

**H Cycle Pittsburg
Renewable Hydrogen Project**

**DRAFT
Environmental Impact Report
SCH Number 2023040173**

January 2024

Prepared For:



City of Pittsburg
Community and Economic Development
Department, Planning Division
65 Civic Avenue, Pittsburg, CA 94565

Prepared By:



TRC Companies
850 Gateway Blvd
Concord, CA 94520

TABLE OF CONTENTS

EXECUTIVE SUMMARY	ES-1
ES.1 Introduction	ES-1
ES.2 Project Objectives.....	ES-1
ES.3 Organization of the EIR.....	ES-2
ES.4 Proposed Project.....	ES-3
ES.5 Environmental Impacts and Mitigation Measures	ES-3
ES.6 Summary Of Potentially Significant Impacts Of The Project.....	ES-21
ES.7 Alternatives to the Proposed Project.....	ES-21
ES.8 Known Areas of Controversy or Unresolved Issues.....	ES-23
1 INTRODUCTION	1-24
1.1 Project Overview	1-24
1.2 Project Objectives.....	1-24
1.3 Applicability of the California Environmental Quality Act.....	1-25
1.4 Purpose of the EIR	1-25
1.5 Use of This EIR by Responsible Agencies	1-27
1.6 Opportunities for Public Comment.....	1-28
1.7 Organization of the EIR.....	1-29
2 PROJECT DESCRIPTION	2-1
2.1 Project Location	2-1
2.2 Project Components.....	2-4
2.3 Description of Proposed Project.....	2-7
3 ENVIRONMENTAL IMPACT ANALYSIS, METHODOLOGY, AND BASELINE.....	3-1
Assessment Methodology.....	3-1
3.1 Aesthetics.....	3.1-1
3.2 Agriculture and Forestry	3.2-1
3.3 Air Quality and Greenhouse Gas Emissions	3.3-1
3.4 Biological Resources	3.4-1
3.5 Cultural and Tribal Cultural Resources	3.5-1
3.6 Energy.....	3.6-1
3.7 Geology and Soils.....	3.7-1

3.8 Mineral Resources..... 3.8-1

3.9 Hazards and Hazardous Materials..... 3.9-1

3.10 Hydrology and Water Quality 3.10-1

3.11 Land Use and Planning..... 3.11-1

3.12 Noise and Vibration 3.12-1

3.13 Population and Housing 3.13-1

3.14 Public Services..... 3.14-1

3.15 Recreation 3.15-1

3.16 Transportation and Traffic..... 3.16-1

3.17 Utilities and Service Systems 3.17-1

3.18 Wildfire 3.18-1

4 CUMULATIVE IMPACTS4-1

4.1 Approach to the Cumulative Analysis..... 4-1

4.2 Related Projects Considered in The Cumulative Impact Analysis..... 4-3

4.3 Cumulative Impacts to Environmental Resources..... 4-5

5 ALTERNATIVES5-1

5.1 Introduction 5-1

5.2 Summary of Analysis..... 5-1

5.3 Considerations for Alternatives 5-1

5.4 Selection of Alternatives..... 5-5

5.5 Alternatives Considered in this EIR..... 5-7

5.6 Environmentally Superior Alternative 5-13

6 OTHER CEQA CONSIDERATIONS.....6-1

6.1 Growth-Inducing Impacts 6-1

6.2 Significant IrreverSible Environmental Changes 6-1

6.3 Significant, Unavoidable Environmental Impacts..... 6-2

7 LIST OF PREPARERS.....7-1

7.1 City of Pittsburg..... 7-1

7.2 HC (Contra Costa, LLC) 7-1

7.3 TRC Companies 7-1

7.4 GeoEngineers, Inc..... 7-2

7.5 Agencies and Organizations Consulted 7-2

TABLE OF TABLES

Table ES-1:	Summary of Project Impacts and Mitigation Measures.....	ES-4
Table 2-1:	Hydrogen Facility Project Components	2-7
Table 3.2-1:	Cultivated Crop Acreages in Contra Costa County	3.2-3
Table 3.3-1:	Summary of EPA Criteria Air Pollutants	3.3-6
Table 3.3-2:	California and National Ambient Air Quality Standards (AAQS).....	3.3-8
Table 3.3-3:	California NAAQS and CAAQS Attainment Status.....	3.3-12
Table 3.3-4:	Days AAQS Exceeded – Concord-2975 Treat Blvd. Monitoring Station, Contra Costa County.....	3.3-14
Table 3.3-5:	BAAQMD CEQA Air Quality Guidelines-- Air Quality Thresholds of Significance (Project Level).....	3.3-29
Table 3.3-6:	Maximum Unmitigated Construction Emissions (lb/day)	3.3-34
Table 3.3-7:	Maximum Mitigated Cancer Risk, Hazard Index, and PM _{2.5} from Construction DPM Emissions	3.3-35
Table 3.3-8:	Maximum Unmitigated Operational Source Emissions (lb/day)	3.3-36
Table 3.3-9:	Land Use Project Design Elements – Buildings.....	3.3-36
Table 3.3-10:	Mitigated Operational Source Emissions (lb/day).....	3.3-37
Table 3.3-11:	Maximum Mitigated Cancer Risk and Hazard Index from Operations TAC Emissions	3.3-39
Table 3.3-12:	Best Management Practices for Construction-Related Fugitive Dust Emissions	3.3-40
Table 3.3-13:	Enhanced Best Management Practices for Construction-Related Fugitive Dust Emissions	3.3-40
Table 3.3-14:	California NAAQS and CAAQS Nonattainment Pollutants	3.3-42
Table 3.3-15:	Mitigated Operational Emissions of Nonattainment Criteria Air Pollutants	3.3-43
Table 3.3-16:	Maximum Mitigated Cumulative Cancer Risk, Hazard Indices, and PM _{2.5} Concentration from Construction Emissions	3.3-44
Table 3.3-17:	Maximum Mitigated Cumulative Cancer Risk, Hazard Indices, and PM _{2.5} Concentration from Operation Emissions	3.3-44
Table 3.3-18:	Best Management Practices for Construction-Related GHG Emissions	3.3-45
Table 3.3-19:	Enhanced Best Management Practices for Construction-Related Fugitive Dust Emissions	3.3-47
Table 3.3-20:	Land Use Project Design Elements – Buildings.....	3.3-47
Table 3.3-21:	Operations Greenhouse Gas Emissions Summary	3.3-48
Table 3.4-1:	Federal and State Sensitive Species Identified as Potentially Occurring in The Study Area.....	3.4-7
Table 3.5-1:	Previous Cultural Resources Studies Within 0.5 Mile of the Project Area.....	3.5-9
Table 3.5-2:	Previously Recorded Cultural Resources Within 0.5 Mile of the Project Area.....	3.5-12
Table 3.6-1:	Gallons of Fuel for Construction.....	3.6-7
Table 3.6-2:	Operational and Stationary Energy Use (annual)	3.6-10
Table 3.7-1:	Regional Active Faults.....	3.7-2
Table 3.10-1:	California Toxics Rule Criteria for Saltwater.....	3.10-3
Table 3.10-2:	Regional Monitoring Program Water Quality, Kirker Creek at Dow Wetland Preserve Sampling Station (Contra Costa 56).....	3.10-7
Table 3.12-1:	Typical A-Weighted Sound Levels.....	3.12-3

