spill response procedures on the soil borrow site.	LTS

Environmental Impacts		Level of Significance before Mitigation	Mitigation Measures		Level of Significance after Mitigation
HAZ-2	Release of hazardous materials to the environment could affect workers and the public.	S	HAZ-2	All AC pipe shall be removed from the soil borrow site by a Cal/OSHA registered asbestos contractor in accordance with the safe worker practices and engineering controls described in 8 CCR 1529 for "Class II asbestos work." As described in 8 CCR 1529, the AC pipe shall be removed in an intact state unless the contractor demonstrates that intact removal is not possible. Any friable ACM shall also be removed in accordance with the USEPA's Asbestos NESHAP requirements (40 CFR Part 61, Subpart M) and the YSAQMD's asbestos rule (Rule 9.9) and disposed of at a landfill that is certified to accept asbestos waste.	LTS
HYDROLOGY AND WATER QUALITY					
HYD-1	The project could result if off-site discharges of pollutants in stormwater that could violate water quality standards.	S	HYD-1	Consistent with the requirements of the State Water Board and the Regional Water Board, the County shall submit a Notice of Intent (NOI) to the State Water Board to obtain coverage under either the Construction or Industrial General permits and prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) designed to reduce potential adverse impacts to surface water quality through the life of the soil borrow project.	LTS

Environmental Impacts		Level of Significance before Mitigation	Mitigation Measures		Level of Significance after Mitigation
				The SWPPP shall describe activities and potential pollution sources at the borrow site and best management practices 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 SWPPP will provide for reseeding exposed areas when they are no longer actively being quarried, and include a monitoring program. The SWPPP will be implemented, and a copy of the SWPPP will be retained at the YCCL site and made available for to Regional Water Board staff for review upon request. The County may, at its discretion, demonstrate to the Regional Water Board that no runoff would be discharged from the borrow site and file a Notice of Termination for coverage under the applicable General Permit. Upon approval by the Regional Water Board, the County may discontinue implementation of the SWPPP.	
HYD-2	The project could substantially deplete groundwater supplies.	LTS		None required.	
HYD-3	The project could substantially alter the existing drainage pattern of the site and cause substantial erosion or sedimentation.	LTS		None required.	
HYD-4	The project could substantially alter the existing drainage pattern of the site and cause flooding.	LTS		None required.	
	The project could substantially degrade groundwater quality if on-site wells were damaged during excavation activities.	S	HYD-5	All identified wells located on the project site (or wells discovered during excavation) shall either be:	LTS

Environmental Impacts		Level of Significance before Mitigation	Mitigation Measures		Level of Significance after Mitigation
				• Properly abandoned in compliance with the California Department of Water Resources, California Well Standards; or • Maintained to prevent damage to the wellheads by clearly marking and isolating each well from construction activities with fencing or steel bollards.	
HYD-6	The project could alter flood flows within a 100-year flood hazard zone.	LTS		None required.	
HYD-7	The project would expose workers to a significant risk of loss, injury or death from flooding as a result of a levee or dam failure.	NI		None required.	
NOISE					
NOI-1	The project could expose sensitive receptors to a substantial long-term increase in noise levels.	LTS		None required.	
NOI-2	The project could expose persons to or generate noise levels in excess of local standards established in the general plan and/or noise ordinance, or in the applicable standards of other agencies.	LTS		None required.	
NOI-3	The project could expose persons to, or generate, excessive vibration.	LTS		None required.	

Notes:
NI = No impact LTS = Less than significant impact S = Significant SU = Significant unavoidable impact

3 PROJECT DESCRIPTION

3.1 INTRODUCTION

The Yolo County Central Landfill (YCCL or landfill) is a municipal solid waste landfill located in a rural portion of unincorporated Yolo County between the cities of Woodland and Davis. The YCCL is owned by Yolo County and operated by the County's Planning, Public Works and Environmental Services Department, Division of Integrated Waste Management (DIWM);[1] it has been in operation since 1975. The YCCL needs a steady supply of soil to support a variety of operations, including daily and intermediate cover, final closure of individual landfill modules, and construction of new modules. These activities are generally required to ensure continued compliance with state requirements. In the past, this soil has been acquired from a variety of sources, including on-site and off-sites soil borrow areas (where native soil materials are excavated and trucked to where it is needed within the YCCL). This project is proposed to provide a new source of soil from a borrow area on a parcel adjacent to the YCCL, followed by subsequent reclamation activities.

A Final Subsequent Environmental Impact Report[2] was completed in 2005 for several Landfill permit revisions (2005 Permit Revision EIR); that document addressed the need for a steady supply of soils at the landfill, as follows:

YCCL has a shortage of soil needed for intermediate and final landfill cover material. In the future, DIWM may need to import soil from off-site for these purposes. DIWM is proposing to purchase property to develop a soil borrow area that would supply soil to the facility. The soil borrow area site has not yet been identified, but DIWM estimates that a 640-acre parcel (i.e., one square mile) would be needed. In order to transport soil economically to the YCCL site, the soil borrow area would need to be within about five miles of the landfill. The County has developed siting criteria (described in Chapter 2, Project Description) that would be used in identifying candidate properties, in order to avoid or minimize potential environmental impacts.

Because the soil borrow site has not yet been determined, this project component is described and evaluated in this EIR at a general, programmatic level of detail. Implementation of this

[1] Under the CEQA process, the Yolo County Planning, Public Works Department and Environmental Services, Division of Integrated Waste Management is the principal public agency for carrying out the project, and the Lead Agency conducting the CEQA environmental review.

[2] Yolo County Public Works and Planning Department, 2005. *Final Subsequent Environmental Impact Report (FSEIR), Yolo County Central Landfill Permit Revisions*, May.
The FSEIR focused only on the potential environmental impacts of the various elements that made up the project proposed in 2004, and not on the overall impacts of the operation of YCCL or of already-approved past projects. The FSEIR was a subsequent EIR to a 1992 EIR on the development of the YCCL. The full reference for the 1992 EIR is: Yolo County, 1992. *Final Environmental Impact Report, Yolo County Central Landfill, State Clearinghouse Number 91123015*. Prepared for Yolo County Community Development Agency. Prepared by SCS Engineers in conjunction with Fugro McClelland. October.

project component will require additional, project-level California Environmental Quality Act (CEQA) review after the site has been identified.

The siting criteria presented in the FSEIR for obtaining a steady source of soil (a soil borrow site) for the various landfill operations provided that the selected soil borrow site meet the following criteria:

- Not located within the view shed of a designated or candidate scenic highway;
- Not contain jurisdictional wetlands or other sensitive habitat or biological resources that would be disturbed or destroyed by soil borrow activities, unless such disturbance could be appropriately mitigated;
- Not support special status species that would be disturbed by soil borrow activities, unless appropriately mitigated;
- Have no sensitive receptors (such as residences, schools, hospitals, or parks) within 2,000 feet of areas where soil borrow activities would take place;
- Located where haul trucks would not create a significant unavoidable impact to traffic or traffic safety;
- Not 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;
- Not include significant geologic features that would be disturbed or destroyed by project activities;
- Not located in an identified mineral resource area; and
- Not located in an area that would adversely impact nearby recreation areas or recreational land uses.

The required CEQA analysis for the proposed soil borrow site was started in October 2014 with an Initial Study (IS) (Appendix A) that evaluated the proposed project for environmental impacts. This Environmental Impact Report (EIR) is a project-level EIR and presents an analysis of issues determined in the IS to potentially result in significant environmental impacts.

No changes are proposed for the existing YCCL, and therefore this document does not address environmental impacts related to YCCL operations not directly related to excavation and transportation of soil from the borrow site.

The County is seeking the following approvals and authorizations:

- General Plan Amendment (Yolo County);

- Flood hazard development permit (Yolo County);
- Grading permit (Yolo County);
- Adoption of the Reclamation Plan (Yolo County);
- Coverage under the State Water Board's NPDES General Permit for Discharges of Stormwater Discharges Associated with Construction and Land Disturbance Activities until such time that the excavation is large enough to contain all runoff;

3.1.1 Setting

Site Location and Description

The project site is located approximately 1.3 miles from the northeastern portion of the City of Davis and approximately 3.4 miles from the southeastern portion of the City of Woodland (Figure 3-1). The 323-acre project site consists of a 298-acre parcel (APN 042-100-017) and 25-acre parcel (APN 042-100-018) located adjacent to, and west of, the YCCL at the intersection of County Road (CR) 28H and CR 104. The 25-acre parcel is not proposed to be excavated; future uses on this 25 acres would be subject to additional environmental review. The proposed soil borrow site is a 243-acre rectangular area located on the northern portion of the 323-acre project site (Figure 3-2).[3]

The two parcels on the project site are designated as Agriculture (AG) in the 2030 Countywide General Plan for Yolo County[4] and are zoned as Public and Quasi-Public (PQP).[5] The project includes an application for a minor General Plan Amendment to change the land use designation of the project site to Public and Quasi-Public (PQ) to be consistent with the PQP zoning. The parcels are not under an active Williamson Act contract.

The project site is bounded on the east by CR 104. This section of CR 104 is a little-used gravel road and the County is proposing to abandon the segment between CR 27 and CR 28H (under a separate abandonment application not related to this project). It is expected that the abandonment will be complete sometime in 2015.

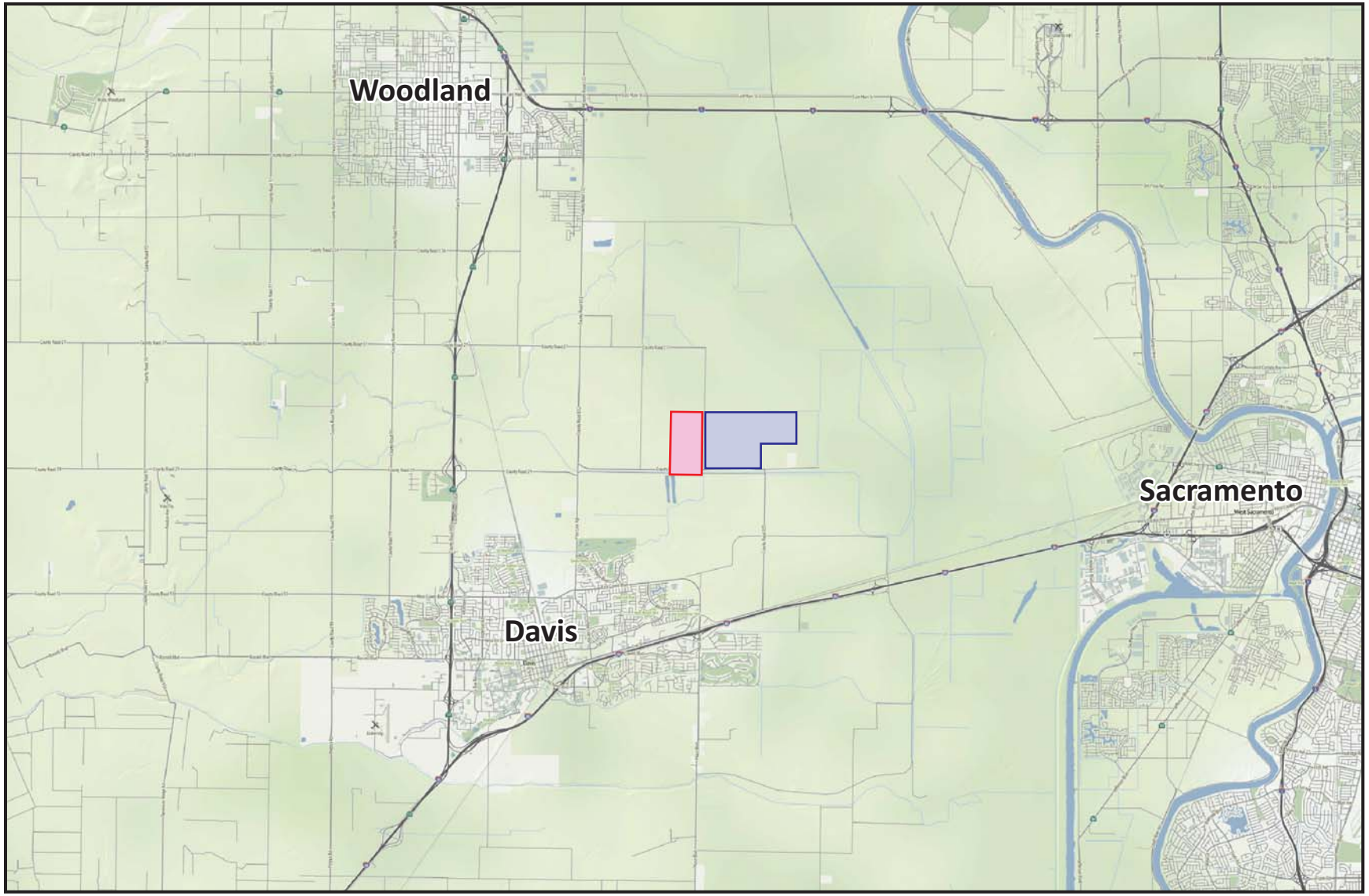
[3] Throughout this document, when the term "project site" is used it is referring to the total 323 acres delineated by the two parcels. When the terms "soil borrow site" or "borrow site" are used it is referring to the 243-acre excavation area.

[4] Yolo County, 2009. *2030 Countywide General Plan*. November.

[5] The Public and Quasi-Public (PQP) zone is applied to lands that are occupied or used for public and governmental offices, places of worship, schools, libraries, and civic uses. Other typical uses include airports, water and wastewater treatment plants, drainage basins, and sanitary landfills. As with park facilities, smaller public/quasi-public uses involving less than 5,000 square feet of building space may be permitted in commercial and some industrial zones.

Regional Location

Figure 3-1



Base: Stamen Design, 2011

Legend

Project Site

Yolo County Central Landfill

0 2.5 Mile

Yolo County Central Landfill
Soil Borrow Site Project

BASELINE ENVIRONMENTAL CONSULTING

Soil Borrow Site Plan

Figure 3-2

Base: Google Earth Pro, 2014.

Legend

- Project Site
- Soil Borrow Site
- PG&E Gas Pipeline Easement
- Monitoring Well Location

0 750 Feet

Yolo County Central Landfill Soil Borrow Site Project

BASELINE ENVIRONMENTAL CONSULTING

Between the 1960s and mid-2000s, the project site was used as an overland flow treatment field for wastewater and stormwater discharged from the Hunt-Wesson tomato cannery facility located about 2.5 miles southwest of the project site. The discharged wastewater was sprayed across the project site via a system of underground piping to facilitate disposal by soil infiltration and evaporation. Discharged wastewater that did not infiltrate or evaporate would flow down the gently eastward sloping site to a ditch along the eastern boundary. Water in the ditch flowed to the south to a recirculation basin in the southeast corner of the field (near the intersection of CR 28H and CR 104). Water would then be pumped back to the spray heads or pumped into the Willow Slough Bypass immediately south of CR 28H. The recirculation basin was equipped with pumps and a small control shed.

Four groundwater monitoring wells are located along the boundaries of the project site (Figure 3-2).[6] The wells were reportedly installed to monitor potential groundwater impacts from the historic wastewater infiltration activities. Historical monitoring data indicate that groundwater levels fluctuate seasonally and vary across the project site at any given time. Based on groundwater levels measured in monitoring wells located around the perimeter of the project site between September 2013 and May 2014, groundwater is encountered between about 8 and 16 feet below the ground surface and at elevations ranging from about 10 to 20 feet (North American Vertical Datum of 1988 [NAVD 88]). A more detailed discussion of groundwater levels is included in the Hydrology and Water Quality section of this Draft EIR.

Since the cannery closed in 1999, the property has been used for cattle grazing. The County recently entered into an agreement with a local farmer to continue farming of the property, which could include grazing, cultivated dry farming, or irrigated farming.

Overall, the project site is relatively flat, with a gentle slope toward the east and south, and elevations ranging from approximately 31 feet (NAVD 88) in the northwest corner to approximately 21 feet (NAVD 88) in the southeast corner near the intersection of CR 28H and CR 104. To support the historic use as a cannery wastewater application site, the project site has been graded into a series of east-west trending low berms with intervening low channels which drain toward the east. The elevation difference between the tops of the berms and the channels is relatively modest, typically only a few feet. The underground piping used to distribute the wastewater is still in-place and would be removed as part of the project. The piping likely contains asbestos (a detailed discussion of the piping composition and how it would be removed is included In the Hazards section of this Draft EIR).

Land Uses in the Project Vicinity

The project site is generally bounded by CR 104 and the existing YCCL to the east, CR 29 and the Willow Slough Bypass to the south, and agricultural operations to the west and north. Land uses in the vicinity of the project site are dominated by agriculture and the YCCL operations.

[6] GeoTrans, Inc., 2004. *Phase I Environmental Assessment and Document Review 99-Acre Main Plant Area and 320-Acre Waste Water Disposal Field Former Hunt-Wesson Plant 1111 E. Covell Boulevard/Road 104 at Road 28H Davis, California*. April.

There are a few farm dwellings in the area, the nearest of which are approximately 0.3 to 0.5 miles to the west. The adjacent property to the west includes some open water ponds and wetlands, surrounded by row-crop agriculture (Figure 3-2).

3.1.2 Regulatory Framework

Relevant Plan and Ordinances

The Surface Mining and Reclamation Act (SMARA) was enacted by the State Legislature in 1975 as a means of minimizing adverse environmental effects of surface mining, ensuring that mined lands are reclaimed to a usable condition, and that the production and conservation of mineral resources are encouraged. The act establishes state policy regarding reclamation of mined lands and minerals management practices, among other things. The proposed project would be subject to the requirements of SMARA.

In 2001, Yolo County adopted the Agricultural Surface Mining and Reclamation Ordinance (Ordinance No. 1276, codified at Yolo County Code of Ordinances § 10-8.101 et seq.). That ordinance was developed so that agricultural operators within the County could improve soil consistency and maintain flood control and drainage features, among other things, under a regulatory program. As stated in the ordinance:

It is the intent of the Board in adopting this ordinance to create a regulatory mechanism consistent with the General Plan that recognizes the need for agricultural surface mining, balanced [by] *other societal values including soil conservation and wildlife habitat. This ordinance will limit agricultural mining and reclamation activities to those that are wholly integral and necessary to the conduct of farm activities, establish performance standards to ensure that the impacts created by agricultural mining and reclamation on surrounding properties are addressed and that productive farmland is safeguarded, and strengthen the County's enforcement abilities.*

The Agricultural Surface Mining and Reclamation Ordinance only applies to areas designated as agricultural lands within the Yolo County General Plan (see Yolo County Code of Ordinances § 10-8.303). Also, the Ordinance does not apply to any mining operation where the mined materials do not leave the property being excavated or are transferred between parcels and there is no exchange of goods and/or services. Given that the property will be designated as Public and Quasi-Public, the ordinance would not apply to the project. The requirements of SMARA, however, would still be applicable.

3.1.3 Project Objectives

The County has identified the following objectives for the proposed project:

- To permit a soil borrow site that would satisfy the need of the YCCL operations for the next 50 years;

- To acquire soil from the nearest feasible location to the YCCL so that operational costs, energy usage, and air emission related to transportation would be minimized to the maximum extent feasible. In accordance with the 2005 Permit Revision EIR siting criteria, the borrow site must be within 5 miles of the YCCL; and

- Continue to utilize the un-excavated portions (and to the extent feasible partially-excavation surfaces) of the property for agricultural purposes as the project progresses.

3.1.4 Project Components

Excavation Plan

The quantity of soil material needed at the YCCL depends on the operations being conducted at the landfill. Typical YCCL needs for daily and intermediate cover range from approximately 50,000 to 100,000 cubic yards per year.[7] During periods when YCCL modules are being constructed or old ones are being closed (generally once every 3 to 4 years), about an additional 200,000 cubic yards of soil are required over the course of 1 to 3 months. Therefore, the maximum estimated excavation and transport of soil material from the borrow site to the YCCL would be 300,000 cubic yards per year (equal to approximately 8 to 10 acres each year). It is estimated that typical daily excavation and transportation rates would range from 150 to 500 cubic yards per day, but could be as much as 3,000 cubic yards per day. Soil excavation and transportation activities would occur primarily during the dry months (May to October) because dry soils would be easier to excavate and transport, but could occur anytime conditions allow.

The soil borrow site is a 243-acre rectangular area that can be accessed from CR 104. The borrow site would be excavated in three phases, with material extracted from the southern portion first (Phase I), followed by the extraction from the center portion and then the northern portion last (Phases 2 and 3) (Figure 3-3). Material would be excavated to a total depth of approximately 12 to 20 feet; excavation or staging of equipment would not occur in the southern portion of the project site near the Willow Slough Bypass (Figure 3-3). Soil would generally be excavated in two lifts (6 to 8 feet in each lift). After excavation of the first lift, the underlying soil would be allowed to dry and once it was sufficiently dry, it would be excavated (to final depth). Depending on the level of the water table and annual rainfall, some areas may remain partially excavated for a number of years before excavation is completed.

[7] These are “in-place” yards. When excavated, the soil would expand and therefore these numbers would increase when considering the number of cubic yards for transport.

Excavation and Phasing Plan

Figure 3-3

Base: Google Earth Pro, 2014.

Legend

- Project Site
- Phase 1 Soil Borrow Area
- Phase 2 Soil Borrow Area
- Phase 3 Soil Borrow Area
- Borrow Access Point

0 750 Feet

Yolo County Central Landfill Soil Borrow Site Project

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Overall final slopes in the borrow area would be not steeper than 3:1 (horizontal:vertical), but could be steeper locally to terraces for reclamation plantings (described in more detail below). Temporary slopes would not be steeper than 2:1. Excavation and grading would occur such that most of the disturbed areas were internally drained (i.e., drainage of the disturbed areas would be toward the newly created lowered surface). Land between the perimeter of the project site and the north, south, and east perimeter of the soil borrow site would be gradually graded at about 2 percent gradient to drain all stormwater into the soil borrow site. Land between the perimeter of the project site and the west perimeter of the soil borrow site would be gradually graded at about 2 percent gradient to drain all stormwater away from the soil borrow site. The grading on the west side would ensure that the western drainage ditch does not drain into the proposed borrow pit during moderate to intense storm events. The proposed southern boundary of the soil borrow site would be set back approximately 600 feet from the top of bank of the Willow Slough Bypass drainage channel. The Willow Slough Bypass empties into the Yolo Bypass to the east. These tributaries ultimately flow to the Sacramento River, which is located approximately 6 miles east of the site.

Soil would be transported from the borrow site to the YCCL using trucks and/or scrapers. There would be three truck transport routes (north, middle and southern routes) between the borrow site and the YCCL. Each haul route would cross CR 104, which forms the western boundary of the YCCL and eastern boundary of the soil borrow portion of the project site.[8] The north and middle routes would provide long-term access to the YCCL and be used throughout the life of the project (Figure 3-3). The south route would be used only during the closure of modules 1 and 2 located at the YCCL southwestern corner (scheduled to occur during the first few years of operation of the proposed borrow site).

The YCCL operators currently obtain soil material from the easternmost portion of the landfill property or from an area south of the inert debris facility located in the southeast portion of the landfill property. These current borrow areas are about the same distance (or greater distance) than the proposed project site borrow area to the soil use area at the landfill. In addition, no change in soil use intensity or excavation/transportation methods would occur under the project. Therefore, the project is not expected to result in increases in duration of equipment use or distance traveled to provide the soil borrow material.

A maximum of about 5 million cubic yards of soil would be removed from the borrow site. Assuming an average of 100,000 cubic yards of soil is needed each year, the life of the project is estimated to be about 50 years. At this average rate, approximately 8 to 10 acres would be excavated each year. Those portions of the borrow site that had not yet been excavated would continue to be farmed until those areas were needed for soil excavation. Landscape screening is proposed along the southern project site boundary as a part of operations and reclamation, to visually screen the excavation activities from CR 28H.

[8] CR 104 would either be abandoned prior to initiation of soil transport (under a separate County process), or if this abandoning is not complete, temporary road closure permits would be acquired.

Schedule and Employees

The existing permitted hours of operation of the YCCL are 6 a.m. to 5 p.m. Monday through Saturday and 7 a.m. to 6 p.m. on Sunday. During typical operations, soil would be excavated and transported during YCCL operating hours. During periods of YCCL module construction or closure, which are estimated to occur every few years, excavation could occur from 4 a.m. to 11 p.m. to meet the soil demand.[9]

The County anticipates that all excavation and trucking operations would be completed by a private contractor (i.e., no new County employees would be hired).

Equipment, Vehicle Trips, and Site Access

Various types of equipment and trucks would be used to excavate and haul soil depending on conditions and demand. During typical periods, when soil is only needed for daily and/or intermediate cover, relatively small amounts of soil would be excavated and transported using approximately 1 to 3 self-elevating scrapers (e.g., Cat 623) operating approximately 4 hours per day and five days per week.

During periods of YCCL module construction/closure or stockpile placement, a relatively large amount of equipment would be used over a fairly short period using a combination of excavators and trucks (highway trucks with bottom dump trailers). Based on the anticipated haul distances, a 60 metric ton excavator can support up to 8 trucks (i.e., keep 8 trucks loaded and moving without excessive wait times). This combination of excavator and trucks can move approximately 70,000 cubic yards of soil per month based on a standard 5-day (Monday through Friday) work week. Based on the size of the project, it is estimated that between 1 and 3 excavators (and the corresponding 8 to 24 trucks) would be used over the course of 1 to 3 months. During the most intensive periods, 3 excavators and 24 trucks operating 8 hours per day and 5 day per week could haul 200,000 cubic yards in one month.[10] These periods are expected to occur every 3 to 5 years.

It is anticipated that the contractor would mobilize heavy equipment (e.g., trucks, excavators, and other equipment) to the borrow site and leave the heavy equipment on-site during moderate- to large-scale soil hauling periods. Daily vehicle trips are anticipated to be largely smaller vehicles (e.g., passenger cars and pick-up trucks) used to transport the workers to and from the borrow site each day.

The project would also enhance and/or create new access routes from the borrow site to the landfill along the landfill's western boundary. Three access routes, capable of accommodating

[9] The December 2012 *Joint Technical Document, Yolo County Central Landfill, Yolo County, California*, Section 1.5 indicates that "facility operations, such as placement or removal of daily cover (soil or alternative daily cover), administrative activities, or other construction activities may occur up to several hours before or after the hours of refuse acceptance" (page 1-3).

[10] Articulated off-road trucks may be used based on the project-specific requirements. However, the scenario with the three 60-ton excavators and 24 trucks operating at the same time is considered the most intensive equipment-use scenario that would occur under the project.

mobilization of excavation equipment and haul trucks on and off the borrow site would be established in the locations shown on Figure 3-3. There is an existing drainage ditch along the eastern boundary of the borrow site. There are already two crossings (fitted with culverts) of the ditch at the northern and middle access locations. The southern access location would be temporary and any soil used to create the access driveway would be removed from the ditch prior to the wet season.

Operations and Facilities

Water supply for dust control would be obtained from the water supply pond located near the center of the landfill. Dust control water needs would vary depending on conditions and volume of excavations, but could be up to 128,000 gallons per day during intensive excavation periods.[11] These intense periods of activity are expected to occur every 3 to 5 years and last for approximately several months. Irrigation of the landscaping screen, which would be installed by the project along CR 28H, would be provided either by the landfill's domestic water well or the domestic well located on the southern portion of the project site. It is expected that the trees would be watered approximately every 3 weeks during the dry season and each watering would require about 24,000 gallons per year for a minimum of three years.

Portable toilet facilities would be used at the project site; no installation of in-ground septic systems are proposed.

Reclamation Plan

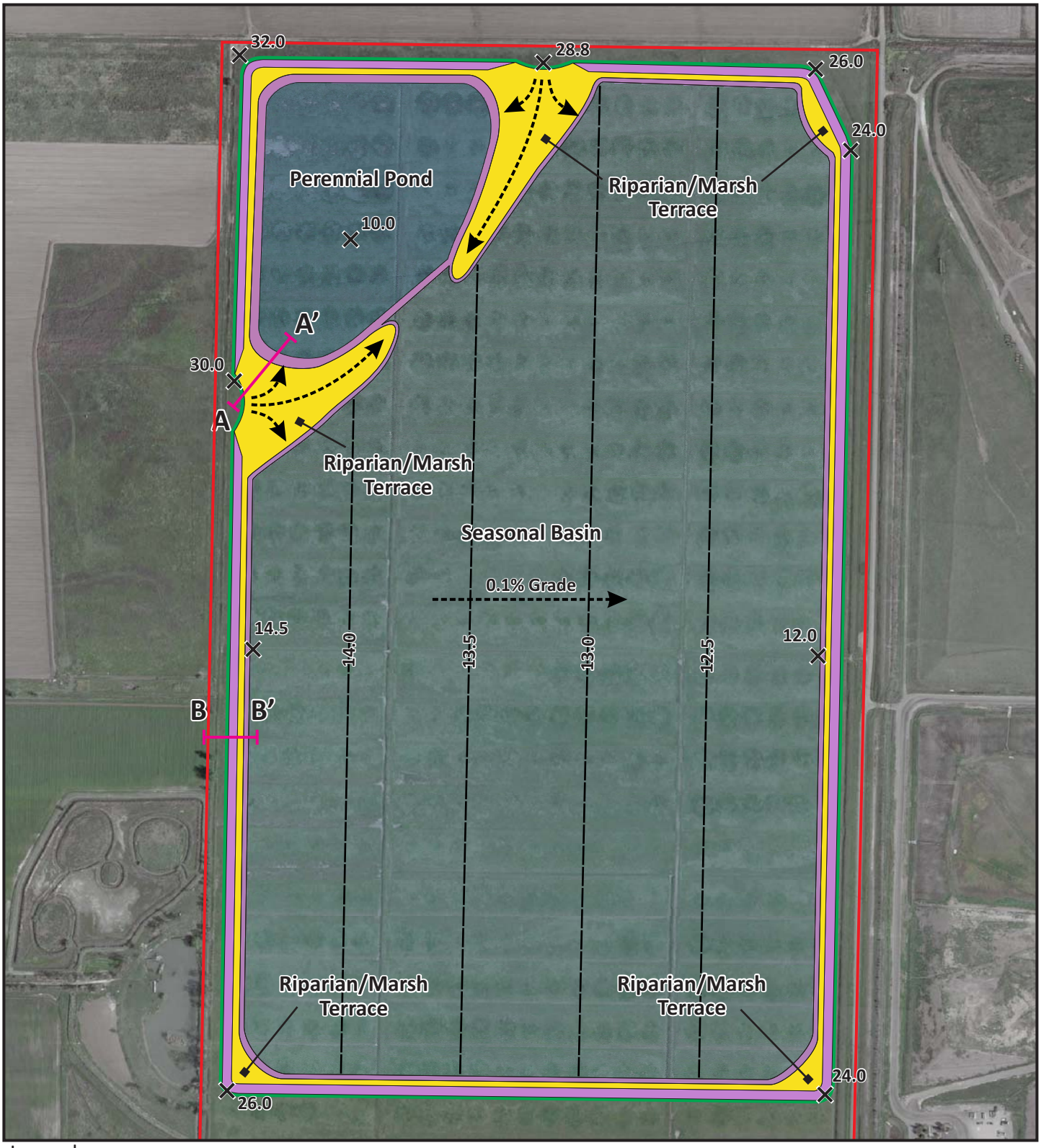
The basin created at the soil borrow site would be reclaimed to perennial and seasonal open water, and the side slopes and property setback areas would be reclaimed to a combination of grasslands, savanna habitat/screen plantings, riparian woodland/scrub, and freshwater marsh habitat, depending on the influence of ground and surface water elevations and other variables (Figure 3-4). It is possible that at some later date stormwater runoff and/or pumped groundwater from the adjacent landfill would be conveyed to the basin created by the soil borrow operations. However, this potential use is not evaluated in this Draft EIR and if the County were to pursue this use, additional CEQA review may be required.

Terraces would be installed around the perimeter side-slopes of the soil borrow site (Figure 3-5) to allow for the establishment of freshwater marsh and riparian habitat, bordered by upland savanna and grassland habitat at upper elevations. The terrace elevations would be established based on the results of on-going monitoring during soil borrow operations, to more accurately understand fluctuations in surface and groundwater conditions, and how to maximize the successful establishment of the desired habitat types.

[11] Assumes two 4,000-gallon water trucks operating simultaneously, each with a load every 30 min for an 8 hour day.

Reclamation Plan Overview

Figure 3-4



Legend

- Project Site
- Soil Borrow Boundary
- Proposed Contour (feet NAVD 88)
- 26.0 Proposed Point Elevation (feet NAVD 88)
- Maximum Slope Excavation (3:1)
- Gradual Slope
- Gradient
- A A' Cross Section Location

Notes: The extent of excavated slopes to be determined based on monitoring. Detailed cross sections shown on Figure 3-5.

0 550 Feet

Yolo County Central Landfill Soil Borrow Site Project

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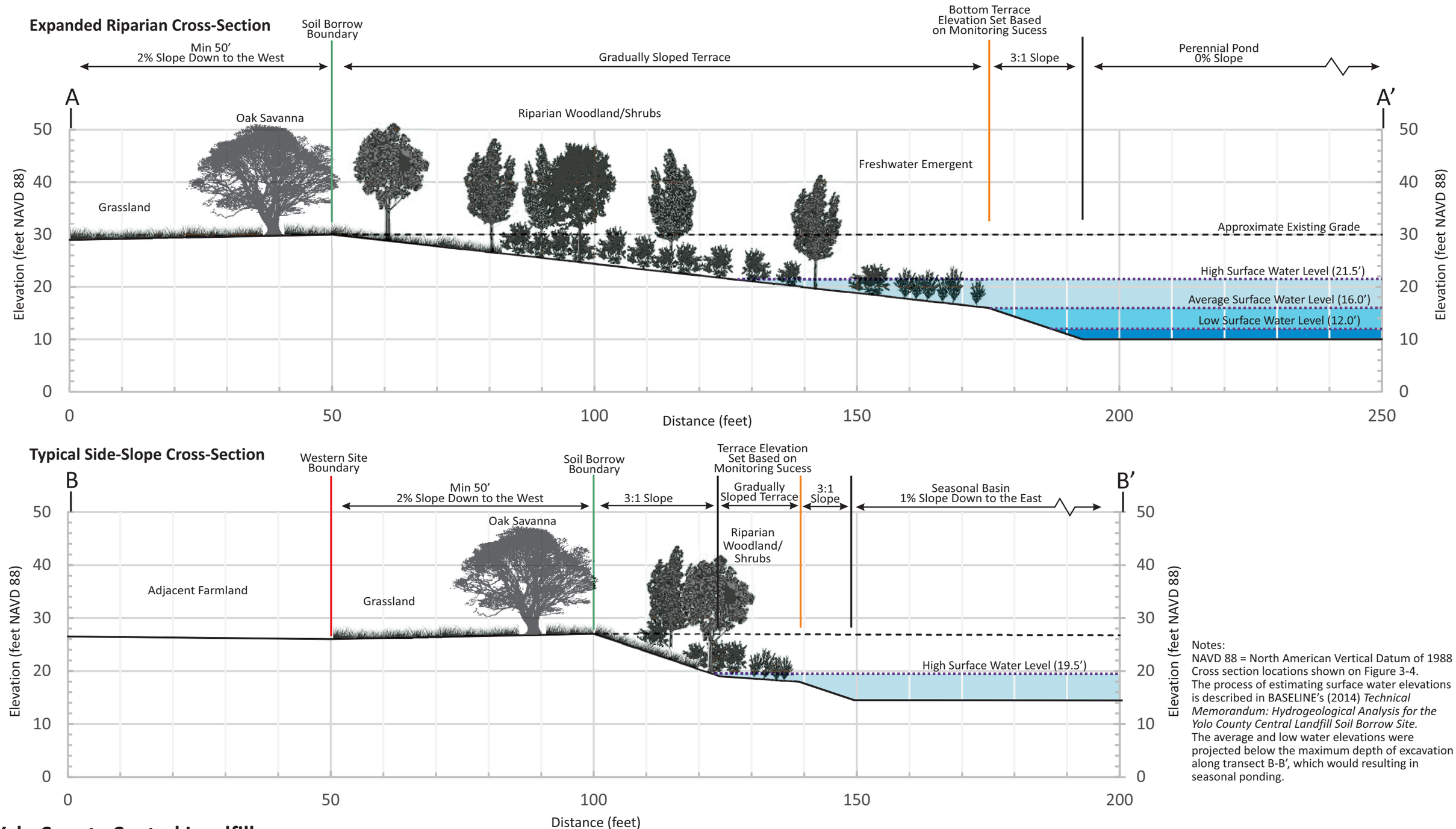
Cross Sections of Side Slopes

Figure 3-5



Notes:
NAVD 88 = North American Vertical Datum of 1988
Cross section locations shown on Figure 3-4.
The process of estimating surface water elevations is described in BASELINE's (2014) *Technical Memorandum: Hydrogeological Analysis for the Yolo County Central Landfill Soil Borrow Site.*
The average and low water elevations were projected below the maximum depth of excavation along transect B-B', which would resulting in seasonal ponding.

Yolo County Central Landfill
Soil Borrow Site Project

BASELINE ENVIRONMENTAL CONSULTING

It is expected that the excavated soil borrow site would partially fill with seasonally fluctuating groundwater (and collect rainfall that falls directly on the soil borrow area of the project site), creating a seasonal pond over most of the basin floor. The northwestern portion of the soil borrow site would be excavated to greater depths to create a perennial water feature for improved wildlife habitat values, bordered by riparian terraces with relatively gentle slopes designed to support broad areas of freshwater marsh and riparian woodland and scrub (Figures 3-4 and 3-5). Maximum water depths (expected during winter and early spring) for the perennial water feature would be on the order of 13 to 15 feet, with depths of about 5 to 8 feet for the shallower seasonal open water. Perimeter fencing would minimize human disturbance of the created habitat. Although not specifically designed for the purpose of improved flood management, the reclaimed borrow site would provide some additional storage capacity during floods.

Reclamation would occur in two stages: temporary and final. As excavation proceeds and areas of the borrow site are fully mined out, the side slopes would be finished-graded at 3:1, track walked, and hydroseeded. These 3:1 slopes would be the temporary reclamation. During excavation of Phase 3 (Figure 3-3), about 16,000 cubic yards of topsoil would be segregated and stockpiled on the borrow pit floor in the Phase 2 area for use during final reclamation.

Revegetation test plots would be established around the perimeter of the soil borrow site during excavation Phases 1 and 2 (Figure 3-3) to allow for a determination of the appropriate elevations to establish the planting terraces for areas of riparian and freshwater marsh habitat. This would allow for a refinement of the final grading plans and the most appropriate revegetation procedures to be followed to ensure successful establishment of the desired vegetation. Final terrace elevations would be determined following monitoring to allow for verification of hydrologic conditions favoring establishment of riparian and freshwater marsh species.

After completion of all soil borrow activities, the final reclamation would include recontouring of the side slopes to include terraces at the appropriate elevation (based on test plot results). Approximately 12 inches of previously stockpiled topsoil would be placed on these re-contoured slopes and revegetated in accordance with the Reclamation Plan. A monitoring and maintenance program would be implemented to ensure the success of the plantings meet the objectives described in the Reclamation Plan. Monitoring would be performed over a minimum of five years following final seeding and plantings.

4 ENVIRONMENTAL ANALYSIS

4.1 AGRICULTURAL RESOURCES

This section evaluates the potential impacts of the proposed project on agricultural resources. It includes a description of the current and past agricultural uses at the project site and in the surrounding area. The section also describes the soil and hydrological properties at the site as they relate to agricultural activities.

4.1.1 Physical Environment

The project site is located in the central portion of the Sacramento Valley, one the most productive agricultural areas of the world. Agriculture is central to culture, history and heritage of Yolo County. In 2013, the gross value of the County's agricultural production was $721,636,091,[12] driving the local and regional economies. The project site is rural and agriculture is the dominant land use. Properties bounding the site on the north and west are large agricultural tracts and the Yolo County Central Landfill bounds the site to the east. The Willow Bypass Slough, an irrigation supply canal and County Road 29, bounds the site to the south.

The project site consists of two parcels (APN 042-100-017 and 018) that are designated as Agriculture (AG) in the 2030 Countywide General Plan for Yolo County and are zoned as Public and Quasi-Public (PQP). The project includes an application for a minor General Plan Amendment to change the land use designation of the project site to Public and Quasi-Public (PQ) to be consistent with the PQP zoning. The parcels are not under an active Williamson Act contract.

Current and Past Agricultural Uses

Currently, the property is being used for cattle grazing. The County currently leases the project site to local farmers for grazing, cultivated dry farming, and/or irrigated farming. Prior to this current use, the project site was used from the 1960s to the mid-2000s as an overland flow treatment field for wastewater and stormwater discharged from the Hunt-Wesson (and later ConAgra) tomato cannery facility located about 2.5 miles southwest of the project site. The discharge water was spread across the project site via a system of underground piping and sprinklers to facilitate disposal by soil infiltration and evaporation. To facilitate the distribution of the water, the site was graded to form a series of low earthen benches or "terraces". The low areas between the terraces ultimately drained to a pump station in the southeastern corner of the project site that could be used to pump water from the irrigation treatment area, when necessary, into the Willow Bypass Slough or onto adjacent farmland.

[12] Yolo County Department of Agriculture and Weights & Measures, 2014. Yolo County 2013 Agricultural Crop Report, available at http://www.yolocounty.org/home/showdocument?id=26474

Discharge of wastewater to the project area ceased in 1999. However, the irrigation system piping and sprinklers (and terraces) have remained in place but are not in use. Following the cessation of wastewater discharge, the land reverted to pasture.

Soil Quality

The Natural Resource Conservation Service (NRCS) has mapped the soil types (also called mapping units) at the borrow site.[13] The soils are generally fine grained developed on alluvium. The predominant soil unit in the northern portion of the site is the Capay silty clay with minor areas of Rincon and Marvin silty clay loam. These three mapping units are the only soils on the site that are classified as "prime soils." The predominant soils in the east-central portion of the site are the drained and undrained Willows Clay. The Pescadero silty clay is found in the west-central portion of the site.

In the late 1990s, the California Regional Water Quality Control Board Central Valley Region (Regional Water Board) raised concerns that the application of tomato cannery wastewater may have raised salinity levels in soils underlying the irrigation treatment area, which could potentially leach downward and impact groundwater quality. In 1999, the Regional Water Board issued a Cease and Desist (Order 99-007) regarding the active Waste Discharge Requirements (Order 99-006) for the discharge of effluent from the land treatment area to Willow Slough Bypass and/or adjacent agricultural lands.