Table 3.12-2: Noise Level/Land Use Compatibility 3.12-5

Table 3.13-1: Decadal Population Estimates for Bay Area, Contra Costa County, and City of
Pittsburg from 2010 to 2020 3.13-1

Table 3.14-1: Fire Station Locations and Facilities in the Pittsburg Planning Area..... 3.14-4

Table 3.17-1: Demands for Potable and Non-Potable Water - Actual..... 3.17-10

Table 3.17-2: Use for Potable and Non-Potable Water-- Projected..... 3.17-10

Table 3.17-3: Last Five Years of Water Loss Audit Reporting..... 3.17-11

Table 3.17-4: Estimated Remaining Capacity and Site Life for Contra Costa County
Landfills 3.17-13

Table 4-1: Related Projects Considered in The Cumulative Impact Analysis..... 4-4

Table 5-1: Comparing Key Environmental Impacts of Project Alternatives 5-1

TABLE OF FIGURES

Figure 2-1: Regional Location Map..... 2-3

Figure 2-2: Existing Project Site Map 2-5

Figure 2-3: Proposed Project Site Map 2-6

Figure 2-4: Overview of Facility Major Processing Units 2-7

Figure 2-5: Overview of Feedstock Preparation Unit 2-8

Figure 2-6: Overview of Waste Conversion Unit..... 2-9

Figure 2-7: Overview of Hydrogen Processing Unit 2-10

Figure 2-8: Overview of Utilities, Water, and Auxiliary Units 2-11

Figure 3.1-1: Representative Viewpoints Map 3.1-3

Figure 3.1-2a: Viewpoint 1 Pittsburg-Antioch Highway, Looking Northeast, Existing View 3.1-4

Figure 3.1-2b: Viewpoint 1 Pittsburg-Antioch Highway, Looking Northeast, Proposed View... 3.1-5

Figure 3.1-2c: Viewpoint 2 Pittsburg-Antioch Highway and Arcy Lane, Looking North, Existing
View 3.1-6

Figure 3.1-2d: Viewpoint 2 Pittsburg-Antioch Highway and Arcy Lane, Looking North, Proposed
View 3.1-7

Figure 3.1-2e: Viewpoint 3 West 10th Street and East Verne Roberts Cir, Looking Northwest,
Existing View..... 3.1-8

Figure 3.1-2f: Viewpoint 3 West 10th Street and East Verne Roberts Cir, Looking Northwest,
Proposed View..... 3.1-9

Figure 3.2-1: City of Pittsburg Agricultural Zoning Designations 3.2-2

Figure 3.3-1: Greenhouse Effect 3.3-15

Figure 3.3-2: Contributions to Greenhouse Gas Emissions 3.3-16

Figure 3.4-1: Sensitive Species Within A 2-Mile Radius of The Project Area 3.4-2

Figure 3.4-2: Land Cover, Vegetation, and Wildlife Habitats in the Study Area 3.4-3

Figure 3.4-3: Aquatic Species in the Study Area..... 3.4-4

Figure 3.4-4: NWI Wetlands Map..... 3.4-5

Figure 3.11-1: City of Pittsburg Land Use Designations 3.11-2

Figure 3.11-2: City of Pittsburg Zoning Classifications 3.11-5

Figure 3.16-1: Transportation and Circulation Map..... 3.16-6

Figure 3.17-1: Existing Utilities Service Area 3.17-7

Figure 3.17-2: Historical Water Use and Population 3.17-9

TABLE OF APPENDICES

Appendix A:	Notice of Preparation
Appendix B:	Air Quality and Greenhouse Gas Calculations (B.1) Health Risk Assessment Methodology (B.2)
Appendix C:	Traffic Impact Assessment
Appendix D:	Biological Technical Memorandum (D.1) Wetlands Waterbody Delineation Report (D.2)
Appendix E:	Cultural Resources Assessment
Appendix F:	Energy/Fuel Use
Appendix G:	Phase I Environmental Site Assessment
Appendix H:	Hydrology & Water Quality Technical Study
Appendix I:	Noise Study Report
Appendix J:	Mitigation Monitoring and Reporting Program

ACRONYMS AND ABBREVIATIONS

Abbreviation/ Acronym	Definition
$\mu\text{g}/\text{m}^3$	Micrograms per cubic meter
AAQS	Ambient Air Quality Standards
AB	Assembly Bill
ABAG	Association of Bay Area Governments
AERMIC	American Meteorological Society/Environmental Protection Agency Regulatory Model Improvement Committee
AERMOD	American Meteorological Society/Environmental Protection Agency Regional Modeling System
AF/yr	Acre-feet per year
AHI	Air hazard index
APCO	Air Pollution Control Officer
Applicant	HC (Contra Costa), LLC
ATC	Authority to Construct
ATC/PTO	Authority to Construct and Permit to Operate
BAAQMD	Bay Area Quality Management District
BARR	Bay Area Regional Reliability
BMP	Best management practice
BNSF	The Burlington Northern & Santa Fe
BPIP-PRIME	Building Profile Input Program with Plume Rise Model Enhancements
CABFFP	California Board of Forestry and Fire Protection
CalARP	California Accidental Release Prevention

Abbreviation/ Acronym	Definition
CalEPA	California Environmental Protection Agency
CalEEMod	California Emissions Estimator Model
CAP	Criteria air pollutant
CARB	California Air Resources Board
CAPCOA	California Air Pollution Control Officers Association
CBC	California Building Standards Code
CBPP	Countywide Bicycle and Pedestrian Plan
CCAA	California Clean Air Act
CCCFPD	Contra Costa County Fire Protection District
CCTA	Contra Costa Transportation Authority
CCWD	Contra Costa Water District
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFC	Chlorofluorocarbon
CFD	Community Facilities District
CFR	Code of Federal Regulations
CGC	California Government Code
CH ₄	Methane
CHI	Chronic hazard index
City	City of Pittsburg
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	Carbon monoxide
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
County	Contra Costa County
CPUC	California Public Utility Commission
CRHR	California Register of Historical Resources
CSTDM	California Statewide Travel Demand Model
CUPA	Certified Unified Permitting Agency
CVP	Central Valley Project
CWA	Clean Water Act
dB	Decibels
dBA	A-weighted scale

Abbreviation/ Acronym	Definition
DDSD	Delta Diablo Sanitary District
DOF	Department of Finance
DPF	Diesel particulate filter
DPM	Diesel particulate matter
DTSC	California Department of Toxic Substances and Control
EIR	Environmental Impact Report
EMSW	Engineered Municipal Solid Waste
EPA	United States Environmental Protection Agency
ERF	Emission Reduction Factor
ESA	Endangered Species Act
FAH	Fraction of Time at Home
FAA	Federal Clean Air Act
g/s	Grams per second
GEP	Good Engineering Practice
GHG	Greenhouse gas
GLC	Ground-level concentration
GPD	Gallons per day
gpm	Gallons per minute
GW	Gigawatts
GWh	Gigawatt hours
GWP	Global warming potential
HAP	Hazardous Air Pollutant
HARP	Hot Spots Analysis & Reporting Program
HCD	Housing and Community Development
HCFC	Hydrochlorofluorocarbon
HFC	Hydrofluorocarbon
HMTA	Hazardous Materials Transportation Act
HRA	Health risk assessment
HVAC	Heating, ventilating, and air conditioning
IEPR	Integrated Energy Policy Report
IG	General Industrial
ISO	Industrial Safety Ordnances
kg	Kilogram
kg/day	Kilograms per day
kW	Kilowatts

Abbreviation/ Acronym	Definition
kWh	Kilowatt hours
lb	Pounds
lb/yr	Pounds per year
LCFS	Low Carbon Fuel Standard
LOS	Level of service
m	Meters
m/s	Meters per second
MBTA	Migratory Bird Treaty Act
MCE	Marin Clean Energy
MEIR	Maximally exposed individual resident
MEIW	Maximally exposed individual worker
MGD	Million gallons per day
mg/kg	Milligrams per kilogram
MMBtu	Million British thermal unit
MMgal/yr	Million gallons per year
MPO	Metropolitan planning organization
MSW	Municipal solid waste
MTCO ₂ e	Metric tons of carbon dioxide equivalent
MW	Megawatts
MWh	Megawatt hours
N/A	Not applicable
N ₂ O	Nitrous oxide
NAAQS	National Ambient Air Quality Standard
NED	National Elevation Dataset
NFPA	National Fire Protection Association
NOP	Notice of Preparation
NO _x	Nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
OEHHA	Office of Health Hazard Assessment
OMNI CT	Omni Conversion Technologies
OPR	Office of Planning and Research
PFC	Perfluorocarbon
PFDF	Project Feedstock Design Feature
PG&E	Pacific Gas and Electric Company

Abbreviation/ Acronym	Definition
PM	Particulate matter
PM ₁₀	Respirable particulate matter
PM _{2.5}	Fine particulate matter
PMC	Pittsburg Municipal Code
PMI	Particulate matter index
POC	Particulate organic carbon
PPA	Power purchase agreement
ppb	Parts per billion
PPC	Pittsburg Power Company
PPD	Pittsburg Police Department
ppm	Parts per million
ppmv	Parts per million by volume
PRC	Public Resources Code
PSA	Pressure swing adsorption
PTE	Potential to emit
REL	Reference exposure level
RfD	Reference dose
RHNA	Regional Housing Needs Allocation
RMP	Risk Management Plan
ROG	Reactive organic gas
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCR	Selective catalytic reduction
SF ₆	Sulfur hexafluoride
SFB-RWQB	San Francisco Bay Regional Water Quality Board
SGMA	Sustainable Groundwater Management Act
SIP	State Implementation Plan
SLCP	Short-lived climate pollutants
SO ₂	Sulfur dioxide
SR	State Route
SRM	Solid Residue Melter
T&C	Transmission and delivery
TAC	Toxic air contaminant
TPD	Tons per day

Abbreviation/ Acronym	Definition
tpy	Tons per year
UBC	Uniform Building Code
UFC	Uniform Fire Code
USC	United States Code
USACE	United States Army Corps of Engineers
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service
USGW	United States Geological Survey
UWMP	Urban Water Management Plan
VMT	Vehicle Miles of Travel
VOC	Volatile organic compound
WAF	Worker Adjustment Factor
WTP	Water Treatment Plan
yr	Year

ES.1 INTRODUCTION

HC (Contra Costa), LLC (Applicant) is proposing to construct and operate the H Cycle Pittsburg Renewable Hydrogen (Project) an approximately 12-acre renewable hydrogen facility in the city of Pittsburg (City) that would use sorted waste materials as feedstock in a non-combustion thermal conversion process. Hydrogen will be used for direct use in fuel cell vehicles, particularly heavy-duty trucks and buses, and also has the potential to decarbonize the production of renewable fuels.

The requested physical and operational changes associated with the proposed Project constitute a “project” as defined by the California Environmental Quality Act (“CEQA,” Public Resources Code Section 21000 *et seq.*) and the State CEQA Guidelines (California Code of Regulations, Title 14, Section 15000 *et seq.*). The proposed Project also requires discretionary action by the City wherein the City has the authority to use its judgment in deciding whether or how to carry out or approve the proposed Project. Therefore, the proposed Project is subject to the requirements of CEQA. For the purposes of CEQA, the term “project” refers to the whole of an action that has the potential to result in a direct physical change or a reasonably foreseeable indirect physical change in the environment (CEQA Guidelines Section 15378).

As the public agency with primary land use authority over the proposed Project, the City is the “lead agency” overseeing and administering the CEQA environmental review process. The City has prepared this Environmental Impact Report (EIR) pursuant to CEQA and the State CEQA Guidelines to provide the public and responsible and trustee agencies with information about the potential environmental effects of the proposed Project.

ES.2 PROJECT OBJECTIVES

The Applicant has identified the following objectives for the proposed Project:

- Develop and operate a renewable hydrogen production facility to convert waste organic feedstock to a useful product, thereby advancing California’s goal (Senate Bill [SB]1383, Assembly Bill [AB] 939) to divert organic materials from landfills and reduce landfill methane generation.
- Produce low-carbon, renewable hydrogen for use in fuel cell vehicles, particularly heavy-duty trucks and buses, and for use in the production of renewable fuels, thereby advancing the goals of California legislation, such as SB32, and regulatory programs, including the Low Carbon Fuel Standard (LCFS) and Advanced Clean Fleets programs.
 - Promote the local transition of heavy-duty trucks and buses to zero-emission fuel cells to reduce local emissions of harmful pollutants, including the intent to decrease local diesel particular matter (PM) pollution, without substantially increasing local fuel costs.
 - Reduce the carbon intensity of hydrogen feedstock supply for the Bay Area’s renewable fuels producers.

- Align with the Justice40 Initiative by investing in a clean energy and energy efficient facility that would remediate and reduce legacy pollution for a community that has been historically underserved.
- Divert an average waste feedstock volume of 350 short ton per day (TPD) and a peak volume of up to 550 TPD from landfills; thereby providing an average dry feedstock volume of 220 TPD, with a peak volume of up to 250 TPD.¹
- Produce up to 25,000 kilograms (kg) per day of carbon-negative renewable hydrogen and up to 50 TPD of vitrified slag byproduct.
- Abate current and future greenhouse gas emissions by displacing fossil fuels and reducing landfill methane emissions.
- Generate renewable hydrogen while minimizing the use of electricity and land.

ES.3 ORGANIZATION OF THE EIR

The EIR contains the following sections:

- **Chapter 1 - Introduction** includes a general overview of the proposed Project, the environmental review process, and purpose and scope of the EIR.
- **Chapter 2 - Project Description** describes the proposed Project, its location and facilities, an overview of its operation, and schedule.
- **Chapter 3 - Environmental Impact Analysis, Methodology, and Baseline** describes existing environmental conditions within issue areas, project-specific impacts and associated mitigation measures, and includes the reference materials used to prepare the analysis.
- **Chapter 4 - Cumulative Impacts** describes the cumulative environmental impacts of the proposed Project when combined with other projects located in the vicinity of the project site and lists the projects considered in the evaluation of cumulative impacts.
- **Chapter 5 - Alternatives** describes the alternatives to the proposed Project carried forward for analysis and the alternatives that were considered but eliminated from detailed evaluation.
- **Chapter 6 - Other CEQA Considerations** addresses other required CEQA elements, including significant irreversible effects and an evaluation of growth-inducing impacts of the proposed Project.
- **Chapter 7 - List of Preparers and References** presents information on the individuals who prepared the EIR and their qualifications.