Regional Water Board concerns and the Cease and Desist order prompted site-specific soils sampling and testing and leaching investigations. The general findings of the investigations were that the average electric conductivity (EC), as determined by direct laboratory testing of soil samples and geophysical surveys, suggested that the soils in the north and central portions of the site were slightly saline. The salinity of the soils may have been increased by the application of gypsum (calcium sulfate) as a soil amendment in the 1960s and 1970s. The investigations concluded that these conditions did not present a significant concern for migration of salts to groundwater. It is unclear what effect, if any, the slight increase in soil salinity would have on the agricultural capability of these soils. A comparison of soil analytical results collected from 2001 and 2004 indicated that the average soil salinity across the treatment site was decreasing over time due to rainfall percolation and dilution,[14] indicating that the potential for soil salinity to affect agricultural capability would be expected to decrease over time.

Relatively high EC levels were identified in the southern 20 percent of the site. This is an area mapped as Willows Clay, a soil that naturally has strongly alkaline subsoils. Downward migration of salts in infiltrating water was a Regional Water Board concern in this area. Suggestions for limiting salt migration included compaction of surface soils, dilution of

[13] United States Department of Agriculture, Natural Resources Conservation Service, 2014. Web Soil Survey. http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm. Accessed 2 September.

[14] Brown and Caldwell, 2004. *ConAgra Grocery Products Company, Davis Cannery Land Treatment Site, Revised Site Investigation and Closure Report*. 26 October.

infiltrating waters with less saline water, or soil removal.[15] An Operations Plan[16] was developed by the property owner at that time and submitted to the Regional Water Board. On the basis of the results and conclusions of the investigation and the Operations Plan, the Regional Water Board rescinded a Cease and Desist Order imposed on the site[17] and determined that no further actions were required.

Regulatory Environment

State

The California Land Conservation Act of 1965-commonly referred to as the Williamson Act-enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments which are lower than normal because they are based upon farming and open space uses as opposed to full market value. The Yolo County Williamson Act Guidelines specify that a property eligible for a contract must be designated "Agricultural" under the 2030 Countywide General Plan for Yolo County and be located within an Agricultural Preserve. Further, the property must be zoned A-N (Agricultural Intensive) or A-X (Agricultural Extensive). The project site is not enrolled in a Williamson Act Contact.

The California Department of Conservation Farmland Mapping and Monitoring Program (FMMP) produces maps and statistical data used for monitoring and analyzing impacts on California's agricultural resources, including conversion of important agricultural lands to non-agricultural uses. The FMMP classifies the importance of land on the basis of soil conditions, land uses, and other factors. The most important lands (i.e., highest quality land for agricultural purposes) are designated "Prime Farmland" followed in descending importance (i.e., agricultural quality) by "Unique Farmland" and "Farmland of Statewide Importance." Lands not meeting the requirements for these designated farmland classifications are designated as "Other Lands."

2030 Countywide General Plan for Yolo County

The Agriculture and Economic Element of the 2030 Countywide General Plan for Yolo County describes existing agricultural resources in Yolo County and the importance and value of the agricultural resources to the economy and character of the County. The element presents goals, policies, and actions intended to support, conserve and protect the County's agricultural resources and industry. The following goals, policies, and actions of the 2030 Countywide General Plan for Yolo County related to the agricultural resources are relevant to the proposed project (goals and policies that are not directly relevant are excluded):

[15] Ibid

[16] Brown and Caldwell, undated. Lewis Homes ConAgra-Davis Overflow Site Closure Operations Plan

[17] California Regional Water Quality Control Board Central Valley Region, 2005. Rescission of Waste Discharge Requirements Order No. 99-006 and Cease and Desist Order No. 99-007, Hunt-Wesson, Inc., Conaway Ranch and Hendricks Farms, Yolo County, Order No. R5-2005-0036, March.

Goal AG-1: Preservation of Agriculture. Preserve and defend agriculture as fundamental to the identity of Yolo County.

Policy AG-1.3: Prohibit the division of agricultural land for non-agricultural uses.

Policy AG-1.4: Prohibit land use activities that are not compatible within agriculturally designated areas.

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:

A. There is a 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 Agriculture.

Policy AG-1.6: Continue to mitigate at 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.

Policy AG-1.14: Preserve agricultural lands using a variety of programs, including the Williamson Act, Farmland Preservation Zones (implemented through the Williamson Act), conservation easements, an Agricultural Lands Conversion Ordinance and the Right-to-Farm Ordinance.

Action AG-A1: Amend the Agricultural Mitigation Ordinance to direct agricultural mitigation to areas that promote open space connectivity and are in close proximity to existing growth boundaries for the communities and cities within the County.

Action AG-A5: Amend the agricultural mitigation ordinance to specify that ancillary uses must be clearly subordinate to the primary agricultural use, particularly with regards to home sites.

In addition to policies related to agricultural resources, there are the following policies and action programs related to rural land uses around the Central County Landfill in the Public Facilities and Services Element:

Policy PF-9.2: Manage property to ensure adequate landfill space for existing and planned land uses.

Action PF-A50: Acquire sufficient land to maintain long-term landfill operations, including property for mitigation and soil cover.

Action PF-A59: Designate lands in the vicinity of the landfill and other waste-related processing and transfer facilities through the 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. (Policy PF-9.2)
Responsibility: Planning and Public Works Department
Timeframe: Ongoing

Action PF-A60: Acquire easements on 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.

Yolo County Agricultural Conservation and Mitigation Program

The Agricultural Conservation and Mitigation Program Ordinance (Section 8-2.404 of the Yolo County Code) requires mitigation when farmland is converted to non-agricultural uses for development purposes. The ordinance requires dedication of one acre of proximate (within a two- or four-mile radius of the project site) and equivalent (in soils quality and irrigation) agricultural land, through the acquisition and dedication of a permanent agricultural conservation easement for each acre of agricultural land converted. The ordinance outlines the soil, irrigation and other requirements of land that can qualify as agricultural mitigation. The Ordinance exempts certain uses from the mitigation requirements, including affordable housing; and "public uses such as parks, schools, and cultural institutions."

A companion set of regulations, the In-Lieu Agricultural Mitigation Fee Ordinance (Section 8-2.405 of the Yolo County Code), sets a per-acre mitigation fee (currently $10,100) and allows small projects (currently defined as five acres or less in size) to pay the fee instead of acquiring and dedicating an agricultural conservation easement.

At the time of this writing (January 2015) both of the Mitigation Ordinances are being reviewed for possible amendments and updates which may affect the location of required conservation easements, the size of the project that may be allowed to pay an in-lieu fee, and the amount of the fee. These changes are not anticipated to impact the mitigation intended for the project.

2005 Yolo County Central Landfill Permit Revision EIR

The YCCL Permit Revision Project proposed a variety of changes to the design and operation of the YCCL, including the purchase of additional land for the development of a soil borrow area.[18] The Land Use and Planning Section of the EIR for that project analyzed the potential impacts on agricultural resources that could result from implementation of that project. The following

[18] Yolo County Public Works and Planning Department, 2005. Final Subsequent Environmental Impact Report (SEIR), Yolo County Central Landfill Permit Revisions. May.

mitigation measures were identified to reduce the potential impacts to a less-than-significant level:

> 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 some of 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 theses 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.
>
> 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, redesignating 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.

Implementation of these mitigation measures was determined to reduce the potential impacts related to agricultural resources for the soil borrow area to a level of less than significant. However, as the specific location of the soil borrow site was not known when the EIR was prepared, it was noted that this impact would have to be re-visited in a project-level environmental review when the off-site borrow area was identified. The impacts associated with the proposed project are evaluated below.

4.1.2 Impacts and Mitigation Measures

Significance Criteria

The proposed project would result in a significant impact if it would:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to a non-agricultural use;

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract;

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g));

d) Result in the loss of forest land or conversion of forest land to non-forest use; or

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.

Impacts Found Less than Significant in Initial Study

The Initial Study evaluated the potential impacts of the proposed project that would occur during soil excavation, transportation, and reclamation activities based on the significance criteria listed above. As summarized below, the project was found not to have a significant impact based on significance criteria (b), (c), and (d).

Conflict with existing zoning for agricultural use, or a Williamson Act contract

The project site is not currently enrolled in a Williamson Act contract. The entire site is currently zoned as Public and Quasi-Public (PQP). The PQP zone is applied to lands that are occupied or used for public and governmental offices, places of worship, schools, libraries, and civic uses. Other typical uses include airports, water and wastewater treatment plants, drainage basins, and sanitary landfills. Although the site is designated in the General Plan as Agriculture (AG), the project proposes to change the designation of the site to Public and Quasi-Public (PQ) to be consistent with the PQP zoning and with the recent acquisition of the property by the County, and to reflect the intended future use of the site as a borrow pit to supply cover soils for continuing operations at the YCCL. Since the project would not conflict with existing zoning for agricultural use or a Williamson Act contract, this was found not to be an impact in the Initial Study and is not evaluated further in this Draft EIR.

Conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production

There are no forest or timberland resources at the site. Therefore, this was found not to be an impact in the Initial Study and is not evaluated further in this Draft EIR.

Result in the loss of forest land or conversion of forest land to non-forest use

There are no forest land resources at the site. Therefore, this was found not to be an impact in the Initial Study and is not evaluated further in this Draft EIR.

Impact Analysis

Impact AG-1: The project would convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a non-agricultural use. (Significant)

The State Farmland Mapping and Monitoring Program (FMMP) does not designate the site farmland classification as "Prime Farmland" "Unique Farmland" or "Farmland of Statewide Importance." The entire site is classified as "Other Lands."[19] The FMMP also maintains and updates lists of "Soil Candidate Listing for Prime Farmland and Farmland of Statewide Importance" for each county. Some of the soils on the site are identified soil candidates for prime or important farmland, particularly the Capay silty clay and Marvin and Rincon silty clay loams (which occupy about 40 percent of the borrow site).

The FMMP classification system is based on the Natural Resource Conservation Service (NRCS) system that is used to define farmland classifications. The most up-to-date NRCS classification of soils at the site[20] indicates that the northern areas of the soil borrow site with Capay silty clay, Marvin silty clay loam, and Rincon silty loam (about 33% of the soil borrow area) are classified as Prime Farmland. Areas within the southern portion with Willow clays (about 32% of the soil borrow area) are classified as Farmland of Statewide Importance. The remaining areas in the central portion of the site (35%), underlain by the Pescadero silty clay loams, are classified as Non-Prime Farmlands (Figure 4.1-1).

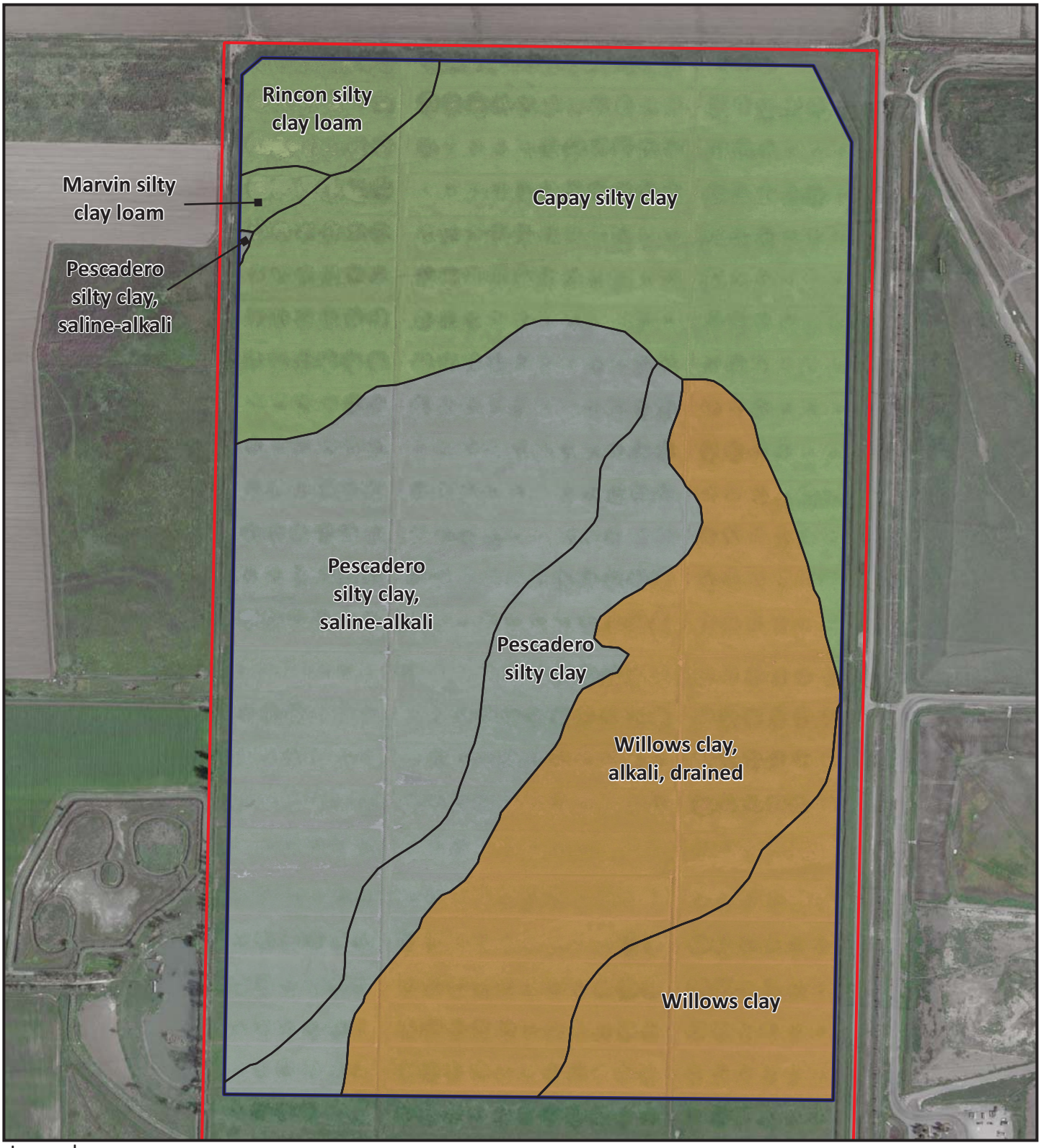
The NRCS has also identified "land capability classes" which generally reflect the suitability of individual soil mapping units for appropriate uses based on the quality of the soil. Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The classifications are ranked numerically from 1 to 8 (formerly assigned corresponding Roman numerals). The first four (best quality) classes are generally described as follows:

[19] California Department of Conservation Farmland Mapping and Monitoring Program (FMMP), 2014, Yolo County Important Farmland Map 2012. April.

[20] United States Department of Agriculture, Natural Resources Conservation Service, 2014. Web Soil Survey. http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm. Accessed 2 September.

Soil and Farmland Classifications

Figure 4.1-1



Legend

- Project Site
- Soil Borrow Boundary
- Soil Unit Boundary
- Prime Farmland
- Farmland of Statewide Importance
- Non-Prime Farmlands

Note: Soil classifications based on the most recent Natural Resources Conservation Service soil survey.

Yolo County Central Landfill
Soil Borrow Site Project

0 550 Feet

BASELINE ENVIRONMENTAL CONSULTING

Class I (1) soils have slight limitations that restrict their use.

Class II (2) soils have moderate limitations that reduce the choice of plants or require moderate conservation practices.

Class III (3) soils have severe limitations that reduce the choice of plants or require special conservation practices, or both.

Class IV (4) soils have very severe limitations that restrict the choice of plants or require very careful management, or both.

The Capay silty clay, Marvin silty clay loam, Rincon silty clay loam, and Willows clay are classified as Class 2 soils, having moderate limitations. The Pescadero silty clay is a Class 3 soil with severe limitations. Finally, the Pescadero silty clay, saline-alkali and Willows clay, alkali, drained are Class 4 with very severe limitations.

The specific reason for the discrepancies between the FMMP and NRCS classifications is not known. It is likely that these soils were not included as Prime or Important Farmland under the FMMP mapping system because they were being used as a cannery wastewater spray field or because the land had not been irrigated for agricultural production in recent years. Regardless, the NRCS mapping (which is used as the technical basis for FMMP mapping) designates portions of the borrow site as Prime Farmland (80 acres) and Farmland of Statewide Importance (76 acres) The conversion of this 243 acres of agricultural land to a non-agricultural use would be a significant impact under CEQA. Although the Agricultural Conservation and Mitigation Program Ordinance exempts public uses from the mitigation requirements, the proposed borrow site is subject to the adopted Mitigation Measures presented in the 2005 Permit Revision EIR.

Mitigation Measure AG-1a:

As required by Mitigation Measure 3.6.1e in the adopted 2005 Permit Revision EIR, "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 Measure AG-1b:

To comply with Mitigation Measure AG-1a, the project may purchase and dedicate a conservation easement or pay an in-lieu fee, according to the Agricultural Conservation and Mitigation Program Ordinance. A conservation easement may be dedicated or the project may pay an in-lieu fee on an annual or biannual basis that is equivalent to the amount of agricultural land (in acres) that is excavated during the applicable time period and which is

not reclaimed to a viable agricultural use such as grazing. The project is anticipated to excavate approximately 8 to 10 acres per year.

Impact AG-2: The project would convert agricultural land to a non-agricultural use. (Significant)

Soils on portions of the borrow site which are not classified by the NRCS as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (see Impact AG-1) are classified as Non-Prime Farmland. Some soils have severe to very severe limitations for use in crop production. However all portions of the project are currently used for grazing and under the current lease could potentially be used for other agricultural uses. Although the site is designated as "Other Land" by the FMMP, the FMMP mapping system includes the classification "Grazing Land" implying grazing as farmland activity which should be monitored by the program. This use may be reasonably interpreted as use as farmland. Excavation of the site and reclamation to open water/wildlife use would be a conversion to non-agricultural use. This conversion would be a significant impact.

Mitigation Measure AG-2:

Implement Mitigation Measure AG-1.

Cumulative Effects

Impact CUMULATIVE AG-1: Implementation of the project and the 2030 Countywide General Plan for Yolo County in conjunction with other planned development in the region would contribute cumulatively to loss of agricultural land. (Significant and Unavoidable)

The borrow site project is a project that is anticipated as part of the cumulative growth allowed by the 2030 Countywide General Plan for Yolo County. The EIR for the 2030 Countywide General Plan for Yolo County discussed 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."

Mitigation Measure CUMULATIVE AG-1:

None available. This impact remains significant and unavoidable.

4.2 AIR QUALITY

4.2.1 Introduction

This section evaluates the potential air quality impacts of the proposed project. It includes a description of the common air pollutants of concern and the existing air quality conditions in the project vicinity, a summary of relevant laws, regulations, policies and plans, and an air quality impact assessment for the proposed project. This analysis was conducted following guidance provided by Yolo-Solano Air Quality Management District (YSAQMD).[21]

4.2.2 Setting

Physical Environment

The project is located in the YSAQMD, which includes all of Yolo County and the northeast portion of Solano County. The YSAQMD is located in the southeast portion of the Sacramento Valley Air Basin (SVAB). Air quality in the SVAB is influenced by the regional climate, meteorology, and topography, in addition to the presence of existing air pollution sources and ambient conditions. The following discussion provides an overview of the physical and regulatory setting for air pollutants of concern in the SVAB. The information presented in this section is primarily from the YSAQMD's *Handbook for Assessing and Mitigating Air Quality Impacts*.[22]

Climate, Topography, and Meteorology

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. The SVAB is bounded by the North Coast Ranges on the west and Northern Sierra Nevada Mountains on the east. The project site is located on the floor of the Sacramento Valley, which is relatively flat. The SVAB has a Mediterranean climate characterized by hot dry summers and mild rainy winters. 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.

[21] YSAQMD, 2007. Handbook for Assessing and Mitigating Air Quality Impacts. 11 July.
[22] Ibid.

The ozone season (May through October) in the Sacramento Valley is characterized by stagnant morning air or light winds with the delta sea breeze arriving in the afternoon out of the southwest. Usually the evening breeze transports the airborne pollutants to the north out of the 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 circle back to the south. Essentially, this phenomenon causes the air pollutants to be blown south toward the YSAQMD. This phenomenon has the effect of exacerbating the pollution levels in the area and increases the likelihood of violating federal or state standards. The eddy normally dissipates around noon when the delta sea breeze arrives.

Air Pollutants of Concern

The California Air Resources Board (CARB) and the United States Environmental Protection Agency (USEPA) currently focus on the following air pollutants as indicators of ambient air quality: ozone, particulate matter (PM), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), and lead. Because these are the most prevalent air pollutants known to be deleterious to human health and extensive health-effects criteria documents are available, they are commonly referred to as the six "criteria air pollutants." As described further below, the primary pollutants of concern in the YSAQMD are ozone and PM.

Ozone

While ozone serves a beneficial purpose in the upper atmosphere (stratosphere) by reducing ultraviolet radiation potentially harmful to humans, it can be harmful to the human respiratory system and to sensitive species of plants when it reaches elevated concentrations in the lower atmosphere. Ozone is not emitted directly into the environment, but is formed in the atmosphere by complex chemical reactions between gaseous precursors, such as reactive organic gases (ROG) and oxides of nitrogen (NOx), in the presence of sunlight.

The primary sources of ROG are mobile sources (including automobiles), consumer products, petroleum marketing (e.g., gas dispensing), coatings and solvents, and agricultural related activities. NOx is a family of gaseous nitrogen compounds whose emissions result primarily from the combustion of fossil fuels under high temperature and pressure. Automobiles are the single largest source of ozone precursors in the SVAB. In 2005, on-road sources contributed about 28 percent of ROG and 61 percent of NOx emissions in the Sacramento Metropolitan Area.[23,24]

Short-term ozone exposure 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-

[23] This area includes the southern part of the Sacramento Valley Air Basin as well as the western portion of El Dorado County and the western and central portions of Placer County.
[24] CARB, 2013. The California Almanac of Emissions and Air Quality - 2013 Edition.

existing respiratory disease (e.g., asthma, chronic bronchitis, and emphysema) are at greater risk. Ozone can also damage plants and trees, and materials such as rubber and fabrics.

Particulate Matter

Particulate matter refers to a wide range of solid or liquid particles in the atmosphere, including smoke, dust, aerosols, and metallic oxides. There are two fractions of PM emissions that are regulated based on aerodynamic resistance diameters equal to or less than 10 microns (PM_{10}) and 2.5 microns ($PM_{2.5}$). Some sources of PM, like pollen, forest fires, and windblown dust, are naturally occurring. The primary manmade sources of PM in the Sacramento Metropolitan Area include fugitive dust from roads and construction activities, particulates from residential fuel combustion (including wood), and waste burning.[25]

PM_{10} is of concern because it bypasses the body's natural filtration system more easily than larger particles, and can lodge deep in the lungs. $PM_{2.5}$ poses an increased health risk because the particles can deposit deep in the lungs and may contain substances that are particularly harmful to human health. 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.

Regional Ambient Air Quality

California and national ambient air quality standards (CAAQS and NAAQS, respectively) have been developed by the CARB and USEPA, respectively, for the six criteria air pollutants to assess regional air quality impacts. California has also established ambient air quality standards for sulfates, visibility reducing particles, hydrogen sulfide, and vinyl chloride. The CAAQS and NAAQS are intended to incorporate an adequate margin of safety to protect the public health and welfare, including people who are most susceptible to air pollutants, known as "sensitive receptors."

The CAAQS, which are based on meteorological conditions unique to California, are either equal to or more stringent than the NAAQS. Areas in California are classified as either in "attainment" or "non-attainment" for each criteria air pollutant, based on whether or not the NAAQS or CAAQS have been achieved. To assess the regional attainment status, the YSAQMD collects air quality data from four State and Local Air Monitoring Stations (SLAMS). Based on the monitoring data, the YSAQMD is currently designated a "non-attainment" area for the 1-hour state ozone standard, the 8-hour state and federal ozone standards, and the 24-hour and annual state PM_{10} standards. Yolo County is also designated a "partial non-attainment" area for the federal $PM_{2.5}$ standard. The YSAQMD is designated as an attainment or unclassified area for all other pollutants (Table AQ-1).

[25] CARB, 2013. Op cit.

Table AQ-1: Ambient Air Quality Standards and Attainment Status

		CAAQS		NAAQS	
Pollutant	**Averaging Time**	**Concentration**	**Status**	**Concentration**	**Status**
Ozone	1-Hour	0.09 ppm	N	---	---
	8-Hour	0.070 ppm	N	0.075 ppm	N
CO	1-Hour	20 ppm	A	35 ppm	U/A
	8-Hour	9.0 ppm	A	9 ppm	U/A
NO_2	1-Hour	0.18 ppm	A	0.1 ppm	NR
	Annual	0.030 ppm	NR	0.053 ppm	A
SO_2	1-Hour	0.25 ppm	A	0.075 ppm	NR
	24-Hour	0.04 ppm	A	0.14 ppm	A
	Annual	---	---	0.030 ppm	A
PM_{10}	24-Hour	50 µg/m^3	N	150 µg/m^3	U
	Annual	20 µg/m^3	N	---	---
$PM_{2.5}$	24-Hour	---	---	35 µg/m^3	Partial N
	Annual	12 µg/m^3	NR	12.0 µg/m^3	A
Sulfates	24-Hour	25 µg/m^3	A	---	---
Lead	30-Day	1.5 µg/m^3	A	---	---
	Calendar Quarter	---	---	1.5 µg/m^3	A
	3-Month Rolling	---	---	0.15 µg/m^3	NR
Hydrogen Sulfide	1-Hour	0.03 ppm	A	---	---
Vinyl Chloride	24-Hour	0.01 ppm	A	---	---
Visibility Reducing Particles	8-Hour	---	A	---	---

Sources: CARB website: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf.
YSAQMD website: http://www.ysaqmd.org/AttainmentPlanning.php.

Notes:
A = attainment; N = non-attainment; U = unclassified; NR = not reported; ppm = parts per million; µg/m^3 = micrograms per cubic meter; "---" = not applicable

Local Air Quality

The four SLAMS in the YSAQMD collectively monitor ozone, PM_{10}, and $PM_{2.5}$, which are the primary pollutants of concern that have resulted in a "non-attainment" air quality status. The nearest monitoring station to the soil borrow site is the Woodland-Gibson Road station located approximately 4.3 miles northeast of the borrow site. Since 2011, the highest annual concentrations of ozone, PM_{10}, and $PM_{2.5}$ reported from the Woodland air monitoring station are summarized in Table AQ-2. The number of days that ozone, PM_{10}, and $PM_{2.5}$ exceeded the CAAQS or NAAQS over this time period are also summarized in Table AQ-2. Ozone levels measured in the City of Woodland exceeded the CAAQS and NAAQS in 2011 and 2012. PM_{10}

levels exceeded the CAAQS in 2011, 2012, and 2013, and $PM_{2.5}$ levels exceeded the NAAQS in 2011.

Table AQ-2: Local Air Pollutant Summary: Woodland-Gibson Road Monitoring Station

Pollutant	Standard	Highest Air Pollutant Concentrations			Days Exceeding Standard		
		2011	2012	2013	2011	2012	2013
Ozone	State 1-Hr	0.088	0.101	0.080	0	1	0
	State 8-Hr	0.073	0.080	0.067	2	9	0
	National 8-Hr	0.072	0.080	0.067	0	2	0
PM_{10}	State 24-Hr	56.6	56.8	61.5	6.1	6.1	23.3
	State Annual	19.1	18.1	22.9	---	---	---
$PM_{2.5}$	National 24-Hr	39.4	14.6	22.0	*	0	0

Source: CARB website: http://www.arb.ca.gov/adam/trends/trends1.php

Notes: Hr = hour; "---" = not applicable
Shaded values exceed current ambient air quality standards.
Ozone concentrations reported in ppm and PM concentrations reported in $\mu g/m^3$.
PM concentrations reported in $\mu g/m^3$ from the Woodland-Gibson Road monitoring station.
* There was insufficient (or no) data available to determine the value.

Federal

The USEPA is responsible for implementing national air quality programs established under the 1977 federal Clean Air Act (CAA). The USEPA is involved with global, international, national, and interstate air pollution issues. Its primary role at the state level is one of oversight of state air quality programs. The USEPA sets federal vehicle and stationary source emission standards and provides research and guidance on air pollution programs.

Under the CAA, the USEPA has established two types of NAAQS: primary standards, which protect public health, and secondary standards, which protect the public welfare from non-health-related adverse effects such as visibility reduction. The primary NAAQS are summarized in Table AQ-1 and are intended to protect, with an adequate margin of safety, those persons most susceptible to respiratory distress, such as people suffering from asthma or other illness, the elderly, very young children, or people engaged in strenuous work or exercise.

The CAA requires each state to prepare an air quality control plan referred to as the State Implementation Plan (SIP). States containing areas that exceed the NAAQS are required to revise their SIPs in order to incorporate additional control measures to reduce air pollution. The SIP is a living document that is periodically modified to reflect the latest emission inventories, planning documents, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The USEPA has responsibility to review all state SIPs to determine if they conform to the mandates of the CAA and will achieve air quality goals when implemented. If the USEPA determines a SIP to be inadequate, it may prepare a Federal Implementation Plan for the non-attainment area and may impose additional control measures. Failure to obtain an approved SIP or to implement the plan within mandated timeframes can result in limitations

being applied to transportation funding and sanctions being placed on stationary air pollution sources in the air basin.

State

CARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing its own air quality legislation, called the California Clean Air Act (CCAA), adopted in 1988. CARB has the primary responsibility in California for developing and implementing air pollution control plans designed to achieve and maintain the NAAQS established by the USEPA. Whereas CARB has primary responsibility and produces a major part of the SIP for pollution sources that are statewide in scope, it relies on the local air districts to provide additional strategies for sources under their jurisdiction. CARB combines its data with all local district data and submits the completed SIP to the USEPA. The SIP consists of the emissions standards for vehicular sources and consumer products set by CARB, and attainment plans adopted by the air districts and approved by CARB.

States may establish their own standards, provided the state standards are at least as stringent as the NAAQS. California has established CAAQS pursuant to Health and Safety Code (H&SC) §39606(b) and its predecessor statutes. The CAAQS are summarized in Table AQ-1. Under H&SC §39608, CARB is also required to "identify" and "classify" each air basin in the state on a pollutant-by-pollutant basis. Subsequently, CARB has designated areas in California as nonattainment based on violations of the CAAQS.

For all non-attainment categories except PM, attainment plans are required to demonstrate a five-percent-per-year reduction in non-attainment air pollutants or their precursors, averaged over consecutive three-year periods, unless an approved alternative measure of progress is developed. In addition, the air districts in violation of CAAQS are required to prepare an Air Quality Attainment Plan (AQAP) that lays out a program to attain and maintain the CCAA requirements.

CARB has established and maintains, in conjunction with the air districts, the SLAMS network that monitors actual pollutant levels present in the ambient air. The data generated at a SLAMS can be used to determine both the state and federal attainment status of an air district and evaluate the effectiveness of air quality rules and regulations.

CARB also sets emissions standards for new motor vehicles, consumer products, small utility engines, and off-road vehicles. In many cases, California standards are the toughest in the nation. State law recognizes that air pollution does not respect political boundaries and therefore requires the CARB to divide the state into separate air basins that have "similar geographical and meteorological conditions" while still making "considerations for political boundary lines whenever practicable".[26]

[26] H&SC §39606(1)

Local

The YSAQMD was established in 1971 by a joint powers agreement between the Yolo and Solano County Board of Supervisors. The YSAQMD is governed by a Board of Directors composed of representatives from both the county boards of supervisors and city council members from the cities within the YSAQMD. The YSAQMD has jurisdiction over all of Yolo County and the northeast portion of Solano County, from Vacaville on the west, to Rio Vista on the South.

The YSQAMD is tasked with achieving and maintaining healthful air quality for its residents. This is accomplished by establishing programs, plans, and regulations enforcing air pollution control rules in order to attain all state and federal ambient air quality standards and minimize public exposure to airborne toxins and nuisance odors. YSAQMD has adopted the following attainment plans to achieve state and federal air quality standards and comply with CAA and CCAA requirements:

- The 1992 Yolo-Solano Air Quality Attainment Plan (AQAP);
- The 1994 Sacramento Area Regional Ozone Attainment Plan; and
- The 2008 Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan.

In May 1992, the YSAQMD adopted the AQAP that identifies feasible emission control measures to reduce emissions of ozone and attain state ozone standards (the CCAA does not require attainment plans for PM). The AQAP control measures focus on emission sources under YSAQMD's authority, specifically, stationary emission sources and some area-wide sources. The AQAP is updated every three years based on an evaluation of existing emissions and projections of population, industry, and vehicle-related emissions growth. The AQAP was most recently updated in accordance with the 2010 *Triennial Assessment and Plan Update*.[27]

The 1994 *Sacramento Area Regional Ozone Attainment Plan* is the current federal ozone plan (SIP) for the YSAQMD, and sets out stationary source control programs and statewide mobile source control programs for attainment of the national 1-hour ozone standard. In 2005, the national 1-hour ozone standard was revoked by the USEPA; however, a court decision found that areas that were subject to certain planning requirements based on their 1-hour ozone non-attainment designation were still obligated to meet those requirements even though the standard had been revoked. The 2008 *Sacramento Regional 8-Hour Ozone Attainment and Reasonable* Further *Progress Plan* continues the strategies found in the 1-hour ozone SIP. As of

[27] YSAQMD, 2010. Triennial Assessment and Plan Update. May.

15 October 2014, the USEPA proposed approval of the YSAQMD's revision to the SIP to include the 8-hour attainment plan pending a public review period.[28]

YSAQMD continuously monitors its progress in implementing attainment plans and must periodically report to CARB and USEPA. The YSAQMD, in partnership with the five air districts in the Sacramento Metropolitan Area, CARB, and the Sacramento Area Council of Governments, periodically revises its attainment plans to reflect new conditions and requirements in accordance with schedules mandated by the CAA and CCAA.

2030 Countywide General Plan for Yolo County

The Conservation and Open Space Element of the 2030 Countywide General Plan for Yolo County describes the physical setting and regulatory framework of air quality in Yolo County and presents goals, policies, and actions intended to improve air quality. The following goal, policy, and action of the General Plan related to air quality are relevant to the proposed project:

> *Goal CO-6:* Air Quality. Improve air quality to reduce the health impacts caused by harmful emissions.
>
> > *Policy CO-6.2:* Support local and regional air quality improvement efforts.
> >
> > > *Action* CO-A97*:* Implement the regulations and programs established by the YSAQMD to bring local air quality into attainment with State and federal standards.

2005 Yolo County Central Landfill Permit Revision EIR

The YCCL Permit Revision Project proposed a variety of changes to the design and operation of the YCCL, including the purchase of additional land for the development of a soil borrow area. The air quality analysis evaluated the daily rate of criteria pollutant emissions from all landfill operations, including the transport of soils from a borrow site within 5 miles of the landfill, and found that unmitigated emissions would have a significant impact on air quality. To reduce emissions of these pollutants, the following mitigation measures were identified:

Mitigation Measure 3.2.4c: When replacing older vehicles at the landfill, the County shall commit to replacing them with diesel-powered vehicles (with proven technologies) that generate less nitrogen oxides and PM_{10} than the older vehicles.

Mitigation Measure 3.2.4d: The County shall conduct periodic reviews to identify feasible retrofit equipment, or fuels that could lower vehicle emissions at the landfill.

The above mitigation measures would not reduce criteria air pollutant impacts from landfill operations (including soil borrow activities) to a less-than-significant level. As a result, the

[28] Office of the Federal Register, 2014. *Federal Register*. https://www.federalregister.gov/articles/2014/10/15/2014-24487/approval-and-promulgation-of-implementation-plans-state-of-california-sacramento-metro-area#h-57. 15 October.

permit revisions for the Yolo County Central Landfill were considered significant and unavoidable.

4.2.3 Impacts and Mitigation Measures

Significance Criteria

The proposed project would result in a significant impact if it would:

a) Conflict with or obstruct implementation of the applicable air quality plan;

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation;

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

d) Expose sensitive receptors to substantial pollutant concentrations; or

e) Create objectionable odors affecting a substantial number of people.

Impacts Found Less than Significant in Initial Study

The Initial Study (Appendix A) evaluated the potential impacts of the proposed project that would occur during soil excavation, transportation, and reclamation activities based on the significance criteria listed above. As summarized below, the project was found not to have a significant impact based on significance criteria (d) and (e).

Expose Sensitive Receptors to Substantial Pollutant Concentrations

The YSAQMD recommends evaluating potential localized health impacts from toxic air contaminant (TAC) and construction dust emissions to nearby sensitive receptors.[29] Since no sensitive receptors are located within 1,000 feet of the soil borrow site, the Initial Study determined that TAC emissions from the soil borrow site would have a less-than-significant impact on sensitive receptors. The Initial Study also determined that continued compliance with the landfill's existing Joint Technical Document (JTD), which is required under existing regulatory programs, would reduce potential localized health impacts from dust to a less-than-significant level. Therefore, this impact is not evaluated further in this Draft EIR.

Create Objectionable Odors Affecting a Substantial Number of People

As a soil borrow site, the project would not be expected to generate significant odors. Therefore, the Initial Study determined that the project's odor impact would be less than significant. This impact is not evaluated further in this Draft EIR.

[29] YSAQMD, 2007. Handbook for Assessing and Mitigating Air Quality Impacts. 7 July.

Impact Analysis

Impact AQ-1: The project could conflict with or obstruct implementation of the applicable air quality plan (Less than Significant)

The YSAQMD's AQAP, 1-hour ozone SIP, and proposed 8-hour ozone SIP are the applicable air quality plans in the project vicinity. These air quality plans primarily focus on controls for stationary and/or mobile emission sources. The soil borrow site would not be considered a stationary source of emissions. Soil borrow sources for current YCCL operations are from sites located on the south and east sides of the landfill at haul distances comparable to the proposed soil borrow site (about 1 mile or less). Since the project would not incrementally increase the existing distance or amount of haul trips associated with soil borrowing activities for the YCCL, the project's ozone emissions would be accounted for in the current air quality plans. Therefore, the proposed project would have a less-than-significant impact on the implementation of applicable air quality plans.

Impact AQ-2: The project could violate air quality standards or contribute substantially to an existing or projected air quality violation (Significant)

Emissions of ROG, NOx, PM_{10}, and CO would be generated from the exhaust of heavy earth-moving equipment (scrapers, excavators, and haul trucks). Emissions of PM_{10} would also increase from fugitive dust generated during truck loading and hauling activities.

The YSAQMD has developed and adopted screening criteria and thresholds of significance that were incorporated into the Handbook for Assessing and Mitigating Air Quality Impacts.[30] The purpose of the screening criteria and thresholds is to assist lead agencies in the evaluation and mitigation of air quality impacts generated from new developments. The thresholds established levels at which air pollution emissions would cause significant environmental impacts, including substantial contributions to existing or projected air quality violations. The thresholds include emission values for ozone precursors (ROG and NOx), PM_{10}, and CO.

The YSAQMD recommends a screening approach to estimate whether or not a project's traffic impact would cause a potential CO hotspot at any given intersection. If either of the following criteria is true of any intersection affected by the project traffic, then the project can be said to have the potential to create a violation of the CO standard:

- A traffic study for the project indicates that the peak-hour Level of Service (LOS) on one or more streets or at one or more intersections in the project vicinity will be reduced to an unacceptable LOS (typically LOS E or F); or

- A traffic study indicates that the project will substantially worsen an already existing peak-hour LOS F on one or more streets or at one or more intersections in the project vicinity. "Substantially worsen" includes situations where delay would increase by 10 seconds or more when project-generated traffic is included.

[30] Ibid.

As described in the Initial Study traffic analysis, the project would not significantly degrade the LOS at nearby intersections. Therefore, the project's local CO impacts would be less than significant.

The YSAQMD recommends using the most current version of the California Emissions Estimator Model (CalEEMod)[31] to estimate emissions of criteria pollutants for a proposed project. CalEEMod utilizes widely accepted models for emission estimates combined with appropriate default data that can be used if site-specific information is not available. Emissions from the excavation and transport of soils at the soil borrow site were estimated in CalEEMod and then compared to the YSAQMD thresholds.

The model input parameters were based on the project-specific equipment and soil excavation requirements for daily cover operations and intermittent periods of module construction or closure. As described in Section 3, up to about 100,000 cubic yards of soil per year would be required for daily and intermediate cover. These soils would be excavated and transported using up to 3 self-elevating scrapers (e.g., Cat 623) operating approximately 4 hours per day and 5 days per week. Every few years an additional 200,000 cubic yards of soil would be required over a short period (1 to 3 months) when landfill modules are being constructed or old ones are being closed. Assuming the most intensive 1-month scenario, up to 3 excavators and 24 trucks operating 8 hours per day and 5 days per week would be required to excavate and haul 200,000 cubic yards of soil. The daily and annual emissions of ROG, NOx, and PM_{10} from one module construction/closure event and one year of daily/intermediate cover operations were compared to the YSAQMD thresholds. A copy of the CalEEMod report for the project, which summarizes the input parameters, assumptions, and findings, is included in Appendix B.

The total unmitigated pollutant emissions of ROG, NOx, and PM_{10} for one year of daily/intermediate soil cover and a module construction/closure event on the soil borrow site were estimated in CalEEMod and compared the YSAQMD's thresholds (Table AQ-3). The total estimated unmitigated emissions for ROG and NOx were calculated to be below the applicable thresholds; therefore, the project's potential ozone impact would be less than significant.

The total estimated unmitigated emissions for PM_{10} were above the thresholds (Table AQ-3), primarily due to fugitive dust generated during haul trips across unpaved roads. The landfill's existing Joint Technical Document (JTD) requires dust mitigation for all landfill activities by using a water truck to saturate exposed surface soils along unpaved haul roads. Previous studies of fugitive dust emissions by the USEPA indicate that watering unpaved roads about once every 2 to 3 hours can result in an average 67 percent reduction in fugitive dust emissions.[32] Implementation of Mitigation Measures AQ-2, below, would reduce the project's potential PM_{10} impacts to a less-than-significant level (Table AQ-3).

[31] ENVIRON International Corporation and the California Air Districts, 2013. *California Emissions Estimator Model Version 2013.2.2*. July.
[32] Countess Environmental, 2006. *WRAP Fugitive Dust Handbook*. 7 September.

Table AQ-3: Summary of Average Air Pollutant Emissions

Pollutant	ROG	NOx	Fugitive PM_{10}	Exhaust PM_{10}	Total PM_{10}
Units	ton/year	ton/year	lb/day	lb/day	lb/day
Daily/Intermediate Cover	0.4	4.2	11.1	1.3	12.4
Module Construction/Closure	0.4	3.6	182.8	12.0	194.8
Total Unmitigated Emissions	0.8	7.8	194.0	13.3	207.3
Total Mitigated Emissions	0.8	7.8	64.0	13.3	77.3
Thresholds	10	10	---	---	80
Threshold Exceedance	No	No	---	---	No

Source: CalEEMod (Appendix B)

Mitigation Measure AQ-2:

The landfill's existing Joint Technical Document (JTD) requirements for dust mitigation using a water truck to saturate exposed surface soils along unpaved haul roads shall be applied to the soil borrow site. Under dry conditions, soils on the soil borrow site shall be watered at least once every 2 to 3 hours to reduce any visible emissions of fugitive dust.

Impact AQ-3: The project could result in a cumulatively considerable net increase in criteria pollutants for which the project region is non-attainment (Significant)

Air pollution is generally a cumulative impact and, therefore, future development projects contribute to the region's adverse air quality impacts on a cumulative basis. The YSAQMD's air quality attainment plans, which address cumulative air quality impacts, incorporate growth projections in potential emission sources, such as population and traffic. In developing thresholds, the YSAQMD considered the emission levels for which an individual project's emissions would be cumulatively considerable based on growth projections incorporated into the air quality plans; including the emissions of criteria pollutants already exceeding CAAQSs. Since the YSAQMD is currently designated a nonattainment area for ozone and PM, the YSAQMD requires new projects to evaluate estimated emissions of ROG, NOx, and PM_{10}. As discussed under Impact AQ-2, above, the project's total estimated emissions of ozone precursors and PM_{10} would be mitigated to a less-than-significant level. Therefore, implementation of Mitigation Measures AQ-3, below, would reduce the cumulative impact of ozone precursors and PM_{10} from the project to a less-than-significant level.

Mitigation Measure AQ-3:

Implement Mitigation Measure AQ-2.

Cumulative Effects

As discussed above, air pollution is generally a cumulative impact and, therefore, future development projects contribute to the region's adverse air quality impacts on a cumulative

basis. In developing thresholds of significance, the YSAQMD considered emission levels for which an individual project's emissions would be cumulatively considerable. Since the project's estimated pollutant emissions would be mitigated to a level below the YSAQMD's thresholds of significance, the project would not have any significant cumulative impact.

4.3 BIOLOGICAL RESOURCES

4.3.1 Introduction

This section evaluates the potential significant impacts to biological resources from implementation of the proposed project. The potential to affect special-status species and jurisdictional waters is evaluated. Information presented in this section is based on the review of available background studies and field reconnaissance surveys of the project site. Background information included the 2005 Permit Revision EIR and information on special-status species and sensitive natural communities monitored by the California Natural Diversity Data Base (CNDDB) of the California Department of Fish and Wildlife (CDFW). Aerial photographs of the project site were also reviewed to determine general vegetative cover and location of features such as scattered trees and drainage ditches. The field surveys were conducted on October 30 and December 9, 2014 and served to confirm vegetative cover and wildlife habitat types. During the field surveys, habitat was evaluated for the potential suitability for special-status species known in the project site vicinity and the possible presence of jurisdictional waters.

4.3.2 Setting

Physical Environment

Vegetation and Wildlife

The majority of the project site was in past agricultural production, and then was developed as part of the former wastewater disposal system, composed of a series of berms, depressions and drainage channels and culverts. It now supports a cover of non-native, ruderal (weedy) grasslands. Exceptions to this include a system of ditches installed for drainage improvements along the west side of the site, areas of seasonal wetlands which have developed as a result of poor drainage in the former wastewater system south of the proposed soil borrow area along the north side of CR 28H, and limited freshwater marsh and ruderal grasslands growing along the Willow Slough Bypass along the south side of CR 28H. Figure 4.3-1 shows the important biological features on the project site.

Grasslands

Non-native annual grasslands occur on the majority of the borrow site. These are dominated by non-native annual grasses such as ripgut brome (*Bromus diandrus*), wild oats (*Avena barbata*), Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), knotgrass (*Polygonum aviculare*), Italian ryegrass (*Festuca perennis*), and white-stemmed filaree (*Erodium moschatum*), together with ruderal species such as yellow star-thistle (*Centaurea solstitialis*), prickly ox-tongue (*Helminthotheca echioides*), field mustard (*Brassica rapa*), and bird's foot trefoil (*Lotus corniculatus*).

Biological Resources

Figure 4.3-1

Base: Google Earth Pro, 2014.

Legend

- Project Site
- Soil Borrow Site
- Potential Seasonal Wetlands/Ditches
- Drainage Ditches with Wetland Grasses
- Willow Slough Bypass
- Burrowing Owl
- Potential Raptor Nest
- Tree Location

0 750 Feet

Yolo County Central Landfill Soil Borrow Site Project

BASELINE ENVIRONMENTAL CONSULTING

Annual grasslands are common throughout Yolo County. Grasslands provide important foraging, breeding, and resting habitat for many species of wildlife. These include numerous resident and migratory bird species, such as ring-necked pheasant, mourning dove, savanna sparrow, western kingbird, meadowlark, scrub jay, barn swallow, and mockingbird, which utilize the foliage, seed and insects found in grassland cover. Mammals in the grasslands include: California vole, Botta's pocket gopher, western harvest mouse, broad-footed mole, California ground squirrel, and black-tailed jackrabbit forage and nest within the grassland. Reptiles such as western fence lizard, western skink, western whiptail, and gopher snake can also be found in the grasslands and field margins. The relatively high populations of insects, smaller birds, reptiles and mammals provide prey for raptors (birds of prey) and mammalian predators, including red-tailed hawk, American kestrel, white-tailed kite, red-shouldered hawks, barn owl, stripped skunk, coyote, and several bat species.

Freshwater Marsh and Seasonal Wetlands.

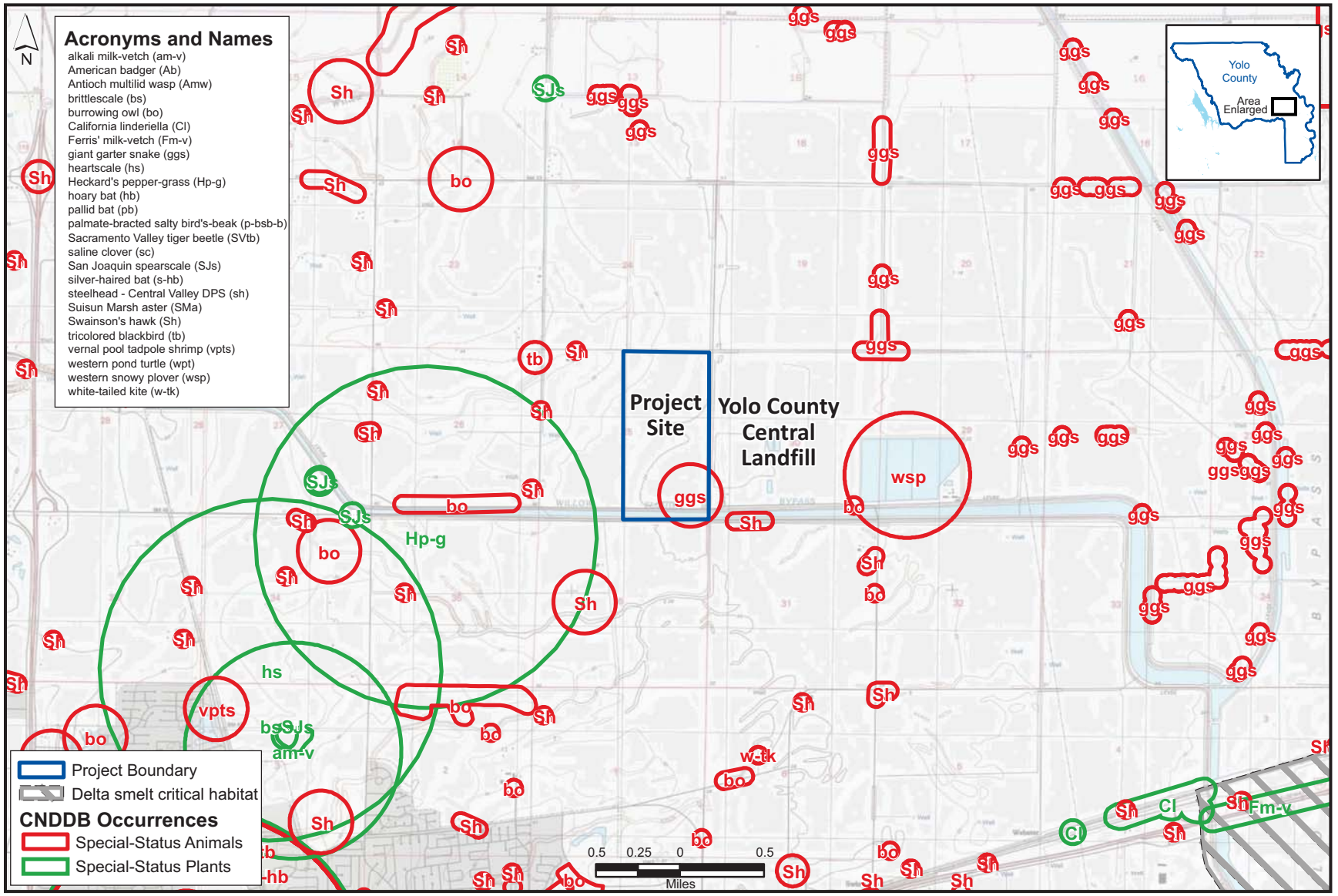
The Willow Slough Bypass, drainage ditches along the western edge of the project site, and areas of seasonal wetlands support vegetation adapted to wetland conditions. Along the low flow channel of Willow Slough Bypass, this vegetation includes scattered clumps of cattail (*Typha lattifolia*) and bulrush (*Scirpus* spp.), with stands of native creeping wildrye (*Elymus* sp.), areas of wetland indicators such as swamp pricklegrass (*Crypsis schoenoides*), lady's thumb (*Polygonum persicaria*), rough cocklebur (*Xanthium strumarium*), and rabbits-foot grass (*Polypogon monspeliensis*), and upland areas of ruderal grassland.

Seasonal wetlands along the western drainage ditches and the former wastewater treatment basins that parallel the north side of CR 28H are dominated by non-native grasses and ruderal forbs. These include rabbits-foot grass, swamp pricklegrass, lady's thumb, Mediterranean barley, and prickly ox-tongue. Dallis grass (*Paspalum dilatatum*), a non-native transitional wetland indicator species, is the dominant plant species growing in the ditches along the western edge of the site. Scattered indicators of seasonal wetlands occur in other areas of the former wastewater treatment basins, but are not considered regulated wetland habitat because they are man-made features and are hydrologically isolated.

The freshwater habitat along Willow Slough Bypass and areas of seasonal wetlands provide aquatic habitat and a source of drinking water for a variety of birds, amphibians, and mammals. Ponded water in areas of seasonal wetlands attract waterfowl and other bird species, and provide suitable conditions to support aquatic insects, invertebrates and amphibians when surface water is present for long enough periods. The state and federally-threatened giant garter snake has been reported from the freshwater marsh habitat along Willow Slough Bypass on the south side of CR 28H, near the southeastern corner of the project site (see Figure 4.3-2). And suitable foraging and nesting habitat is also present along the Willow Slough Bypass for colonial nesting tri-colored blackbird, red-winged blackbird, and a wide variety of other bird species.

Special Status Species Records

Figure 4.3-2



Base: USGS map produced by www.digitalmappingsolutions.com on 11/21/2014.
Sources: California Natural Diversity Database accessed on November 21, 2014;
USFW Critical Habitat Database accessed on November 21, 2014.

Yolo County Central Landfill
Soil Borrow Site Project

BASELINE ENVIRONMENTAL CONSULTING

Sensitive Natural Communities

Sensitive natural communities are natural community types considered to be rare or of a "high inventory priority" by the CDFW. Although sensitive natural communities have no legal protective status under the federal Endangered Species Act (ESA) or California Endangered Species Act (CESA), they are provided some level of consideration under CEQA. The CNDDB provides an inventory of sensitive natural communities considered to have a "high inventory priority" in the state by the CDFW. CDFW ranks natural communities (also referred to by CDFW as alliances) based on rarity rank, using a system derived from NatureServe's standard heritage program, as indicated in the *List of California Vegetation Alliances*.[33]

The project site has been highly disturbed by past and on-going agricultural practices and flood control modifications along the Willow Slough Bypass, and does not contain any riparian or other sensitive natural community types.

Special-Status Species

Special-status species[34] are plants and animals which are legally protected by the State and/or federal Endangered Species Acts[35] or other regulations and other species which the scientific community and trustee agencies have identified as rare enough to warrant special consideration, particularly the protection of isolated populations, nesting or denning locations, communal roosts, and other essential habitat (see Regulatory Environment in this section). Species protected by the Endangered Species Acts often represent major constraints to

[33] California Department of Fish and Wildlife, Biogeographic Data Branch, Vegetation Classification and Mapping Program, 2014. *List of California Vegetation Alliances*. September.

[34] Special-status species include:

- Officially designated (rare, threatened, or endangered) and candidate species for listing by the California Department of Fish and Wildlife (CDFW).
- Officially designated (threatened or endangered) and candidate species for listing by the U.S. Fish and Wildlife Service (USFWS).
- Species considered to be rare or endangered under the conditions of Section 15380 of the California Environmental Quality Act Guidelines, such as those identified on lists 1A, 1B, and 2 in the California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California.
- And possibly other species which are considered sensitive or of special concern due to limited distribution or lack of adequate information to permit listing or rejection for state or federal status, such as those included on lists 3 and 4 in the CNPS Inventory or identified as "California Species of Special Concern" (SSC) by the CDFW. A SSC has no legal protective status under the state Endangered Species Act but are of concern to the CDFW because of severe decline in breeding populations in California, and other factors.

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

development, particularly when they are wide-ranging or highly sensitive to habitat disturbance and where proposed development would result in a "take"[36] of these species.

Figure 4.3-2 shows the known distribution of special-status plant and animal species in the site vicinity. As concluded in the Initial Study, the project site has been extensively disturbed as part of past and on-going agricultural practices, which preclude the potential for occurrence of any special-status plant species known or suspected to occur in the surrounding area of Yolo County.

There remains a possibility that one or more special-status bird species may occasionally forage on the project site and vicinity, including Swainson's hawk (*Buteo swainsoni*), which is a state-listed threatened species under the CESA. Individual western burrowing owls (*Athene cunicularia*), which is considered a California Species of Special Concern by the CDFW, were observed in two locations on the project site during the field reconnaissance surveys (see Figure 4.3-2). Burrowing owls typically nest in the underground burrows of ground squirrels, including along the edges of fields and roadways. Suitable conditions occur on the project site for possible nesting by burrowing owl. Giant garter snake (*Thamnophis gigas*) has been reported from the freshwater marsh habitat along the Willow Slough Bypass. Information on each of these special status species known or suspected to use the project site is summarized below.

Giant Garter Snake

Giant garter snake historically ranged throughout the Sacramento and San Joaquin valleys but is very scarce throughout its range due to the elimination of natural sloughs and marshy areas. This species is an active diurnal snake rarely found away from water. Habitat types utilized by giant garter snakes include freshwater marsh, flooded rice fields, and drainage canals. Giant garter snakes are usually found within a few feet of water, often between the water level and the top of adjacent banks. It aestivates in uplands adjacent to aquatic habitat during its inactive period (approximately October through mid-April). Winter retreats utilized by the giant garter snake include small mammal burrows and man-made structures such as piles of large rocks or riprap. It typically feeds upon small fish and amphibians. Potential habitat on the project site is generally limited to the permanent freshwater drainage along the Willow Slough Bypass, where a snake was observed in the past (see Figure 4.3-2). There is a remote possibility that individuals may occasionally disperse along the vegetated drainage ditch along the western

[36] The FESA defines "take" as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect" a threatened or endangered species. The USFWS further defines "harm" as including the killing or harming of wildlife due to significant obstruction of essential behavior patterns (i.e., breeding, feeding, or sheltering) through significant habitat modification or degradation. The CDFW also considers the loss of listed species habitat as "take," although this policy lacks statutory authority and case law support under the CESA.
Two sections of FESA contain provisions which allow or permit "incidental take". Section 10(a) provides a method by which a state or private action which may result in "take" may be permitted. An applicant must provide the USFWS with an acceptable conservation plan and publish notification for a permit in the Federal Register. Section 7 pertains to a federal agency which proposes to conduct an action that may result in "take," requiring consultation with USFWS and possible issuance of a jeopardy decision. Under the CESA, "take" can be permitted under Section 2081 of the Fish and Game Code. An applicant must enter into a habitat management agreement with the CDFW which defines the permitted activities and provides adequate mitigation.

edge of the project site, and along the man-made ponds to the west. However, a flap gate to the culvert under CR 28H limits opportunities for dispersal except during storm runoff events or in instances where snakes may attempt to cross CR 28H. The on-site ditches do not contain permanent water necessary to sustain this species on the project site north of CR 28H during the dry summer season.

Ferruginous Hawk

Ferruginous hawk (*Buteo regalis*) are birds of the open country that winter, but do not breed, in the Central Valley. They tend to occur in grasslands with scattered trees, rocky mounds or outcrops, and shallow canyons that overlook open valleys. Ferruginous hawks rely primarily upon rodents found in their grassland ecosystems. Prey includes black-tailed jackrabbits, ground squirrels, pocket gophers, and kangaroo rats. Other prey includes snakes, lizards, meadowlarks, grasshoppers, and crickets. The open grasslands on the project site provides suitable foraging habitat for this species.

Northern Harrier

Northern harrier (*Circus cyaneus)* inhabit areas of tall, dense, grasses, moist or dry shrubs, and the edges of row crops for nesting, cover, and feeding. Common food items are voles, frogs, small reptiles, crustaceans, and insects. Nests are built on ground with shrubby vegetation. These birds could nest in grasslands in the project site or grain fields in the project vicinity. Several individual northern harriers, exhibiting hunting behavior, were observed within the open grasslands of the project area during the site survey; a potential nest site also was observed.

Short-Eared Owl

Short-eared owl (*Asio flammeus*) forages in open grasslands, dunes, fresh and saltwater marshes and other open country. The species nests on the ground in a grass-lined depression that is often concealed in weeds or beneath shrubs. It typically hunts for small mammals during the late afternoon and onward through the night. The project site provides potentially suitable foraging and nesting habitat, although no known nests have been detected.

Swainson's Hawk

Swainson's hawk is a migratory raptor listed as threatened by the State of California, and as a Species of Concern by the USFWS. It breeds in western North America and winters in Mexico and South America. It nests in trees and shrubs, and forages over pasturelands and open agricultural fields. In the Central Valley it is often associated with riparian corridors adjacent to field crops and grasslands and subsists largely on small mammals, especially California vole, California ground squirrel, and large insects. The species also nests in isolated trees in agricultural fields and landscaping associated with rural residences. Suitable foraging habitat within an energetically efficient flight distance from active Swainson's hawk nests has been found to be of great importance. The decline of the species in the Central Valley has been associated with extensive reduction of suitable foraging habitat. Suitable foraging habitat is present within the project area in open grasslands, where abundant populations of prey species are supported. High quality nesting habitat occurs in the vicinity of the project site. There have

been more than 30 Swainson's hawk nests reported by CDFW within a 5-mile radius of the project site and occupied nests occurring less than 0.5 mile from the project site (see Figure 4.3.2).

Western Burrowing Owl

Western burrowing owl inhabits open grasslands and shrublands that have perches and burrows. These owls eat mainly insects, with small mammals and birds also making up a portion of the diet. The owls use old rodent burrows, particularly California ground squirrel burrows, for cover and breeding. They are also known to utilize pipes, debris piles and other man-made structures for retreat and nesting. This species has been documented as nesting along County Road 28H within one mile of the project site (see Figure 4.3-2). Individual owls were observed at two different locations on the project site (see Figure 4.3-1); one owl was flushed from an irrigation structure from the former wastewater treatment facilities, and another owl was flushed from a ground squirrel burrow. These individuals may be winter residents of the area, or could be part of an established pair or colony that could possibly breed on the project site or vicinity.

White-Tailed Kite

White-tailed kite (*Elanus leucurus*) inhabit areas of tall, dense, grasses and shrubs, farmlands, and open country, and feed mainly on rodents and insects. They typically build nests in tall trees near a water source. These birds forage in areas of grassland cover on the project site and surrounding area. Several individual white-tailed kites were observed within the open grasslands of the project site during the field reconnaissance surveys.

Jurisdictional Waters

Although definitions vary to some degree, wetlands generally are considered to be areas that are periodically or permanently inundated by surface or ground water and support vegetation adapted to life in saturated soil. Wetlands are recognized as important features on a regional and national level due to their high inherent value to fish and wildlife, use as storage areas for storm and floodwaters, and water recharge, filtration, and purification functions. Technical standards for delineating wetlands have been developed by the U.S. Army Corps of Engineers (Corps) and the USFWS, which generally define wetlands through consideration of three criteria: hydrology, soils, and vegetation.

The CDFW, Corps, and Regional Water Board have jurisdiction over modifications to stream channels, river banks, lakes, and other wetland features (see Regulatory Environment below). Jurisdiction of the Corps is established through the provisions of Section 404 of the Clean Water Act, which prohibits the discharge of dredged or fill material into "waters" of the United States without a permit, including wetlands and unvegetated "other waters of the U.S." Jurisdictional authority of the CDFW over wetland areas is established under Section 1600 of the Fish and Game Code, which pertains to activities that would disrupt the natural flow or alter the channel, bed, or bank of any lake, river, or stream. The Regional Water Board is responsible for upholding state water quality standards pursuant to Section 404 of the Clean Water Act and for

regulating fill of hydrologically isolated wetlands under the Porter-Cologne Water Quality Control Act.

The majority of the project site is generally an upland area with no apparent seasonal wetland depressions, natural drainages, or other conspicuous potential jurisdictional wetland features. Willow Slough Bypass contains a low flow channel and low terrace wetland areas that are regulated waters south of County Road 28H. The vegetated drainage ditches in the western edge of the project site and possibly the seasonal wetlands that have formed along the north side of CR 28H are connected hydrologically to the regulated waters of Willow Slough Bypass and may also be considered jurisdictional waters (see Figure 4.3-1). However, these potential wetland areas are outside the area that is proposed for excavation. The man-made drainage ditches and basins associated with the former wastewater treatment facilities are hydrologically isolated from tributary waters, and therefore would not be considered regulated waters.

Regulatory Environment

Federal

The federal regulations that are applicable to biological resources in the site vicinity are the federal Endangered Species Act, the Migratory Bird Treaty Act, and the Clean Water Act. Relevant portions of these regulations are summarized below.

Federal Endangered Species Act

The United States Congress passed the FESA in 1973 to protect those species that are endangered or threatened with extinction. FESA is intended to operate in conjunction with the National Environmental Policy Act (NEPA) to help protect the ecosystems upon which endangered and threatened species depend.

FESA prohibits the "take" of endangered or threatened wildlife species. "Take" is defined to include harassing, harming (including significantly modifying or degrading habitat), pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct (16 USC 1532, 50 CFR 17.3). Actions that result in take can result in civil or criminal penalties.

FESA and NEPA Section 404 guidelines prohibit the issuance of wetland permits for projects that would jeopardize the existence of threatened or endangered wildlife or plant species. The Corps must consult with the U.S. Fish and Wildlife Service (USFWS) and National Oceanic Atmospheric Administration (NOAA) Fisheries Service when threatened or endangered species may be affected by a proposed project to determine whether issuance of a Section 404 permit would jeopardize the species.

Migratory Bird Treaty Act

Raptors (birds of prey), migratory birds, and other avian species are protected by a number of state and federal laws. The federal Migratory Bird Treaty Act (MBTA) prohibits the killing,

possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of Interior.

Clean Water Act

The Corps regulates discharge of dredged or fill material into waters of the United States under Section 404 of the Clean Water Act (CWA). "Discharge of fill material" is defined as the addition of fill material into waters of the U.S., including, but not limited to the following: placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; fill for intake and outfall pipes and subaqueous utility lines [33 C.F.R. §328.2(f)]. In addition, 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 waters of the United States to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards.

Waters of the U.S. include a range of wet environments such as lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, and wet meadows. Wetlands are defined as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" [33 C.F.R. §328.3(b)].

Furthermore, jurisdictional Waters of the U.S." can be identified where they exhibit a defined bed and bank and ordinary high water mark (OHWM). The OHWM is defined by the Corps as "that line on shore established by the fluctuations of water and indicated by physical character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" [33 C.F.R. §328.3(e)].

State

The State regulations applicable to biological resources in the project site vicinity include the California Endangered Species Act (CESA), the CDFW California Species of Special Concern (SSC) list, and the list of rare or endangered plant species prepared by the California Native Plant Society. State agencies are also responsible for regulating modifications to streams, creeks, lakes and other water bodies, and for overseeing implementation of regulations protecting wetlands and other waters. Relevant portions of these lists and regulations are summarized below.

Clean Water Act (CWA)

The Regional Water Board is responsible for implementing Section 401 of the CWA and for upholding state water quality standards. Pursuant to Section 401 of the Act, projects that apply for a Corps permit for discharge of dredge or fill material, and projects that qualify for a Nationwide Permit must obtain water quality certification. The Regional Water Board has taken an increasing role over regulating wetlands that are hydrologically isolated following the

U.S. Supreme Court decision in 2001 regarding the case *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (SWANCC), which limits the jurisdictional authority of the Corps under Section 404. These hydrologically isolated features are now regulated by the Regional Water Board under authority of Section 401 of the CWA and the Porter-Cologne Water Quality Control Act.

Streambed Alteration Agreement Process

The CDFW has jurisdiction under Section 1600 et seq. of the California Fish and Game Code over fish and wildlife resources of the State. CDFW must be notified if a proposed project will substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds, in accordance with Section 1602. If an existing fish or wildlife resource may be substantially adversely affected by the activity, the CDFW may propose reasonable measures that will allow protection of those resources. If these measures are agreeable to the party, they may enter into an agreement with the CDFW identifying the approved activities and associated mitigation measures.

California Endangered Species Act

The State of California enacted the CESA in 1984. CESA is similar to the FESA but pertains to state-listed endangered and threatened species. CESA requires lead agencies to consult with the CDFW when preparing California Environmental Quality Act (CEQA) documents to ensure that the lead agency actions do not jeopardize the continued existence of listed species. It directs agencies to consult with CDFW on projects or actions that could affect listed species, directs CDFW to determine whether jeopardy would occur, and allows CDFW to identify "reasonable and prudent alternatives" to the project consistent with conserving the species. Agencies can approve a project that affects a listed species if they determine that there are "overriding considerations;" however, the agencies are prohibited from approving projects that would result in the extinction of a listed species.

CESA prohibits the taking of state-listed endangered or threatened plant and wildlife species. CDFG exercises authority over mitigation projects involving state-listed species, including those resulting from CEQA mitigation requirements. CDFW may authorize taking if an approved habitat management plan or management agreement that avoids or compensates for possible jeopardy is implemented. CDFW requires preparation of mitigation plans in accordance with published guidelines.

State listing of plants began in 1977 with passage of the Native Plant Protection Act (NPPA). The CESA expanded upon the NPPA and enhanced legal protection for plants. To align with federal regulations, CESA created the categories of threatened and endangered species. It grandfathered all rare animals into the CESA as threatened species, but did not do so for rare plants.

Natural Community Conservation Planning Act

The Natural Community Conservation Planning Act allows for the identification and provision of measures necessary to conserve and manage natural biological diversity while allowing

compatible use of the land. The purpose of natural community conservation planning is to sustain and restore those species and their habitat identified by CDFW that are necessary to maintain the continued viability of biological communities impacted by human changes to the landscape. A number of Natural Community Conservation Plans (NCCPs), which function as a Habitat Conservation Plan (HCP) and more, have been established in various areas of the State.

CDFW California Special Concern Species

Plant and wildlife species receive additional consideration during the CEQA process. Species that may be considered for review are included on a list of California "Species of Special Concern" or SSC species developed by the CDFW. These species are broadly defined as animals that are of concern to the CDFG because of population declines and restricted distribution, and/or because they are associated with habitats that are declining in California. These species are inventoried in the CNDDB, focusing on nesting, roosting, and congregation sites for non-listed species. In addition, wildlife species designated as "Fully Protected" or "Protected" may not be taken or possessed without a permit from the Fish and Game Commission and/or the CDFW.

Protection of Raptors

Section 3503.5 of the California Fish and Game Code states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (raptors) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto."

California Native Plant Society

The California Native Plant Society (CNPS) is a non-profit conservation organization dedicated to the preservation of native flora in California. The CNPS has been involved in assembling, evaluating, and distributing information on special-status plant species in the state, as listed in the Inventory of Rare and Endangered Plants of California (2001 and electronic inventory update). CNPS has recently updated their rating system for the rarity of special-status plants, and now include both a California Rare Plant Rank and a Threat Rank. CEQA requires government agencies to consider environmental impacts of discretionary projects and to avoid or mitigate them where possible. Under Section 15380, CEQA provides protection for both State-listed species and for any other species which can be shown to meet the criteria for State listing. The CDFW recognizes that special-status plants with a California Rare Plant Rank of 1A (Presumed extinct in California), 1B (Rare, threatened, or endangered in California and elsewhere), and 2 (Rare and endangered in California, but are more common elsewhere) in the CNPS Inventory consist of plants that, in a majority of cases, would qualify for listing and these species should be addressed under CEQA review. In addition, the CDFW recommends, and local governments may require, protection of species which are regionally significant, such as locally rare species, disjunct populations, essential nesting and roosting habitat for more common wildlife species, or plants with a CNPS California Rare Plant Rank of 3 (Plant species for which additional data is needed – a review list) and 4 (Plant species of limited distribution - a watch list).

Surface Mining and Reclamation Act of 1975

Acceptable practices and performance standards have been developed as part of Surface Mining and Reclamation Act (SMARA) while providing protection to wildlife and the successful revegetation of mined lands. Section 2712 (b) of SMARA states that the production and conservation of minerals are encouraged, while giving consideration to values relating to recreation, watershed, wildlife, range and forage, and aesthetic enjoyment. There are an additional 12 standards in the SMARA that provide principles for the protection and restoration of wildlife habitats.

Local

The 2030 Countywide General Plan contains a number of policies related to biological resources in the Land Use and Community Character and the Conservation and Open Space Elements. The County has no tree protection or creek protection ordinance that would pertain to conditions on the project site. Relevant polices from the 2030 General Plan are listed below, numbered here as they are in the General Plan:

Land Use and Community Character Element

CC-4.32. Emphasize the use of regionally native drought tolerant plants for landscaping where appropriate.

Conservation and Open Space Element

CO-1.22. Emphasize the use of native grasses, shrubs and trees as the primary focus of landscaping and restoration work within resource parks and other open spaces.

CO-2.9. Protect riparian corridors to maintain and balance wildlife values.

CO-2.10. Encourage the restoration of native habitat.

CO-2.15. Encourage the use of mosquito abatement methods that are compatible with protecting fish and wildlife, including native insect pollinators.

CO-2.30. Promote native perennial grass habitat restoration and controlled fire management in grazing lands to reduce invasive species cover and enhance rangeland forage.

CO-2.32. Protect wetland ecosystems by minimizing erosion and pollution from grading, especially during grading and construction projects.

CO-3.1. Encourage the production and conservation of mineral resources, balanced by the consideration of important social values, including recreation, water, wildlife, agriculture, aesthetics, flood control, and other environmental factors.

4.3.3 IMPACTS AND MITIGATION MEASURES

Significance Criteria

The significance criteria, presented below, are those identified in Appendix G of the CEQA Guidelines. The proposed project would result in a significant impact if it would:

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

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service;

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

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

CEQA Section 15380 provides that a plant or animal species may be treated as "rare or endangered" even if not officially listed under the state or federal Endangered Species Acts if, for example, it is likely to become endangered in the foreseeable future. As species of plants and animals become restricted in range and limited in population numbers, species may become listed or candidates for listing as endangered or threatened and become recognized under CEQA as a significant resource.

Impacts Found Less than Significant in Initial Study

The Initial Study evaluated the potential impacts of the proposed project that would occur during soil excavation, transportation, and reclamation activities based on the significance criteria listed above. As summarized below, the project was found not to have a significant impact based on significance criteria (b), (d), and (e).

Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service.

The portion of the project site encompassing the proposed borrow area has been highly disturbed by past and on-going agricultural practices and does not contain any riparian or other sensitive natural community types. *No impacts* on sensitive natural communities are anticipated as a result of the proposed project.

Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery site.

Grading and excavation activities associated with the proposed project would disturb the existing non-native grassland vegetative cover on the project site (243 acres), and would interfere with foraging and other activities of wildlife species common in the area. Individuals would utilize suitable habitat in the surrounding area when construction equipment operation, vegetation removal, and other disturbance associated with the proposed project interfere with on-going wildlife use of the site. But alternative habitat is available in the surrounding area for movement, and no substantial adverse impacts on wildlife movement or native wildlife nursery areas are anticipated as part of the proposed project. Once the area is reclaimed following completion of the proposed project, the site would have a greater complexity of habitat types with the restored grassland cover, tree plantings, and seasonal wetland areas. Compensatory mitigation provided to address potential impacts on Swainson's hawk foraging habitat and possible nesting habitat for burrowing owl would serve to address the loss of grasslands and potential nesting habitat. Birds and other wildlife could continue to move across the site, either over the open water habitat or along the shoreline and restored uplands. Potential impacts on wildlife movement corridors and native wildlife nursery areas would be less than significant.

Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

The 2030 Yolo County General Plan includes policies that serve to protect natural resources in Yolo County. However, no substantial conflicts with current policies are anticipated and this would be a less-than-significant impact of the proposed project.

Impact Analysis

Impact BIO-1: The proposed project may have significant adverse impacts, either directly or through habitat modifications, to special status bird species. (Significant)

<u>Swainson's Hawk</u>

The soil excavation and other earthmoving activities would affect up to 243 acres of suitable foraging habitat, in the form of extensive grasslands. Although no nests for this species have been identified at the project site, more than 30 breeding pairs of Swainson's hawk are known to occur within 5 miles and a breeding pair was documented within 1 mile of the project site (see Figure 4.3-2). Over the life of the proposed project, up to 243 acres of grassland that is

potential foraging habitat for this species would be affected by borrow activities during excavation activities. Excavation of the borrow soils would be phased over the anticipated 50-year life of the project. An estimated 8 to 10 acres would be excavated each year, resulting in the loss of grassland cover and possible foraging habitat for Swainson's hawk and other bird species. Reclamation would reestablish some small areas of natural grassland, savanna and riparian foraging and possibly nesting opportunities for Swainson's hawk (a total of approximately 38 acres). This would result in a net increase in nesting habitat present on the site, but over the life of the project as much as 8 to 10 acres of suitable foraging habitat would be excavated each year and a cumulative total of approximately 205 acres would be lost as foraging habitat, which would be a significant impact.

Ferruginous Hawk, Northern Harrier, Western Burrowing Owl, Short-eared Owl and White-Tailed Kite

These species of birds may be impacted by the removal of potential foraging habitat through borrow excavation activities in advance of revegetation called for under the reclamation plan. In the case of the northern harrier, western burrowing owl and short-eared owl, potential nesting habitat would also be impacted. Soil removal or other project activities that would result in the failure of nests of these species would be considered a significant impact. As noted above, several individual northern harriers, exhibiting hunting behavior, were observed within the open grasslands of the project area during the site survey; a potential nest site also was observed.

This impact would be the same as described above for Swainson's hawk. See Impact BIO-2 below for further discussion of western burrowing owl.

Once reclaimed, a small portion of the project site would continue to provide suitable foraging and nesting habitat for these species, and the lack of on-going disturbance associated with agricultural or past wastewater disposal activities would eventually serve to improve habitat conditions, allowing for establishment of permanent populations of prey species. While temporary and permanent revegetation would reduce the amount of habitat loss at any given time, the annual loss of 8 to 10 acres of grasslands during the operational life of the landfill is considered a significant impact.

Implementation of the following mitigation measures would reduce this impact to a less-than-significant level.

Mitigation Measure BIO-1a:

For any earthmoving activities that will occur between March 15 and September 15 of any given year, the County shall conduct preconstruction surveys for suitable nesting habitat within 0.5 mile of the excavation for Swainson's hawk and within 1,000 feet of the excavation site for tree-nesting raptors. Surveys shall be conducted by a qualified biologist and will conform to the Swainson's Hawk Technical Advisory Committee (2000) guidelines. If nesting raptors are recorded within their respective buffers, the County will consult with

CDFW regarding suitable measures to avoid impacting breeding efforts. Measures may include, but are not limited to:

- Maintaining a 500-foot buffer around each active raptor nest; no construction activities shall be permitted within this buffer except as described below in this mitigation measure. This buffer may be reduced in consultation with CDFW;

- Depending on conditions specific to each nest, and the relative location and rate of earthmoving activities, it may be feasible for activities to occur as planned within the buffer without impacting the breeding efforts. In this case (to be determined in consultation with CDFW), the nest(s) shall be monitored by a qualified biologist during project activities within the buffer. If, in the professional opinion of the monitor, the project would impact the nest, the biologist shall immediately inform the project manager and CDFW. The project manager shall stop earthmoving activities within the buffer until either the nest is no longer active or the project receives approval to continue from CDFW.

Mitigation Measure BIO-1b:

In order to mitigate the loss of wildlife habitat and existing open space as required in the conservation and open space policies of the Yolo County General Plan, and the pending Yolo County NCCP/HCP, the County shall purchase and dedicate a conservation easement or pay an in-lieu fee. The County may purchase shares in an appropriate mitigation bank, make a payment to the Swainson's hawk mitigation fee program if it is still in effect, or purchase comparable raptor foraging area in consultation with the CDFW at a ratio of 1:1 (1 acre conserved for every acre that is lost). A conservation easement may be dedicated or the project may pay an in-lieu fee on an annual or biannual basis that is equivalent to the amount of habitat land (in acres) that is excavated during the applicable time period and which is not reclaimed to a viable habitat use such as grazing. The project is anticipated to excavate approximately 8 to 10 acres per year. The County shall consult with CDFW to fulfill appropriate mitigation acreage and/or ratio requirements in consideration of the anticipated phased excavation of grasslands on the project site.

Mitigation Measure BIO-1c:

Surveys for other raptors and birds protected under the MBTA shall be conducted for possible nesting activities as part of the other bird surveys identified in Mitigation Measure BIO-1a. If the qualified biologist determines that other raptors or birds are nesting in areas where project activities could result in injury or failed reproductive success, construction disturbance shall be postponed in the immediate area until young have fledged. A nest avoidance zone shall be established by the qualified biologist based on the species and sensitivity to disturbance, based on coordination with CDFW, until the qualified biologist determines that the young-of-the-year are no longer reliant upon the nest. For raptors, the nest avoidance zone shall typically be at least 300 feet and for passerine and other birds, the nest avoidance zone shall typically be at least 75 feet. The surveys shall be repeated if

soil borrow activities have been suspended for more than 14 days during any particular nesting season (i.e., during February 1 through August 31).

Impact BIO-2: The proposed project may have significant adverse impacts, either directly or through habitat modifications, on western burrowing owl. (Significant)

Burrowing owls may nest in burrows and forage in grasslands found on the project site. As noted above, individual owls were observed at two different locations on the project site. These individuals may be winter residents of the area, or could be part of an established pair or colony that could possibly breed on the project site or vicinity.

Proposed earthmoving activities may directly affect burrowing owl nest site locations (i.e., destroying active burrows) or cause indirect impacts (e.g., nest abandonment), thereby reducing the viability of local populations. Removal or causing the failure of nests of these species would be considered a significant impact.

Implementation of the following mitigation measures would reduce this impact to a less-than-significant level.

Mitigation Measure BIO-2a:

For any earthmoving that will occur between February 1 through August 31 of any given year, the applicant shall conduct preconstruction surveys in suitable nesting habitat within the borrow site and within 500 feet of the borrow site, for burrowing owls prior to earthmoving activities. Surveys shall be conducted by a qualified biologist and will conform to the latest CDFW burrowing owl recommendations. Burrowing owl surveys shall be conducted in both the breeding and non-breeding season.

Mitigation Measure BIO-2b:

If nesting burrowing owls are detected within the proposed excavation area, mitigation to avoid the active nests or compensate for the loss of the nest(s) shall be developed in coordination with CDFW. In general, no disturbance will occur within 160 feet of occupied burrows during the non-breeding season (September 1 - January 31) or within 250 feet during the breeding season (February 1 - August 31) without a detailed monitoring program that verifies disturbance is not adversely affecting the nest(s). Mitigation may include, but is not restricted to, delaying excavation activities in the vicinity of any active nest site until the young have fledged), creating new burrows for every nest lost at a 2:1 ratio, and the passive relocation of resident owls, if necessary. A qualified wildlife biologist shall be retained to monitor active nests during project activities. This biologist would have the authority to halt earthmoving activities if these activities would result in the abandonment of a nest.

Impact BIO-3: The proposed project may have significant adverse impacts, either directly or through habitat modifications, on giant garter snake. (Significant)

There is a remote possibility that the proposed project may affect giant garter snake if the snakes are present in the vicinity of the western drainage ditches during excavation and other project activities. Snakes may be incidentally harmed or harassed by project activities if they are foraging in areas adjacent to the western ditches. Because these surface run-off ditches lack a continuous water supply and sufficient emergent vegetation, they provide very marginal habitat for this species. However, these vegetated drainages do provide marginally suitable habitat when surface water is present. Uplands within 200 feet of aquatic habitat for this species are considered potential aestivation (wintering) habitat; therefore, following the guidelines of the USFWS' Programmatic Formal Consultation for giant garter snake, a 200-foot radius around aquatic habitat for the species is used to evaluate temporary and/or permanent disturbances and identify mitigation measures. This is considered a potentially significant impact.

Implementation of the following mitigation measures would reduce this impact to a less-than-significant level.

Mitigation Measure BIO-3a:

Any grading or excavation within potential aquatic habitat for giant garter snake, and/or upland habitat within 200 feet of potential aquatic habitat (i.e., the western drainage ditches), shall conform to the latest USFWS guidelines for procedures and timing of activities in giant garter snake habitat.

Mitigation Measure BIO-3b:

No grading, excavating, or filling may take place in or within 30 feet of the western drainage ditches considered to be potential aquatic habitat for giant garter snake between October 1 and May 1 (the active period for the giant garter snake) unless authorized by the USFWS and CDFW.