¹ The balance of mass volume is evaporated as moisture or returned to the feedstock supplier for recycling or landfilling.

ES.4 PROPOSED PROJECT

The project site is located in the city of Pittsburg along New York Slough, southeast of the Pittsburg Marina. The project site is at the corner of Arcy Lane where it turns west, approximately 0.4 mile north of the Pittsburg-Antioch Highway. The Burlington Northern & Santa Fe (BNSF) Railroad runs west to east just south of the project site. Union Pacific Railroad (UPRR) is located south of the project site. State Route 4 (SR 4) is south of the project site.

The surrounding project area is mostly vacant with some residual pieces of industrial equipment, a few railroad spurs, five buildings that account for less than one acre, and includes exterior and interior access roads that would be improved and maintained for the project. An existing industrial tenant is using one building in the Study Area that may require relocation elsewhere within the Corteva industrial park. Permanent usage of the proposed renewable hydrogen facility would be approximately 12 acres of the 24-acre Study Area.

The proposed project site would encompass approximately 20 acres, including laydown and staging areas. The existing buildings, ancillary structures and equipment would be demolished and/or removed. The proposed Project would comprise an approximately 8,000-square foot office and control building to receive and prepare the feedstock; two outdoor storage silos (approximately 4,000 square feet each); 125,000-square foot outdoor hydrogen purification unit, a 12,000 square foot OMNI Conversion Technologies waste processing plant, 20,000 square-foot wastewater treatment facility; 13,600-square foot substation yard with electrical switch gear; 3,500 linear feet of security fencing with restricted gate access; and 110,000 square feet of primary and emergency access roads. The maximum building height is expected to be less than 100 feet.

ES.5 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

This EIR includes a detailed evaluation of the potentially significant environmental effects that could result from implementation of the proposed Project on a variety of resource topics. Table ES-1 presents a summary of potential impacts of and mitigation measures for the proposed Project.

Table ES-1: Summary of Project Impacts and Mitigation Measures

SECTION	IMPACT NUMBER	IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
3.1 Aesthetics	AES-1	Have a substantial adverse effect on a scenic vista.	Less than Significant	No mitigation required.	Less than Significant
	AES-3	In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings. If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality.	Less than Significant	No mitigation required.	Less than Significant
	AES-4	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.	Less than Significant	No mitigation required.	Less than Significant
3.3 Air Quality and Greenhouse Gas Emissions	AQ-1	Conflict with or obstruct implementation of the applicable air quality plan.	Less than Significant (Construction) and Potentially Significant (Operations)	<p>Mitigation Measure AQ-O1a: To mitigate the potential for a significant impact from operational ROG, NOx, and respirable particulate matter (PM₁₀) emissions, BAAQMD-approved emissions abatement equipment will be installed.</p> <p>Mitigation Measure AQ-O1b: To mitigate the potential for GHG emissions, the following measures will be implemented:</p> <p>Project Feedstock Design Feature incorporating the avoidance of landfill emissions with feedstock selection.</p> <p>The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).</p> <p>The project will not result in any wasteful, inefficient, or unnecessary energy use as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.</p>	Less than Significant
	AQ-2	Expose sensitive receptors to substantial pollutant concentrations.	Less than Significant	No mitigation required.	Less than Significant
	AQ-3	Result in other emissions (such as those leading to odors) affecting a substantial number of people.	Less than Significant	No mitigation required.	Less than Significant

Table ES-1: Summary of Project Impacts and Mitigation Measures

SECTION	IMPACT NUMBER	IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
3.3 Air Quality and Greenhouse Gas Emissions	AQ-4	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or State ambient air quality standard.	Less than Significant	No mitigation required.	Less than Significant
	AQ-5	Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, or conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs	Potentially Significant	<p>Mitigation Measure AQ-C2: To mitigate the potential for GHG emissions during construction, projects should incorporate <i>Best Management Practices for Construction-Related GHG Emissions</i>, presented below:</p> <ul style="list-style-type: none"> Use zero-emission and hybrid-powered equipment to the greatest extent possible, particularly if emissions are occurring near sensitive receptors or located within a BAAQMD-designated Community Air Risk Evaluation (CARE) area or Assembly Bill 617 community. Require all diesel-fueled off-road construction equipment be equipped with EPA Tier 4 Final compliant engines or better as a condition of contract. Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to no more than 2 minutes (A 5-minute limit is required by the state airborne toxics control measure [Title 13, Sections 2449(d)(3) and 2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the site and develop an enforceable mechanism to monitor idling time to ensure compliance with this measure. Prohibit off-road diesel-powered equipment from being in the “on” position for more than 10 hours per day. Use California Air Resources Board-approved renewable diesel fuel in off-road construction equipment and on-road trucks. Require all construction equipment to be maintained and properly tuned in accordance with manufacturer’s specifications. Equipment should be checked by a certified mechanic and determined to be running in proper condition prior to operation. 	Less than Significant

Table ES-1: Summary of Project Impacts and Mitigation Measures

SECTION	IMPACT NUMBER	IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
3.3 Air Quality and Greenhouse Gas Emissions	AQ-5 (cont'd)	Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, or conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs	Potentially Significant	<ul style="list-style-type: none"> Where grid power is available, minimize portable diesel engines and provide electrical hook ups for electric construction tools, such as saws, drills, and compressors, and use electric tools whenever feasible. Where grid power is not available, use alternative fuels, such as propane or solar electrical power, for generators at construction sites. Encourage and provide carpools, shuttle vans, transit passes, and/or secure bicycle parking to construction workers and offer meal options on site or shuttles to nearby meal destinations for construction employees. Reduce electricity use in the construction office by using LED bulbs, powering off computers every day, and replacing heating and cooling units with more efficient ones. Minimize energy used during site preparation by deconstructing existing structures to the greatest extent feasible. Recycle, divert, or salvage nonhazardous construction and demolition debris, with a goal of recycling at least 15 percent more by weight than the diversion requirement in Title 24. Use locally sourced or recycled materials for construction materials (goal of at least 20 percent based on costs for building materials and based on volume for roadway, parking lot, sidewalk and curb materials). Wood products used should be certified through a sustainable forestry program. When feasible, use low-carbon concrete, and/or minimize the amount of concrete used. When feasible and if more efficient or lower emitting, produce concrete on-site instead of transporting ready-mix. Develop a plan to efficiently use water for adequate dust control since substantial amounts of energy can be consumed during the pumping of water. Include all requirements in applicable bid documents, purchase orders, and contracts, with successful contractors demonstrating the ability to supply the compliant on- or off-road construction equipment for use prior to any ground-disturbing and construction activities. 	Less than Significant