Mitigation Measure BIO-3c:

Prior to initiation of earthmoving activities, all workers shall take part in a training program conducted by a qualified biologist (i.e., a biologist who has had prior experience with giant garter snake monitoring through USFWS-approved biological opinions and/or implemented HCPs). This training shall include, at a minimum, a description of giant garter snake, its habitat requirements, and a photograph or illustration of the species so that workers can recognize the species.

Mitigation Measure BIO-3d:

A qualified biologist shall be present on site during the excavation or filling of giant garter snake habitat, including uplands, within 200 feet of aquatic habitat. Alternatively, 24-hours

prior to initiating grading, the area within 200 feet of aquatic habitat shall be surveyed by a qualified biologist to confirm no giant garter snakes are present. The survey shall be repeated if a lapse in construction activities of two weeks or greater occurs. If a giant garter snake is found in the work area, all work shall cease, and the County shall retain a qualified biologist holding necessary permits to remove the snake(s) from the work area and to adequately secure the area to prevent other snakes from entering the work zone.

Impact BIO-4: The proposed project may affect regulated waters associated with the western drainage channels, which would be a potentially significant impact. (Significant)

There is a possibility that the proposed project may affect areas of potential jurisdictional waters if adequate controls are not in place during grading and excavation. This includes direct and indirect effects on the drainage channels along the western edge of the project site, and the potential seasonal wetlands along the north side of CR 28H. Although these features are not located within the limits of proposed soil borrow activities, they could be disturbed or modified if careful practices are not implemented as part of the proposed project. Without appropriate restrictions and monitoring this could be a significant impact. Implementation of the following mitigation measures would reduce this impact to a less-than-significant level.

Mitigation Measure BIO-4:

Proposed earthmoving and other activities associated with the proposed project shall be designed to avoid any indirect impacts to the potential jurisdictional waters associated with the seasonal wetlands along the north side of CR 28H and the drainage ditches along the western edge of the project site. If any future construction activities are proposed in these areas, a formal wetland delineation shall be prepared and submitted to the Corps for verification, and if necessary, authorizations shall be obtained from the appropriate regulatory agencies

Impact BIO-5: The proposed project would not conflict with any adopted Habitat Conservation Plans, although the County is participating with preparation of the Yolo Natural Heritage Program Habitat Conservation Plan/Natural Community Conservation Plan. (Less than Significant)

There are currently no adopted Habitat Conservation Plans or Natural Community Conservation Plans for the project site or surrounding areas. However, the Yolo County Habitat Conservation Plan/Natural Community Conservation Plan Joint Powers Agency (JPA) continue to work on adopting the Yolo Natural Heritage Program Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP) for Yolo County. The JPA was formed in 2002 for the purposes of acquiring Swainson's hawk habitat conservation easements and to serve as the lead agency for the preparation of a county-wide HCP/NCCP, now known as the Yolo Natural Heritage Program. In 1993 a Swainson's Hawk Interim Mitigation Fee Program was established as part of the early planning efforts for habitat conservation planning in the County, now overseen by the JPA. The

program utilizes mitigation fees to acquire conservation easements protecting Swainson's hawk habitat.

The County is continuing to facilitate completion of the HCP/NCCP. Once adopted, it would allow for adequate mitigation of any temporary or permanent impacts associated with the proposed project on suitable foraging habitat for Swainson's hawk and other bird species covered under the HCP/NCCP. No significant conflicts with the HCP/NCCP are anticipated as a result of implementing the proposed project.

Cumulative Effects

The potential impacts of a project on biological resources tend to be site-specific, and the overall cumulative effect would be dependent on the degree to which significant vegetation and wildlife resources are protected on a particular site. This includes preservation of well-developed native vegetation (e.g., marshlands, native grasslands, oak woodlands, riparian scrub and woodland), populations of special-status plant or animal species, and wetland features (including seasonal wetlands and drainages). Environmental review of specific development proposals in the vicinity of a development site should serve to ensure that important biological resources are identified, protected, and properly managed, and to prevent any significant adverse development-related impacts, including development for the remaining undeveloped lands in the surrounding area.

The proposed project contribution to cumulative effects on biological resources would not be considerable. Although portions of the project site would be disturbed during soil borrow excavation activities, the site has undergone seasonal and annual changes in the past as part of past agricultural and wastewater disposal activities, and would remain as natural habitat once construction is completed. And mitigation recommended above, would serve to address any project-specific impacts on sensitive biological resources, such as nesting birds, foraging habitat, or the remote potential for dispersal of giant garter snake in the area. As such, implementation of the proposed project, when combined with other past, present and reasonably foreseeable future projects (Table 5.2-1) would not be expected to incrementally contribute to cumulative impacts in a significant way.

4.4 CULTURAL RESOURCES

4.4.1 Introduction

This section describes the potential impacts the project will have on archaeological sites, including properties of historic or cultural significance to communities or ethnic groups eligible for inclusion in the California Register of Historic Resources and paleontological resources. Pertinent laws, regulations and policies related to cultural resources are described and significant cultural resources eligible for inclusion in the California Register of Historical Resources are identified based on archival research, a field inventory and subsurface testing documented in an archaeological assessment for the project site.

4.4.2 Setting

Physical Environment

The project is located within the Central Valley roughly 10 miles west of the Sacramento River. The Willow Slough Bypass flows through the southern portion of the project site immediately south of CR 28H and drains the valley floor between Putah Creek and Cache Creek, which are located about 4 miles south and 6 miles north of the project site, respectively. The Willow Slough Bypass and nearby creeks drains into the Yolo Bypass located about 3.3 miles east of the project site, which then drains into the Sacramento River.

The following discussion of the cultural history and resources in the project vicinity is based on the findings of archival research and subsurface testing documented by Basin Research Associates in an archaeological assessment of the project site.[37] A copy of the archaeological assessment is included in Appendix C.

Native American – Prehistoric

As early as 8,000 to 10,000 years ago, Native Americans may have occupied and used the lands in the general region of the project site. Occupation sites in the area appear to have been selected for accessibility, protection from seasonal flooding, and the availability of resources. An early study by Johnson and Johnson commented on the perceived density of prehistoric, ethnographic, and historic era sites present within a one-mile strip bordering Sacramento River and the numerous creeks and rivers flowing into the Sacramento.

Archaeological data for the region suggests a change from hunter-collectors to a more sedentary lifestyle over time with a concomitant increase in the prehistoric population and a focus on permanent settlements. This perceived change to a more sedentary lifestyle appears to be due to more efficient resource procurement with a focus on staple food exploitation, the increased ability to store food at village locations, and the development of increasingly complex social and political systems including long-distance trade networks. The information obtained

[37] Basin Research Associates, 2014. Archaeological Assessment/Test Trenching of 323 + Acre Parcel Associated with Expansion of Yolo County Central Landfill Borrow Site, Woodland, Yolo County (APN 042-100-017 and APN 042-100-018).

from archaeological studies in the general region of the project site has played a key role in refining both the local and regional interpretations of Native American history for central California.

Archaeological research in the region has been interpreted using several chronological schemes based on stratigraphic differences and the presence of various cultural traits. A three-part cultural chronological sequence, the Central California Taxonomic System (CCTS), was developed by archaeologists to explain local and regional cultural change in prehistoric central California from about 4,500 years ago to the time of European contact. This classification scheme, consisting of three horizons (Early, Transitional, and Late) has been revised although the prior nomenclature (Early, Middle, and Late Horizon) is still in common use. Available data suggests the Early Horizon dated from about 4,500 to 3,500/3,000 years ago, the Middle Horizon dated from about 3,500 to 1,500 years ago, and the Late Horizon dated about 1,500 to 250 years ago.

An alternative scheme was developed by Fredrickson to interpret the prehistoric cultural history of Central California. He used three chronological periods: the PaleoIndian Period (10,000-6,000 B.C.); the Archaic Period (6,000 B.C. to A.D. 500) with three stages (Lower Archaic 6,000-3,000 B.C., Middle Archaic 3,000-1,000 B.C., and Upper Archaic 1,000 B.C.-A.D. 500); and, the Emergent Period (A.D. 500-1,800) with a Lower and an Upper component.

Little information is available for the PaleoIndian Period. The Archaic Period is characterized by several periods of climatic change that resulted in an initial emphasis on seed collecting and processing to transition to acorn collection and processing. An increase in the importance of hunting and the prevalence of marine and littoral faunal remains also occurs during the Middle Archaic. Fredrickson suggested that the appearance of new technologies (e.g., concave base projectile points and the appearance of the mortar and pestle) were due to population shifts. During the Upper Archaic, an increase in social complexity based on burial patterns and complex trade networks is apparent. These patterns continue into the Emergent Period which also appears to have a noticeable population increase and evidence of intergroup exchange suggesting complex social, religious, and organizational patterns. The Lower Emergent corresponds to Phase 1 Late Horizon while the Upper Emergent (A.D. 1500) is equivalent to Phase 2 Late Horizon.

Native American – Ethnographic

The aboriginal inhabitants of the region belonged to a group generally referred to as the Patwin ('people'), a term of reference applied by several tribelets. The term Patwin does not denote a politically unified entity, but rather refers to different groups of people who shared similar cultural traits and close linguistic affinities. Other names employed for the Patwin include Copéh, Southern Wintun, Southerly Wintun, and Southeastern Wintu.

The South Wintuan or Patwin language belongs to the larger Penutian language family spoken by other California Indian groups known as the Costanoan, Wintun, Maidu, Miwok, and Yokuts. Patwin political units were composed of autonomous tribelets with a primary and several

satellite villages within a defined territory. The cultural attributes of each tribelet differed slightly from one another and different dialects could be spoken by several tribelets. Each village had a chief who was important in economic and ceremonial domains.

Patwin territory occupied an area extending about 90 miles from north to south and about 40 miles from east to west from Princeton in the southern Sacramento Valley southward to the San Pablo and Suisun Bays. Most of the population resided in large villages along rivers. The Patwin aboriginal subsistence relied on hunting and fishing, and the gathering of vegetal foods, especially acorns. The subsistence cycle was dependent on the specific locations utilized by individual villages. Material culture relied on a variety of stone (e.g., projectile points, mortars, pestles) and perishable objects for utilitarian, recreational and ceremonial uses (e.g., bows, harpoons, tule balsa boats, basketry, nets). Cemeteries were usually located at one end of a village and included cremation in some areas. None of the known Patwin tribal villages or known trails were located in the vicinity of the project site.

Tribelet boundaries and village locations are inexact due to incomplete historic records, and they remain a subject of anthropological contention and debate. No villages were recorded by researchers between Davis and Woodland.

The aboriginal lifeway was disrupted during the Hispanic Period and was subjected to intense EuroAmerican pressures from the late 1840s through the American Period. The disruption of the aboriginal lifeway was due to factors such as the introduction of new diseases, a declining birth rate, missionization, military forays and settler raids to capture aboriginal laborers and in retribution for livestock theft. The Patwin were transformed from hunters and gatherers into agricultural laborers who lived at the missions and worked with former neighboring groups for individual EuroAmericans. After the government of Mexico secularized the missions in the 1830s, most of the aboriginal population gradually moved from the missions to ranchos to work as manual laborers.

Smallpox epidemics in 1828 and especially in 1838 and a "new disease" in 1830 had a particularly devastating effect on Native Americans and spread rapidly throughout central and northern California. The population of the Patwin declined from an estimated pre-contact total of 3,500/12,500 to 185 in 1905/1906 and 200 in 1923/1924. In 1803-1827, there were apparently 10 Southern Patwin villages occupied by 527 individuals. By the early 1930s, the southern half of the Patwin was extinct.

Historic Era – Hispanic Period

The Spanish philosophy of government in northwestern New Spain was directed at the founding of presidios, missions, and secular towns (pueblos) with the land held by the Spanish Crown (1769-1821), while the later Mexican policy stressed individual ownership of the land. After the secularization of the missions by Mexico in 1833, vast tracts of the mission lands were granted to individual citizens.

Even though the routes of the early explorers cannot be determined with total accuracy, a number appear to have passed through the general vicinity of the project site. Expeditions

through this area along the Sacramento River included: Gabriel Moraga in 1808 to as far north as about Glenn or Butte City north of Sutter Buttes; Luis Arguello in 1817 with Fathers Narciso Duran and Ramon Abella to as far as present-day Clarksburg; and, Arguello in 1821 with Father Blas Ordaz and John Gilroy as interpreter through present-day Solano and Yolo counties to the vicinity of Grimes (present-day Colusa County).

Mountain Men expeditions as well as adventurers also travelled along the Sacramento River in the 1830s and 1840s through the study area. Hudson Bay Company trappers arrived in the general project vicinity prior to 1830 to cache furs along various creeks including present-day Cache Creek. Their "French Camp" was situated on the north bank of the creek (about a mile east of present-day Yolo, formerly Cacheville). Other known parties of Mountain men/trappers passing through present-day Yolo County included Ewing Young who led a group in spring and summer 1830 along the San Joaquin and Sacramento rivers and for a time along Cache Creek. Later in 1832 he camped on Cache Creek and Putah Creek. In 1843, Joseph Gale, part of the 1831 Ewing Young party, had cattle rendezvous on Cache Creek.

None of the Mexican Period land grants made between 1842 and 1846 include the project site. Among the nine known grants, Putah and Cache creeks were the initial foci of settlement. Only five of the nine land grants were confirmed.

Historic Era – American Period

In the mid-19th century, most of the rancho and pueblo lands in California were subdivided as the result of population growth and the American takeover. This American ascendancy was the result of the confirmation of property titles throughout California, prior to which the transfer of real estate had been extremely risky. The initial explosion in population was associated with the Gold Rush (1848), followed later by the construction of the transcontinental railroad (1869). Still later, the development of the refrigerator railroad car (circa 1880s), used for the transport of agricultural produce to distant markets, had a major impact on population growth.

Yolo County was one of the original 27 counties. It was named for Yolo or Yodoy (Yodoi), a Patwin village reportedly named for "a place abounding in rushes" near present-day Knight's Landing. Fremont, at the mouth of the Feather River north of Sacramento, was the first County seat from 1850 to 1851 followed by Washington (part of present-day West Sacramento) from 1851 to 1857, then Cacheville (present-day Yolo) from 1857 to 1861, back to Washington from 1861 to 1862, and then Woodland in 1862 .

<u>Water Conveyance Systems</u>

Water diversion for irrigation in the general vicinity of the project site appears to have started in 1856 with Moore's dam and ditch system on Cache Creek within Gordon's Ranch (Rancho Quesesosi). A dam and ditch by David Quincy Adams on the Rancho Canada de Capay also on Cache Creek started shortly thereafter in 1857 and was completed in 1870.

The south levee of the Willow Slough Bypass is located adjacent to the project site. Willow Slough, the former Laguna de Santos Calle and its major contributory Dry Slough, the former "Deep Arroyo," were renamed when the Corps built the Sacramento River Flood Control project

in the first quarter of the 20th century. Willow Slough has always been a discrete waterway expanding to as much as 50 yards wide and 75 feet deep and ending among the Tule marshes on the west side of the Sacramento River. Though both Willow and Dry slough were ephemeral streams that ran dry in summers, Willow Slough was fed by underground springs in several places. The Willow Slough Bypass was constructed by the Corps in the 1960s to divert all flows in downstream Willow Slough to a lower elevation of the Yolo Bypass. The Willow Slough Bypass levees are maintained by the California Department of Water Resources.

Known Cultural Resources in the Project Vicinity

The following discussion summarizes the results of a prehistoric and historic site record and literature search conducted by the California Historical Resources Information System, Northwest Information Center, Sonoma State University.

Listed Historic Properties

No National Register of Historic Places and/or California Register of Historical Resources listed, determined or potential archaeological sites, significant local, state or federal historic properties, landmarks, etc. have been identified on the proposed project site. Nor have any local landmarks and/or points of interest been identified within or adjacent to the project site.

Recorded and/or Reported Sites

No prehistoric, combined prehistoric/historic era or historic era sites have been recorded or reported on the project site. One recorded prehistoric site, the Yolo County Landfill Cemetery (CA-YOL-171 [P-57-000188]), is located on the YCCL adjacent to and east of the project site. The prehistoric resource was discovered in 1981 near the eastern boundary of the proposed landfill expansion project during the excavation of Landfill Unit 3. The resource consisted of four loosely flexed Native American burials exposed at an approximate depth of eight feet below the former surface within a buried sand deposit. No culturally affected soil (i.e., midden) was observed. Three of the burials were removed by the Department of Anthropology, University of California, Davis. The fourth burial was left in place. All of the bone was highly mineralized and several of the burials had associated artifacts. It was concluded that the burials may have been in an east to west trending line along the top of a linear sand ridge associated with former prehistoric sloughs in the area. The archaeologists interpreted the burials as representing a classic example of a prehistoric Central California cemetery deposited in sand ridges along water courses. The area with the burials was left undisturbed to preserve any unknown burials.

In addition to the four burials, isolated prehistoric artifacts had been previously recovered on the landfill to the southeast of the burial exposure suggesting some archaeological sensitivity to the general area. The artifacts included an obsidian serrated biface and a small mortar. No isolated finds are known for the project site.

Native American Review and Consultation

The Native American Heritage Commission review of the Sacred Lands Inventory was negative for Native American resources in or adjacent to the project site. County of Yolo Planning, Public Works, and Environmental Services Department staff contacted the Yocha Dehe Wintun Nation

who had previously expressed interest in County projects. A project notification letter was submitted to tribal representatives and County staff met with tribal representatives at the YCCL and at the County offices. The representatives stated that they wanted the County to conduct subsurface testing prior to issuance of the EIR and field activities should be monitored by a tribal representative. The results of subsurface testing conducted for the archaeological assessment of the project site are summarized below.

Project Inventory

The archaeological field survey of the project site was completed by an archaeologist meeting the Standards of the Secretary of the Interior. No surface indications of prehistoric or significant historic archaeological materials were noted. Three standing utilitarian building/structures and two water control features associated with former agricultural activities were present. These resources do not appear eligible for the California Register of Historical Resources under any of the criteria due to integrity and age and their common utilitarian nature.

Mechanical Subsurface Testing

A focused backhoe test trenching program was completed at the request of the County of Yolo Planning, Public Works, and Environmental Services Department in consultation with the Yocha Dehe Wintun Nation. The exploratory backhoe testing program was undertaken to determine if the proposed project site could have a buried sand ridge within the parcel at the depths previously noted for the Native American burials exposed at the YCCL (8-10 feet below grade) to the east. Prior to the testing, a review of the results of an exploratory geotechnical trenching program on the project site did not indicate the presence of any sand deposits typical of the buried sand ridge identified at the YCCL in 1981. The profiles consisted of either a clayey-silt or silty-clay sediment to at least 10 feet below the existing grade. A trace of sand was noted in one of the 12 trenches near the northern extent of the previously completed geotechnical trenches.

The subsurface testing consisted of 20 trenches completed north of the geotechnical trenches (Figure 18 in Appendix C). No prehistoric cultural material was exposed in any of the 20 backhoe test trenches. In general, the sediments consisted of approximately 0 to 4 feet of a dry, hard grayish brown clayey silt over a firm very dark grayish brown clayey silt from 4 to between 8 and 10 feet below the surface. A moist olive yellow clayey silt with a minor sand component (8 to 12.5 feet below the surface) was present in 12 units. The sand was very fine-grained and similar to that noted in one unit of the geotechnical testing completed for the landfill. However, no indications of an extensive sand deposit suggesting the presence of a former sand ridge similar to the one noted in the current landfill was present in the test area. The tribal representative monitoring the test trenching with the Project Archaeologist did not note any Native American resources and had no comment on the findings.

Paleontological Resources

Paleontological resources include the fossilized remains of vertebrate and invertebrate organisms, fossil tracks and trackways, and plant fossils. Key information used in the preparation of this section was derived from published geologic literature and maps, and from

guidelines published by the Society of Vertebrate Paleontology (SVP). Sedimentary rock units and unconsolidated sediments may be described as having a "high" potential for containing significant nonrenewable paleontological resources, a "low" potential for containing nonrenewable paleontological resources, or an "undetermined" potential, as described in Table CUL-1.

Table CUL-1: Paleontological Sensitivity Criteria Used in This Analysis

Sensitivity Level	Definition
High	Geologic units from which vertebrate or significant invertebrate fossils or suites of plant fossils have been recovered
Undetermined	Geologic units for which little information is available
Low	Geologic units that are not known to have produced a substantial body of significant paleontologic material

Source: Society of Vertebrate Paleontology, 2014, Conformable Impact Mitigation Guidelines, website accessed 12/15/14: http://vertpaleo.org/The-Society/Governance-Documents/Conformable-Impact-Mitigation-Guidelines-Committee.aspx

Based on published regional geologic mapping, the project site is underlain by Pleistocene-age (between 11,700 to 2.6 million years before present) Riverbank and Modesto-Riverbank alluvial deposits.[38] 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.[39] Pleistocene alluvium in Yolo County is considered to have "high" sensitivity for paleontological resources.[40]

Site-specific information has been identified that indicates the sediment deposits in the vicinity of the project are not Pleistocene in age. As described in *Known Cultural Resources in the Project Vicinity* subsection above, YCCL operators uncovered four Native American burials at about 8 feet below the former ground surface while constructing a new landfill module in 1981. The discovery was located approximately 400 feet to the east of the eastern boundary of the project site during the excavation of Landfill Unit 3 in the same geologic unit (Riverbank alluvial deposits) that underlie a portion of the project site. The remains associated with one of the burials was age-dated and found to be approximately 3,900 years old. The date of 3,900 years before present indicates that the alluvium at the burial site (and by association at the project site) at 8 feet and above is Holocene in age (0 to 11,700 years before present). Holocene alluvial deposits in Yolo County are generally not considered paleontologically significant.[41] Since in-place relatively undisturbed sedimentary deposits get older with depth, it is possible that the deeper sediments are older, potentially of early Holocene and/or Pleistocene age.

[38] Wagner, D.L., Jennings, C.W., Bedrossian, T.L., and Bortugno, E.J., 1981. Sacramento Quadrangle Map No. 1A, 1:250,000. California Division of Mines and Geology, Sacramento, California.

[39] Bell, C.J., E.L. Lundelius, Jr., A.D. Barnosky, R.W. Graham, E.H. Lindsay, D.R. Ruez, Jr., H.S. Semken, Jr., S.D. Webb, and R.J. Zakrzewski, 2004, pp. 232-314. The Blancan, Irvingtonian, and Rancholabrean Mammal Ages. In Late Cretaceous and Cenozoic Mammals of North America, Edited by M.O. Woodburne, Columbia University Press, New York.

[40] Yolo County, 2009, Yolo County 2030 Countywide General Plan EIR, April 24.

[41] Yolo County, 2009, op.cit.

Regulatory Environment

The regulatory framework that mandates consideration of cultural resources in project planning includes federal, state, and local requirements. Cultural resources include: prehistoric and historic archaeological sites, districts, and objects; standing historic structures, buildings, districts, and objects; and locations of important historic events or sites of traditional and/or cultural importance to various groups. Cultural resources may be determined significant or potentially significant in terms of national, state, or local criteria either individually or in combination. Resource evaluation criteria are determined by the compliance requirements of a specific project.

State

The California Register of Historical Resources (Public Resources Code Section 5024.1) is a listing of those properties that are to be protected from substantial adverse change, and it includes properties that are listed, or have been formally determined to be eligible for listing in, the National Register of Historic Places, State Historical Landmarks, and eligible Points of Historical Interest. A historical resource may be listed in the California Register of Historical Resources if it meets one or more of the following criteria:

- It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;
- It is associated with the lives of persons important to local, California, or national history;
- It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or,
- It has yielded or has the potential to yield information important in the prehistory or history of the local area, California, or the nation.

Historical Resources

Public Resources Code Section 21084.1 stipulates that any resource listed in, or eligible for listing in the California Register of Historical Resources, is presumed to be historically or culturally significant. Resources listed in a local historic register or deemed significant in a historical resource survey (as provided under Public Resources Code Section 5024.1g) are presumed historically or culturally significant unless the preponderance of evidence demonstrates they are not. A resource that is not listed in or determined to be eligible for listing in the Public Resources Code, not included in a local register or historic resources, or not deemed significant in a historical resource survey may nonetheless be historically significant (Public Resources Code Section 21084.1). This provision is intended to give the Lead Agency discretion to determine that a resource of historic significance exists where none had been identified before and to apply the requirements of Public Resources Code Section 21084.1 to properties that have not previously been formally recognized as historic.

The California Environmental Quality Act equates a substantial adverse change in the significance of a historical resource with a significant effect on the environment (Public Resources Code Section 21084.1) and defines substantial adverse change as demolition, destruction, relocation, or alteration that would impair historical significance (Public Resources Code Section 5020.1).

Archaeological Resources

Where a project may adversely affect a unique archaeological resource, Public Resources Code Section 21083.2 requires the Lead Agency to treat that effect as a significant environmental effect. When an archaeological resource is listed in or is eligible to be listed in the California Register of Historical Resources, Public Resources Code Section 21084.1 requires that any substantial adverse effect to that resource be considered a significant environmental effect. Public Resources Code Sections 21083.2 and 21084.1 operate independently to ensure that potential effects on archaeological resources are considered as part of a project's environmental analysis. Either of these benchmarks may indicate that a project may have a potential adverse effect on archaeological resources.

Other California Laws and Regulations

Other state-level requirements for cultural resources management appear in the California Public Resources Code Chapter 1.7, Section 5097.5 "Archaeological, Paleontological, and Historical Sites," and Chapter 1.75 beginning at Section 5097.9 "Native American Historical, Cultural, and Sacred Sites" for lands owned by the state or a state agency.

The disposition of Native American burials is governed by Section 7050.5 of the California Health and Safety Code and Public Resources Code Sections 5097.94 and 5097.98, and falls within the jurisdiction of the Native American Heritage Commission.

Local - Yolo County

Title 8, Chapter 8 of the Yolo County Code (the Zoning Code) addresses the treatment of local historic landmarks and historic districts. This chapter of the County code is overseen by the Historic Resources Commission and provides for the identification, protection, enhancement, perpetuation, and use of cultural resources within the County that reflect elements of its cultural, agricultural, social economic, political, aesthetic, military, maritime, engineering, archaeological, religious, ethnic, natural, architectural and other heritage.

A building, structure, object, particular place, vegetation, or geology, may be designated a County historic landmark if it meets one or more of the following criteria:

- It exemplifies or reflects valued elements of the County's cultural, agricultural, social, economic, political, aesthetic, military, religious, ethnic, natural vegetation, architectural, maritime, engineering, archaeological, or geological history; or,

- It is identified with persons or events important in local, State, or national history; or,

- It reflects significant geographical patterns, including those associated with different eras of settlement and growth and particular transportation modes; or,

- It embodies distinguishing characteristics or an architectural style, type, period, or method of construction or is a valuable example of the use of indigenous materials or craftsmanship; or

- It is representative of the notable work of a builder, designer or architect; or,

- It represents an important natural feature or design element that provides a visual point of reference to members of the community.

2030 Countywide General Plan for Yolo County

The Conservation and Open Space Element of the General Plan presents goals, policies, and actions related to cultural resources. The following goals, policies, and actions of the General Plan related to cultural resources are relevant to the proposed 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-4.11: Honor and respect local tribal heritage.

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.

Action CO-A64: Require that discretionary projects which involve earth disturbing activities on previously undisturbed soils in an area determined to be archaeologically sensitive perform the following:

1) Enter into a cultural resources treatment agreement with the culturally affiliated tribe.
2) Retain a qualified archaeologist to evaluate the site if cultural resources are discovered during the project construction. The archaeologist will have the authority to stop and redirect grading activities, in consultation with the culturally affiliated tribe and their designated monitors, to evaluate the significance of any archaeological resources discovered on the property.
3) Consult with the culturally-affiliated tribe to determine the extent of impacts to archaeological resources and to create appropriate mitigation to address any impacts.

4) Arrange for the monitoring of earth disturbing activities by members of the culturally affiliated tribe, including all archaeological surveys, testing, and studies, to be compensated by the developer.
5) Implement the archaeologist's recommendations, subject to County approval.
6) Agree to relinquish ownership of all artifacts that are found on the project area to the culturally affiliated tribe for proper treatment and disposition.

Action CO-A65: Require that when cultural resources (including non-tribal archeological and paleontological artifacts, as well as human remains) are encountered during site preparation or construction, all work within the vicinity of the discovery is immediately halted and the area protected from further disturbance. The project applicant shall immediately notify the County Coroner and the Planning and Public Works Department. Where human remains are determined to be Native American, the project applicant shall consult with the Native American Heritage Commission to determine the person most likely descended from the deceased. The applicant shall confer with the descendant to determine appropriate treatment for the human remains, consistent with State law.

Action CO-A66: Prohibit the removal of cultural resources from the project site except by a qualified consultant and after the County planning staff have been notified. Prehistoric resources include chert or obsidian flakes, projectile points, mortars, pestles, dark friable soil containing shell and bone dietary debris, heat-affected rock, or human burials. Historic resources include stone or adobe foundations and walls, structures and features with square nails, and refuse deposits often in old wells and privies.

Action CO-A70: Refer draft environmental documents, including any studies and recommended mitigation measures, to the appropriate culturally-affiliated tribes for review and comment as part of the public review process.

4.4.3 Impacts and Mitigation Measures

Significance Criteria

The proposed project would result in a significant impact if it would:

a) Cause a substantial adverse change in the significance of a historical resource and/or archaeological resource as defined in California Environmental Quality Act Guidelines Section 15064.5;

b) Directly or indirectly destroy a unique paleontological resource or site;

c) Disturb any human remains, including those interred outside of formal cemeteries; or

d) Cause a substantial adverse change in religious or sacred sites, or unique ethnic-cultural resources.

Impact Analysis

The California Environmental Quality Act states that a project that may cause a substantial adverse change in the significance of a cultural resource may have a significant impact on the environment. Substantial adverse change in the significance of a cultural resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the resource would be materially impaired.

Impact CUL-1: The project could cause a substantial adverse change in the significance of archaeological and historical resources pursuant to §15064.5 of CEQA. (Significant)

Previously unknown archaeological and historical resources could be exposed during ground disturbing construction operations associated with ground disturbing excavation and/or other development. Construction operations in areas of native soil could result in the inadvertent exposure of buried prehistoric or historic archaeological materials that could be eligible for inclusion on the California Register of Historical Resources (Public Resources Code Section 5024.1) and/or meet the definition of a unique archeological resource as defined in Section 21083.2 of the Public Resources Code.

No recorded archaeological resources are present within the project site. A focused backhoe testing program did not expose any geological formations or sediments that appeared to have archaeological sensitivity. However, the extent of the recorded prehistoric archaeological site, CA-YOL-171 (P-57-000188), located on the eastern portion of the adjacent YCCL site, is not known. The site has yielded subsurface Native American burials and artifacts and its presence near the project site suggests a high sensitivity for potential buried prehistoric archaeological resources. In addition, the discovery of isolated prehistoric artifacts during the development of the adjacent YCCL also contributes to the overall archaeological sensitivity. The resource has not been formally evaluated for inclusion on the CRHR. At the time of its discovery in 1981, it appeared eligible for the inclusion on the National Register of Historic Places. The resource appears eligible for inclusion on both the California Register of Historical Resources and the National Register of Historic Places at the state and local levels under criterion d/4 and possibly criterion a/1 (see 36 CFR Part 60 and Public Resources Code Section 5024.1).

This impact would be reduced to a less-than-significant impact with implementation of Mitigation Measure CUL-1 which requires the review, identification, evaluation, and treatment of any significant archaeological finds by a Professional Archaeologist at the time of discovery. This measure will be implemented in accordance with the Yolo County General Plan 2030 Actions CO-A64, CO-A65, and CO-A66.

Mitigation Measure CUL-1a:

The project proponent shall note on any plans that require ground disturbing excavation that there is a potential for exposing buried cultural resources including prehistoric Native American burials.

Mitigation Measure CUL-1b:

The project proponent shall retain a Professional Archaeologist to provide pre-construction briefing(s) to supervisory personnel of any excavation contractor to alert them to the possibility of exposing significant prehistoric archaeological resources within the project area. The briefing shall discuss any archaeological 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 project proponent and archaeological team. Briefings shall be conducted annually, at minimum, and before any periods of intense excavation activity (e.g., excavation for landfill cell creation or closure). An "Alert Sheet" shall be posted in conspicuous locations at the project location to alert personnel to the procedures and protocols to follow for the discovery of potentially significant prehistoric archaeological resources.

Mitigation Measure CUL-1c:

The project proponent shall retain a Professional Archaeologist on an “on-call” basis during ground disturbing construction for the project to review, identify and evaluate cultural resources that may be inadvertently exposed during construction. The archaeologist shall review and evaluate any discoveries to determine if they are historical resource(s) and/or unique archaeological resources under the California Environmental Quality Act.

Mitigation Measure CUL-1d:

If the Professional Archaeologist determines that any cultural resources exposed during construction constitute a historical resource and/or unique archaeological resource, he/she shall notify the project proponent and other appropriate parties of the evaluation and recommended mitigation measures to mitigate to a less-than significant level. Mitigation measures may include avoidance, preservation in-place, recordation, additional archaeological testing and data recovery among other options. The completion of a formal Archaeological Monitoring Plan may be developed if extensive archaeological deposits are exposed during borrow operations. Treatment of any significant cultural resources shall be undertaken with the approval of the project proponent and the County of Yolo Planning, Public Works, and Environmental Services Department in consultation with the Yocha Dehe Wintun Nation.

Mitigation Measure CUL-1e:

A Monitoring Closure Report shall be filed with the County of Yolo Planning, Public Works, and Environmental Services Department at the conclusion of ground disturbing construction if archaeological and Native American monitoring of excavation was undertaken.

Impact CUL-2: Soil excavation could directly or indirectly destroy a unique paleontological resource. (Significant)

Regional geologic mapping indicates that the soil borrow site is underlain by Pleistocene-age unconsolidated sediments and the Yolo County General Plan indicates that Pleistocene alluvium in Yolo County is considered to have "high" sensitivity for paleontological resources. However, site-specific information (age-dated burial remains) indicates that at least the upper 8 feet of sediments in the vicinity of the borrow site are Holocene in age. Holocene alluvial deposits in Yolo County are generally not considered paleontologically significant.[42] It is possible that the deeper sediments are older, potentially of early Holocene and/or Pleistocene age, and therefore, without additional information, could be considered paleontologically sensitive. The project would excavate soils to depths up to 16 feet and therefore could impact potential paleontologically sensitive sediments. This is a significant impact.

Implementation of the following mitigation measures would reduce this impact to a less-than-significant level.

Mitigation Measure CUL-2

Prior to initiation of any 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 project location 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.

[42] Yolo County, 2009, Yolo County 2030 Countywide General Plan EIR, April 24

Impact CUL-3: The project could disturb human remains, including those interred outside of formal cemeteries. (Significant)

Previously unknown Native American human remains could be exposed during ground disturbing construction operations associated with subsurface development. Construction operations could result in the inadvertent exposure of buried prehistoric or protohistoric (ethnographic) Native American human remains. Native Americans consider the locations and remains of their ancestors to have religious and sacred importance as well as represent a unique ethnic cultural resource.

As discussed under Impact CUL-1, the extent of the prehistoric archaeological resource CA-YOL-171 (P-57-000188) located on the eastern portion of the YCCL adjacent to the project site has not been defined. The resource is identified as a "cemetery site" with subsurface Native American burials and artifacts. The geological formation associated with the known burials from CA-YOL-171, a sand ridge associated with former prehistoric sloughs, could extend into the project site. Future project activities have the possibility of disturbing human remains.

This significant impact would be reduced to a less-than-significant impact with implementation of Mitigation Measure CUL-3 which requires that the treatment of human remains and/or associated or unassociated funerary objects exposed during construction must comply with applicable state law. This measure will also be implemented in accordance with the County General Plan Actions CO-A65 and CO-A66.

Mitigation Measure CUL-3a:

Pursuant to State Health and Safety Code Section 7050.5(e) and Public Resources Code Section 5097.98, if human bone or bone of unknown origin is found at any time during on - or off-site construction, all work shall stop in the vicinity of the find and the County of Yolo Coroner shall be notified immediately. If the remains are determined to be Native American, the Coroner shall notify the California State Native American Heritage Commission, who shall identify the person believed to be the Most Likely Descendant. The archaeologist, project proponent, and Most Likely Descendant shall make all reasonable efforts to develop an agreement for the treatment of human remains and associated or unassociated funerary objects with appropriate dignity (CEQA Guidelines Sec. 15064.5(d)). The agreed upon Treatment Plan shall address the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. California Public Resources Code allows 48 hours to reach agreement on a Treatment Plan. If the Most Likely Descendant and the other parties do not agree on the reburial method, the project shall follow PRC Section 5097.98(b) which states that ". . . the landowner or his or her authorized representative shall reinter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance."

Mitigation Measure CUL-3b:

The Treatment Plan shall be implemented and any findings shall be submitted by the archaeologist in a professional report submitted to the County of Yolo Planning, Public Works, and Environmental Services Department, and Environmental Services Department, the Yocha Dehe Wintun Nation, and the California Historical Resources Information System, Northwest Information Center.

Impact CUL-4: The project could cause a substantial adverse change in religious or sacred sites, or unique ethnic-cultural resources (Less than Significant)

Based on database research and field reconnaissance, no surface indications of prehistoric or significant historic archaeological materials were noted. Three standing utilitarian building/structures and two water control features associated with former agricultural activities were present. These resources do not appear eligible for the California Register of Historical Resources under any of the criteria due to integrity and age and their common utilitarian nature. Therefore, this potential impact is less than significant.

Cumulative Effects

Cultural resources are unique and non-renewable resources that can provide important information on the lifeways and objects associated with prehistoric peoples. Native Americans consider prehistoric archaeological resources containing ancestral human remains as culturally important and highly significant to their culture. Many unique sites have been destroyed or damaged by regional agricultural activity and/or commercial/industrial/residential development in Central California prior to systematic study.

As described above, there is a potential to encounter previously undiscovered cultural resources, including archaeological and paleontological resources, as well as human remains, during implementation of the proposed project (though no known resources exist at the project site). Cumulative projects, including those listed on Table 5-1 and other past, present, and future excavation and grading projects could also encounter previously undiscovered archaeological and paleontological resources and human remains during construction. Thus, cumulative impacts on these resources could be potentially significant and the proposed project's contribution could be cumulatively considerable. However, Mitigation Measure CUL-1 requires, among other things, that the recommendations of a qualified archaeologist be followed if archaeological remains are discovered during excavation activities. Recommendations may include evaluation, preservation in place, archaeological test excavation, and/or archaeological data recovery and consultation with members of the Yocha Dehe Wintun Nation. Mitigation Measure CUL-2, require paleontological assessment and surveys in sensitive areas as well as monitoring (and potential recovery) if appropriate; and Mitigation Measure CUL-3 requires, among other things, that human remains found during excavation activities be protected until the County Coroner determines their status per Public Resources Code Sec. 5097.98. Implementation of these mitigation measures would reduce the project's contributions to a less-than-cumulatively considerable level (less than significant).

4.5 GREENHOUSE GAS EMISSIONS

4.5.1 Introduction

This section describes the expected emissions of greenhouse gases (GHGs) generated during project operations. It includes a summary of GHG laws, regulations, policies, and plans that may pertain to the project.

4.5.2 Setting

Physical Environment

Climate Change and GHG Emissions

Existing GHGs allow about two-thirds of the visible and ultraviolet light from the sun to pass through the atmosphere and be absorbed by the Earth's surface. To balance the absorbed incoming energy, the surface radiates thermal energy back to space at longer wavelengths primarily in the infrared part of the spectrum. Much of the thermal radiation emitted from the surface is absorbed by the GHGs in the atmosphere and is re-radiated in all directions. Since part of the re-radiation is back towards the surface and the lower atmosphere, the global surface temperatures are elevated above what they would be in the absence of GHGs. This process of trapping heat in the lower atmosphere is known as the greenhouse effect.

An increase of GHGs in the atmosphere results in a global warming trend. Increases in global average temperatures have been observed since the mid-20th century, and have been linked to observed increases in GHG emissions from anthropogenic sources. The primary GHG emissions of concern are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Other GHGs of concern include hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6), but their contribution to climate change is less than 1 percent of the total by well-mixed GHGs.[43]

According to the Intergovernmental Panel on Climate Change (IPCC), the atmospheric concentrations of CO_2, CH_4, and N_2O have increased to levels unprecedented in at least the last 800,000 years due to anthropogenic sources. In 2011, the concentrations of CO_2, CH_4, and N_2O exceeded the pre-industrial[44] levels by about 40, 150, and 20 percent, respectively. The Earth's mean surface temperature in the Northern Hemisphere from 1983–2012 was likely the warmest 30-year period over the last 1,400 years.[45]

The global increases in CO_2 concentration are due primarily to fossil fuel combustion, cement production, and land use change (e.g., deforestation). The dominant anthropogenic sources of CH_4 are from ruminant livestock, fossil fuel extraction and use, rice paddy agriculture, and landfills, while the dominant anthropogenic sources of N_2O are from ammonia for fertilizer and

[43] IPCC, 2013. *Climate Change 2013; the Physical Science Basis; Working Group I Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*.
[44] Pre-1750.
[45] IPCC, 2013. *Op cit.*

industry.[46] All emissions of HFCs, PFCs, and SF_6 are not naturally-occurring and originate from industrial processes such as semiconductor manufacturing, use as refrigerants and other products, and electric power transmission and distribution.[47]

Each GHG has a different global warming potential (GWP). For instance, CH_4 traps about 21 times more heat per molecule than CO_2. As a result, emissions of GHGs are reported in metric tons of "carbon dioxide equivalents" (CO_2e), where each GHG is weighted by its GWP relative to CO_2.

Effects of Greenhouse Gas Emissions

Some of the potential effects of increased GHG emissions and the associated climate change may include loss in snow pack (affecting water supply), sea level rise, and an increase in extreme weather events, large forest fires, and drought years. In addition, climate change may increase electricity demand for cooling, decrease the availability of hydroelectric power, and affect regional air quality and public health.

Regulatory Environment

Federal

In 2007, the United States Supreme Court ruled that CO_2 is an air pollutant as defined under the Clean Air Act, and that the United States Environmental Protection Agency (USEPA) has the authority to regulate emissions of GHGs. The USEPA made two distinct findings regarding GHGs under Section 202(a) of the Clean Air Act:

- **Endangerment Finding:** The current and projected concentrations of the six key well-mixed GHGs[48] (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) in the atmosphere threaten the public health and welfare of current and future generations.

- **Cause or Contribute Finding:** The combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution which threatens public health and welfare.

These findings do not themselves impose any requirements on industry or other entities. However, these findings were a prerequisite for implementing GHG emissions standards for vehicles. In collaboration with the National Highway Traffic Safety Administration, the USEPA finalized emission standards for light-duty vehicles (2012-2016 model years) in May of 2010 and heavy-duty vehicles (2014-2018 model years) in August of 2011.

There are no federal regulations or policies regarding GHG emissions applicable to the proposed project.

[46] IPCC, 2013. *Op cit.*
[47] Bay Area Air Quality Management District, 2010. *Source Inventory of Bay Area Greenhouse Gas Emissions*. Updated February.
[48] The well-mixed GHGs have lifetimes long enough to be relatively homogeneously mixed in the troposphere.

State

Executive Order S-3-05

In 2005, the California governor established Executive Order S-3-05, which states that California is vulnerable to the effects of climate change, including reduced snowpack in the Sierra Nevada Mountains, exacerbation of California's existing air quality problems, and sea level rise. To address these concerns, the executive order established statewide targets to reduce GHG emissions to 2000 levels by 2010, to 1990 levels by 2020, and to 80 percent below 1990 levels by 2050.

Assembly Bill 32

In 2006, the California legislature passed Assembly Bill (AB) 32, also known as the California Global Warming Solutions Act. AB 32 requires California to reduce statewide GHG emissions to 1990 levels by 2020. AB 32 directs the California Air Resources Board (CARB) to develop and implement regulations that reduce statewide GHG emissions, institute a schedule to meet the emissions target, and develop tracking, reporting, and enforcement tools to ensure that California achieves the required emission reductions.

Senate Bill 97

In 2007, the California legislature passed Senate Bill (SB) 97, which acknowledges that climate change is a prominent environmental issue that requires analysis under the California Environmental Quality Act (CEQA). Pursuant to SB 97, the State CEQA Guidelines were updated in 2010 to include provisions for mitigating GHG emissions and/or the effects of GHG emissions. The amended CEQA Guidelines (Section 15183.5) allow jurisdictions to analyze and mitigate the significant effects of GHGs at a programmatic level by adopting a plan for reducing GHG emissions (commonly referred to as a Climate Action Plan).

Climate Change Scoping Plan

In 2008, CARB approved the *Climate Change Scoping Plan* (Scoping Plan), which outlines the measures California will implement to achieve the GHG reductions required in AB 32. On May 22, 2014, CARB approved the first update to the Scoping Plan. The updated Scoping Plan contains the primary strategies California will implement to achieve a reduction of 169 million metric tons of CO_2e, or approximately 28 percent from the State's projected 2020 emission levels. Key elements of the Scoping Plan include the following recommendations:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a statewide renewable energy mix of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation-related GHG emissions for regions throughout California and pursuing policies and incentives to achieve those targets;

- Adopting and implementing measures pursuant to existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and

- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the state's long-term commitment to AB 32 implementation.

Senate Bill 375 (2008)

In 2008, California legislature passed SB 375, which aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocations to reduce vehicle emissions. SB 375 requires California's regional land use and transportation authorities to work with local agencies to achieve more compact growth patterns, thereby reducing the quantity of GHGs emitted by passenger vehicles. Each metropolitan planning organization (MPO) must adopt a Sustainable Communities Strategy or Alternative Planning Strategy, which will prescribe land use allocation in that MPO's Regional Transportation Plan. The Sustainable Communities Strategy seeks to achieve the targeted reductions in GHG emissions by encouraging compact growth in concert with transportation planning.

SB 375 requires CARB to establish GHG emission reduction targets related to transportation for each metropolitan transportation organization region. The Sacramento Area Council of Governments (SACOG) is the designated MPO for the region's six counties: El Dorado, Placer, Sacramento, Sutter, Yolo, and Yuba. On 19 April 2012, the SACOG adopted a *Metropolitan Transportation Plan/Sustainable Communities Strategy for 2035*, which proposes to help the region achieve its GHG goals with a 9 percent per capita GHG reduction in 2020 and a 16 percent reduction in 2035. On 12 June 2012, CARB approved the GHG reduction targets recommended by SACOG.[49]

Local

Yolo-Solano Air Quality Management District

The Yolo-Solano Air Quality Management District (YSAQMD) has jurisdiction over all of Yolo County and the northeast portion of Solano County, from Vacaville on the west, to Rio Vista on the South. The YSQAMD recommends that impacts to climate change be evaluated for every CEQA project; however, YSQAMD has not developed specific guidance to evaluate the potential significance of GHG emissions from new projects.[50]

Yolo County Climate Action Plan

In 2011, Yolo County adopted a Climate Action Plan (CAP)[51] pursuant to SB 97. The CAP summarizes GHG emissions inventories for 1990 and 2008 and emission projections estimated

[49] CARB, 2012. Executive Order G-12-044; Sacramento Area Council of Governments Sustainable Communities Strategy ARB Acceptance of GHG Quantification Determination.

[50] YSAQMD, 2007. *Handbook for Assessing and Mitigating Air Quality Impacts*. 11 July.

[51] Yolo County, 2011. *Yolo County Climate Action Plan: A Strategy for Smart Growth Implementation, Greenhouse Gas Reduction, and Adaptation to Global Climate Change*.

for 2020, 2030, and 2050. The CAP also describes measures and actions to reduce GHG emissions and satisfy the GHG reduction goals established by AB 32 and the Governor's Executive Order S-3-05 based on population and employment growth forecasts from the 2030 Countywide General Plan for Yolo County.

2030 Countywide General Plan for Yolo County

In 2011, the Conservation and Open Space Element of the General Plan was amended to incorporate GHG reduction measures from the adopted CAP. The following goal, policies, and actions of the amended General Plan related to GHG emissions are relevant to the proposed project:

Goal CO-8: Climate Change. Reduce greenhouse gas emissions and plan for adaptation to the future consequences of global climate change.

Policy CO-8.1: Assess current greenhouse gas emission levels and adopt strategies based on scientific analysis to reduce global climate change impacts.

Action CO-A117: Pursuant to the adopted Climate Action Plan (CAP), the County shall take all feasible measures to reduce its total carbon dioxide equivalent (CO_2e) emissions within the unincorporated area (excluding those of other jurisdictions, e.g., UC-Davis, Yocha Dehe Wintun Nation, DQ University, school districts, special districts, reclamation districts, etc.), from 648,252 metric tons (MT) of CO_2e in 2008 to 613,651 MT of CO_2e by 2020. In addition, the County shall strive to further reduce total CO_2e emissions within the unincorporated area to 447,965 MT by 2030. These reductions shall be achieved through the measures and actions provided for in the adopted CAP, including those measures that address the need to adapt to climate change.

Policy CO-8.5: Integrate climate change planning and program implementation into County decision making.

Action CO-A118: Pursuant to and based on the CAP, the following thresholds shall be used for determining the significance of GHG emissions and climate change impacts associated with future projects:

1) Impacts associated with GHG emissions from projects that are consistent with the General Plan and otherwise exempt from CEQA are determined to be less than significant and further CEQA analysis for this area of impact is not required.

2) Impacts associated with GHG emissions from projects that are consistent with the General Plan, fall within the assumptions of the General Plan EIR, consistent with the CAP, and not exempt from CEQA are determined to be less than significant or mitigated to a less-than-significant level, and further CEQA analysis for this area of impact is generally not required.

To be determined consistent with the CAP, a project must demonstrate that it is included in the growth projections upon which the CAP modeling is based, and that it incorporates applicable strategies and measures from the CAP as binding and enforceable components of the project.

3) Impacts associated with GHG emissions from projects that are not consistent with the General Plan, do not fall within the assumptions of the General Plan EIR, and/or are not consistent with the CAP, and are subject to CEQA review are rebuttably presumed (sic) to be significant and further CEQA analysis is required. The applicant must demonstrate to the County's satisfaction how the project will achieve its fair share of the established targets including:

- Use of alternative design components and/or operational protocols to achieve the required GHG reductions; and

- Use of real, additional, permanent, verifiable and enforceable offsets to achieve required GHG reductions. To the greatest feasible extent, offsets shall be: locally based, project relevant, and consistent with other long term goals of the County.

The project must also be able to demonstrate that it would not substantially interfere with implementation of CAP strategies, measures, or actions.

4.5.3 Impacts and Mitigation Measures

Significance Criteria

The proposed project would result in a significant impact if it would:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Impact Analysis

Impact GHG-1: The project's GHG emissions would impact the environment (Less than Significant)

The project's potential impacts on the environment from GHG emissions were evaluated based on the CEQA thresholds of significance adopted in the County's CAP and amended General Plan under Action CO-A118. The following threshold of significance is applicable to the project:

Impacts associated with GHG emissions from projects that are consistent with the General Plan, fall within the assumptions of the General Plan EIR, consistent with the CAP, and not exempt from CEQA are determined to be less than significant or mitigated to a less-than-significant level, and further CEQA analysis for this area of impact is generally not required.

As described in the CAP, a project must address the following requirements to demonstrate consistency with the threshold of significance:

- Pursuant to Section 15064.4(a)(1) of the CEQA Guidelines, estimate the level of GHG emissions that would result from implementation of the project;
- Demonstrate consistency with the CAP, including consistency with the growth projections upon which the CAP modeling is based, and incorporation of applicable strategies and measures from the CAP as binding and enforceable components of the project; and
- Demonstrate consistency with the General Plan land use designation and applicable policies.

The project's GHG emissions were estimated using the most current version of the California Emissions Estimator Model (CalEEMod).[52] CalEEMod uses widely accepted models for emission estimates combined with appropriate default data that can be used if site-specific information is not available. A copy of the CalEEMod report for the project, which summarizes the input parameters, assumptions, and findings, is included in Appendix B.

The model input parameters were based on the project-specific equipment and soil excavation requirements for daily cover operations and intermittent periods of module construction or closure. As described in Section 3, about 100,000 cubic yards of soil per year would be required for daily and intermediate cover. These soils would be excavated and transported using up to three self-elevating scrapers (e.g., Cat 623) operating approximately 4 hours per day and 5 days per week. Every few years an additional 200,000 cubic yards of soil would be required over a short period (1 to 3 months) when landfill modules are being constructed or old ones are being closed. Assuming the most intensive 1-month scenario, up to 3 excavators and 24 trucks operating 8 hours per day and 5 day per week would be required to excavate and haul 200,000 cubic yards of soil.

The maximum annual emissions of CO_2e expected from one module construction/closure event and one year of daily/intermediate cover operations is 715 MT of CO_2e (Table GHG-1). Assuming one module is constructed or closed every five years, the project would generate on the order of 20,000 MT of CO_2e over the lifetime of the project (50 years). In 2008, the unincorporated portions of Yolo County generated approximately 651,740 MT of CO_2e.[53] As a general comparison, the project's maximum annual GHG emissions would represent about 0.1

[52] ENVIRON International Corporation and the California Air Districts, 2013. *California Emissions Estimator Model Version 2013.2.2*. July.
[53] Yolo County, 2011. *Op. cit.*

percent of the total GHG emissions generated in 2008 for the unincorporated portions of Yolo County.

Table GHG-1: Summary of Maximum Annual GHG Emissions

Pollutant	CO_2e	
Units	MT/year	MT/50 years
Daily/Intermediate Cover	326	16,300
Module Construction/Closure	389	3,890
Total Emissions	715	20,190

Source: CalEEMod (Appendix B)

The growth projections used in the CAP modeling were based on population and employment growth forecasts from the General Plan adopted in 2009. As described in the Initial Study (Appendix B), the project would not result in a net increase in population and employment; therefore, the project is consistent with the growth projections used in the CAP. As described in Appendix F of the CAP, GHG reduction measures generally apply to agricultural practices, energy use, and waste management and would not apply to the project; therefore, none of the CAP measures can be incorporated as binding and enforceable components of the project.

The project site consists of two parcels (APN 042-100-017 and 018) that are designated as Agriculture (AG) in the 2030 Countywide General Plan for Yolo County and are zoned as Public and Quasi-Public (PQP). The project includes an application for a minor General Plan Amendment to change the land use designation of the project site to Public and Quasi-Public (PQ) to be consistent with the PQP zoning. The General Plan land use designation of PQ includes landfill uses, such as soil borrow for the YCCL. Upon approval of the minor General Plan Amendment application, the project's land use designation would be consistent with the General Plan land use designation. No other General Plan policies related to GHGs would be applicable to the project.

In accordance with the County's thresholds of significance, the project's GHG emissions would have a less-than-significant impact on the environment.

Impact GHG-2: The project would conflict with an applicable plan, policy or regulation for reducing GHG emissions (Less than Significant)

The GHG emission reductions goals adopted under the County's CAP and amended General Plan are consistent with the Statewide GHG reduction goals established by AB 32 and the Governor's Executive Order S-3-05. As described under Impact GHG-1, above, the project would comply with the County's CAP and General Plan. Therefore, the project's impact on applicable plans, policies, or regulations related to GHG emission reductions would be less than significant.

Cumulative Effects

The County's CAP analyzes the cumulative impact of GHG gas emissions from future projects based on inventories for 1990 and 2008 and emission projections estimated for 2020, 2030, and 2050, which are based on population and employment growth forecasts from the 2030 Countywide General Plan for Yolo County. Using the projection estimates for GHG emissions, the CAP also describes measures and actions that would reduce future GHG emissions below existing levels and satisfy the GHG reduction goals established by AB 32 and the Governor's Executive Order S-3-05. Therefore, by demonstrating compliance with the County's CAP, an individual project's GHG emissions are both accounted for and mitigated under the County's CAP and would not contribute to or result in a cumulatively considerable adverse impact to the environment. Since the project would comply with the CAP, the project would not have any significant cumulative impact.

4.6 HAZARDS AND HAZARDOUS MATERIALS

4.6.1 Introduction

This section describes the potential hazards and hazardous material[54] impacts of the proposed project. It includes a description of the historical land uses related to hazardous materials on the soil borrow site, identification of potential aviation hazards, and a summary of pertinent federal, state, and local agency laws, regulations, and programs related to these hazards.

4.6.2 Setting

Regulatory Environment

The proper management of hazardous materials is a common concern for all communities. Beginning in the 1970s, governments at the federal, state, and local levels became increasingly concerned about the effects of hazardous materials on human health and the environment. Numerous laws and regulations were developed to investigate and mitigate these effects. As a result, the storage, use, generation, transport, and disposal of hazardous materials are highly regulated by federal, state, and local agencies. These agencies and information about the laws, regulations, and programs they administer are summarized below.

Federal

Hazardous Materials Management

The United States Environmental Protection Agency (USEPA) is the lead agency responsible for enforcing federal laws and regulations governing hazardous materials that affect public health or the environment. The major federal laws and regulations enforced by the USEPA that could potentially relate to the project include: the Resource Conservation and Recovery Act (RCRA); the Toxic Substances Control Act (TSCA); the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA); the Superfund Amendments and Reauthorization Act (SARA); the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA); and the Hazardous Material Transportation Act (HMTA).

In 1976, RCRA was enacted to provide a general framework for the USEPA to regulate hazardous waste from the time it is generated until its ultimate disposal. In accordance with RCRA, facilities that generate, treat, store, or dispose of hazardous waste are required to ensure that the wastes are properly managed from “cradle to grave” by complying with the federal waste manifest system.

[54] The California Health and Safety Code Section 25501 defines a hazardous material as “…any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety, or to the environment. Hazardous materials include, but are not limited to, hazardous substances, hazardous waste, radioactive materials, and any material which a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.”

In 1976, TSCA was enacted to provide the USEPA authority to regulate the production, importation, use, and disposal of chemicals that pose a risk of adversely impacting public health and the environment. TSCA and subsequent amendments regulate specific contaminants such as asbestos-containing materials (ACMs).

In 1980, CERCLA, commonly known as the Superfund, was enacted to ensure that a source of funds was available for the USEPA to clean up uncontrolled or abandoned hazardous materials release sites that pose a risk of adversely impacting public health and the environment. Prohibitions and requirements regarding closed or abandoned hazardous waste sites and liability standards for responsible parties were also established by CERCLA. In 1986, SARA amended CERCLA to increase the Superfund budget, modify contaminated site cleanup criteria and schedules, and revise settlement procedures.

In 1972, an amendment to FIFRA provided the USEPA authority to regulate the manufacture, distribution, and import of pesticides. The USEPA approves registered uses of a pesticide based on an evaluation of its potential adverse effects to human health and the environment. The USEPA has granted the California Department of Pesticide Regulation (DPR) authority to enforce federal laws pertaining to the proper and safe use of pesticides. The DPR can also designate pesticides as "restricted material" based on potential adverse effects to public health, applicators, farm workers, domestic animals, honeybees, the environment, wildlife, or crops other than those being treated.

In 1990 and 1994, the HMTA was amended to improve the protection of life, property, and the environment from the inherent risks of transporting hazardous material in all major modes of commerce. The United States Department of Transportation (DOT) developed hazardous materials regulations, which govern the classification, packaging, communication, transportation, and handling of hazardous materials, as well as employee training and incident reporting. The transportation of hazardous materials is subject to both RCRA and DOT regulations.

Worker Health and Safety

The Occupational Health and Safety Administration (OSHA) is the federal agency responsible for enforcement and implementation of federal laws and regulations pertaining to worker health and safety. Under OSHA jurisdiction, the Hazardous Waste Operations and Emergency Response regulations require training and medical supervision for workers at hazardous waste sites. Additional regulations have been developed for construction workers regarding exposure asbestos during construction activities.

State

Hazardous Materials Management

In California, the USEPA has granted most enforcement authority of federal hazardous materials regulations to the California Environmental Protection Agency (Cal/EPA). Under the authority of Cal/EPA, the State Water Resources Control Board (State Water Board) and Department for Toxic Substances Control (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 SWRCB, DTSC, the California Department of Health Services, and the California Department of Resources Recycling and Recovery to submit information pertaining to sites associated with solid waste disposal, hazardous waste disposal, and/or hazardous materials releases to Cal/EPA.

The California Highway Patrol, the California Department of Transportation (Caltrans), and DTSC are responsible for enforcing federal and state regulations pertaining to the transportation of hazardous materials. If a discharge or spill of hazardous materials occurs during transportation, the transporter is required to take appropriate immediate action to protect human health and the environment (e.g., notify local authorities and contain the spill), and is responsible for the discharge cleanup.[55]

Worker Health and Safety

State worker health and safety regulations related to construction activities are enforced by the California Division of Occupational Safety and Health (Cal/OSHA). Regulations include exposure limits and requirements for protective clothing and training to prevent exposure to hazardous materials. Cal/OSHA also enforces occupational health and safety regulations specific to asbestos investigations and abatement, which equal or exceed their federal counterparts.[56]

Local

Hazardous Materials Management

The State Water Board supports the Central Valley Regional Water Quality Control Board (Regional Water Board), which is responsible for overseeing the protection of water quality in the project vicinity. Under authority from the Regional Water Board, the Yolo County Planning, Public Works, and Environmental Services Division implements a Local Oversight Program to oversee the investigation and remediation of leaking underground fuel tanks in Yolo County.

The routine management of hazardous materials in California is administered under the Unified Program.[57] The Cal/EPA has granted responsibilities to the Yolo County Planning, Public Works, and Environmental Services Division to implement and enforce hazardous material regulations in Yolo County under the Unified Program as a Certified Unified Program Agency.

2030 Countywide General Plan for Yolo County

The Health and Safety Element of the General Plan presents goals, policies, and actions intended to ensure safety from hazardous materials. The following goals, policies, and actions of the General Plan related to hazardous materials are relevant to the proposed project:

[55] California Code of Regulations, Title 22 *Social Security*, Section 66260.10 et seq.

[56] California Code of Regulations, Title 8 *Industrial Relations*, Sections 1529 *Asbestos* and 5192 *Hazardous Waste Operations and Emergency Response.*

[57] California Health and Safety Code, Chapter 6.11 *Unified Hazardous Waste and Hazardous Materials Management Regulatory Program*, Sections 25404-25404.9.

Goal HS-4: Hazardous Materials. 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.

Action HS-A45: 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.

Physical Environment

Wastewater Discharge

Between the 1960s and the mid-2000s, the soil borrow site was used as an overland flow treatment field for wastewater and stormwater discharged from the Hunt-Wesson tomato cannery facility located about 2.5 miles southwest of the borrow site.[58] The discharged water was sprayed across the borrow site via a system of underground piping to facilitate disposal by soil infiltration and evaporation. The wastewater disposal was conducted under a National Pollutant Discharge Elimination System permit No. CA0079227 administered by the Regional Water Board. Based on the results of previous soil and groundwater monitoring, the constituents of concern on the soil borrow site are mineral salts. While high salinity in soils can potentially limit certain plant growth, the presence of mineral salts in soil and groundwater on the borrow site does not pose a hazardous materials concern.[59]

Asbestos-Cement Pipe

The existing overland flow irrigation system on the soil borrow site was reportedly constructed from approximately 10,000 lineal feet of 12-inch diameter asbestos-cement (AC) pipe.[60] Asbestos is classified as a known carcinogen and potential health effects from inhaling asbestos fibers include lung cancer, mesothelioma, and/or asbestosis. The structural integrity of the underground AC pipe is unknown.

As required in 8 CCR 1529, the removal of AC pipe is subject to Cal/OSHA's safe worker practices and engineering controls for "Class II asbestos work." [61] These requirements include supervision from a registered asbestos contractor, air monitoring for asbestos fibers, prescribed methods of removal, and the use of personal protective equipment (e.g., respirators) if the AC pipe cannot be removed intact.

[58] Brusca Associates, Inc., 2013. *Phase I Environmental Site Assessment; Woodland 320 Property, APN 014-100-008, Yolo County, California*. 18 June.
[59] Brown and Caldwell, 2004. *ConAgra Grocery Products Company Davis Cannery Land Treatment Site Revised Site Investigation and Closure Report*. 26 October.
[60] *Geotrans, 2004. Op. cit.*
[61] "Class II asbestos work" means activities involving the removal of asbestos containing material which is not thermal system insulation or surfacing material.

The USEPA considers intact AC pipe to be Category II, non-friable,[62] non-regulated ACM. If non-friable AC pipe is left in place or removed in such a way that it is not crumbled, pulverized, or reduced to powder (i.e., becomes friable), it would not be subject to federal and state regulation.[63] Although non-friable AC pipe is not regulated, it must be removed, handled, and disposed of in a manner that keeps the material in whole pieces to remain non-friable and non-regulated. If properly managed, the AC pipe can be disposed of at a landfill that is certified to accept Category II non-friable ACM.

Friable ACM is considered a regulated asbestos-containing material (RACM) subject to the USEPA's Asbestos National Emission Standard for Hazardous Air Pollutants (NESHAP) requirements (40 CFR Part 61, Subpart M) and the Yolo-Solano Air Quality Management District's (YSAQMD's) asbestos rule (Rule 9.9). These regulatory requirements apply to AC pipelines when at least 260 linear feet of existing or expected RACM is being removed or repaired. The USEPA and YSAQMD asbestos regulations include requirements for agency notifications, engineering controls, waste handling, worker certifications, and reporting. All friable ACM materials must be disposed of at a landfill certified to accept friable ACM.

Aviation Hazards

Development near airports can pose a potential hazard to people and property on the ground, as well as create obstructions and other hazards to flight. The Sacramento Area Council of Governments (SACOG) has adopted *Comprehensive Land Use Plans* (CLUPs) for areas surrounding public-use airports within the counties of Yolo, Sacramento, Yuba, and Sutter. The closest public-use airport to the soil borrow site is the University Airport located approximately 6 miles to the southwest.[64] A CLUP has not been prepared for the University Airport.

The Sacramento International Airport is located about 7 miles northeast of the soil borrow site and is the next closest public-use airport. In December 2013, the *Sacramento International Airport Land Use Compatibility Plan* (Compatibility Plan) was adopted by SACOG that replaced the previous airport CLUP adopted by SACOG in 1994. Policy 3.4.3 in the Compatibility Plan addresses the potential of newly created water features within 10,000 feet of the airport operations area to attract birds and increase the potential of bird strikes on aircraft operations.[65] The soil borrow site is not located within 10,000 feet of the airport operations area.

4.6.3 Impacts and Mitigation Measures

Significance Criteria

The proposed project would result in a significant impact if it would:

[62] The USEPA defines "friable" as any material containing more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure.
[63] USEPA, 1991. U.S. Environmental Protection Agency Applicability Determination Index. Control Number: C99. Asbestos Cement Pipe Disposal. 17 July.
[64] AirNav, LCC, 2014. http://www.airnav.com/airports/. Accessed on 23 May.
[65] SACOG, 2013. *Sacramento International Airport Land Use Compatibility Plan*. Adopted 12 December.

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset or accident conditions involving the release of hazardous materials into the environment;

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment;

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area;

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

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or

h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

Impacts Found Less than Significant in Initial Study

The Initial Study (Appendix A) evaluated the potential impacts of the proposed project that would occur during soil excavation, transportation, and reclamation activities based on the significance criteria listed above. As summarized below, the project was found not to have a significant impact based on significance criteria (c), (d), (f), (g), and (h).

Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school

The nearest school is located approximately 2 miles south of the soil borrow site.[66] Since there are no existing or proposed schools within one-quarter mile of the soil borrow site, the project would have a less-than-significant impact on the health of children at schools.

[66] California Department of Education, 2014. *California School Directory*. http://www.cde.ca.gov/re/sd/. Accessed on 23 May.

Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment

Based on a review of regulatory databases, including listed hazardous material release sites compiled pursuant to Government Code 65962.5, the YCCL is the only hazardous materials release site reported within one mile of the soil borrow site. The landfill is located immediately east of the soil borrow site. Groundwater beneath the landfill has primarily been impacted by chlorinated volatile organic compounds. Since 1993, a groundwater extraction and treatment system has been operated at the landfill. Groundwater contamination from the YCCL site has not migrated beneath the soil borrow site. [67] Therefore, the project would not disturb land affected by solid waste disposal or hazardous materials releases and, thereby, would have no impact related to these land use conditions on the public or the environment.

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

The closest privately-owned airport to the soil borrow site is the Medlock Field Airport located about 2.5 miles to the northwest. The Medlock Field Airport has only one runway that is 2,600 feet long.[68] Based on the size and distance of the privately-owned airport from the soil borrow site, the project would have a less-than-significant impact on the airport's safety operations.

Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan

The Yolo County Office of Emergency Services (OES) is responsible for coordinating emergency response and evacuation in the event of a major disaster within Yolo County. The OES has identified general evacuation routes throughout the County, such as Interstate 5, Interstate 80, and State Route 113 located within about 5 miles of the soil borrow site. The project would not generate a net increase in daily vehicle trips on nearby roadways or limit access to the OES evacuation routes. Therefore, the project would have no impact on emergency response or evacuation plans.

Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands

The California Department of Forestry and Fire Protection (CAL FIRE) has mapped areas in Yolo County with significant fire hazards based on fuels, terrain, weather, and other relevant factors. These zones, referred to as Very High Fire Hazard Severity Zones, are classified by the CAL FIRE Director in accordance with Government Code Sections 51175-51189 to assist responsible local

[67] Yolo County Planning and Public Works Department, 2013. *Annual 2012-2013 Monitoring Report; Groundwater Disposal System, California Regional Water Quality Control Board Monitoring and Reporting Program No. R5-2002-0078*. 30 April.
[68] AirNav, LCC, 2014. *Op. cit.*

agencies in identifying measures to reduce the potential for losses of life, property, and resources from wildland fire. Fire services at the soil borrow site would be provided by the Davis Fire Department. CAL FIRE has determined that there are no Very High Fire Hazard Severity Zones located on or adjacent to the soil borrow site.[69] Therefore, the project would have a less-than-significant impact related to wildland fires.

Impact Analysis

Impact HAZ-1: Routine project earthwork operations could result in the accidental release of fuels or lubricants. (Significant)

Heavy equipment used for project soil excavation, transportation, and reclamation activities would require the routine use of fuels and lubricants. While routine fueling and equipment maintenance will not be conducted at the soil borrow site, an accidental spill during earthwork operations on the soil borrow site could affect soil quality. The existing Spill Prevention, Control and Countermeasures (SPCC) plan for the YCCL describes the procedures for responding to accidental spills on the YCCL. According to the SPCC plan, any soil affected by accidental spills (e.g., fuels or lubricants) would be removed promptly to minimize the potential for migration of contaminants to surface water bodies or groundwater. The impacted soils would then be stored and maintained in drums at the landfill for off-site disposal. Implementation of Mitigation Measure HAZ-1, below, would amend the SPCC plan to cover the soil borrow site and reduce this impact to a less-than-significant level.

Mitigation Measure HAZ-1:

The Spill Prevention, Control and Countermeasures plan for the YCCL shall be amended to include accidental spill response procedures on the soil borrow site.

Impact HAZ-2: Release of hazardous materials to the environment could affect workers and the public. (Significant)

Approximately 10,000 lineal feet of 12-inch diameter underground AC pipe would need to be removed from the soil borrow site. Various methods of AC pipe removal have been developed that minimize the potential for AC pipe to release asbestos fibers and become an RACM. For example, wetting and cutting the pipe with manual-powered snap cutters or carbide-tipped blade cutters does not produce significant amounts of airborne asbestos and the clean cut maintains the integrity of the non-friable ACM. However, the current structural integrity of the AC pipe is not known and excavation and removal activities could potentially damage the integrity of the pipe and result in releases of asbestos fibers into the environment.

Cal/OSHA, USEPA, and YSAQMD regulatory requirements for removing AC pipe, such as air monitoring, engineering controls, training certifications, and personal protective equipment (e.g., respirators), reduce the risk of exposure to and the release of asbestos fibers. Compliance with applicable Cal/OSHA, USEPA, and YSAQMD regulations during the removal and disposal of

[69] CAL FIRE, 2007. *Draft Fire Hazard Severity Zones in LRA; Yolo County*. 5 October.

AC pipe would minimize the potential for a release of asbestos fibers and protect construction workers. Implementation of Mitigation Measure HAZ-2, below, would ensure compliance with applicable asbestos regulations and reduce this impact to a less-than-significant level.

Mitigation Measure HAZ-2:

All AC pipe shall be removed from the soil borrow site by a Cal/OSHA registered asbestos contractor in accordance with the safe worker practices and engineering controls described in 8 CCR 1529 for "Class II asbestos work." As described in 8 CCR 1529, the AC pipe shall be removed in an intact state unless the contractor demonstrates that intact removal is not possible. Any friable ACM shall also be removed in accordance with the USEPA's Asbestos NESHAP requirements (40 CFR Part 61, Subpart M) and the YSAQMD's asbestos rule (Rule 9.9) and disposed of at a landfill that is certified to accept asbestos waste.

Cumulative Effects

Hazards and hazardous materials impacts are generally site-specific and/or have limited mobility (the project does not propose the use of any large amounts of compressed gases that could be released and affect a large area), and would not be expected to have cumulatively considerable effects beyond the project site. In addition, the handling of hazardous materials at the project site would be subject to these laws and regulations, and as a result the cumulative hazardous materials risks would not be significant. Therefore, implementation of the proposed project would not result in any significant cumulative hazards and hazardous materials impacts.

4.7 HYDROLOGY AND WATER QUALITY

4.7.1 Introduction

This section describes existing hydrologic and water quality conditions in the project vicinity and addresses potential impacts to these conditions from implementation of the proposed project. The setting describes historical water quality issues on the project site and local precipitation, evaporation, surface water, and groundwater conditions. Pertinent laws, regulations, policies, and plans related to the hydrology and water quality of the project site are also described. The impacts and mitigation measures section defines CEQA significance criteria, discusses potential impacts, and where necessary, provides applicable mitigation measures.

4.7.2 Setting

Physical Environment

Climate

The project site is located on the floor of the Sacramento Valley, which is relatively flat. This region has a Mediterranean climate characterized by hot dry summers and mild rainy winters. 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.[70] The average annual rainfall near the project site is about 17 inches and the wet season generally occurs from November through March. The average annual pan evaporation near the project site is about 82 inches and the monthly pan evaporation rate exceeds precipitation by about 5 to 12 inches during the dry season (i.e., April through October). The average annual difference between pan evaporation and precipitation is about 5.4 feet.[71]

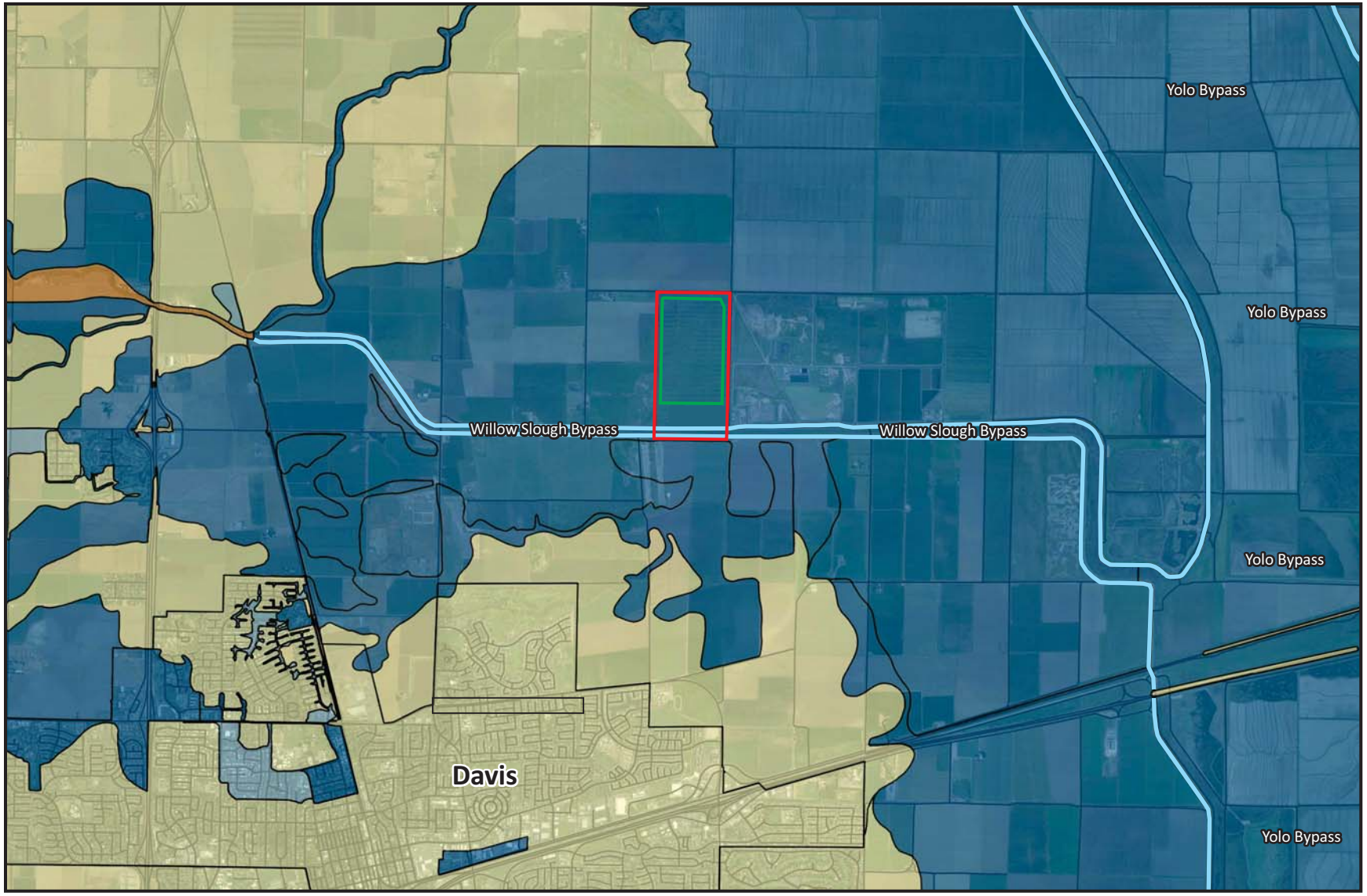
Surface Water

The Willow Slough Bypass, a watercourse that drains the valley floor between Putah and Cache Creeks, flows through the southern portion of the project site immediately south of CR 28H. The Willow Slough Bypass drains into the Yolo Bypass located about 3.3 miles east of the project site. These waterways and their associated levees are part of the state-federal flood protection system in the Central Valley. The southern boundary of the soil borrow site would be set back approximately 700 feet from the Willow Slough Bypass levee (Figure 4.7-1). Stream flow in the Willow Slough Bypass is primarily influenced by precipitation and agricultural runoff.[72]

[70] YSAQMD, 2007. *Handbook for Assessing and Mitigating Air Quality Impacts*. 11 July.
[71] BASELINE, 2014. *Technical Memorandum: Hydrogeological Analysis for the Yolo County Central Landfill Soil Borrow Site*. 23 October.
[72] *Ibid*.

State-Federal Levees and Flood Hazards Map

Figure 4.7-1



Source: FEMA, 2012.

Legend

- 1% Annual Chance Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Area of Undetermined Flood Hazard
- Regulatory Floodway
- Project Site
- Soil Borrow Site
- State-Federal Levee

0 1.0 Mile

Yolo County Central Landfill
Soil Borrow Site Project

BASELINE ENVIRONMENTAL CONSULTING

Stormwater Drainage

Project Site Drainage

Stormwater runoff from the field on project site north of CR 28H is drained by a series of east-west trending low channels (with intervening low berms) that drain into a ditch along the east perimeter of the project site. When present, water in the eastern drainage ditch drains stormwater from the field into a concrete basin located in the southeast corner of the field. As shown on Figure 4.7-2, the concrete basin and drainage system were designed to support an overland flow treatment field for wastewater and stormwater discharged from the Hunt-Wesson tomato cannery facility, which was located in Davis. Operation of the overland flow treatment field ceased in the mid-2000s.[73] During operation of the treatment field, wastewater and stormwater in the concrete basin was either recirculated or discharged into the Willow Slough Bypass in accordance with adopted Waste Discharge Requirements (WDRs). In 2005, the Regional Water Board rescinded the WDRs for discharges into the Willow Slough Bypass from the treatment field (see *Groundwater* discussion, below). Since 2005, stormwater accumulation in the concrete basin has been controlled by evaporation.

The Willow Slough Bypass levee creates a general stormwater flow divide along the southern portion of the project site, where any stormwater south of CR 28H drains into the Willow Slough Bypass. However, as shown on Figure 4.7-2, there are two additional peripheral drainage ditches located along the east and west side of the project site that drain south through culverts beneath CR 28H into the Willow Slough Bypass. The eastern peripheral drainage ditch primarily collects stormwater runoff from CR 104. The western peripheral drainage ditch consists of a series of interconnected ditches that primarily collect stormwater runoff from the adjacent properties to the west. A slightly elevated farm road located on the adjacent property immediately to the north prevents stormwater from draining onto the project site.

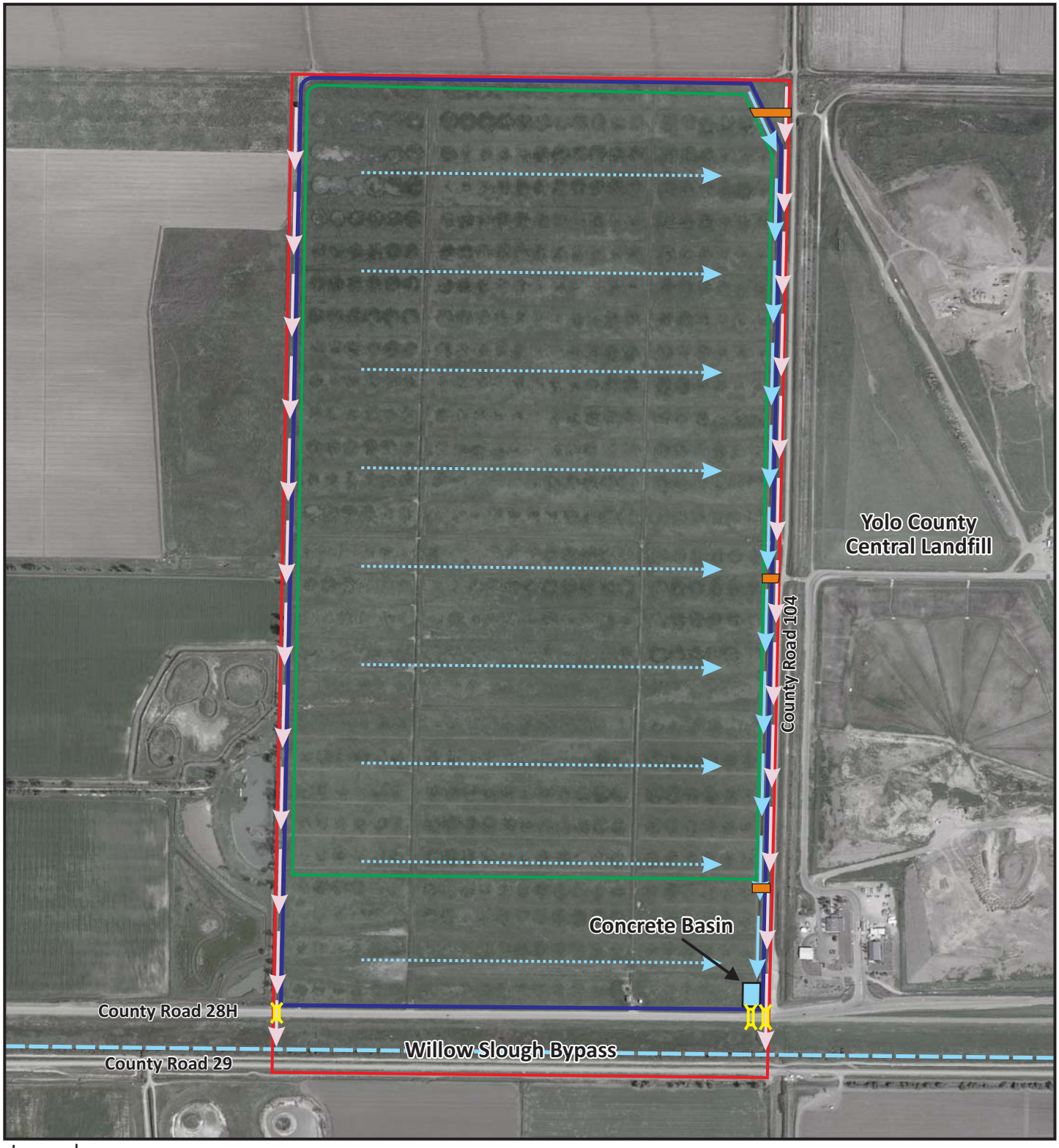
YCCL Stormwater Management

Prior to November 2012, the YCCL managed stormwater discharges at the landfill (adjacent to the project site to the east) in accordance with the 1997 National Pollutant Discharge Elimination System (NPDES) Industrial General Permit. The Stormwater Pollution Prevention Plan (SWPPP) for the landfill was updated to include drainage modifications to retain all runoff from a 100-year 24-hour storm event. Since all runoff is retained, a Notice of Termination (NOT) application was granted by the State Water Board in February 2013, which effectively terminated coverage under the Industrial General Permit. The SWPPP also indicated that it would be maintained as a planning tool to ensure proper management of facility stormwater even though a SWPPP is not required with an approved NOT. Current stormwater permitting and management practices on the YCCL do not include the project site.