Table ES-1: Summary of Project Impacts and Mitigation Measures

SECTION	IMPACT NUMBER	IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
3.3 Air Quality and Greenhouse Gas Emissions	AQ-5 (cont'd)	Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, or conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs	Potentially Significant	<p>Mitigation Measure AQ-O2: To mitigate the potential for GHG emissions during operations, the following measures will be implemented:</p> <ul style="list-style-type: none"> Project Feedstock Design Feature incorporating the avoidance of landfill emissions with feedstock selection. The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development). The project will not result in any wasteful, inefficient, or unnecessary energy use as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines. 	Less than Significant
3.4 Biological Resources	BIO-1	Cause substantial adverse impacts to special-status species identified by the USFWS, California Department of Fish and Wildlife (CDFW), or NMFS due to project development.	Potentially Significant	<p>Mitigation Measure BIO-1a: General Work Site Best Management Practices. The following measures shall be included on all plans and employed by Applicant and its contractors to avoid and minimize impacts to water quality and other beneficial characteristics of wetlands at the project site:</p> <ul style="list-style-type: none"> No debris, soil, silt, sand, cement, concrete or washings thereof, or other construction-related materials or wastes, oil or petroleum products, or other organic or earthen material shall be allowed to enter into or be placed where it may be washed by rainfall or runoff into marshes or open water/ditches adjacent to the work areas. All personnel and their equipment shall be required to stay within the designated construction area to perform job-related tasks and shall not be allowed to enter wetlands, drainages and habitat of listed species. Pets shall not be allowed in or near the construction area. Firearms shall not be allowed in or near the construction area, except for armed security officers who may periodically patrol work sites. No intentional killing or injury of wildlife shall be permitted. The construction site shall be maintained in a clean condition. All trash (e.g., food scraps, cans, bottles, containers, wrappers, cigarette butts and other discarded items) shall be placed in closed containers and properly disposed off site. 	Less than Significant

Table ES-1: Summary of Project Impacts and Mitigation Measures

SECTION	IMPACT NUMBER	IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
3.4 Biological Resources	BIO-1 (cont'd)	Cause substantial adverse impacts to special-status species identified by the USFWS, CDFW, or NMFS due to project development.	Potentially Significant	<p>Mitigation Measure BIO-1b: Spill and Accidental Discharge Prevention. The following measures shall be included on all plans and employed by Applicant and its contractors. Applicant and its contractors shall be responsible for structure operations in a manner that minimizes the risk of spills or the accidental discharge of fuels or hazardous materials. Applicant and its contractors shall, at a minimum, ensure that:</p> <ul style="list-style-type: none"> • All employees handling fuels and other hazardous materials are properly trained. • All equipment is in good operating order and inspected regularly. Hazardous materials, including chemicals, fuels and lubricating oils, shall not be stored within 200 feet of a wetland or water body. This applies to storage of these materials and does not apply to normal operation or use of equipment in these areas. • If refueling is needed on-Site, it will occur at least 100 feet from a surface water feature, and in a designated refueling area with secondary containment/plastic sheeting and a spill containment kit. <p>Mitigation Measure BIO-1c: Emergency Spill and Containment Plan. The following measures shall be included on all plans and employed by Applicant and its contractors. In the event of an accidental spill, the Facility Oil Spill Contingency Plan shall be implemented.</p> <ul style="list-style-type: none"> • Site-specific provisions shall be listed on the Safe Work Permit and included within the job plan maintained on-Site. • At a minimum, the Applicant and its contractors shall: <ul style="list-style-type: none"> ○ Ensure that each construction crew (including clean-up crews) has sufficient supplies of absorbent and barrier materials on-Site to allow the rapid containment and recovery of spilled materials, and that each construction crew knows the procedure for reporting spills. ○ Ensure that each construction crew has sufficient tools and material on Site to stop leaks. 	Less than Significant

Table ES-1: Summary of Project Impacts and Mitigation Measures

SECTION	IMPACT NUMBER	IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
3.4 Biological Resources	BIO-1 (cont'd)	Cause substantial adverse impacts to special-status species identified by the USFWS, CDFW, or NMFS due to project development.	Potentially Significant	<ul style="list-style-type: none"> ○ Know the contact names and telephone numbers for all Applicant contacts and local, state and federal agencies (including, if necessary, the United States Coast Guard and the National Response Center) that might need to be notified in the event of a spill. ○ Follow the requirements of those agencies in cleaning up the spill, excavating and disposing soils or other materials contaminated by a spill, and collecting and disposing waste generated during spill cleanup. <p>Mitigation Measure BIO-1d: Stormwater Pollution Prevention Plan (SWPPP). The proposed Project shall adhere to and implement the requirements of the respective existing SWPPP for Corteva during project operations. Applicable measures for project construction shall be incorporated into the construction SWPPP plans by a qualified specialist and implemented prior to construction.</p> <p>Mitigation Measure BIO-1e: Demarcation of Limits of Work. Applicant and its contractors shall clearly demarcate the limits of work in the field. All project-related activity shall be confined to the designated work areas; no entry into adjacent areas shall be allowed by project personnel. Upon project completion, material used to mark the work boundary shall be removed.</p> <p>Mitigation Measure BIO-1f: Weed Spread Prevention. Applicant and its contractors shall implement measures to ensure that boots, clothing, vehicles and equipment are free of soils and plant parts prior to entering work areas.</p> <p>Mitigation Measure BIO-1g: Preconstruction Focused Soft-Bird's Beak Surveys. Focused surveys for soft-bird's beak shall be conducted by a qualified biologist each year during the appropriate blooming period (June 1 through September 30) prior to construction to confirm its absence. Locations of rare plants in proposed construction areas will be recorded using a GPS unit and flagged for avoidance or project proponent will consult with the appropriate agency regarding the potential to relocate the plants. When construction is occurring in the area of the flagged plants, a qualified biologist shall monitor</p>	Less than Significant

Table ES-1: Summary of Project Impacts and Mitigation Measures

SECTION	IMPACT NUMBER	IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
3.4 Biological Resources	BIO-1 (cont'd)	Cause substantial adverse impacts to special-status species identified by the USFWS, CDFW, or NMFS due to project development.	Potentially Significant	<p>construction activities occurring in the vicinity of the flagged plants to ensure that no direct or indirect impacts occur.</p> <p>Mitigation Measure BIO-1h: Preconstruction Nesting Bird Surveys. No more than 5 days prior to construction during the nesting bird season (February 1 through September 15), a qualified biologist shall conduct a survey for nesting birds. If work within an area lapses for more than 14 days during the nesting season, the survey shall be repeated. The survey shall encompass all work areas and those areas within a buffer of 250 feet for passerines, 500 feet for small raptors, and 1,000 feet for large raptors. Where accessible, the location of active nests will be recorded using a handheld global-positioning system unit. Should an active nest be discovered, the area of the nest and an appropriate buffer area will be cordoned off during construction activities that could cause disturbance of the nest. The qualified biologist conducting the nesting surveys should prepare a report that provides details about the nesting outcome and the removal of buffers. This report should be submitted to the City for review and approval prior to the time that buffers are removed at the end of the project, at which time the biologist will confirm that the nests were not disturbed.</p>	Less than Significant
		Cause substantial adverse impacts to special-status species identified by the USFWS, CDFW, or NMFS due to project development.	Potentially Significant	<p>Measure BIO-1i: California Ridgway's Rail and California Black Rail Surveys. Prior to construction occurring during the rail nesting season (February 1 through August 31) within 700 feet of suitable rail habitat, surveys shall be conducted for California Ridgway's rail and California black rail in accordance with the USFWS Survey protocol for California Ridgway's rail. Surveys should be initiated between January 15 and February 1. For each survey station, four surveys are to be conducted. Surveys should be spaced at least two weeks apart and should cover the time period from the date of the first survey through the end of March or mid-April. If California Ridgway's or California black rails are detected during the survey, no work within 700 feet of the rail calling centers (identified via compass bearing and distance estimate during surveys) shall occur between February 1 and August 31, unless otherwise approved by USFWS and CDFW.</p>	Less than Significant