[73] Brusca Associates, Inc., 2013. *Phase I Environmental Site Assessment, ASTM Standard E 1527-07; Woodland 320 Property, APN 042-100-08, Yolo County, California*. 18 June

Stormwater Drainage

Figure 4.7-2



Legend

- Overland Flow Treatment Site
- Project Site
- Soil Borrow Site
- Internal Surface Drainage
- Internal Drainage Ditch
- Peripheral Drainage Ditches
- Borrow Site Access Point
- Culvert

Yolo County Central Landfill
Soil Borrow Site

0 750 Feet

BASELINE ENVIRONMENTAL CONSULTING

Flooding

Prior to 2010, the Federal Emergency Management Agency (FEMA) considered the effects of the Willow Slough Bypass and Yolo Bypass levees when mapping the 100-year flood zone in the project vicinity. As a result, the project site was not mapped within a 100-year flood zone at that time. However, FEMA published new Flood Insurance Maps in 2010 that discredited the effects of the Willow Slough Bypass and Yolo Bypass levees and expanded the approximate limits of the 100-year flood hazard zone[74] to include the project site and adjacent lands (Figure 4.7-1).[75] The expanded floodplain classification was the result of a new approach used by FEMA that requires levee owners to provide technical documentation that demonstrates that a levee meets federal design, construction, maintenance, and operation standards to provide protection from a 100-year flood. While there has never been a reported failure along the Willow Slough Bypass and Yolo Bypass levees, the technical data required by FEMA to consider levee protection was not available.

Dam Failure

The Monticello dam is located about 10 miles west of the City of Winters. In the event of a structural failure at the Monticello dam, the California Office of Emergency Services has determined that the Willow Slough Bypass levee on the southern portion of the project site would provide adequate flood protection on lands immediately north of the levee, which includes the soil borrow site.[76] No other potential dam failures would be expected to affect the borrow site.

Groundwater

Soil Borrow Site Groundwater Quality and Trends

In October 2014, a hydrogeological analysis was performed for the borrow site that evaluated historic groundwater level trends.[77] Based on the analysis, groundwater generally flows to the east and northeast across the soil borrow site at a gradient of about 0.003 feet per foot (Figure 4.7-3). Groundwater flow to the northeast is influenced by a slurry wall and groundwater extraction wells located on northwest portion of the YCCL site (see discussion below). Groundwater levels in the project vicinity fluctuate seasonally with the highest groundwater levels observed near the end of the wet season and the lowest groundwater levels observed near the end of the dry season. The average depths to groundwater on the borrow site range from about 8 to 12 feet below the ground surface. Based on review of historical groundwater elevation data collected at the YCCL since 2007, the projected lowest and highest seasonal groundwater elevations expected on the borrow site would be about 9 and 26 feet (NAVD 88), respectively (Figure 4.7-4).

[74] The project site is mapped in a FEMA Zone A, which is an approximate flood hazard area for which no base flood elevations have been determined.

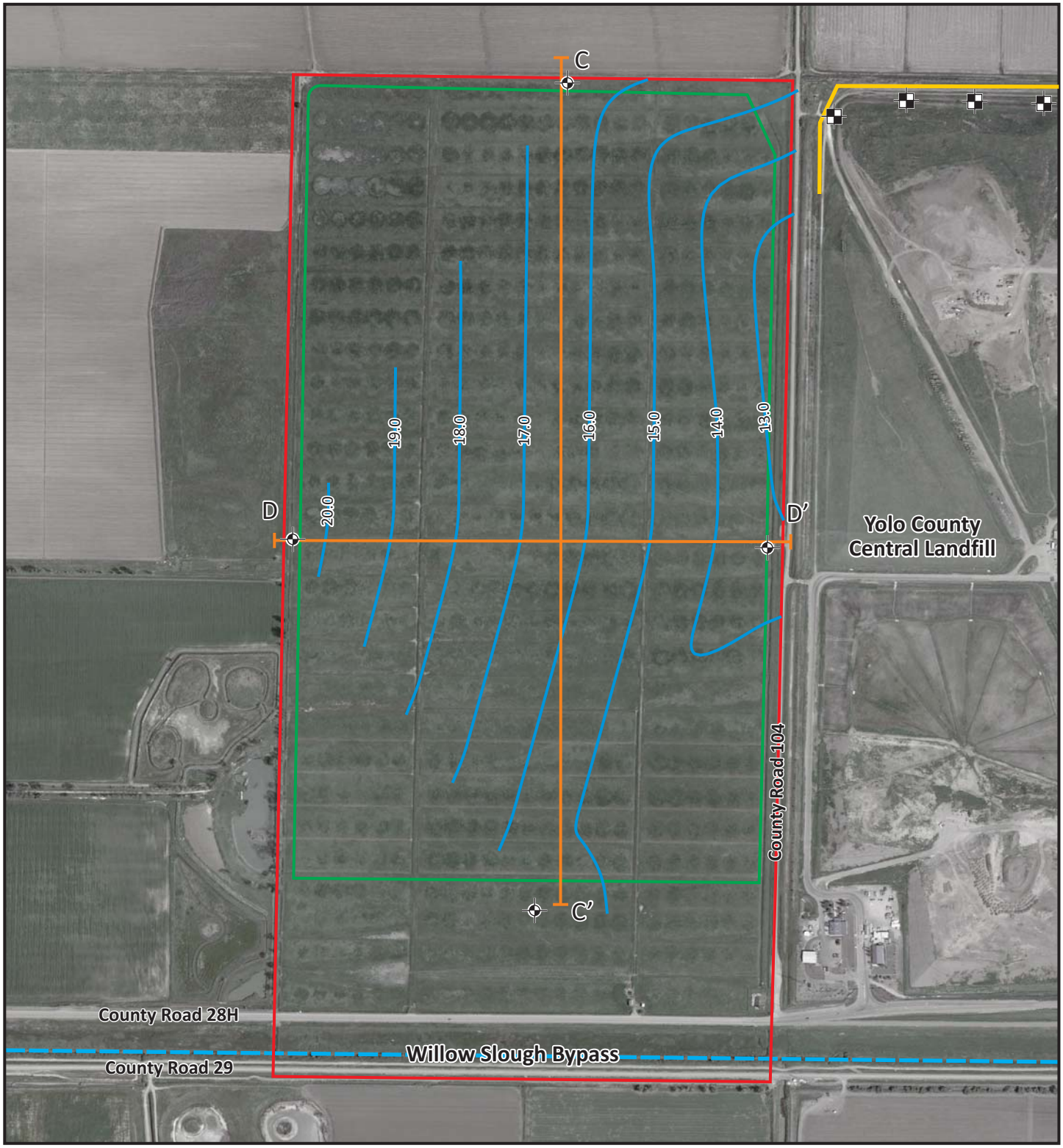
[75] FEMA, 2012. *National Flood Hazard Layer Version 1.1.1.0*. 17 May.

[76] California Office of Emergency Services, 2012. *Yolo County Operational Area Multi-Jurisdictional Hazard Mitigation Plan.* December.

[77] BASELINE Environmental Consulting, 2014. *Op. cit.*

Average Groundwater Elevation Contour Map

Figure 4.7-3



Legend

- Project Site
- Soil Borrow Site
- C — C' Cross Section Location
- 19.0 Groundwater Contour (feet NAVD 88)
- Slurry Wall
- Monitoring Well Location
- Extraction Well Location

Note: Average groundwater elevations were measured in May 2014 and are described in BASELINE's (2014) *Technical Memorandum: Hydrogeological Analysis for the Yolo County Central Landfill Soil Borrow Site.* Detailed cross sections are shown in Figure 4.7-4.

Yolo County Central Landfill Soil Borrow Site

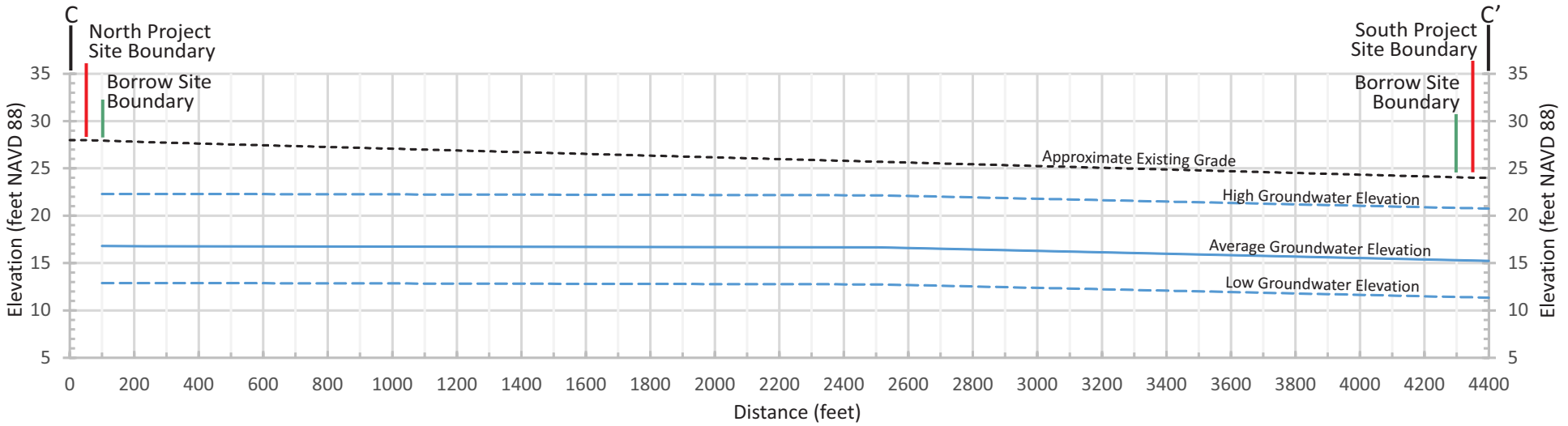
0 750 Feet

BASELINE ENVIRONMENTAL CONSULTING

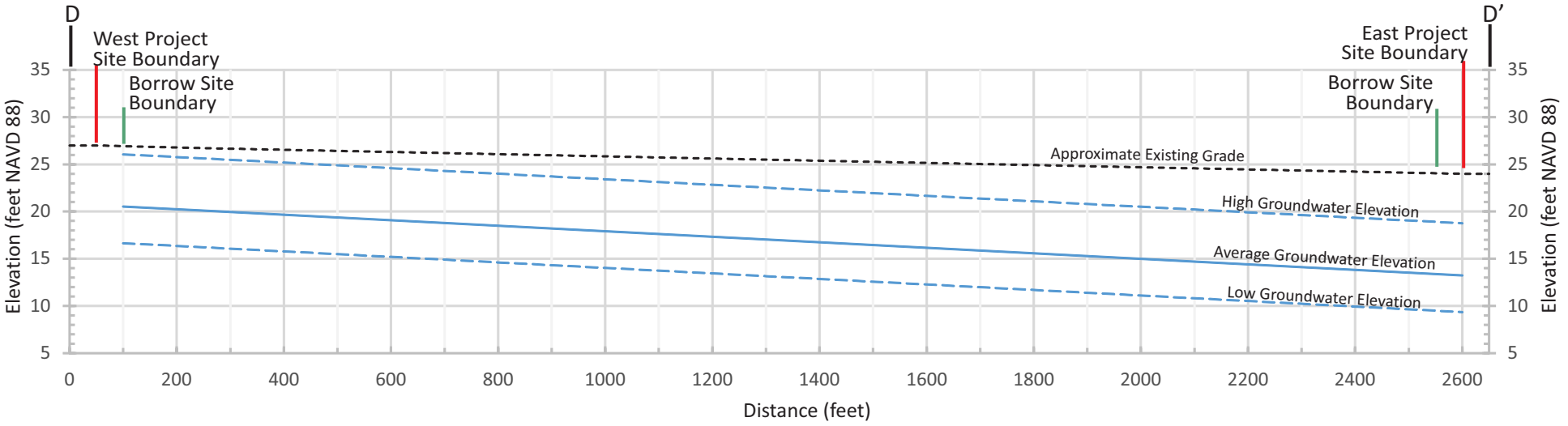
Hydrogeological Cross Sections C - C' and D - D'

Figure 4.7-4

North to South Cross-Section C - C'



West to East Cross-Section D - D'



Yolo County Central Landfill Soil Borrow Site Project

Note: Cross section locations shown on Figure 4.7-3.

BASELINE ENVIRONMENTAL CONSULTING

Between the 1960s and 1999, the project site north of CR 28H was used as an overland flow treatment field (Figure 4.7-2) for wastewater discharged from the Hunt-Wesson tomato cannery facility.[78] The wastewater was sprayed across the field via a system of underground piping to facilitate infiltration and evaporation. Discharge water that did not infiltrate or evaporate was drained to a concrete basin located in the southeastern corner of the field. Water would then be pumped back to the spray heads or pumped into the Willow Slough Bypass immediately south of the basin. The concrete basin is equipped with pumps and a small control shed.[79]

The application of wastewater from the tomato cannery resulted in elevated concentrations of sodium in soils, which caused soil deterioration (e.g., crusting) and water infiltration problems. Between the 1960s and 1970s, gypsum (calcium sulfate) was applied to the soils at the overland flow treatment site to leach the sodium out of the shallow soils and improve the infiltration capacity. However, the addition of gypsum and the continued discharge of wastewater increased the soil and groundwater salinity over time. In April 1999, the Regional Water Board adopted Waster Discharge Requirements (WDRs) for the overland flow treatment site (Order No. 99-006). The WDRs prescribed monitoring and reporting requirements for the discharge of wastewater to the overland flow treatment field and the Willow Slough Bypass. Due to several discharge violations of wastewater exceeding the allowable concentrations for total dissolved solids and biological oxygen demand limits and the discharger's failure to monitor wastewater discharged to the Willow Slough Bypass, the Regional Water Board issued a Cease and Desist Order (No. 99-007) in 1999.[80]

In October 2004, the discharger prepared a *Revised Site Investigation and Closure Report* that assessed the fate and transport of soluble salts in the soil and groundwater at the overland flow treatment site. A comparison of soil analytical results collected from 2001 and 2004 indicated that the average soil salinity across the treatment site was decreasing over time due to rainfall percolation and dilution. In 2004, an electromagnetic survey showed that the highest soil salinity remained in the southeast portion of the treatment field.[81]

Four monitoring wells are located near the perimeter of the overland treatment site (Figure 4.7-3). Groundwater samples collected from the perimeter monitoring wells in 2004 indicated that groundwater salinity was greatest in the southeast portion of the treatment field with electrical conductivity levels estimated as high as about 4,000 micromhos per centimeter (µmhos/cm). Groundwater electrical conductivity levels in the northwest portion of the treatment site were estimated below about 100 µmhos/cm. One of the Regional Water Board's current criterion for designating beneficial uses of groundwater in the Sacramento River Basin as municipal or domestic water supply is for electrical conductivity levels to be below 5,000

[78] Stormwater from the cannery facility was also discharged to the field until the mid-2000s.
[79] Brusca Associates, Inc., 2013. *Op. cit*.
[80] *Ibid.*
[81] Brown and Caldwell, 2004. *ConAgra Grocery Products Company, Davis Cannery Land Treatment Site, Revised Site Investigation and Closure Report*. 26 October.

µmhos/cm;[82] therefore, based on the reported 2004 analytical results and improving water quality trends, the beneficial use of groundwater at the overland treatment site (which includes the soil borrow site) for municipal or domestic water supply were being maintained.

The 2004 *Revised Site Investigation and Closure Report* concluded that groundwater quality protection measures were not necessary at the overland treatment site and recommended no further regulatory action.[83] In January 2005, the discharger prepared an *Operations Plan* that described post-closure operations and maintenance of the pump station used for the overland treatment site.[84] In March 2005, based on review of the 2004 *Revised Site Investigation and Closure Report* and the *2005 Operations Plan,* the Regional Water Board rescinded the WDR Order No. 99-006 and Cease and Desist Order (No. 99-007) for the overland treatment site and determined that no further actions were required.[85]

YCCL Groundwater Management

Groundwater beneath portions of the YCCL site has been impacted chlorinated volatile organic compounds. Since 1989, shallow groundwater elevations in the vicinity of the YCCL have been influenced by groundwater extraction wells installed along the north border of the landfill (Figure 4.7-3), which were designed and are operated to prevent groundwater contamination from migrating offsite. Historically, shallow groundwater in the vicinity of the YCCL has flowed toward the extractions wells, except for groundwater north of the YCCL that is hydraulically separated from the extraction wells by a slurry wall.[86]

Regulatory Environment

Federal

Clean Water Act

The federal Clean Water Act of 1972 (CWA) is the primary federal law that protects the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands, and is administered by the USEPA. The CWA operates on the principle that all discharges into the nation's waters are unlawful unless specifically authorized by a NPDES permit. The USEPA has delegated its authority to implement and enforce most of the applicable water quality provisions to the individual states. In California, the provisions are enforced by nine Regional Water Quality Control Boards under the auspices of the State Water Board (and are described below under State Regulations).

National Flood Insurance Program

In 1968, Congress created the National Flood Insurance Program (NFIP) in response to the rising cost of taxpayer funded disaster relief for flood victims and the increasing amount of damage

[82] Regional Water Board, 2011. *The Water Quality Control Basin (Basin Plan) for the California Water Quality Control Board Central Valley Region; Fourth Edition; The Sacrament River Basin and the San Joaquin River Basin*. Revised October 2011 with approved amendments.
[83] Brown and Caldwell, 2004. *Op. cit.*
[84] Brown and Caldwell, 2005. *Lewis Homes ConAgra-Davis Overflow Site Closure Operations Plan*.
[85] Regional Water Board, 2005. WDR Order No. R5-2005-0036. March.
[86] DIWM, 2014. *First Semester 2014 Monitoring Report: Yolo County Central Landfill*. 31 July.

caused by floods. The NFIP makes federally-backed flood insurance available for communities that agree to adopt and enforce floodplain management ordinances to reduce future flood damage. FEMA manages the NFIP and creates Flood Insurance Rate Maps (FIRMs) that designate 100-year flood hazard zones and delineate other flood hazard areas. A 100-year floodplain zone is the area that has a one in one hundred (1 percent) chance of being flooded in any one year based on historical data.

State

Central Valley Flood Protection Board

In 2007, as a result of new legislation, the new Central Valley Flood Protection Board (CVFPB) replaced the State Reclamation Board and took on new responsibilities related to floodplain development. The purpose and mission of the CVFPB, with authority granted under the California Water Code and Title 23 of the California Code of Regulations, is 1) to control flooding along the Sacramento and San Joaquin rivers and their tributaries in cooperation with the Corps; 2) to cooperate with various agencies of the federal, state and local governments in establishing, planning, constructing, operating, and maintaining flood control works; 3) to maintain the integrity of the existing flood control system and designated floodways through the board's regulatory authority by issuing permits for encroachments. The board requires applications to be filed for, among other things, all proposed encroachments within the floodways under its jurisdiction and any levees adjacent thereto, as well as on streams that may affect those floodways.

The borrow site is not within the jurisdiction of the CVFPB (the jurisdiction of the CVFPB ends just east of the borrow site). However, the project site is under the jurisdiction of the County (which implements the requirements of the NFIP) and any grading or alteration of the topography within a FEMA special flood hazard zone in unincorporated Yolo County would require compliance with the Yolo County Flood Management Ordinance (described below).

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act, promulgated in 1969, implements the federal CWA in California. It established the State Water Board and divided the State into nine hydrologic regions, each overseen by a Regional Water Quality Control Board. The State Water Board is the primary state agency responsible for protecting the quality of the State's surface and groundwater supplies, but much of its daily implementation authority is delegated to the nine Regional Water Quality Control Boards. The Porter-Cologne Act also provides for the development and tri-annual review of Water Quality Control Plans (Basin Plans) that designate beneficial uses of California's major rivers and groundwater basins and establish narrative and numerical water quality objectives for those waters.

NPDES General Permits

There are two NPDES General Permits that could apply to the project. Based on preliminary consultation with the Regional Water Board staff, coverage under only one of the permits would be required. These General Permits are described below.

Construction General Permit

Projects disturbing more than 1 acre of land during construction are required to submit Permit Registration Documents (PRDs) to the State Water Board to be covered under the NPDES General Permit for Discharges of Stormwater Discharges Associated with Construction and Land Disturbance Activities (Water Quality Order No. 2009-0009-DWQ, NPDES General Permit No. CAS000002) (Construction General Permit). The PRDs include, but are not limited to, a Notice of Intent (NOI), SWPPP, and Risk Assessment. Activities subject to the Construction General Permit include clearing, grading, excavation, and other land disturbance activities.

The discharger must ensure that the SWPPP is written, amended, and certified by a Qualified SWPPP Developer. The SWPPP describes Best Management Practices (BMPs), which must be implemented by a Qualified SWPPP Practitioner, that are designed to reduce potential impacts to surface water quality and achieve state water quality standards. Common BMPs on construction sites include the placement of vegetation, straw, fiber, stabilizing emulsion, protective blankets, or other materials on areas of disturbed soils to reduce erosion.

The discharger must also prepare a Risk Assessment that evaluates the sediment risk and receiving water risk during construction to assign a Risk Level to the construction site. Depending on the Risk Level, different monitoring and control measures are required to comply with the Construction General Permit.

The discharger may file a Notice of Termination (NOT) when construction is complete or ownership has been transferred. The Regional Water Board will consider construction completed when all of the following conditions have been met:

- The final stabilization (which means that a site does not pose any additional sediment discharge risk than it did prior to the commencement of construction activity) has been achieved;
- There is no potential for construction-related stormwater pollutants to be discharged into site runoff;
- Construction materials and wastes have been disposed of properly;
- Compliance with the Post-Construction Standards in the Construction General Permit has been demonstrated;
- Post-construction stormwater management measures have been installed and a long-term maintenance plan[87] has been established; and

[87] For the purposes of this requirement a long-term maintenance plan will be designed for a minimum of five years, and will describe the procedures to ensure that the post-construction stormwater management measures are adequately maintained.

- All construction-related equipment, materials, and any temporary BMPs are no longer needed and are removed from the site.

Industrial General Permit

The new Industrial General Permit (NPDES General Permit for Stormwater Discharges Associated with Industrial Activities, Order No. CAS000001) was adopted April 1, 2014 and becomes effective July 1, 2015. Therefore, activities under the proposed project would be subject to the new permit.

The Industrial General Permit regulates discharges associated with 10 broad categories of industrial activities, including mining activities. The Industrial General Permit requires the implementation of management measures that will achieve the performance standard of best available technology economically achievable (BAT) and best conventional pollutant control technology (BCT). The Industrial General Permit also requires the development of a SWPPP and a monitoring plan. Through the SWPPP, sources of pollutants are to be identified and the means to manage the sources to reduce storm water pollution are described. The Industrial General Permit requires:

- Dischargers to implement a set of minimum BMPs. Implementation of the minimum BMPs, in combination with any advanced BMPs necessary to reduce or prevent pollutants in industrial storm water discharges;

- Compliance with Numeric Action Levels (NALs). This General Permit contains two types of NAL exceedances. An annual NAL exceedance occurs when the average of all sampling results within a reporting year for a single parameter (except pH) exceeds the applicable annual NAL. An instantaneous maximum NAL exceedance occurs when two or more analytical results from samples taken for any parameter within a reporting year exceed the applicable instantaneous maximum NAL value. Instantaneous maximum NALs are only for Total Suspended Solids and Oil and Grease.

- Development and implementation Exceedance Response Actions (ERA). This General Permit requires Dischargers to develop and implement ERAs, when an annual NAL or instantaneous maximum NAL exceedance occurs during a reporting year. The first time an annual NAL or instantaneous maximum NAL exceedance occurs for any one parameter, a Discharger's status is changed from Baseline to Level 1 status, and the Discharger is required to evaluate and revise, as necessary, its BMPs (with the assistance of a QISP) and submit a report prepared by a QISP. The second time an annual NAL or instantaneous maximum NAL exceedance occurs for the same parameter in a subsequent reporting year, the Discharger's status is changed from Level 1 to Level 2 status, and Dischargers are required to submit a Level 2 ERA Action Plan and a Level 2 ERA Technical Report.

<u>Basin Plan (Regional Water Quality Control Board)</u>

The Regional Water Board implements the Basin Plan, which is a master policy document for managing water quality in the Sacramento River Basin (which includes the project site) and the

San Joaquin River Basin.[88] The Basin Plan establishes beneficial uses of surface water and groundwater within this region. All groundwater in the Sacramento River Basin is considered as suitable or potentially suitable, at a minimum, for municipal and domestic water supply, agricultural supply, industrial service supply, and industrial process supply. The Willow Slough Bypass does not have any listed beneficial use designations in the Basin Plan and therefore, by default, the water body is considered as suitable or potentially suitable, at a minimum, for municipal and domestic water supply. Specific narrative and numerical water quality objectives (e.g., color and concentration limits, respectively) have been developed in the Basin Plan to protect beneficial use designations through the adoption of WDRs and cleanup abatement orders.

Yolo County

2030 Countywide General Plan

The Conservation and Open Space Element of the General Plan describes existing water resources in Yolo County and presents goals, policies, and actions intended to protect those resources. The following goal, policies, and actions of the General Plan related to water resources are relevant to the proposed project:

Goal CO-5: Water Resources. Ensure an abundant, safe, and sustainable water supply to support the needs of existing and future generations.

Policy CO-5.5: Integrate water conservation and water quality protection into all aspects of the planning and development process.

Policy CO-5.6: Improve and protect water quality for municipal, agricultural, and environmental uses.

Action CO-A89: Require the implementation of Best Management Practices (BMPs) to minimize erosion, sedimentation, and water quality degradation resulting from new development and increases in impervious surfaces.

Action CO-A90: Adopt design standards that use low-impact development techniques that emulate the natural hydrologic regime and reduce the amount of runoff and associated pollutants. Examples include vegetated swales, landscaped detention basins, permeable paving, and green roofs.

Yolo County Flood Management Ordinance

When the County joined the NFIP, it adopted and began to enforce minimum floodplain management standards. FEMA worked closely with the State and the County to identify flood hazard areas, flooding risk and to establish minimum floodplain management standards. The floodplain management standards are designed to prevent new development from increasing

[88] Regional Water Board, 2011. *Op. cit*

the flood threat and to protect new and existing buildings from anticipated flood events. To satisfy the requirements of the Floodplain Management Ordinance, projects planned for construction within a special flood hazard area must meet development and construction standards specifically designed to prevent or limit flood damage.

If a property proposed for development is determined to be in a FEMA special flood hazard area, the applicant will be required to obtain a floodplain permit from the Building Inspection Division before applicable permits can be issued.

2005 Yolo County Central Landfill Permit Revision EIR

The YCCL Permit Revision Project proposed a variety of changes to the design and operation of the YCCL, including the purchase of additional land for the development of a soil borrow site. The Hydrology and Water Quality Section of the EIR analyzed the potential soil erosion and groundwater impacts that could result from excavation of a future offsite borrow site. The following mitigation measures were identified to reduce the potential impacts to a less-than-significant level:

> Mitigation Measure 3.5.9a: Prior to commencement of any quarrying or excavation at a new borrow area, the DIWM will produce a stormwater pollution prevention plan for the quarry site, or if the site is adjacent, update YCCL's existing SWPPP to include the borrow area. The SWPPP will describe activities and potential pollution sources at the site and best management practices 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 reseeding exposed areas when they are no longer actively being quarried, and include a monitoring program. Pursuant to NPDES [Construction] General Permit requirements, the revised SWPPP will be implemented, and a copy of the SWPPP will be retained at the YCCL site and [be] available for [Regional Water Board] review upon request.
>
> Mitigation Measure 3.5.9b: Before quarrying activities commence, the DIWM shall obtain a permit if required by the Surface Mining and Reclamation Act (SMARA). 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. New mining operations must also file an initial report with the Office of Mine Reclamation, pursuant to PRC §2207(d)(6).
>
> Mitigation Measure 3.5.9c: Drainage structures at the site will be designed and constructed to prevent the off-site discharge of surface run-off.

4.7.3 Impacts and Mitigation Measures

Significance Criteria

The proposed project would result in a significant impact if it would:

a) Violate any water quality standards or waste discharge requirements;

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

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

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

e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;

f) Otherwise substantially degrade water quality;

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows;

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; or

j) Inundation by seiche, tsunami, or mudflow.

Impacts Found Less than Significant in Initial Study

The Initial Study evaluated the potential impacts of the proposed project that would occur during soil excavation, transportation, and reclamation activities based on the significance criteria listed above. As summarized below, the project was found not to have a significant impact based on significance criteria (e), (g), and (j).

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

The project site is not currently connected to a public stormwater drainage system, and is not anticipated to be connected in the future. No impacts related to existing or planned storm drainage systems would therefore occur.

Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map

Although the project site is located within a 100-year flood hazard zone, the proposed project does not involve the development of housing. Therefore, no impact related to housing would occur.

Inundation by seiche, tsunami, or mudflow

The project site is located approximately 80 miles east of the ocean and approximately 20 miles east of Lake Berryessa, the nearest lake to the project site. Because of the distance between the project site and the nearest large bodies of water, the proposed project would not expose people or structures to a substantial risk of inundation by tsunami or seiche. Therefore, there would be no impacts related to a tsunami or seiche.

The relatively flat topography of the project site and surrounding area does not include high or steep slopes susceptible to slope failures, such as mudflow. The excavated slopes of the soil borrow site would be less steep than regulatory worker safety requirements and guidelines. In addition, the slopes would be stabilized during project reclamation activities. Therefore, conformance with the project design reduces potential mudflow impacts to a less-than-significant level.

Impact Analysis

Impact HYD-1: The project could result in off-site discharges of pollutants in stormwater that could violate water quality standards. (Significant)

Excavation and reclamation activities related to the proposed project would require the disturbance of vegetation and soils, which has the potential to increase erosion. The project could disturb several acres of ground surface each year. In addition, the project includes construction of a new southern access driveway to the borrow site. The driveway would be constructed by placing fill in the north-south trending drainage ditch. If this fill is not removed prior to the wet season, drainage could pond behind the fill, potentially causing localized flooding and discharge of sediment-laden water. Also, the implementation of the proposed project would require the use of heavy equipment, which could result in spills or leaks of petroleum hydrocarbons and represent a potential source of stormwater pollutants. The potential increase in sediments and other pollutants in runoff from the project site could potentially violate water quality standards. Consistent with Impact 3.5.9 of the SEIR, this potential impact is considered significant requiring mitigation. However, as excavation

progresses and the borrow pit becomes larger and as long as runoff is directed to the excavated pit, at some point no discharge from the site will occur (i.e., the pit will have the capacity to contain all runoff). When this condition is reached, the County could opt out of coverage under the applicable General Permit (either Construction or Industrial). Implementation of the following mitigation measures would reduce this impact to a less-than-significant level.

Mitigation Measure HYD-1:

Consistent with the requirements of the State Water Board and the Regional Water Board, the County shall submit a Notice of Intent (NOI) to the State Water Board to obtain coverage under either the Construction or Industrial General permits and prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) designed to reduce potential adverse impacts to surface water quality through the life of the soil borrow project.

The SWPPP shall describe activities and potential pollution sources at the borrow site and best management practices 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 SWPPP will provide for reseeding exposed areas when they are no longer actively being quarried, and include a monitoring program. The SWPPP will be implemented, and a copy of the SWPPP will be retained at the YCCL site and made available for to Regional Water Board staff for review upon request.

The County may, at its discretion, demonstrate to the Regional Water Board that no runoff would be discharged from the borrow site and file a Notice of Termination for coverage under the applicable General Permit. Upon approval by the Regional Water Board, the County may discontinue implementation of the SWPPP.

Impact HYD-2: The project could substantially deplete groundwater supplies. (Less than Significant)

As described in the hydrogeological analysis[89] and the Reclamation Plan[90] for the soil borrow site, project excavation would lower the surface grade below the seasonal high groundwater levels and result in the development of a seasonal open water body (Figure 4.7-5). In addition, the northwestern portion of the soil borrow site would be excavated to greater depths to create a perennial water feature for improved wildlife habitat values. As shown in Figure 4.7-6, the average level of expected seasonal ponding (14 feet NAVD 88) would primarily fill the eastern two-thirds of the soil borrow site and seasonal high surface water levels would likely fill the entire soil borrow site (up to 19.5 feet NAVD 88).

[89] BASELINE, 2014. *Op. cit.*

[90] DIWM, 2015. Draft Reclamation Plan for the Central Landfill Soil Borrow Site at the Yolo Central County Landfill, Yolo County, California. January 13.

Seasonal and Perennial Ponding

Figure 4.7-5

Legend

- Project Site
- Soil Borrow Site
- Proposed Contour (feet NAVD 88)
- 26.0 Proposed Point Elevation (feet NAVD 88)
- Maximum Slope Excavation (3:1)
- Gradual Sloped Terrace
- E — E' Cross Section Location

Note: The proposed slopes are described in BASELINE's (2014) Reclamation Plan. A detailed cross section is shown on Figure 4.7-6.

Yolo County Central Landfill Soil Borrow Site Project

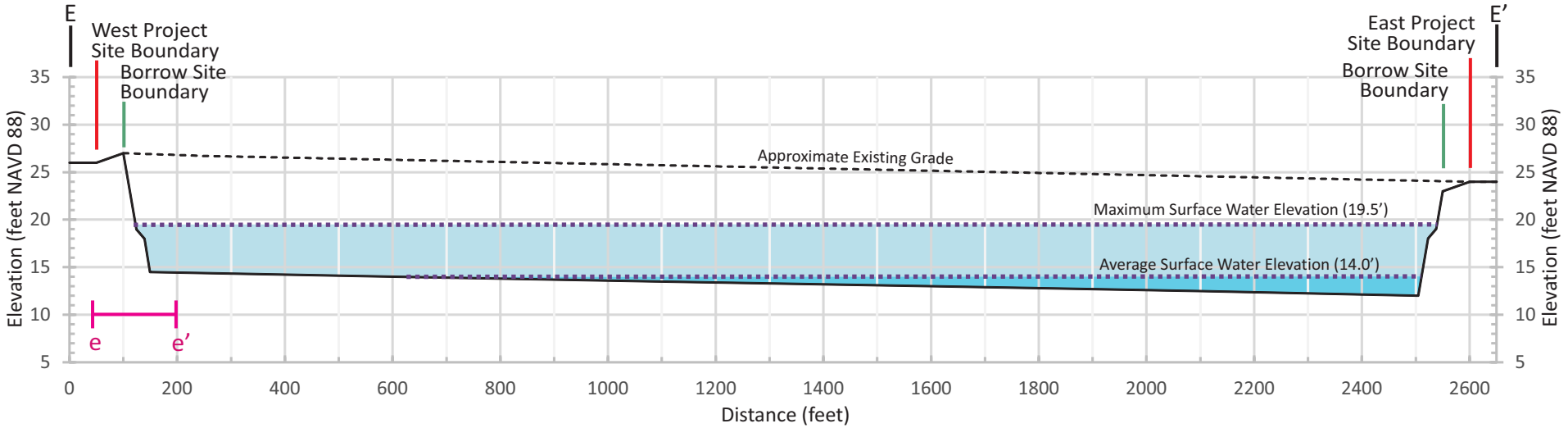
0 550 Feet

BASELINE ENVIRONMENTAL CONSULTING

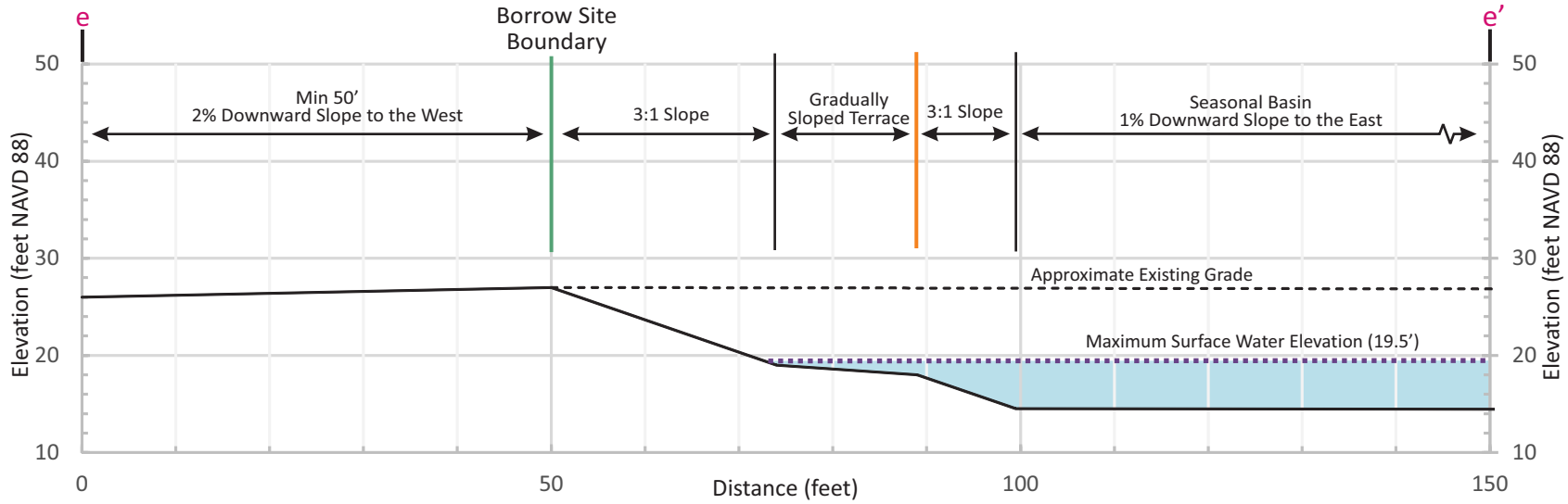
Seasonal Surface Water Levels

Figure 4.7-6

West to East Cross-Section E - E'



Expanded West Side Cross-Section e - e'



Notes:
The process of estimating surface water elevations is described in BASELINE's (2014) *Technical Memorandum: Hydrogeological Analysis for the Yolo County Central Landfill Soil Borrow Site.*
Cross section location shown on Figure 4.7-5.
Minimum surface water elevations were projected below the maximum depth of excavation, which would result in seasonal ponding.

Yolo County Central Landfill Soil Borrow Site Project

BASELINE ENVIRONMENTAL CONSULTING

Excavation below the groundwater table and the creation of an open water body would expose groundwater to evaporation. If ponding on the borrow site fills both the perennial and seasonal basin for an entire year, then approximately 1,780 acre-feet of water would be lost per year from evaporation. This is a conservative estimate, because the seasonal basin would likely be partially filled or empty during the dry season.

Based on these evaporation rates (and County experience managing similar ponds at the YCCL), the average surface water elevations at the soil borrow site are expected to be about 3 feet lower than the local groundwater elevations. Groundwater levels at the immediate perimeter of the borrow site would also be expected to be lowered by up to 3 feet and decrease with distance away from it.

There are no groundwater supply wells near the borrow site that would likely be adversely affected by these localized changes to the groundwater table (the nearest identified water supply well is more than 1,500 feet from the borrow site). Groundwater from the project site flows east and northeast onto the adjacent YCCL site, where the landfill's extraction wells capture and treat the incoming groundwater (Figure 4.7-3). The project would not interfere with operation of the YCCL's extraction wells. Therefore, the project would have a less-than-significant impact on specific groundwater supply wells.

Even though no adverse impacts to local water supply wells would be expected, the project would contribute to a net loss of water from the uppermost water-bearing zone. However, under the project, this water loss would be offset by the creation of valuable wildlife habitat at the reclaimed borrow site. Therefore, this impact is also less than significant.

Impact HYD-3: The project could substantially alter the existing drainage pattern of the site and cause substantial erosion or sedimentation. (Less than Significant)

Excavation and reclamation activities for the soil borrow site would require the disturbance of vegetation and soils, which would alter the existing drainage pattern of the project site. The project would not disturb the Willow Slough Bypass on the southern portion of the project. No other natural drainage channels would be affected due to the project operations.

Stormwater on the soil borrow site currently drains to an existing drainage ditch along the eastern boundary of the borrow site. Two peripheral drainage ditches along the west and east sides of the project sites primarily collect stormwater from the adjacent lands (Figure 4.7-2). During periods of intense rainfall, water that backs up in the western ditch could discharge to the excavated pit. This discharge could cause bank erosion. However, the excavation plan specifies that a safety berm would be installed around the perimeter of the excavation area. This berm would effectively prevent the discharge of water from the western ditch into the pit.

Trucks and equipment would need to cross the two drainage ditches located on the east site of the borrow site during soil hauling. There are already two crossings (fitted with culverts) of the ditch in place at the northern and middle access locations. A new temporary southern access

location would be installed and the soil used to create the access driveway would be removed from the ditches prior to the wet season (Figure 4.7-2).

During initial excavation activities, any stormwater discharged from the project site would be managed in accordance with a State Water Board General Permit (see Impact and Mitigation Measure HYD-1). Stormwater from the internal eastern drainage ditch would be discharged to the concrete basin immediately southeast of the borrow site (Figure 4.7-2). If necessary, stormwater in the concrete basin could be pumped to the Willow Slough Bypass located south of the basin in accordance with the General Permit.

Land between the perimeter of the project site and the north, south, and east perimeter of the soil borrow site on would be gradually graded at about 2 percent gradient to drain all stormwater into the soil borrow site. Land between the perimeter of the project site and the west perimeter of the soil borrow site on would be gradually graded at about 2 percent gradient to drain all stormwater away from the soil borrow site. The grading on the west side would ensure that the western drainage ditch does not drain into the proposed borrow pit during moderate to intense storm events. The final grade of the bottom of the borrow site would also be gradually sloped at about a 1 percent gradient downward to the east to maintain positive sheet flow drainage. Once grading and excavation activities have generated a sufficient stormwater retention area within the soil borrow site, all stormwater would be retained on the project site and ongoing coverage under the General Permit may not be necessary.