Table ES-1: Summary of Project Impacts and Mitigation Measures

SECTION	IMPACT NUMBER	IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
3.4 Biological Resources	BIO-2	Disturbance or loss of sensitive natural communities or State and Federally protected wetlands	Potentially Significant	Mitigation Measure BIO-2: Implement Mitigation Measures BIO-1a, BIO-1b, BIO-1c, BIO-1d, BIO-1e, and BIO-1f.	Less than Significant
	BIO-3	Interfere with wildlife migratory corridors or nursery sites.	Potentially Significant	Mitigation Measure BIO-3: Implement Mitigation Measures BIO-1a, BIO-1b, BIO-1c, BIO-1e, and BIO-1f.	Less than Significant
	BIO-4	Conflict with any local policies or ordinances protecting biological resources or provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.	Less than Significant	Mitigation BIO-4: Implement Mitigation Measures BIO-1a, BIO-1b, BIO-1c, BIO-1e, and BIO-1f.	Less than significant
3.5 Cultural and Tribal Cultural Resources	CR-1	Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5e.	Potentially Significant	<p>Mitigation Measure CR-C1a: Prepare and Implement an Inadvertent Discovery Plan. The following measures shall be included on all plans and employed by the Applicant and its contractors to avoid and minimize impacts to historical and archaeological resources at the project site:</p> <p>A plan for the inadvertent discovery of historic or cultural resources, or human remains will be prepared. If unanticipated cultural resources (historic or prehistoric artifacts, concentrations of shell, burnt or unburnt bone, stone features, etc.) are uncovered during grading or excavation activities, work immediately within 50 feet of the discovery of the find shall be halted, the city of Pittsburg Planning Division shall be notified, and a professional archaeologist that meets the Secretary of the Interior's Standards and Guidelines for Professional Qualifications in archaeology and/or history shall be retained to determine the significance of the discovery. A mitigation plan shall include such measures as avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures. The City shall consider mitigation recommendations presented in the mitigation plan. The Applicant shall be required to implement any mitigation necessary for the protection of cultural resources before ground-disturbing activities may resume.</p>	Less than Significant

Table ES-1: Summary of Project Impacts and Mitigation Measures

SECTION	IMPACT NUMBER	IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
3.5 Cultural and Tribal Cultural Resources	CR-2	Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5.	Potentially significant	<p>Mitigation Measure CR-C1b: Provide Preconstruction Worker Awareness Training. The following measure shall be included on all plans and employed by the Applicant and its contractors to avoid and minimize impacts to historical and archaeological resources at the project site:</p> <p>As part of construction personnel training, the City of Pittsburg shall ensure that all construction personnel receive training that includes: 1) information on the possibility of encountering human or animal remains during construction; 2) the types of cultural resources are likely to be seen; and 3) proper procedures in the event of any inadvertent discovery. Worker training shall be prepared and presented by a qualified archaeologist.</p>	Less than Significant
	CR-3	Potentially disturb human remains, including those interred outside of formal cemeteries.	Potentially significant	<p>Mitigation Measure CR-C1a: Prepare and Implement an Inadvertent Discovery Plan.</p> <p>Mitigation Measure CR-C1b: Provide Preconstruction Worker Awareness Training.</p> <p>Mitigation Measure CR-C2: Excavation/Grading Halt upon Human Burial or Bone Discovery. The following measures shall be included on all plans and employed by the Applicant and its contractors to avoid and minimize impacts to historical and archaeological resources at the project site:</p> <p>In the event of the discovery of a burial, human bone, or suspected human bone: 1) all excavation and grading in the vicinity of the find shall be halted immediately; 2) the area of the find shall be cordoned off; and 3) the Applicant shall immediately notify the Contra Costa County Coroner of the find and comply with provisions of the California Public Resources Code (PRC) § 5097 with respect to Native American involvement, burial treatment, and re-burial, if necessary. If the coroner's office determines that the remains are Native American and not under its purview, it shall contact the Native American Heritage Commission as mandated by PRC § 5097.</p>	Less than Significant

Table ES-1: Summary of Project Impacts and Mitigation Measures

SECTION	IMPACT NUMBER	IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
3.6 Energy	ENG-1	The proposed Project could result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.	Potentially Significant	<p>Mitigation Measure ENG-C1a: Provide incentives for construction workers to use electric vehicles, transit, bicycles, or carpool. As examples, construction workers could be provided preferential parking, stipends, and assistance to take advantage of the numerous federal and state electric vehicle incentives. Bicyclists can be provided electric bike subsidies through California's CalBike Program. Carpoolers can be provided reward programs (such as prize drawings), and employees can be encouraged to form carpools through rideshare matching and through other assistance.</p> <p>Mitigation Measure ENG-C1b: Provide incentives for zero emission delivery trucks to use the facility. Since California requires 100 percent zero emission truck sales beginning in 2036, most major truck manufacturers already have such vehicles on the market today. Incentives could involve preferences in vendor selection, preferred scheduling, free or low-cost recharging on site, and purchase incentives.</p> <p>Mitigation Measure ENG-C1c: Provide incentives for the construction contractor to use electric powered equipment on site.</p> <p>Mitigation Measure ENG-C1d: Provide incentives for the construction contractor to minimize and reuse waste generated on site.</p> <p>Mitigation Measure ENG-O1a: Require the Applicant to install EV charging stations.</p> <p>Mitigation Measure ENG-O1b: Require 10 percent of on-road commercial trucks entering the facility to be zero emission by 2030 and 100 percent to be zero emission by 2045.</p> <p>Mitigation Measure ENG-O1c: Require all buildings to comply with the adopted California Green Building Standards Code.</p> <p>Mitigation Measure ENG-O1d: Require the Applicant to prioritize parking for zero emission vehicles. Mitigation Measure ENG-O1e: Provide incentives for facility workers and visitors to use electric vehicles, bicycles, or transit, or to walk or carpool to the site.</p>	Less than Significant

Table ES-1: Summary of Project Impacts and Mitigation Measures

SECTION	IMPACT NUMBER	IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
3.6 Energy	ENG-1 (cont'd)	The proposed Project could result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.	Potentially Significant	<p>Mitigation Measure ENG-O1f: Require the Applicant to participate in one or more of the numerous zero emission truck purchase programs if funding is available. For example, CARB provides funding assistance, planning resources, and other support to entities such as the Applicant to purchase zero-emission vehicles.</p> <p>Mitigation Measure ENG-O1g: Require 25 percent of all on-site forklifts, yard trucks, and company vehicles other than off-road equipment to be zero emission by 2030 and 100 percent to be zero emission by 2045.</p>	Less than Significant
	ENG-2	Would the proposed Project conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	Potentially Significant	<p>Mitigation Measure ENG-C2a: Provide incentives for construction workers to use electric vehicles, transit, bicycles, or carpool. As examples, construction workers could be provided preferential parking, stipends, and assistance to take advantage of the numerous federal and state electric vehicle incentives. Bicyclists can be provided electric bike subsidies through California's CalBike Program. Carpoolers can be provided reward programs (such as prize drawings), and employees can be encouraged to form carpools through rideshare matching and through other assistance.</p> <p>Mitigation Measure ENG-C2b: Provide incentives for zero emission delivery trucks to use the facility. Since California requires 100 percent zero emission truck sales beginning in 2036, most major truck manufacturers already have such vehicles on the market today. Incentives could involve preferences in vendor selection, preferred scheduling, free or low-cost recharging on site, and purchase incentives.</p> <p>Mitigation Measure ENG-C2c: Provide incentives for the construction contractor to use electric powered equipment on site.</p> <p>Mitigation Measure ENG-C2d: Provide incentives for the construction contractor to minimize and reuse waste generated on site.</p> <p>Mitigation Measure ENG-O2a: Require the Applicant to install EV charging stations.</p>	Less than Significant