The final reclamation of the soil borrow site would create perennial and seasonal open water habitats with the side slopes of the basin reclaimed as a combination of grasslands, savanna habitat/screen plantings, riparian woodland/scrub, and freshwater marsh habitat, depending on the influence of ground and surface water elevations and other variables (Figure 4.7-5). As phases of excavation are completed on the borrow site, the side slopes would be temporarily reclaimed by hydroseeding the slopes with an appropriate grassland seed mix selected for erosion control and habitat value.

Implementation of Mitigation Measure HYD-1 (and compliance with the applicable State Water Board General Permit) during initial construction activities and implementation of the temporary and final reclamation activities to stabilize the basin slopes would reduce potential erosion and sedimentation impacts from altering existing drainage patterns to a less-than-significant level.

Impact HYD-4: The project could substantially alter the existing drainage pattern of the site and cause flooding. (Less than Significant)

Excavation and reclamation activities for the soil borrow site would require the disturbance of vegetation and soils, which would alter the existing drainage pattern of the project site. The project would not disturb the Willow Slough Bypass on the southern portion of the project. No other natural drainage channels would be affected due to the project operations.

The basin of the soil borrow site would be expanded each year and eventually retain all stormwater on-site. Therefore, the risk of off-site flooding would be reduced and provide an incremental benefit to regional flooding problems by providing new flood water storage capacity within the floodplain. Therefore, the risk of flooding from changes to existing drainage patterns would be a less-than-significant impact.

Impact HYD-5: The project could substantially degrade groundwater quality if on-site wells were damaged during excavation activities. (Significant)

There are four monitoring wells located near the perimeter of the soil borrow site that are screened in the shallow aquifer. Groundwater samples previously collected and analyzed from the monitoring wells indicated that the groundwater salinity was elevated due to former use of the project site as an overland flow treatment field for tomato cannery wastewater. The 2004 *Revised Site Investigation and Closure Report* concluded that groundwater salinity on the project site would decrease over time as soluble salts in the overlying soils are diluted by rainfall percolation.[91] Project excavation and removal of soils on the borrow site that contain elevated concentrations of soluble salts would reduce the leaching of salts into the groundwater and thereby improve the water quality.

A 2004 Phase I Environmental Site Assessment prepared for the project site reported that an old agricultural well may be located in the northwest corner of the project site.[92] While the wells are located outside the areas of proposed excavation, operation of heavy equipment in the area (e.g., grading sideslopes, establishing entry and exit ramps) could disturb the wellheads during project excavation and reclamation activities and surface seals could be damaged, allowing surface water (potentially containing pollutants) to preferentially seep into the well(s) and the underlying aquifer. The potential for pollutants to seep into the aquifer and degrade water quality is considered a significant impact. Implementation of the following mitigation measures would reduce this impact to a less-than-significant level.

Mitigation Measure HYD-5:

All identified wells located on the project site (or wells discovered during excavation) shall either be:

- Properly abandoned in compliance with the California Department of Water Resources, California Well Standards; or
- Maintained to prevent damage to the wellheads by clearly marking and isolating each well from construction activities with fencing or steel bollards.

[91] Brown and Caldwell, 2004. *Op. cit.*

[92] GeoTrans, Inc., 2004. *Phase I Environmental Assessment and Document Review 99-Acre Main Plant Area and 320-Acre Waste Water Disposal Field Former Hunt-Wessen Plant 1111 E. Covell Boulevard/Road 104 at Road 28H Davis, California*. April.

Implementation of Mitigation Measure HYD-5 would reduce this impact to a less-than-significant level.

Impact HYD-6: The project could alter flood flows within a 100-year flood hazard zone. (Less than Significant)

The project site is located within a 100-year flood hazard zone and would modify the floodplain topography. The project would not disturb the Willow Slough Bypass levee on the southern portion of the project site. Since the basin of the borrow site would be excavated to create seasonal and perennial open water bodies and retain all stormwater on-site and would provide additional regional flood water storage capacity, the risk of flooding in the project vicinity would be reduced. Therefore, the project would benefit the floodplain and the impact to the floodplain would be less than significant.

Impact HYD-7: The project would expose workers to a significant risk of loss, injury or death from flooding as a result of a levee or dam failure. (No Impact)

The project site is protected from flooding from dam failure by the Willow Slough Bypass levee on the southern portion of the project site. Since the project would not disturb the Willow Slough Bypass levee, there would be no impact.

Cumulative Effects

The geographic scope of potential cumulative hydrology and water quality impacts consists of the project site and surrounding watershed lands. As described above, the project could cause significant impacts to hydrology and water quality, including degradation of runoff water quality and impacts to groundwater quality if on-site wells are damaged during excavation activities.

Ongoing and future projects summarized in Table 5-1 that include ground disturbance and/or discharge of water potentially containing pollutants could cause impacts to surface water quality, including water quality within local creeks. The potential impacts to surface water quality associated with the proposed project (e.g., discharges of stormwater before the pit becomes large enough to contain all runoff) could be cumulatively significant. Implementation of Mitigation Measures HYD-1, which require the implementation of measures to minimize any effects on local water quality would reduce project impacts related to stormwater and surface waters to a less-than-significant level. Further, any other projects that result in disturbance of greater than 1 acre during construction would be subject to the provisions of the applicable NPDES General Permit, including preparation and implementation of a SWPPP; proper preparation and implementation of a SWPPP is a legal requirement.

With implementation of Mitigation Measures HYD-1 and compliance with existing NPDES regulations requiring the proper management of discharges, the project's contribution to any localized cumulative impacts related to degradation of surface water quality would not be cumulatively considerable (less than significant).

Degradation of groundwater quality from infiltration of surface water into damaged (i.e., not properly sealed) wells is a significant cumulative impact. However, implementation of Mitigation Measure HYD-5 would effectively eliminate any project impacts related to infiltration into damaged wells and therefore the project's contribution to the cumulative impact would not be considerable.

Based on groundwater monitoring, the water levels in the local uppermost water-bearing zone are relatively stable and not in overdraft. The average depths to groundwater on the borrow site range from about 8 to 12 feet below the ground surface. The creation of a pond at the project site that exposed groundwater to evaporation would be expected to slightly lower groundwater levels in the immediate vicinity of the pond by 1 to 3 feet, but this effect would diminish quickly with distance from the pond. This slight reduction in groundwater level would not be discernible at any local water supply well and therefore the potential cumulative impact is less than significant.

The potential impacts related to modifying drainage patterns would be limited to the project site itself (because the borrow site would be internally-drained) and would not contribute considerably to a cumulative impact.

4.8 NOISE

4.8.1 Introduction

This section evaluates potential noise and vibration impacts from the proposed project. The setting section includes a description of noise and vibration terminology; a description of the current noise conditions near the project site; and a summary of the relevant guidance, plans, and policies for evaluating and regulating noise and vibration. The potential impacts assessed consist of the noise and vibration impacts that could result from the use of heavy equipment within the soil borrow site.

Noise is commonly defined as unwanted sound that annoys or disturbs people and can have an adverse psychological or physiological effect on human health. The effects of noise on people can be grouped into three general categories: 1) subjective effects of annoyance, nuisance, and dissatisfaction; 2) interference with such activities as speech and sleeping; and 3) physiological effects, such as hearing loss.

Sound is measured in decibels (dB), which is a logarithmic scale. Decibels describe the purely physical intensity of sound based on changes in air pressure, but they cannot accurately describe sound as perceived by the human ear since the human ear is only capable of hearing sound within a limited frequency range. For this reason, a frequency-dependent weighting system is used and monitoring results are reported in A-weighted decibels (dBA). Technical terms used to describe noise are defined in Table NOI-1.

An important method for determining a person's subjective reaction to a new noise is by comparing it to existing conditions. The following describes the general effects of noise on people.[93]

- A change of one dBA cannot typically be perceived, except in carefully controlled laboratory experiments;
- A three-dBA change is considered a just-perceivable difference;
- A minimum of a five-dBA change is required before any noticeable change in community response is expected; and
- A ten-dBA change is subjectively perceived as approximately a doubling (or halving) in loudness.

[93] Salter, Charles M., 1998. Acoustics – Architecture, Engineering, the Environment, William Stout Publishers.

Table NOI-1: Definition of Acoustical Terms

Term	Definitions
Decibel (dB)	A unit describing the amplitude of sound on a logarithmic scale. Sound described in decibels is usually referred to as sound or noise "level." This unit is not used in this analysis because it includes frequencies that the human ear cannot detect.
Frequency (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure.
A-Weighted Sound Level (dBA)	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
L01, L10, L50, L90	The A-weighted noise levels that are exceeded 1, 10, 50, and 90 percent of the time during the measurement period.
Equivalent Noise Level (Leq)	Describes a receiver's cumulative noise exposure from all events during the measurement period. In this report, Leq refers to a one-hour period unless otherwise stated.
Community Noise Equivalent Level (CNEL)	Describes a receiver's cumulative noise exposure during a 24-hour day, with events between 7 p.m. and 10 p.m. increased by 5 decibels and events between 10 p.m. and 7 a.m. increased by 10 decibels, to account for greater evening and nighttime sensitivity to noise.
Day/Night Noise Level (Ldn)	Describes a receiver's cumulative noise exposure during a 24-hour day, with events between 10 p.m. and 7 a.m. increased by 10 decibels to account for greater nighttime sensitivity to noise.
Lmax, Lmin	The maximum and minimum A-weighted noise level during the measurement period.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Vibration Decibel (VdB)	A unit describing the amplitude of vibration on a logarithmic scale.
Peak Particle Velocity (PPV)	The maximum instantaneous peak of a vibration signal.
Root Mean Square (RMS) Velocity	The average of the squared amplitude of a vibration signal.

In an unconfined space, such as outdoors, noise attenuates with distance according to the inverse square law. Noise levels at a known distance from point sources, such as a piece of heavy construction equipment, are reduced by at least 6 dBA for every doubling of that distance over hard surfaces (e.g., asphalt), and 7.5 dBA for every doubling of that distance over soft surfaces (e.g., undeveloped land). Noise levels at a known distance from line sources, such as the noise from high-volume roadways, decrease at a rate of at least 3 dBA for every doubling of the distance over hard surfaces and 4.5 dBA over soft surfaces. A greater decrease in noise levels can result from the presence of intervening structures or buffers. Typical A-weighted noise levels at specific distances are shown for different noise sources in Table NOI-2.

Table NOI-2: Typical Sound Levels Measured in the Environment and Industry

Noise Source (distance in feet)	A-Weighted Sound Level in Decibels (dBA)	Subjective Impression
Civil Defense Siren (100)	130	Pain Threshold
Jet Takeoff (200)	120	
Rock Music Concert (50)	110	
Pile Driver (50)	100	Very Loud
Ambulance Siren (100)	90	
Diesel Locomotive (25)	85	Loud
Pneumatic Drill (50)	80	
Freeway (100)	70	Moderately Loud
Vacuum Cleaner (10)	60	
Light Traffic (100)	50	
Large Transformer (200)	40	Quiet
Soft Whisper (5)	30	Threshold of Hearing

Source: Salter, Charles M., 1998.

It should be noted that because decibels are based on a logarithmic scale, they cannot be added or subtracted in the usual arithmetical way. For instance, if one noise source emits a sound level of 90 dBA, and a second source is placed beside the first and also emits a sound level of 90 dBA, the combined sound level is 93 dBA, not 180 dBA. When the difference between two co-located sources of noise is 10 dBA or more, the higher noise source dominates and the lower noise source makes no perceptible difference in what people can hear or measure. For example if the noise level is 95 dBA and another noise source is added that produces 80 dBA noise, the noise level will still be 95 dBA.

Vibration is an oscillatory motion through a solid medium (versus noise which is an oscillatory motion through air) in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Several different methods are used to quantify vibration. Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Sensitive receptors to vibration include structures (especially older masonry structures), people (especially residents, the elderly, and sick), and vibration-sensitive equipment. Vibration amplitudes are usually expressed as either peak particle velocity (PPV) or the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous peak of the vibration signal. PPV is appropriate for evaluating potential damage to buildings, but it is not suitable for evaluating human response to vibration because it takes the human body time to respond to vibration signals. The response of the human body to vibration is dependent on the average amplitude of a vibration. The RMS of a signal is the average of the squared amplitude of the signal and is more appropriate for evaluating human response to vibration. PPV and RMS are normally described in units of inches per second (in/sec), and RMS is also often described in vibration decibels (VdB).

4.8.2 Setting

Noise Sources

The areas north, west, and south of the soil borrow site are zoned as intensive agricultural,[94] and the YCCL is located east of the site. The existing ambient noise environment in the immediate vicinity of the borrow site is defined primarily by local traffic, local agricultural operations, and YCCL operations.[95] Noise at YCCL is generated by a variety of activities including the operation of heavy equipment, power generation at the methane gas recovery facility, bin transfer operations, and the operation of the household hazardous waste collection facility.[96] Noise monitoring results collected at the western and southwestern boundaries of the YCCL (i.e., the eastern and southeastern boundaries of the project site) indicate noise levels of 66 and 64 dBA Leq, respectively (Table NOI-3).[97] Higher noise levels of 75.2 dBA Leq were measured at a location 144 feet north of the YCCL (Table NOI-3).[98]

Table NOI-3: Noise Monitoring Results at Yolo County Central Landfill

Location	Measured dBA CNEL	Measured dBA Leq
On fence at western YCCL boundary, approximately 100 to 200 feet from the working face [1, 2]	61	65.6 dBA (peak hourly measurement @ 3-4 p.m.)
On fence at southwestern YCCL boundary, 100 feet west of entrance gate and 35 feet north of Road 28H [1, 2]	64	64.3 dBA (peak hourly measurement @ 11-12 p.m.)
144 feet north of YCCL [3]	--	75.2 (range from 64.1 dBA Lmin to 91.2 dBA Lmax)

Notes:
"--" = no community noise exposure level specified.
[1] Noise measurements were collected Wednesday, November 6, 2002. Road 105 was closed for repairs, so landfill traffic entered the YCCL coming from Road 28H from the west.
[2] Source: Yolo County Public Works and Planning Department, 2004. Draft Subsequent Environmental Impact Report (SEIR), Yolo County Central Landfill Permit Revisions. September.
[3] Source: Yolo County, 2009b. 2030 Countywide General Plan, Health and Safety Element. November.

The General Plan indicates that noise levels from vehicular traffic along County Road 28H, located south of the soil borrow site, are 51.1 dBA Ldn at 100 feet from centerline and are expected to increase to 59.5 dBA Ldn by the year 2030.[99] Local agricultural activities generate noise primarily through the operation of heavy equipment. A tractor typically generates noise levels of 78 dBA to 106 dBA Lmax at 50 feet, with an average of about 84 dBA Lmax.[100] These

[94] Yolo County, 2009a. 2030 Countywide General Plan, Land Element. November.
[95] Yolo County, 2009b. 2030 Countywide General Plan, Health and Safety Element. November.
[96] Environmental Science Associates (ESA), 2004. Draft Subsequent Environmental Impact Report: Yolo County Central Landfill Permit Revisions. September.
[97] Ibid.
[98] Yolo County, 2009b. Op. cit.
[99] Ibid.
[100] Yolo County, 2009b. Op. cit.

noise levels are considered to be representative of the noise generated by other wheeled and tracked farm equipment.[101]

Sensitive Receptor Locations

Sensitive receptors are land uses where noise-sensitive people may be present or where noise-sensitive activities may occur. Areas with sensitive receptors require special consideration and protection from excessive noise. The Yolo County General Plan defines noise sensitive receptors as residentially designated land uses; hospitals, nursing/convalescent homes, and similar board care facilities; hotels and lodging; schools and day care centers; and neighborhood parks.[102] There are seven sensitive receptor locations within one mile of the soil borrow site (Figure 4.8-1). The distance and location of these sensitive receptors relative to the borrow site are summarized in Table NOI-4.

Table NOI-4: Noise Sensitive Receptors within One Mile of the Project Area

Receptor	Use/Location	Direction from the borrow site	Approximate distance from the borrow site boundary
1	Residence along Road 103	Northwest of northwest corner	3,300
2	Residence along Road 103	West of northwest corner	3,250
3	Residence along Road 103	West of northwest corner	1,550
4	Residence along Road 103	West of southwest boundary	2,400
5	Residence along Road 103	West of southwest boundary	2,650
6	Residence along Road 29	East southeast of southeast corner	3,350
7	Residence along Road 105	East southeast of southeast corner	4,700

Notes: Noise sensitive receptor locations are presented in Figure 4.8-1.

Regulatory Environment

Noise standards in Yolo County are promulgated by the State of California and by the local general plan and local ordinances. The State of California provides guidance for the preparation of noise elements in general plans. In California, noise is primarily regulated at the local level, through the implementation of General Plan policies and local noise ordinances. The purpose of local General Plans is to identify the general principles intended to guide land use and development, and the purpose of the ordinances is to specify the standards and requirements for implementing the principles of the General Plan.

[101] Ibid.
[102] Ibid.

Noise Sensitive Receptors

Figure 4.8-1

Base: Google Earth Pro, 2014

Legend

- Project Site
- Soil Borrow Site
- (1) Noise Sensitive Receptor

0 2,000 Feet

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State

Sections 46000 to 46080 of the California Health and Safety Code codify the California Noise Control Act (CNCA) of 1973. This act established the Office of Noise Control under the California Department of Health Services. The CNCA requires that the Office of Noise Control adopt, in coordination with the Office of Planning and Research, guidelines for the preparation and content of noise elements for general plans. The most recent guidelines are contained in General Plan Guidelines, published by the California Office of Planning and Research in 2003.[103] The document provides guidelines for cities and counties to use in their general plans to reduce conflicts between land use and noise.

Local

2030 Countywide General Plan for Yolo County

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. The following goals, policies, and actions of the General Plan related to noise are relevant to the proposed project:[104]

Goal HS-7: 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.

[103] California Office of Planning and Research, 2003. General Plan Guidelines.
[104] Yolo County, 2009b. Op. cit.

Table NOI-5 presents the noise compatibility guidelines for agricultural and residential land uses. As discussed above, the areas surrounding the borrow site are zoned as intensive agricultural; although there are no areas zoned as residential in the vicinity of the borrow site, there are scattered farm dwellings located within one mile of the borrow site. The noise compatibility guidelines are intended to assist in determining whether a new development project may impact, or be impacted by, existing ambient noise levels. When noise ranges for two different compatibility categories overlap, local conditions must be considered in evaluating land use compatibility.

Table NOI-5: Noise Compatibility Guidelines (dB Ldn or CNEL)

Compatibility	Industrial, Manufacturing, Utilities, Agriculture	Residential – Low density, Single Family, Duplex, Mobile Homes
Normally acceptable	<75	<60
Conditionally acceptable	70-80	55-70
Normally unacceptable	75-85	70-75
Clearly unacceptable	--	>75

Notes: "--" = no community noise exposure level specified.
"Normally acceptable" = Specified land use is satisfactory, based upon the assumption that any building involved is 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 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 generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
"Clearly unacceptable" = New construction or development should generally not be undertaken.

Local Noise Ordinances

Action HS-A61 of the Yolo County General Plan calls for Yolo County to adopt a comprehensive Noise Ordinance. Currently, noise in Yolo County is addressed within the regulations for specific activities (e.g., Title 10 of the Yolo County Municipal Code provides noise regulations for mining within the Cache Creek Area Plan), rather than through a comprehensive noise ordinance. The Yolo County Municipal Code does not contain any noise regulations applicable to the proposed project.

2005 Yolo County Central Landfill Permit Revision EIR

The YCCL Permit Revision Project proposed a variety of changes to the design and operation of the YCCL, including the purchase of additional land for the development of a soil borrow site. The Noise Section of the EIR analyzed the potential noise and vibration impacts that could result from the exposure of sensitive receptors to noise generated by activities at a soil borrow site. The following mitigation measures were identified to reduce the potential impacts to a less-than-significant level:

Mitigation Measure 3.7.2a: As stated in the siting criteria for the soil borrow operation in Chapter 2, Project Description, "Soil-borrow" activities shall be located in areas with a buffer zone of 2,000 feet to the nearest sensitive receptors.

Mitigation Measure 3.7.2b: Soil borrow activities will be limited to achieve an hourly average noise level that does not exceed 65 dBA at the nearest sensitive receptor.

Mitigation Measure 3.7.2c: If haul routes pass sensitive noise receptors that are within approximately 50 feet of the roadway, hourly heavy truck trips should be limited to no more than 25 passbys of the sensitive receptor per hour.

Mitigation Measure 3.7.2d: To avoid noise effects of nighttime operations, haul trips leaving the soil-borrow area shall be limited to 7 a.m. to 5 p.m.

Mitigation Measures 3.7.2a and 3.7.2b are applicable to the proposed project and both measures serve the purpose of ensuring that sensitive receptors are not exposed to excess noise levels from the soil borrow site. Mitigation Measures 3.7.2c and 3.7.2d do not apply to the proposed project because the soil borrow site is located adjacent to the YCCL and, as a result, haul trucks will not be required to pass sensitive receptors. Although haul trucks would be required to cross County Road 104, which forms the eastern boundary of the soil borrow site and the western boundary of the YCCL, this road is scheduled to be abandoned by the County. Regardless of whether the abandonment occurs or not, County Road 104 near the borrow site is not bordered by sensitive receptors.

4.8.3 Impacts and Mitigation Measures

Significance Criteria

The proposed project would result in a significant noise impact if it would:

a) Expose persons to or generate noise levels in excess of local standards established in the general plan and/or noise ordinance, or in the applicable standards of other agencies;

b) Expose persons to or generate excessive vibration;

c) Result in a substantial temporary increase in ambient noise levels above levels existing without the project;

d) Result in a substantial permanent increase in ambient noise levels above levels existing without the project; or

e) For a project located in the vicinity of an airport or airstrip, or within an airport land use plan area, expose people residing or working in the project area to excessive noise levels.

Impacts Found Less than Significant in Initial Study

The Initial Study evaluated the potential impacts of the proposed project that would occur during soil excavation and reclamation activities based on the significance criteria listed in Subsection 12.3.1, above. As summarized below, the project was found not to have a significant impact and not to require further analysis based on significance criteria (d) and (e).

Result in a substantial permanent increase in ambient noise levels above levels existing without the project

Soil borrow activities at the project site are expected to last for about 50 years. The potential noise and vibration impacts of these long-term activities are analyzed in the Impact Analysis below. Upon completion of soil borrow activities, the borrow site would be reclaimed as a permanent seasonal open water body and wildlife habitat. The reclaimed use of the borrow site would not involve any noise generating equipment or processes. Therefore, this was found to be a less-than-significant impact in the Initial Study, and is not evaluated further in this Draft EIR.

Expose people residing or working in the area of the County to excessive aircraft noise levels

The borrow site is not located within an airport land use plan area. The nearest public airports to the borrow site are the University Airport, located about 6 miles to the southwest, and the Sacramento International Airport, located about seven miles to the northeast. The Medlock Field Airport is the nearest private airport to the borrow site, located about 2.5 miles to the northwest. At these distances, aircraft from these airports would not be a significant source of noise at the borrow site.[105] Therefore, this was found to have no impact in the Initial Study and is not evaluated further in this Draft EIR.

Impact Analysis

Significance criterion (a) typically references quantitative standards established in the local general plan and/or noise ordinance. However, the Yolo County Municipal Code does not contain any quantitative noise standards that are applicable to the proposed project, and the General Plan does not specify quantitative standards, but rather presents noise compatibility guidelines which provide noise level ranges whose applicability is subject to interpretation based on project specific conditions. Similarly, significance criteria (b) through (e) state that a project would result in a significant noise or vibration impact if it would cause a substantial increase in, or excessive levels of, noise or vibration, but the criteria do not specify quantitative standards to define what constitutes a substantial change or excessive exposure level.

In this analysis, a noise level increase was considered substantial if it could expose sensitive receptors to noise levels greater than 65 dBA Ldn or CNEL. The areas surrounding the borrow site are zoned as agricultural, and noise levels of up to 75 dBA Ldn or CNEL are normally acceptable for these areas (Table NOI-5). However, there are several residences located within one mile of the borrow site, and the Noise Compatibility Guidelines indicate that noise levels of

[105] Yolo County, 2009b. Op. cit.

up to 60 dBA Ldn or CNEL are normally acceptable for residential areas and that noise levels between 55 and 70 dBA Ldn or CNEL are conditionally acceptable, depending on specific local conditions (Table NOI-5). Because the borrow site and surrounding areas are currently exposed to noise from landfill activities and from agricultural activities, both of which can generate noise levels in excess of 75 dBA Lmax at 50 feet, a maximum exposure level of 65 dBA Ldn or CNEL would be consistent with the current land uses of the area while still preventing the exposure of sensitive receptors to excessive noise. The 2005 Permit Revision EIR also considered 65 dBA CNEL to be the maximum exposure level for noise-sensitive receptors.[106]

The 65 dBA Ldn or CNEL standard considers noise generated during a 24-hour day, which includes nighttime periods when no noise would be generated at the soil borrow site. To ensure that noise sensitive receptors are not exposed to noise levels above 65 dBA during any given hour of excavation activities within the soil borrow site, this analysis also considered a noise level increase substantial if it would expose sensitive receptors to hourly noise levels greater than 65 dBA Leq. Additionally, vibration levels were considered excessive if they could exceed the Federal Transit Administration criteria to prevent disturbance to people and damage to structures (Tables NOI-8 and NOI-9).

Impact NOI-1: The project could expose sensitive receptors to a substantial long-term increase in noise levels. (Less than Significant)

The implementation of the proposed project would not result in increased traffic volumes on area roadways because the soil borrow site is located adjacent to the YCCL and, as a result, haul trucks would not be required to travel public roads (other than County Road 104 if it is not abandoned by the County) and pass sensitive receptors. The primary noise generation from the implementation of the proposed project would occur from the operation of heavy equipment within the borrow site. Equipment that could be used at the borrow site includes trucks, excavators, scrapers, and graders. Table NOI-6 presents the typical noise levels associated with this equipment.

Table NOI-6 Noise Levels from Heavy Equipment (dBA Lmax)

Equipment	Noise Level at 50 Ft
Excavator	85
Dump truck	84
Grader	85
Scraper	85

Source: Federal Highway Administration, 2006. Construction Noise Handbook (FHWA-HEP-06-015).

As discussed in the Section 3, Project Description, during the most intensive excavation periods, three excavators and twenty-four haul trucks could be operating 5 days per week (Monday through Friday) for 1 month. Generally, it is anticipated that excavation would occur for 8 hours

[106] ESA, 2004. Op. cit.

a day, however, it is possible that on some days excavation would occur from 4 a.m. to 11 p.m. Based on the noise levels presented in Table NOI-6 and based on the intensive use assumptions above, the predicted noise levels at the sensitive receptor nearest the borrow site (Receptor 3; Figure 4.8-1 and Table NOI-5) would be 61 dBA Ldn and 55 dBA Leq[107] (the hourly Leq is lower than the Ldn because the Ldn accounts for increased sensitivity to nighttime noise). These noise levels are below the 65 dBA Ldn and Leq criteria to prevent disturbance to sensitive receptors and are a conservative estimate because the equipment used as part of excavation would move across the borrow site over time and would not be continuously located at the northwest corner of the borrow site. Reclamation activities would require less equipment than excavation activities and would therefore generate less noise. Consequently, the potential of the proposed project to expose sensitive receptors to noise levels above 65 dBA Ldn or Leq is less than significant.

The typical noise levels presented in Table NOI-7 do not include noise generated by backup alarms on the heavy equipment, which would be an intermittent source of noise. The California Occupational Safety and Health Administration (Cal/OSHA) requires backup warning alarms that activate immediately upon reverse movement on all vehicles that have a haulage capacity of 2.5 cubic yards or more (Title 8, California Code of Regulations). The backup alarms must be audible above the surrounding ambient noise level at a distance of 200 feet. In order to meet this requirement, backup alarms are often designed to emit a sound as loud as 82 to 107 dBA Lmax at 4 feet.[108] For equipment located at the northwest corner of the borrow site, a backup alarm of 107 dBA Lmax would generate a noise level of 42 dBA Lmax at the nearest sensitive receptor to the borrow site[109] (Receptor 3; Figure 4.8-1; Table NOI-5). This is well below the 65 dBA Leq threshold and therefore would not have the potential to expose sensitive receptors to excessive noise.

The predicted noise levels indicate that the proposed project would be in compliance with Mitigation Measure 3.72b of the YCCL Permit Revision Project EIR. However, the location of the soil borrow site is not in compliance with Mitigation Measure 3.72a because it is located within 2,000 feet of a sensitive receptor (Table NOI-5). The YCCL Permit Revision Project EIR states that excavation activities located within 2,000 feet of noise sensitive receptors could result in a significant impact and that the purpose of Mitigation Measure 3.72a is to prevent to exposure of sensitive receptors to noise levels in excess of 65 dBA Leq. This analysis shows that the

[107] BASELINE Environmental Consulting, 2014. Technical Memorandum: Noise Analysis for the Yolo County Central Landfill Soil Borrow Site.

[108] National Cooperative Highway Research Program (NCHRP), 1999. Mitigation of Nighttime Construction Noise, Vibrations, and Other Nuisances. NCHRP Synthesis 218.

[109] The following propagation adjustment was applied to estimate noise levels at Receptor 3, which is located approximately 1,550 feet west of the northwest corner of the borrow site:

$dBA2 = dBA1 + 10\ Log_{10}(D1/D2)^{2.5}$

Where:

dBA1 reference noise level at a specified distance.

dBA2 is the calculated noise level.

D1 is the reference distance.

D2 is the perpendicular distance from receiver.

sensitive receptor located within 2,000 feet of the borrow site would not be exposed to noise levels in excess of 65 dBA Leq or Ldn. Consequently, the implementation of the proposed project would not conflict with the intended purpose of Mitigation Measure 3.72a, and the impact is less than significant.

Impact NOI-2: The project could expose persons to or generate noise levels in excess of local standards established in the general plan and/or noise ordinance, or in the applicable standards of other agencies. (Less than Significant)

Although there are no quantitative standards applicable to the proposed project, the protection of people from the harmful effects of excessive noise is one of the goals established in the Yolo County General Plan.[110] The General Plan also establishes noise compatibility goals for different land use types within the County. As discussed above, implementation of the proposed project would not result in the exposure of residential receptors to noise levels above 65 dBA Ldn or Leq and would therefore be within the normally acceptable noise compatibility range for agricultural land use and the conditionally acceptable range for residential land use. Consequently, the proposed project would not conflict with the noise-related goals of the Yolo County General Plan.

Impact NOI-3: The project could expose persons to, or generate, excessive vibration. (Less than Significant)

The vibration levels associated with the types of heavy equipment that would be used at the borrow site are summarized in Table NOI-7. Although the table provides one vibration level for each piece of equipment, it should be noted that there is considerable variation in reported ground vibration levels from the use of heavy equipment, primarily due to variation in soil characteristics. Tables NOI-8 and NOI-9 summarize the vibration criteria to prevent disturbance of residents and to prevent damage to structures.

Table NOI-7 Vibration Source Levels for Construction Equipment

Equipment	PPV at 25 Ft (in/sec)	PPV at 1,550 Ft (in/sec)	RMS at 25 Ft (VdB)	RMS at 1,550 Ft (VdB)
Large bulldozer	0.089	0.0002	87	33
Loaded trucks	0.076	0.0002	86	32
Small bulldozer	0.003	0.00001	58	4

Source of PPV and RMS at 25 feet: Federal Transit Administration, 2006. Transit Noise and Vibration Impact Assessment (DTA-VA-90-1003-06).

Note: The following propagation adjustment was applied to estimate PPV vibration levels at 1,550 feet assuming:
$PPV2 = PPV1 \times (D1/D2)^{1.5}$
Where:
PPV1 is the reference vibration level at a specified distance.
PPV2 is the calculated vibration level.
D1 is the reference distance.

[110] Yolo County, 2009b. Op. cit.

D2 is the distance from the equipment to the receiver.

The following propagation adjustment was applied to estimate RMS vibration levels at 1,550 feet assuming:

$RMS2 = RMS1 - 30 \times Log_{10}(D2/D1)$

Where:

RMS1 is the reference vibration level at a specified distance.

RMS2 is the calculated vibration level.

D1 is the reference distance.

D2 is the distance from the equipment to the receiver.

Table NOI-8 Vibration Criteria to Prevent Disturbance – RMS (Vdb)

Land Use Category	Frequent Events [1]	Occasional Events [2]	Infrequent Events [3]
Residences and buildings where people normally sleep	72	75	80

Source: Federal Transit Administration, 2006. Transit Noise and Vibration Impact Assessment (DTA-VA-90-1003-06).

Notes:
1 = More than 70 vibration events of the same kind per day.
2 = Between 30 and 70 vibration events of the same kind per day.
3 = Fewer than 30 vibration events of the same kind per day.

Table NOI-9 Vibration Criteria to Prevent Damage to Structures

Building Category	PPV (in/sec)	RMS (VdB)
Reinforced-concrete, steel or timber (no plaster)	0.5	102
Engineered concrete and masonry (no plaster)	0.3	98
Non-engineered timber and masonry buildings	0.2	94
Buildings extremely susceptible to vibration damage	0.12	90

Source: Federal Transit Administration, 2006. Transit Noise and Vibration Impact Assessment (DTA-VA-90-1003-06).

The nearest receptor to the soil borrow site is a residential receptor located approximately 1,550 feet west of the northwest corner of the borrow site (Receptor 3; Table NOI-5). At this distance, vibration generated through the operation heavy equipment at the borrow site during both excavation and reclamation activities would be well below the 72 RMS VdB threshold of disturbance to people and well below the 0.3 PPV in/sec threshold to prevent damage to engineered concrete or masonry structures. Furthermore, the proposed long-term use of the borrow site is as a seasonal open water body and wildlife habitat. This use would not involve any vibration generating equipment or processes. Therefore, the potential of the implementation of the proposed project to expose people to excessive vibration is less than significant.

Cumulative Effects

Reasonably foreseeable projects in the vicinity of the soil borrow site are listed in Table 5-1 and their locations are presented in Figure 5.1-1. Three of the four projects listed in Table 5-1 are

located more than 2 miles from the borrow site. Because of their distance from the soil borrow site, noise levels as high as 70 dBA at 50 feet generated at these project sites would attenuate to about 11 dBA at the soil borrow site[111], which is well below the 30 dBA threshold of hearing. Based on their proposed land uses (residential, office, commercial, and light industrial), these foreseeable projects would not generate noise levels above 70 dBA, except temporarily during construction. Therefore, the potential for the three projects located more than two miles from the soil borrow site to contribute to a cumulatively considerable ambient noise level increase in the areas potentially impacted by the proposed project is less-than-significant.

The Saca Tentative Parcel Map project listed in Table 5-1 is located immediately south of the soil borrow site. This project involves the subdivision of a parcel, and does not propose any new development or change in land use. Consequently, this project will have no impact on ambient noise levels and its potential to contribute to a cumulatively considerable ambient noise level increase in the areas potentially impacted by the proposed project is less-than-significant.

[111] The following propagation adjustment was applied to estimate noise levels at a receptor located approximately 10,560 feet from the noise source of 70dBA at 50 feet:

$dBA2 = dBA1 + 10\ Log_{10}(D1/D2)^{2.5}$

Where:

dBA1 reference noise level at a specified distance.

dBA2 is the calculated noise level.

D1 is the reference distance.

D2 is the perpendicular distance from receiver.

5 CEQA CONSIDERATIONS

5.1 CUMULATIVE EFFECTS

Cumulative impacts, as defined in Section 15355 of the CEQA Guidelines, refer to two or more individual effects that, when taken together, are considerable or that compound or increase other environmental impacts. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, or reasonably foreseeable future projects. Pertinent guidance for cumulative impact analysis is provided in Section 15130 of the CEQA Guidelines:

- An EIR shall discuss cumulative impacts of a project when the project's incremental effect is "cumulatively considerable" (i.e., the incremental effects of an individual project are considerable when viewed in connection with effects of past, current, and reasonably foreseeable future projects, including those outside the control of the agency, if necessary).

- An EIR should not discuss impacts that do not result in part from the project evaluated in the EIR.

- A project's contribution is less than cumulatively considerable, and thus not significant, if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact.

- The discussion of impact severity and likelihood of occurrence need not be as detailed as for effects attributable to the project alone.

- The focus of analysis should be on the cumulative impact to which the identified other projects contribute, rather than on attributes of the other projects that do not contribute to the cumulative impact.

5.1.1 Approach

Two approaches to a cumulative impact analysis are discussed in the CEQA Guidelines Section 15130(b) (1): (a) the analysis can be based on a list of past, present, and probable future projects producing related or cumulative impacts, or (b) a summary of projections contained in a general plan or related planning document can be used to determine cumulative impacts. For the purposes of this Draft EIR, the analysis employs the list-based approach. General Plans and other planning documents were used as additional sources of information in establishing the cumulative scenario for the analysis. The following factors were used to determine an appropriate list of projects to be considered in this cumulative analysis:

- Similar Environmental Impacts – a relevant project contributes effects on resources also affected by the proposed project.

- Geographic Scope and Location – a relevant project is located within a defined geographic scope for the cumulative effect. The area within which a cumulative effect can occur varies by resource. For example, air quality impacts tend to disperse over a large area, while agricultural resources impacts are typically more localized. For this reason, the geographic scope for the analysis of cumulative impacts shifts with each subject area addressed.

- Timing and Duration of Implementation – effects associated with activities for a relevant project (e.g., short-term construction or demolition, or longer operations) would likely coincide in timing with the effects of the proposed project.

Similar Environmental Impacts

As described in Chapter 4, *Environmental Analysis*, the proposed project would have potential impacts that are less than significant with mitigation or less than significant in each of the CEQA issue areas analyzed (impacts to agricultural resources were found to be significant and unavoidable). Even impacts that were found to be less than significant at the project level are considered in the cumulative impact analysis because it is possible that the residual impact (the impact that was found to be "less than significant" but greater than "no impact") could contribute to a significant cumulative impact.

5.1.2 List of Relevant Projects

Table 5-1 lists the past, present, and reasonably foreseeable projects and activities within and near the project area. A name, brief description, application status, and location relative to the soil borrow site are provided for each project. Figure 5.1-1 shows the locations of the cumulative projects evaluated in this section.

5.1.3 Cumulative Effects

The potential for cumulative effects with any of the projects listed in Table 5-1 is discussed for each issue area in Chapter 4, *Environmental Analysis*. Where there is a potential for cumulative effects, an assessment of whether the proposed project's incremental contribution to the effect would be cumulatively considerable is provided. If appropriate, mitigation measures are identified to address cumulative effects.

LOCATIONS OF CUMULATIVE PROJECTS

Figure 5.1-1

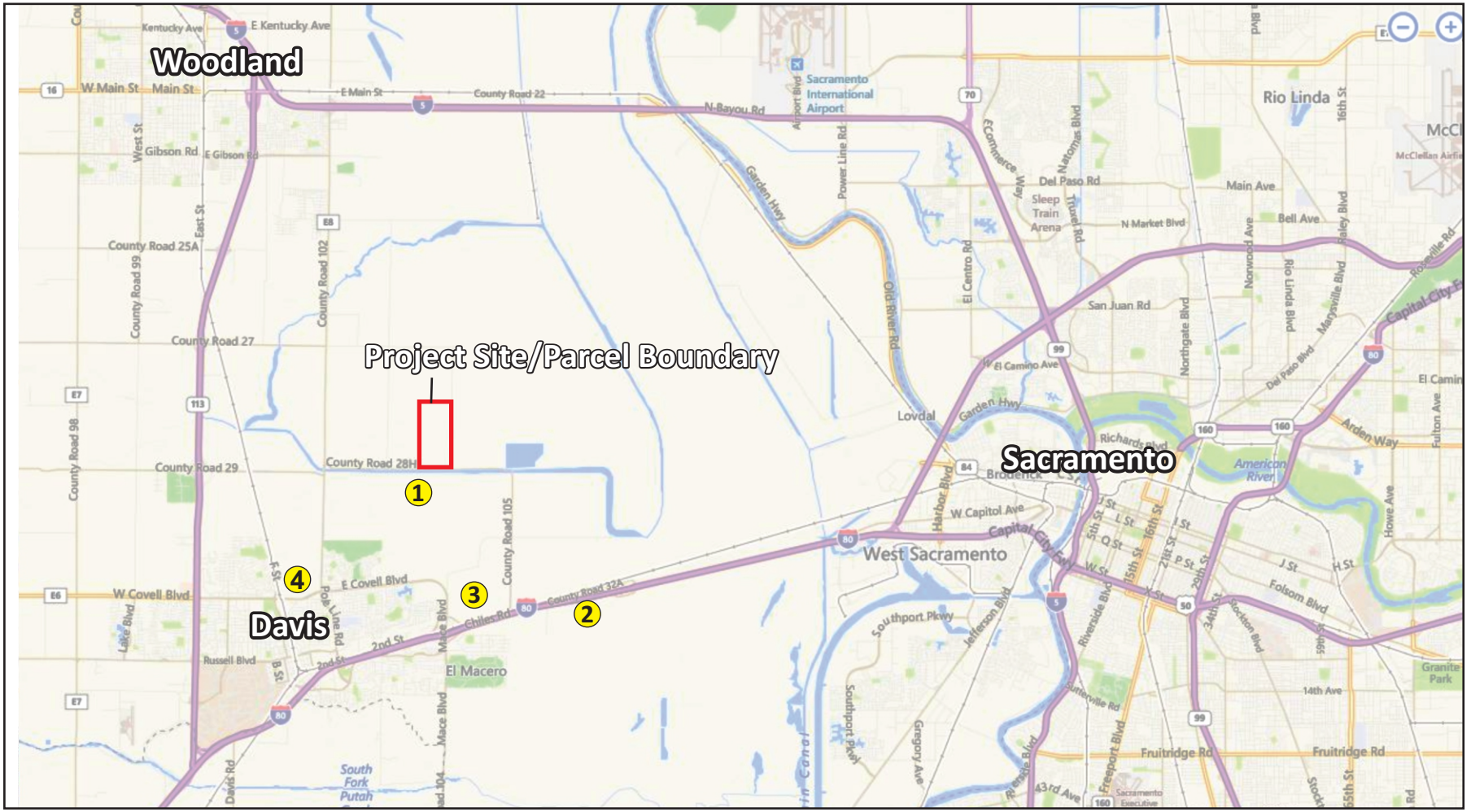

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Table 5-1: List of Cumulative Projects

Project ID	Project Name/ Owner/Applicant/ (Jurisdiction)	Description of Project	Status of Application	Location/Distance from Borrow Site
1	Saca Tentative Parcel Map/John Saca (Yolo County)	Subdivision of 234-acre parcel into two parcels of 116 acres and 118 acres	Approved by Planning Commission on January 15, 2015	43565 County Road 29, northeast of the City of Davis (APN: 042-120-009)/ immediately south of site
2	Rehman Tentative Parcel Map/ Davis 2660 LLC/Shoup/ (Yolo County)	Subdivision of 278-acre parcel into two parcels of 110 acres and 168 acres	Approved by Planning Commission on November 13, 2014	South of Interstate 80, and east of the City of Davis off Chiles Road (APNs: 033-290-044 and 033-300-019)/ 3 miles southeast of site
3	Mace Ranch Innovation Center/Ramos/ Oates/ (City of Davis)	212-acre business park, potential buildout of 2.65 million square feet of R&D, manufacturing, retail, and hotel/ conference uses	Preliminary application received, EIR not yet begun, will require vote and annexation to City	East of Mace Blvd "curve" north of I-80 (APNs:033-290-059, 033-630-009)/ 2 miles south of project site
4	The Cannery/The New Home Company (City of Davis)	100-acre mixed use project consisting of 610 residential dwelling units and up to 236,000 square feet of mixed-use commercial, office and high density residential uses	Approved in December 2013. Construction began in April 2014	1111 East Covell Blvd (APNs: 035-970-034, -035, -037, and-051)/ 3 miles southwest of project site

5.2 GROWTH-INDUCING EFFECTS

During periods when soil is only needed for daily and/or intermediate cover, one to three heavy equipment operators would be required for excavation and transportation of soils at the soil borrow site. During periods of module construction/closure or stockpile placement at the YCCL, which requires larger quantities of soil at the YCCL, the proposed project would require 9 to 27 heavy equipment operators. Module construction/closure or stockpile placement would be expected to occur over the course of one to three months.