Table ES-1: Summary of Project Impacts and Mitigation Measures

SECTION	IMPACT NUMBER	IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
3.6 Energy	ENG-2 (cont'd)	Would the proposed Project conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	Potentially Significant	<p>Mitigation Measure ENG-O2b: Require 10 percent of on-road commercial trucks entering the facility to be zero emission by 2030 and 100 percent to be zero emission by 2045.</p> <p>Mitigation Measure ENG-O2c: Require all buildings to comply with the adopted California Green Building Standards Code.</p> <p>Mitigation Measure ENG-O2d: Require the Applicant to prioritize parking for zero emission vehicles.</p> <p>Mitigation Measure ENG-O2e: Provide incentives for facility workers and visitors to use electric vehicles, bicycles, or transit, or to walk or carpool to the site.</p> <p>Mitigation Measure ENG-O2f: Require the Applicant to participate in one or more of the numerous zero emission truck purchase programs if funding is available. For example, CARB provides funding assistance, planning resources, and other support to entities such as the Applicant to purchase zero-emission vehicles.</p> <p>Mitigation Measure ENG-O2g: Require 25 percent of all on-site forklifts, yard trucks, and company vehicles other than off-road equipment to be zero emission by 2030 and 100 percent to be zero emission by 2045.</p>	Less than Significant
3.7 Geology and Soils	GEO-1	Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving a) rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? B) strong seismic ground shaking? C) seismic-related ground failure, including liquefaction? D) landslides.	Potentially Significant	Mitigation Measure GEO-1: Compliance with California Building Code requirements	Less than Significant
	GEO-2	Result in substantial soil erosion or the loss of topsoil.	Less than Significant	No mitigation required.	Less than Significant

Table ES-1: Summary of Project Impacts and Mitigation Measures

SECTION	IMPACT NUMBER	IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
3.7 Geology and Soils	GEO-3	Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.	Potentially Significant	Mitigation Measure GEO-1: Compliance with California Building Code requirements	Less than Significant
	GEO-4	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property.	Potentially Significant	Mitigation Measure GEO-1: Compliance with California Building Code requirements	Less than Significant
	GEO-6	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	Less than Significant	No mitigation required.	Less than Significant
3.9 Hazards and Hazardous Materials	HAZ-1	Create a hazard to workers, the public and/or the environment through the routine transport, use, and/or disposal of hazardous materials.	Less than Significant	No mitigation required.	Less than Significant
	HAZ-2	Create a hazard to workers, the public, and/or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment.	Less than Significant	No mitigation required.	Less than Significant
	HAZ-4	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, create a significant hazard to the public or the environment.	Less than Significant	No mitigation required.	Less than Significant
	HAZ-5	For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area.	Less than Significant	No mitigation required.	Less than Significant

Table ES-1: Summary of Project Impacts and Mitigation Measures

SECTION	IMPACT NUMBER	IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
3.9 Hazards and Hazardous Materials	HAZ-6	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	Less than Significant	No mitigation required.	Less than Significant
3.10 Hydrology and Water Quality	HWQ-1	Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.	Less than Significant	No mitigation required	Less than significant
	HWQ-3	Substantially alter the existing drainage pattern of area in a manner which would result in substantial erosion or siltation on- or off-site.	Less than Significant	No mitigation required.	Less than Significant
	HWQ-4	Substantially alter the existing drainage pattern of area in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.	Less than Significant	No mitigation required.	Less than Significant
3.10 Hydrology and Water Quality	HWQ-5	Substantially alter the existing drainage pattern of area in a manner which would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.	Less than Significant	No mitigation required.	Less than Significant
	HWQ-6	Substantially alter the existing drainage pattern of area in a manner which would impede or redirect flood flows.	Less than Significant	No mitigation required.	Less than Significant
	HWQ-7	In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.	Less than Significant	No mitigation required.	Less than Significant
	HWQ-8	Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	Less than Significant (Operations only)	No mitigation required.	Less than Significant

Table ES-1: Summary of Project Impacts and Mitigation Measures

SECTION	IMPACT NUMBER	IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
3.11 Land Use	LU-1	Physically divide an established community.	Less than Significant	No mitigation required.	Less than Significant
3.12 Noise	NOI-1	Generation of a substantial temporary increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	Less than Significant	No mitigation required.	Less than Significant
	NOI-2	Generation of excessive temporary groundborne vibration or groundborne noise levels.	Less than Significant	No mitigation required.	Less than Significant
3.14 Public Services	PUB-1	Substantial adverse physical impacts associated with the need or provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection.	Less than Significant	No mitigation required.	Less than Significant
3.14 Public Services	PUB-2	Substantial adverse physical impacts associated with the need or provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for police protection.	Less than Significant	No mitigation required.	Less than Significant
3.16 Transportation	TRAN-1	Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.	Less than Significant	No mitigation required.	Less than Significant
	TRAN-2	Conflict or be inconsistent with CEQA Guidelines Section 15064.3(b).	Less than Significant	No mitigation required.	Less than Significant

Table ES-1: Summary of Project Impacts and Mitigation Measures

SECTION	IMPACT NUMBER	IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
3.16 Transportation	TRAN-3	Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	Less than Significant	No mitigation required.	Less than Significant
	TRAN-4	Result in inadequate emergency access.	Less than Significant	No mitigation required.	Less than Significant
3.17 Utilities and Service Systems	UTIL-1	Need for relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.	Less than Significant	No mitigation required.	Less than Significant
	UTIL-2	Adequacy of available water supplies to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.	Less than Significant	No mitigation required.	Less than Significant
	UTIL-3	Project construction and operations result in a determination by the wastewater treatment provider that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.	Less than Significant	No mitigation required.	Less than Significant
	UTIL-4	Generation of solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.	Less than Significant	No mitigation required.	Less than Significant
	UTIL-5	Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	Less than Significant	No mitigation required.	Less than Significant

Table ES-1: Summary of Project Impacts and Mitigation Measures

SECTION	IMPACT NUMBER	IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
3.18 Wildfire	WF-2	Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire.	Less than Significant	No mitigation required.	Less than Significant

ES.6 SUMMARY OF POTENTIALLY SIGNIFICANT IMPACTS OF THE PROJECT

The proposed Project could cause potentially significant temporary impacts to special-status species during construction. While construction impacts of the proposed Project would be temporary, mitigation measures are identified that would reduce these impacts to less than significant by conducting pre-construction surveys, demarcating sensitive habitats, and implementing best management practices.

The proposed Project could cause potentially significant temporary impacts to cultural resources during construction. Mitigation measures including preparation of a discovery plan and training of site workers would reduce these impacts to less than significant.

The proposed Project could cause potentially significant temporary impacts to air emissions and greenhouse gases during construction. Use of electric and/or compliant diesel construction equipment would reduce these impacts and potential energy impacts to less than significant during construction. Potential impacts to air during operations would be reduced to less than significant by the installation of Best Available Control Technologies. Potentially significant impacts to energy during operations would be reduced by building design and adding energy saving and generating features to the facility.