After soil borrowing activities are completed each year, incremental reclamation activities would be performed each fall in completed excavation areas. Incremental reclamation would occur each fall until soil borrowing activities at the project site were completed, which is anticipated to be in about 2072. Reclamation activities would be completed by one to three employees (similar to the workforce needed during the typical soil borrowing activities). Upon completion of the project, the reclaimed site would create a seasonal open water body and wildlife habitat; no jobs would be created. Because of the seasonal nature and limited number of additional jobs associated with the project (and because the project would not create new

housing), a substantial increase in population growth in the vicinity of the soil borrow site would not be expected.

6 ALTERNATIVES

6.1 CEQA REQUIREMENTS FOR ALTERNATIVES ANALYSIS

The CEQA Guidelines, Section 15126.6(a), state that an EIR must describe and evaluate a reasonable range of alternatives to the proposed project that would feasibly attain most of the project's basic objectives, and avoid or substantially lessen any identified significant adverse environmental effects of the project. An EIR is not required to consider every conceivable alternative to a proposed project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation. CEQA Guidelines Section 15126.6(e) states that, "The specific alternative of 'no project' shall also be evaluated along with its impact." The EIR must evaluate the comparative merits of the alternatives and include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. Specifically, the CEQA Guidelines set forth the following criteria for selecting alternatives:

- The discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly. (Section 15126.6[b])

- The range of potential alternatives shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. (Section 15126.6[c])

- The specific alternative of "no project" shall also be evaluated along with its impact. (Section 15126.6[e][1])

- The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision-making. (Section 15126.6[f])

6.2 OVERVIEW OF THE PROPOSED PROJECT'S SIGNIFICANT IMPACTS

As described above in Section 6.1, alternatives should reduce or avoid significant environmental impacts associated with the project as proposed. Project implementation would result in the following significant impacts (before mitigation).

6.2.1 Agricultural Resources

The project would convert agricultural land (a portion of which is designated as Prime Farmland and Farmland of Statewide Importance by the NRCS) to non-agricultural uses.

6.2.2 Air Quality/Greenhouse Gas Emission

The proposed project would not result in any significant impacts related to air quality or greenhouse gas emissions (largely because the proposed borrow site is located adjacent to the YCCL and material would be excavated in a similar fashion and distance from the landfill as the current soil source). However, one or more of the alternatives would acquire soil from a more distant location and therefore could increase emissions relative to the proposed project.

6.2.3 Biological Resources

The project would result in potentially significant impacts on a number of special-status animal species. These include foraging and possibly nesting habitat for western burrowing owl, foraging habitat for Swainson's hawk and several other special-status bird species, possible destruction of bird nests in active use protected under the Migratory Bird Treaty Act, and possible loss of individual giant garter snake if present within areas to be disturbed during soil excavation and other project-related activities. The proposed project could also affect regulated waters, if careful controls are not implemented during soil excavation, grading and other earthmoving activities.

6.2.4 Cultural Resources

The project could cause a substantial adverse change in the significance of archeological resources and/or has the potential to disturb human remains, including those interred outside of formal cemeteries. Even though pre-construction field surveys that included inspection of 20 soil pits did not identify the presence of any archaeological resources, the soil borrow site is considered highly sensitive because burial remains were identified in 1981 at the YCCL about 400 feet to the east. In addition, the sediments below 8 feet may be considered to be of high sensitivity for paleontological resources.

6.2.5 Hazards and Hazardous Materials

The project could result in the accidental release of fuels or lubricants during routine project earthwork operations. In addition, the project would remove asbestos concrete pipe from the soil borrow site which could result in the accidental release of asbestos fibers into the environment.

6.2.6 Hydrology and Water Quality

The project could result in off-site discharges of pollutants in stormwater that could violate water quality standards. In addition, the project could degrade groundwater quality if on-site wells were damaged during excavation activities.

6.2.7 Noise and Vibration

The proposed project would not result in any significant impacts related to noise or vibration. This is primarily because the distance between the proposed borrow site and the nearest sensitive receptors is 1,550 feet or more, and because the proposed borrow site is located adjacent to the YCCL and, as a result, haul trucks would not be required to travel public roads and pass sensitive receptors. However, one or more of the alternatives would acquire soil from a more distant location, or from a location that is closer to sensitive receptors than the proposed borrow site, and either of these situations could increase the exposure of sensitive receptors to noise and vibration relative to the proposed project.

6.3 SELECTION AND ANALYSIS OF ALTERNATIVES

This subsection describes and evaluates three alternatives selected for analysis in this Draft EIR, including the No Project Alternative. The alternatives selected for detailed analysis were developed based on feasibility, compliance with project goals and objectives, and avoidance of environmental effects. The objectives of the project, as stated in the Project Description of this Draft EIR, are restated below so that they could be used to screen potential alternatives:

- To permit a soil borrow site that would satisfy the need of the YCCL operations for the next 50 years;

- To acquire soil from the nearest feasible location to the YCCL so that operational costs, energy usage, and air emissions related to transportation would be minimized to the maximum extent feasible. In accordance with the 2005 Permit Revision EIR siting criteria, the borrow site must be within 5 miles of the YCCL; and

- Continue to utilize the un-excavated portions (and to the extent feasible partially-excavation surfaces) of the property for agricultural purposes as the project progresses.

The three alternatives (summarized in Table 6-1) include: 1) the No Project Alternative; 2) the Cache Creek Settling Basin Alternative; and 3) the City of Davis Wastewater Ponds Alternative. The two “build” alternatives represent a range of feasible alternatives, one very near the project site (City of Davis Wastewater Ponds Alternative) and one at a distance of approximately 5 miles of the project site (Cache Creek Settling Basin Alternative). These alternatives were selected for detailed analysis because: 1) they would meet most or all of stated objectives, and 2) they would avoid or lessen some of the environmental impacts that would result from the proposed project.

Table 6-1: Summary of Alternatives

Alternative	Description	Rationale for Consideration
No Project	No excavation would occur on the proposed borrow site west of, and adjacent to, the landfill. Soil would need to be acquired from another source. Since potential other nearby sources are limited (and the material that can be borrowed from the landfill property will be exhausted in the next couple of years), it would be assumed that soil material would be trucked in from a more distant location.	Required by CEQA.
Cache Creek Settling Basin	Excess sediment that accumulates in the Cache Creek Settling Basin (located approximately 5 miles to the north of the project site) would be excavated and transported to the landfill for use. This would extend the life of the settling basin without requiring the state to raise the levees and weir thereby reducing upstream flooding concerns.	Reduces impacts related to loss of agricultural land. Avoids potential impacts related to disturbance of cultural resources.
City of Davis Wastewater Ponds	The City of Davis operates a wastewater treatment facility adjacent to the YCCL (to the east). Due to operational changes at the treatment facility, the City is planning to decommission one or more of the existing wastewater ponds. Under this alternative, the County would purchase the decommissioned ponds from the City and excavate soils from these locations for use at the landfill.	Reduces impacts related to loss of agricultural land and biological resources.

6.3.1 Alternative 1: No Project

This alternative analyzes the effects of taking no action. Under the No Project Alternative, no excavation would occur on the proposed borrow site west of, and adjacent to, the landfill. Since the landfill will continue to operate and the use of soil (for daily cover and construction and closure of new cells) is mandated by law, soil would need to be acquired from another source. Since potential other nearby sources are limited (and the material that can be borrowed from the landfill property will soon be exhausted), it is assumed that soil material would be trucked in from a more distant, but unspecified, location.

Consistency with Project Objectives

The No Project Alternative would achieve only one of the project objectives: the County could continue to use the project site for agricultural purposes. The No Project Alternative would not satisfy the objectives of establishing a long-term soil source at the nearest feasible location.

Impacts

The CEQA Guidelines require that an EIR evaluate and analyze the impacts of the No Project Alternative. This allows decision makers to compare the impacts of a proposed project to the impacts or benefits of not building the project as well as to evaluate what would be reasonably expected to occur in the foreseeable future if the project were not built (CEQA Guidelines Section 15126.6[e][1] and [2]).

Agricultural Resources

It is possible that an unspecified alternate source of soil could affect agricultural land elsewhere in the County. However, since loss of agricultural land is assured under the proposed project and speculative under the No Project Alternative, it is expected that the No Project Alternative would decrease impacts associated with loss of agricultural land compared with the proposed project.

Air Quality/Greenhouse Gas Emissions

The project site is considered the closest feasible source of soil to the YCCL. Since an alternative soil borrow site would need to be selected as the result of the No Project Alternative, the alternative site would have to transport soils over a greater distance to the YCCL. By increasing the travel distance to an unspecified alternate source of soil, the No Project Alternative would increase the level of air quality and greenhouse gas impacts from mobile emission sources compared to the proposed project.

Biological Resources

The potential for adverse impacts on sensitive biological resources at the alternative soil borrow site would depend on existing conditions at that location. Further review would be necessary to confirm presence or absence of any sensitive biological resources at the alternative soil borrow site location, but it is possible that there could be similar or greater potential impacts, and that mitigation measures would be required. For this reason, it is uncertain whether the No Project Alternative would decrease or increase potential impacts on biological resources.

Cultural Resources

No impacts related to the change in important archaeological or paleontological resources would occur at the project site under the No Project Alternative. However, since an alternative source may also be considered sensitive for these resources (most Pleistocene sediments in the County are sensitive), it is likely that an alternative soil borrow site would be equally sensitive and potential impacts would be similar.

Hazards and Hazardous Materials

An alternative soil borrow site would need to be selected as the result of the No Project Alternative. Similar to the proposed project, heavy equipment used for earthwork operations at the alternative soil borrow site could result in an accidental spill, which could be mitigated by preparing and implementing a Spill Prevention, Control and Countermeasures plan. It is unknown if the unspecified alternative site would contain hazardous materials concerns (e.g., soil contamination) that pose an equal or greater health risk than the asbestos-cement pipe on the project site. However, since the risk of an asbestos releases exists under the proposed project and similar hazardous materials concerns are speculative under the No Project Alternative, it is expected that the No Project Alternative would decrease impacts associated with hazards and hazardous materials compared to the project site.

Hydrology and Water Quality

An alternative soil borrow site would need to be selected as the result of the No Project Alternative. Similar to the proposed project, excavation of the unspecified alternative soil borrow site has the potential to impact existing drainage patterns and increase off-site erosion, sedimentation, and/or discharges of pollutants. It is unknown if the unspecified alternative soil borrow site would deplete groundwater supplies, degrade groundwater quality, alter flood flows in a 100-year flood hazard zone, or expose workers to flooding as a result of a levee or dam failure. Therefore, it is assumed that development of an unspecified soil borrow site would have similar impact to hydrology and water quality as the proposed project.

Noise

The project site is considered the closest feasible source of soil to the YCCL. Since an alternate soil borrow site would need to be selected under the No Project Alternative, soils would need to be transported over a greater distance to the YCCL. Because there are sensitive receptors located adjacent to all major roads leading to the YCCL, increasing the travel distance to an unspecified alternate soil borrow site would increase the exposure of sensitive receptors to noise from haul trucks compared to the proposed project. Furthermore, the alternate soil borrow site may be located closer to sensitive receptors then the proposed soil borrow site, which could increase the exposure of sensitive receptors to noise from soil excavation activities compared to the proposed project.

Conclusions

For the purposes of this discussion, it is assumed that an alternate soil borrow site that would be required under the No Project Alternative would have similar impacts as the proposed project. The primary benefit of this alternative would be to avoid the loss of agricultural land (though an alternate site could also be used for agriculture). Since an alternative borrow site would almost certainly be at a greater distance from the YCCL, this alternative would likely increase the intensity of potential air quality, greenhouse gas, and noise impacts relative to the proposed project.

6.3.2 Alternative 2: Cache Creek Settling Basin

Under this alternative, excess sediment that accumulates in the Cache Creek Settling Basin, located approximately 5 miles to the north of the project site (Figure 6-1), would be excavated and transported to the landfill for use. The Cache Creek Settling Basin is a 3,600-acre structure located at the base of the Cache Creek watershed. The basin was constructed in 1937 to contain sediment that would otherwise build up in the Yolo Bypass and decrease the Yolo Bypass' ability to protect the Sacramento region from flooding. The basin was modified in 1993 to increase its sediment trapping efficiency.

The Cache Creek watershed is responsible for a disproportionate amount of all the mercury entering the Bay-Delta Estuary. The Cache Creek watershed represents about 2 percent of the land area of the Central Valley watershed but generates about 60 percent of the mercury. Half of the mercury from the Cache Creek watershed is trapped in the Cache Creek Settling Basin and the rest passes through to the Yolo Bypass.[112] Sources of mercury entering the watershed include waste rock and tailings from historic mercury mines, erosion of naturally mercury-enriched soils, geothermal springs, and atmospheric deposition. There are multiple inactive mercury mines in the Cache Creek watershed.

Removal of sediment by the project would extend the life of the settling basin without requiring the state to raise the levees and weir and would reduce upstream flooding concerns. The areas where sediment has accumulated is mostly privately-owned and either being used for agriculture or open space/habitat.

It is likely that permitting with the resource agencies (e.g., Regional Water Board, California Department of Fish and Wildlife) would be required to conduct the earthwork and excavation within the Cache Creek Settling Basin. Preliminary characterization of sediments in the Cache Creek Settling Basin indicate that mercury levels do not exceed the applicable hazardous waste criteria for mercury[113] and so the sediment would not be classified as a hazardous waste.[114] This is important because the YCCL is not permitted to accept hazardous waste.

Consistency with Project Objectives

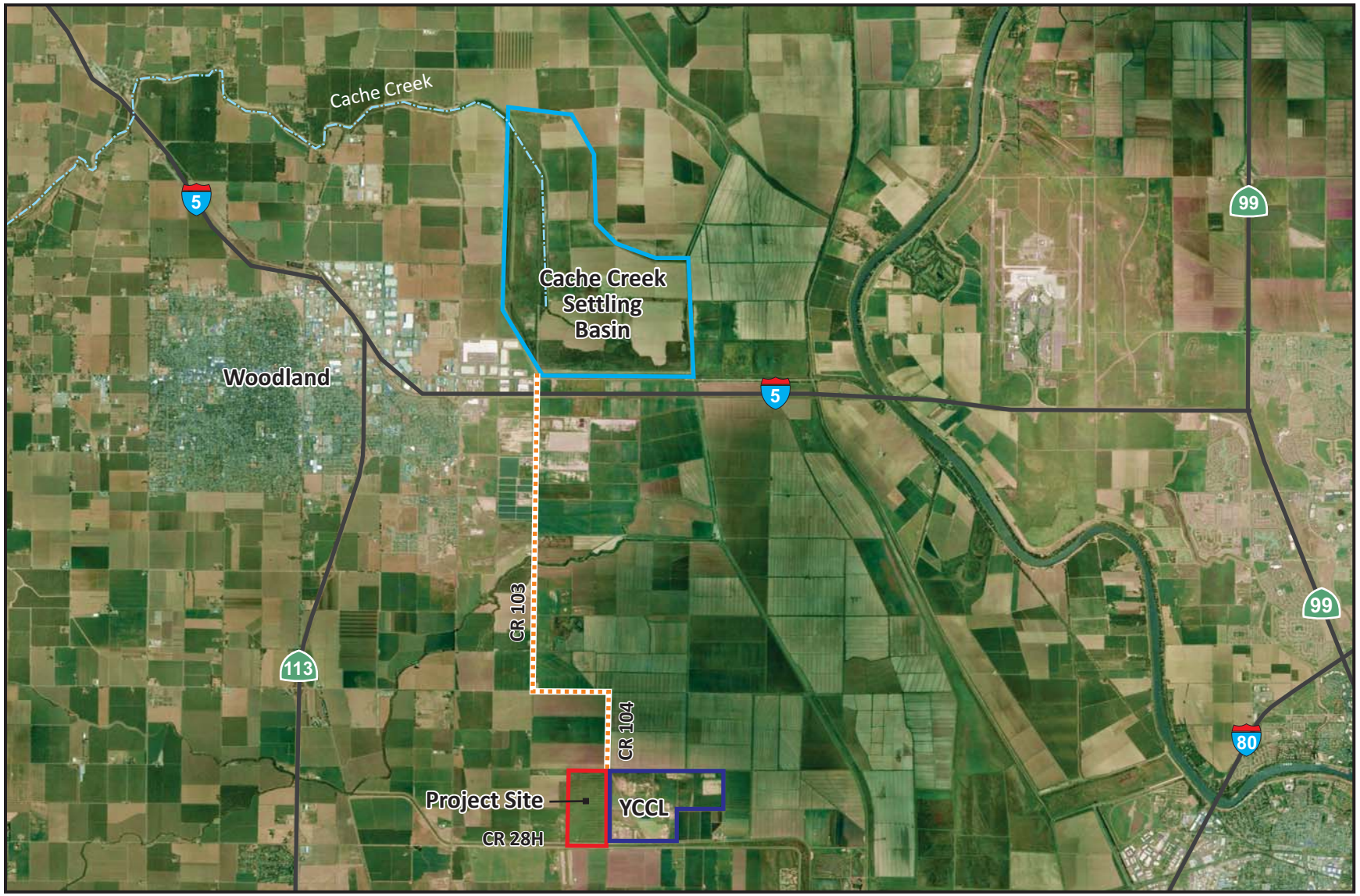
This alternative would satisfy all the stated project objectives, except the following:

- Acquire soil from the nearest feasible location to the YCCL so that operational costs, energy usage, and air emission related to transportation would be minimized to the maximum extent feasible.

[112] Central Valley Regional Water Quality Control Board, 2008, Staff Report: Mercury Inventory in the Cache Creek Canyon, February.
[113] The Total Threshold Limit Concentration (a hazardous waste criteria) for mercury is 20 parts per million (CCR Title 22 § 66261.24. Characteristic of Toxicity).
[114] Central Valley Regional Water Quality Control Board, 2009, Cache Creek Settling Basin Sediment Mercury Waste Characterization: Small-Scale Preliminary Assessment, November 5.

Cache Creek Settling Basin Alternative

Figure 6-1



Base: Google Earth Pro, 2014
Note: YCCL = Yolo County Central Landfill

Legend

Haul Route

Cache Creek

0 10,000 Feet

Yolo County Central Landfill Soil Borrow Site Project

BASELINE ENVIRONMENTAL CONSULTING

Even though this alternative specifies a soil source at a greater distance than the project site, it would satisfy 2005 Permit Revision EIR siting criteria, that the borrow site must be within 5 miles of the YCCL (the settling basin is approximately 5 miles from the YCCL).

Impacts

Agricultural Resources

The California Department of Conservation Farmland Mapping and Monitoring Program (FMMP) maps the Cache Creek Settling Basin as "Farmland of Local Potential," "Grazing Land," and "Other Land." NRCS mapping indicates that about 10 percent of the soils are classified as "prime soils." It is likely that sediment excavation activities under the Cache Creek Settling Basin Alternative site would temporarily impact agricultural land. Since the impact would be temporary and when excavation is complete the land could be restored to agriculture, this alternative would reduce impacts related to loss of agricultural land compared to the proposed project.

Air *Quality/Greenhouse Gas Emissions*

The increases in distance to transport soils from the Cache Creek Settling Basin to the YCCL relative to the project site would increase the project's emissions of criteria air pollutants, toxic air contaminants (e.g., diesel particulate matter), and greenhouse gases from mobile sources. As a result, the Cache Creek Settling Basin Alternative site would have a greater unavoidable impact on air quality and greenhouse gas emissions compared to the project site.

Biological Resources

The potential impacts on biological resources under the Cache Creek Settling Basin Alternative would depend on the specific location where soil extraction would occur, and whether any sensitive biological resources were present. Further review would be necessary to confirm presence or absence of any sensitive biological resources at the Cache Creek Settling Basin Alternative, but potential impacts on western burrowing owl, Swainson's hawk, and other special-status bird species and active nests protected under the Migratory Bird Treaty Act would be similar to those associated with the project site, given the similar conditions in both areas. There would likely remain a potential for adverse impacts on giant garter snake, given the number of records for this species in the vicinity. And soil excavation on the Cache Creek Settling Basin Alternative could also affect jurisdictional waters, depending on the location of the soil borrow activities. For these reasons, potential impacts on biological resources would be similar under this alternative to the proposed project, and mitigation measures would still be required to address adverse effects.

Cultural Resources

Only recently deposited sediments (within the last 100 years) that have accumulated in the Cache Creek Settling Basin would be excavated and/or disturbed under this alternative. Therefore, potential impacts to archaeological and paleontological resources would not occur under this alternative.

Hazards and Hazardous Materials

Similar to the proposed project, heavy equipment used for earthwork operations at the Cache Creek Settling Basin Alternative site could result in an accidental spill, which could be mitigated by preparing and implementing a Spill Prevention, Control and Countermeasures plan. Both the Cache Creek Settling Basin and the project site have hazardous materials issues. Earthwork activities at the Cache Creek Settling Basin could generate dust emissions that contain elevated concentrations of mercury that could pose a risk to human health and the environment. The project site has asbestos-cement pipe in the subsurface. Both potential impacts could be mitigated, but the Cache Creek Settling Basin mercury issue would occur throughout the life of the project (up to 50 years), while the asbestos pipe at the project site would be excavated and disposed of within 1 month. Therefore, the Cache Creek Settling Basin Alternative would increase the level of impacts related to hazards and hazardous materials compared to the project site.

Hydrology and Water Quality

Similar to the proposed project, excavation of the Cache Creek Settling Basin has the potential to impact existing drainage patterns and increase off-site erosion, sedimentation, and/or discharges of pollutants. Excavation of the Cache Creek Settling Basin could also have a beneficial impact on the existing drainage patterns by extending the life of the settling basin without requiring the State to raise the levees and weir and would reduce upstream flooding concerns. Overall, the Cache Creek Settling Basin Alternative would have a similar level of impact on hydrology and water quality compared to the project site.

Noise

The nearest sensitive receptor is a residence located about 2,400 feet from the Cache Creek Settling Basin. This is greater than the distance of the nearest sensitive receptor to the proposed soil borrow site. Consequently, the Cache Creek Settling Basin Alternative would decrease the exposure of sensitive receptors to noise from soil excavation activities compared to the proposed project. However, there are residences located adjacent to CR 103, which would likely be used as a truck hauling route between the Cache Creek Settling Basin and the YCCL (Figure 6-1). Increased truck traffic along CR 103 from the Cache Creek Settling Basin Alternative site would increase the exposure of sensitive receptors to noise from haul trucks compared to the proposed project.

Conclusions

The primary benefits of this alternative would be to avoid the permanent loss of agricultural land and to avoid impacts to cultural resources. However, it would increase the intensity of air quality, greenhouse gas, hazardous materials, and noise impacts relative to the proposed project.

6.3.3 Alternative 3: City of Davis Wastewater Ponds

The City of Davis operates a wastewater treatment facility adjacent to the YCCL (to the east, as shown on Figure 6-2). Due to operational changes at the treatment facility, the City is planning to decommission one or more of the existing wastewater ponds. Under this alternative, the County would purchase the decommissioned ponds from the City and excavate soils underlying the ponds for use at the landfill. However, according to City of Davis staff, these ponds would not be available until 2017. Since the YCCL current on-site soil source is likely to be exhausted before 2017, another short-term source of soil would be needed. Two options that could fill this short-term need include: 1) truck soil in from some distant unspecified location; or 2) excavate soil from an undeveloped portion of the landfill (likely the east end of the YCCL property). YCCL staff would then need to replace that soil from another source prior to developing that portion of the landfill (which would mean the double-handling of soil).

Consistency with Project Objectives

This alternative would fully or partially satisfy all the stated proposed project objectives. It would establish a new long-term soil source. However, it is not known at this time how many of the ponds the City will decommission and how much soil could be generated under this alternative. It is unlikely that this alternative would provide as much soil as the proposed project and therefore would not provide soils for the next 50 years. This alternative would provide a nearby source of soil, once the ponds are available (satisfying the second objective. However, in the short-term (for the first few years), soils would be brought in from some distant source and/or excavated on-site (and backfilled later). Under this alternative, the County could continue to use the project site for agricultural purposes.

Impacts

Agricultural Resources

No impacts related to loss of agricultural land would occur at the project site under the City of Davis Wastewater Ponds Alternative. The California Department of Conservation FMMP maps the Cache Creek Settling Basin as “Urban and Build-Up Land.” Therefore, the City of Davis Wastewater Ponds Alternative would have a reduced impact related to loss of agricultural land than the proposed project.

City of Davis Wastewater Ponds Alternative

Figure 6-2

Base: Google Earth Pro, 2014

Legend

Haul Route Access

0 1,500 Feet

Yolo County Central Landfill
Soil Borrow Site Project

BASELINE ENVIRONMENTAL CONSULTING

Air Quality/Greenhouse Gas Emissions

The wastewater ponds and project site are located approximately equidistant from the YCCL. However, the short-term soil source would either require an increase in transportation distance to the YCCL or additional earthwork moving activities to backfill soils removed from the YCCL. In addition, an additional long-term source of soil at an unspecified location would need to be selected after excavation of the wastewater ponds to provide soil to the YCCL for a total of at least 50 years. The additional unspecified soil source would be located further away from the YCCL than the project site. Relative to the project site, the increase in transportation and/or earthwork moving activities associated with the short-term and long-term soil sources for the City of Davis Wastewater Ponds Alternative would increase the project's emissions of criteria air pollutants, toxic air contaminants (e.g., diesel particulate matter), and greenhouse gases from mobile sources. As a result, the City of Davis Wastewater Ponds Alternative would have a greater impact on air quality and greenhouse gas emissions compared to the project site.

Biological Resources

The potential impacts on biological resources under the City of Davis Wastewater Ponds Alternative would generally be less than those associated with the proposed project. The open water treatment ponds have only limited wildlife habitat value, given their routine maintenance for wastewater treatment purposes, and fact that they are bordered by riprap with very little emergent wetland vegetation. The lack of grassland cover and absence of trees precludes foraging and nesting by Swainson's hawk on the site, although a pair has been reported to nest immediately south along the Willow Slough Bypass. The riprap berms that surround the treatment ponds provide potential nesting habitat for western burrowing owl as well. And unlike the project site, the wastewater ponds have been used as a nesting location for the federally-threatened snowy plover (*Charadrius alexandrinus nivosus*) in the past based on a CNDDB record from 1963. This small shorebird forages in flat open areas having little vegetation, including sandy beaches and salt flats. It nests in small depressions on the ground. Further investigation into whether snowy plover continues to nest at the treatment plant site and vicinity would be necessary to determine whether this species poses a possible constraint to this alternative, although this appears unlikely based on the age of the record. For these reasons, potential impacts on biological resources would generally be considered less under this alternative in comparison to the proposed project, although mitigation measures related to burrowing owl, preconstruction nesting surveys, and possibly measures related to snowy plover would be required to address possible adverse effects.

Cultural Resources

Sediments underlying the wastewater ponds would be considered to be equally sensitive for archaeological and paleontological resources. Therefore, implementation of this alternative would result in similar potential impacts to these resources as the proposed project.

Hazards and Hazardous Materials

Similar to the proposed project, heavy equipment used for earthwork operations at the Davis wastewater ponds could result in an accidental spill, which could be mitigated by preparing and

implementing a Spill Prevention, Control and Countermeasures Plan. Metals are a common contaminant of concern in wastewater ponds. The YCCL has removed sludge from the Davis wastewater ponds in the past to use as soil cover and previous analytical results indicated that metals concentrations were below hazardous waste thresholds. However, excavation and transportation of shallow soils at the wastewater ponds could generate dust emissions containing elevated concentrations of metals and other contaminants (if present) that could pose a risk to human health and the environment. This impact could be mitigated to a less-than-significant level by implementing dust control measures. The project site poses a similar hazardous materials concern related to the management of asbestos-cement pipe, except that the mitigation for properly removing asbestos-cement pipe would last about a month. The duration of mitigation to manage shallow soils impacted by wastewater effluent at the Davis wastewater ponds could extend over many months or years depending on the phasing of excavation. Therefore, the City of Davis Wastewater Ponds Alternative would increase the level of impacts related to hazards and hazardous materials compared to the project site.

Hydrology and Water Quality

Since all stormwater runoff would be contained on-site, excavation of the wastewater treatment ponds would not be expected to discharge pollutants off-site (similar to the proposed project). All other potential impacts related to hydrology and water quality would also be similar to the proposed project. Overall, the City of Davis Wastewater Ponds Alternative would have similar impact on hydrology and water quality compared to the proposed project.

Noise

The nearest sensitive receptor to the wastewater ponds is a residence located about 1,300 feet away. This is less than the distance of the nearest sensitive receptor to the proposed soil borrow site. Consequently, the City of Davis Wastewater Ponds Alternative would increase the exposure of sensitive receptors to noise from soil excavation activities compared to the proposed project. In addition, under the City of Davis Wastewater Ponds Alternative, an additional long-term source of soil at an unspecified location would need to be selected once the excavation of the wastewater ponds is completed. This would be necessary to provide soil to the YCCL for a total of at least 50 years. Because the project site is considered the closest feasible source of soil to the YCCL, the additional unspecified soil source would be located further away from the YCCL than the project site. Because there are sensitive receptors located adjacent to all major roads leading to the YCCL, increasing the distance to an unspecified additional source of soil would increase the potential of noise generated by haul trucks to impact sensitive receptors compared to the proposed project.

Conclusions

The primary benefits of this alternative would be to avoid the loss of agricultural land and reduce potential impacts to biological resources. However, this alternative would increase the intensity of potential air quality, greenhouse gas, hazardous materials, and noise impacts relative to the proposed project.

6.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Pursuant to CEQA Guidelines Section 15126.6(e)(2), an environmentally superior alternative must be identified from among the other alternatives if the "No Project" alternative would otherwise be the environmentally superior alternative. The environmentally superior alternative is the alternative that would result in the fewest or least significant environmental impacts.

Table 6-2 provides a summary comparison of significance levels for identified impacts under each alternative. Based on the discussion provided above and summarized in Table 6-1, the No Project Alternative (Alternative 1) would not satisfy any of the objectives and would not decrease overall impacts relative to the proposed project. The City of Davis Wastewater Ponds Alternative (Alternative 3), while meeting most of the project objectives, would avoid the loss of agricultural land and reduce impacts to biological resources. However, this alternative would not avoid potential impacts to cultural resources, and would increase the intensity of potential air quality, greenhouse gas, hazardous materials, and noise impacts relative to the proposed project. Furthermore, because the wastewater ponds would not provide enough soil to supply the YCCL for 50 years, an additional source of soil would be required under this alternative. The additional source of soil is undefined and, as a result, the potential impacts of this alternative are difficult to fully evaluate.

Table 6-2: Comparison of Project and Alternatives Impacts

Resource Area	Project Impact	Proposed Project Impact - Level of Significance	Alternative 1	Alternative 2	Alternative 3
			No Project	Cache Creek Settling Basin	City of Davis Wastewater Ponds
Agricultural Resources	AG-1: The project would convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a non-agricultural use.	S	<	<	<
	AG-2: The project would convert agricultural land to a non-agricultural use.	S	<	<	<
	CUMULATIVE AG-1: Build-out of the project and the 2030 Countywide General Plan for Yolo County in conjunction with other planned development in the region would contribute cumulatively to loss of agricultural land.	SU	=	<	<
Air Quality	AQ-1: The project could conflict with or obstruct implementation	LTS	=	=	=

Resource Area	Project Impact	Proposed Project Impact - Level of Significance	Alternative 1	Alternative 2	Alternative 3
			No Project	Cache Creek Settling Basin	City of Davis Wastewater Ponds
	of the applicable air quality plan.				
	AQ-2: The project could violate air quality standards or contribute substantially to an existing or projected air quality violation.	S	>	>	>
	AQ-3: The project could result in a cumulatively considerable net increase in criteria pollutants for which the project region is non-attainment.	S	>	>	>
Biological Resources	BIO-1: The project may have significant adverse impacts on special-status bird species.	S	<	=	<
	BIO-2: The project may have significant adverse impacts on western burrowing owl.	S	<	=	<
	BIO-3: The project may have significant adverse impacts on giant garter snake.	S	<	=	<
	BIO-4: The project may affect regulated waters.	S	<	=	<
	BIO-5: The project would not conflict with any adopted habitat conservation plants.	LTS	<	=	<
Cultural Resources	CUL-1: The project could cause a substantial adverse change in the significance of archaeological and historical resources pursuant to §15064.5 of CEQA.	S	=	<	=
	CUL-2: Soil excavation could directly or indirectly destroy a unique paleontological resource.	S	=	<	=
	CUL-3: The project could disturb human remains, including those interred outside of formal cemeteries.	S	=	<	=
	CUL-4: The project could cause a substantial adverse change in religious or sacred sites, or unique ethnic-cultural resources.	LTS	=	<	=

Resource Area	Project Impact	Proposed Project Impact - Level of Significance	Alternative 1	Alternative 2	Alternative 3
			No Project	Cache Creek Settling Basin	City of Davis Wastewater Ponds
Greenhouse Gas Emissions	GHG-1: The project's GHG emissions would impact the environment.	LTS	>	>	>
	GHG-2: The project would conflict with an applicable plan, policy or regulation for reducing GHG emission.	LTS	=	=	=
Hazards and Hazardous Materials	HAZ-1: Routine project earthwork operations could result in the accidental release of fuels or lubricants.	S	=	=	=
	HAZ-2: Release of hazardous materials to the environment could affect workers and the public.	S	<	>	>
Hydrology and Water Quality	HYD-1: The project could result in off-site discharges of pollutants in stormwater that could violate water quality standards.	S	=	=	=
	HYD-2: The project could substantially deplete groundwater supplies.	LTS	=	=	=
	HYD-3: The project could substantially alter the existing drainage pattern of the site and cause substantial erosion or sedimentation.	LTS	=	=	=
	HYD-4: The project could substantially alter the existing drainage pattern of the site and cause flooding.	LTS	=	=	=
	HYD-5: The project could substantially degrade groundwater quality if on-site wells were damaged during excavation activities.	S	=	=	=
	HYD-6: The project could alter flood flows within a 100-year flood hazard zone.	LTS	=	=	=
	HYD-7: The project would expose workers to a significant risk of loss,	N	=	=	=

Resource Area	Project Impact	Proposed Project Impact - Level of Significance	Alternative 1	Alternative 2	Alternative 3
			No Project	Cache Creek Settling Basin	City of Davis Wastewater Ponds
	injury or death from flooding as a result of a levee or dam failure.				
Noise	NOI-1: The project could expose sensitive receptors to a substantial long-term increase in noise levels.	LTS	>	>	>
	NOI-2: The project could expose persons to or generate noise levels in excess of local standards established in the general plan and/or noise ordinance, or in the applicable standards of other agencies.	LTS	>	>	>
	NOI-3: The project could expose persons or generate excessive vibration.	LTS	=	=	=

Notes:
"=" – The impact is considered equal to that of the proposed project or is unknown.
"<" – The impact is considered less than the proposed project.
">" – The impact is considered greater than the proposed project.

The Cache Creek Settling Basin Alternative (Alternative 2) is the environmentally superior alternative because while meeting most of project objectives, it would avoid the permanent loss of agricultural land and impacts to cultural resources. However, because of its distance from the YCCL and because the sediments in the basin contain elevated levels of mercury, this alternative would increase the severity of impacts related to air quality, greenhouse gases, hazardous materials, and noise relative to the proposed project.

6.5 ALTERNATIVES CONSIDERED BUT REJECTED FOR FURTHER ANALYSIS

The following additional project alternatives were considered but rejected from further comparative analysis for the reasons given below:

Alternative Location, Snyder Property

A 160-acre piece of land located south of the landfill was considered by the County for purchase and use as the borrow site. This site would have satisfied most of the objectives of the County. Similar to the propose project site, the Snyder property is currently in agriculture. One complication related to this property that is not an issue for the proposed project site is that the Snyder parcel is under Williamson Act contract. The County was in negotiation with the property owner when the property owner decided not to sell to the County and cancelled the negotiations. An unwilling seller makes this alternative infeasible.

Alternative Mining Scenario, Preserve Prime Soils

Under this alternative, the northern portion of the project site, where the best agricultural soils are located, would not be mined. The NRCS mapping (which is used as the technical basis for FMMP mapping) designates the northern portions of the borrow site as Prime Farmland (80 acres) and Farmland of Statewide Importance (76 acres). The unmined portion would continue to be used for grazing or crops. The remaining portion of the site would be mined to depths of approximately 25-30 feet using conventional scrapers and excavators above and near the water table surface and a drag-line or other equivalent equipment below the water table. Saturated soils would be stockpiled and allowed to drain/dry before transport to the landfill. The perimeter of the deep wet pit would be reclaimed to wildlife habitat similar to the scenario described for reclamation under the proposed project. This alternative was considered by County staff and considered infeasible because it is not practical to excavate and dewater clay soils so far below the groundwater table (high groundwater levels range from 1 to 6 feet across the site).

Alternative Mining Scenario, Shallower Mining

Under this alternative, excavation would be limited to the depth of approximately 2 feet above high groundwater levels. Topsoil would all be saved and redistributed over the lowered surface upon completion of mining. The site would be reclaimed to agricultural use (grazing or crops). Since high groundwater levels range from 1 to 6 feet across the site and 1 foot of topsoil would be saved, this alternative would allow for only about 0 to 5 feet of excavation. This would result in an over 80 percent reduction in soil volume (less than 1 million cubic yards) relative to the proposed project and would not meet the soil volume objective of the project.

7 REPORT PREPARATION

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7.2 ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
AC	Asbestos-cement
ACMs	Asbestos-containing materials
AG	Agriculture
AQAP	Air Quality Attainment Plan
CAA	Clean Air Act
CAAQS	California ambient air quality standards
CAL FIRE	California Department of Forestry and Fire Protection
Cal/EPA	California Environmental Protection Agency
Cal/OSHA	California Division of Occupational Safety and Health
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCTS	Central California Taxonomic System
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CESA	California Endangered Species Act
CH_4	Methane
CLUPs	Comprehensive Land Use Plans
CNDDB	California Natural Diversity Data Base
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalents
Compatibility Plan	Sacramento International Airport Land Use Compatibility Plan
Corps	U.S. Army Corps of Engineers
CR	County Road
CWA	Clean Water Act
DIWM	Division of Integrated Waste Management
DOT	United States Department of Transportation
DPR	California Department of Pesticide Regulation
DTSC	Department for Toxic Substances Control
EC	Electric conductivity
EIR	Environmental Impact Report
ESA	Endangered Species Act

FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
GHGs	Greenhouse gases
GWP	Global warming potential
H&SC	Health and Safety Code
HFCs	Hydrofluorocarbons
HMTA	Hazardous Material Transportation Act
IPCC	Intergovernmental Panel on Climate Change
IS	Initial Study
JTD	Joint Technical Document
LOP	Local Oversight Program
LOS	Level of Service
MBTA	Migratory Bird Treaty Act
mph	Miles per hour
MPO	Metropolitan planning organization
MT	Metric tons
N_2O	Nitrous oxide
NAAQS	National ambient air quality standards
NAVD 88	North American Vertical Datum of 1988
NEPA	National Environmental Policy Act
NESHAP	National Emission Standard for Hazardous Air Pollutants
NOAA	National Oceanic Atmospheric Administration
NO_2	Nitrogen dioxide
NOx	Nitrogen oxides
NOP	Notice of Preparation
NRCS	Natural Resource Conservation Service
OCPs	Organochlorine pesticides
OES	Yolo County Office of Emergency Services
OSHA	Occupational Health and Safety Administration
PFCs	Perfluorocarbons
PM	Particulate matter
PM_{10}	Particulate matter with an aerodynamic resistance diameter equal to or less than 10 microns
$PM_{2.5}$	Particulate matter with an aerodynamic resistance diameter equal to or less than 2.5 microns
PQ	Public and Quasi-Public
PQP	Public Quasi Public
RACM	Regulated asbestos-containing material
RCRA	Resource Conservation and Recovery Act
Regional Water Board	Central Valley Regional Water Quality Control Board

ROG	Reactive organic gases
SACOG	Sacramento Area Council of Governments
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
Scoping Plan	Climate Change Scoping Plan
SEIR	Subsequent Environmental Impact Report
SF_6	Sulfur hexafluoride
SIP	State Implementation Plan
SLAMs	State and Local Air Monitoring Stations
SMARA	Surface Mining and Reclamation Act
SO_2	Sulfur dioxide
SPCC	Spill Prevention, Control and Countermeasures
SVAB	Sacramento Valley Air Basin
SVP	Society of Vertebrate Paleontology
SWRCB	State Water Resources Control Board
TAC	Toxic air contaminant
TSCA	Toxic Substances Control Act
USEPA	United States Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
YCCL	Yolo County Central Landfill
YSAQMD	Yolo-Solano Air Quality Management District
dB	decibels
dBA	A-weighted decibels
Leq	Equivalent Noise Level
CNEL	Community Noise Equivalent Level
Ldn	Day/Night Noise Level
VdB	Vibration decibel
PPV	Peak Particle Velocity
RMS	Root Mean Square Velocity
in/sec	inches per second