Potentially significant impacts to geological resources would be reduced to less than significant by the application of state building codes to the project design.

ES.7 ALTERNATIVES TO THE PROPOSED PROJECT

CEQA requires consideration of a range of reasonable alternatives to the project or project location that: (1) could feasibly attain most of the basic project objectives; and (2) would avoid or substantially lessen any of the significant impacts of the proposed project. The following is a summary of alternatives analyzed in this EIR. A more detailed discussion is included in Chapter 5.0, Alternatives.

No Project Alternative

The No Project Alternative assumes the baseline condition of the project site would remain in its current condition largely underutilized and consisting of storage for industrial equipment, rail and idled infrastructure. Given the industrial zoning and potential for redevelopment, the current condition baseline is a conservative estimate for evaluating alternative project impacts.

Electrolysis Alternative A

Electrolysis is an alternative method to produce “green” hydrogen and can enable low-to-zero carbon emission hydrogen, depending on the source of the electricity input. Using an electricity-intensive process, electrolyzers separate highly purified water into hydrogen and oxygen gases. Large-scale hydrogen production using electrolysis is expected to become more widespread in the near/medium-term, but it is a nascent market with approximately 700 megawatts (MW) of global electrolyzer

capacity², which is capable of producing approximately 300,000 kg/day of hydrogen³. The proposed Project would be capable of producing up to 25,000 kg/day of hydrogen, which represents a meaningful contribution to existing global green hydrogen production capacity and helps meet the growing demand for low-carbon energy products.

At this time electrolysis projects in California are only happening in the Central Valley and desert areas in the southern parts of the state where there is sufficient low-cost land to build large-scale solar farms plus electrolysis projects. Due to these concerns similar projects are not being constructed in urban or semi-urban areas. As reference, the closest large-scale electrolysis project to the project site is Plug Power's project in Mendota.

Electrolysis Alternative B

The Electrolysis Alternative B shares similarities and impacts to Electrolysis Alternative A above, however, Electrolysis Alternative B assumes a low-to-zero carbon emission profile powered entirely with co-located renewable energy, such as wind, solar or hydropower electricity, instead of a standard utility grid mix. An electrolyzer project with co-located solar power that produces the equivalent hydrogen output as the proposed Project would require more than 1,000 acres⁴ which is only viable in rural California areas, and not a feasible project alternative in or near Pittsburg. Therefore, Electrolysis Alternative B is assumed to be located generally in central California, not the City. Apart from the project location and electricity source, Electrolysis Alternative B shares all other project features with Electrolysis Alternative A.

Downsize Alternative

CEQA Guidelines do not prescribe a downsize threshold for evaluating project alternatives, however, for the purposes of this analysis, it is assumed the Downsize Alternative processes 50 percent of the MSW feedstock and therefore produces 50 percent of the hydrogen output. While the throughput of material is reduced, the design of the Omni Conversion Technologies (Omni CT) waste conversion unit is not assumed to be reduced because there is no viable alternative size offered by Omni CT.

System size reduction of 50 percent does reduce capital cost; however, it also decreases the capital efficiency (i.e., it increases the capital cost per kg/day of hydrogen production capacity) because the fixed costs of development, permitting and engineering would not decrease significantly, and the OMNI system cost would not decrease significantly, as described above. Diseconomies of scale would render the facility financially infeasible because the required sales price for the hydrogen produced would be too high to attract buyers.

² <https://www.ica.org/energy-system/low-emission-fuels/electrolysers>

³ Assumes 50 kWh/kg electrolyzer efficiency.

⁴ Assumes 80 MW of electrolysis capacity powered by 200 MW solar PV and batteries to produce 25,000 kg/day; assumes solar PV requires 5-6 acres per 1 MW capacity.

Environmentally Superior Alternative

The Electrolysis alternatives A and B would reduce some environmental impacts such as truck traffic; however, the electrolysis alternatives would create potentially significant impacts related to energy usage and land use (particularly Electrolysis Alternative B) and could impact biological, cultural and water quality resources more than the proposed Project.

The Downsize Alternative would obtain reduced benefit from the proposed Project objectives, while minimizing the environmental impacts of the proposed Project and avoiding additional impacts. In accordance with CEQA Guidelines, the Downsize Alternative case is therefore the environmentally superior alternative, in lieu of the No Project Alternative, which would reduce all proposed project impacts completely, but is prohibited from being deemed the environmentally superior alternative.

ES.8 KNOWN AREAS OF CONTROVERSY OR UNRESOLVED ISSUES

CEQA requires a statement of issues to be resolved and areas of known controversy. However, at this time there have not been any controversial or unresolved issues identified by resource agencies and interested parties as topics of particular interest during the EIR scoping process.

Written and spoken comments received during the public comment period on the notice of preparation of this EIR are included in Appendix A.

This chapter provides a brief introduction to the H Cycle Pittsburg Renewable Hydrogen Project (Project) and summarizes the process for evaluation of potential environmental impacts thereof. Chapter 2, Project Description, provides a detailed description of the proposed Project, including existing conditions and proposed physical and operational changes to the project site.

1.1 PROJECT OVERVIEW

HC (Contra Costa), LLC (Applicant) is proposing to construct and operate an approximately 12-acre renewable hydrogen facility in the city of Pittsburg (City) that would use sorted waste materials as feedstock in a non-combustion thermal conversion process. Hydrogen would be used for direct use in fuel cell vehicles, particularly heavy-duty trucks and buses and also has the potential to decarbonize the production of renewable fuels.

1.2 PROJECT OBJECTIVES

The Applicant has identified the following objectives for the proposed Project:

- Develop and operate a renewable hydrogen production facility to convert waste organic feedstock to a useful product, thereby advancing California’s goal (Senate Bill [SB]1383, Assembly Bill [AB] 939) to divert organic materials from landfills⁵ and reduce landfill methane generation.
- Produce low-carbon, renewable hydrogen for use in fuel cell vehicles, particularly heavy-duty trucks and buses, and for use in the production of renewable fuels, thereby advancing the goals of California legislation, such as SB32, and regulatory programs, including the Low Carbon Fuel Standard (LCFS) and Advanced Clean Fleets programs.
 - Promote the local transition of heavy-duty trucks and buses to zero-emission fuel cells to reduce local emissions of harmful pollutants, including the intent to decrease local diesel PM pollution, without substantially increasing local fuel costs.
 - Reduce the carbon intensity of hydrogen feedstock supply for the Bay Area’s renewable fuels producers.
- Align with the Justice40 Initiative⁶ by investing in a clean energy and energy efficient facility that would remediate and reduce legacy pollution for a community that has been historically underserved.

⁵ Note that CalRecycle 2020 report (“Analysis of the Progress Toward the SB1383 Organic Waste Reduction Goals”) concluded that 27 million tons/year of organic waste must be diverted in a beneficial and cost-effective manner.

⁶ Executive Order 14008 made it a goal that 40 percent of the overall benefits of certain Federal investments flow to disadvantaged communities that are marginalized, underserved, and overburdened by pollution. The categories of investment are: climate change, clean energy and energy efficiency, clean transit, affordable and sustainable housing, training and workforce development, remediation and reduction of legacy pollution, and the development of critical clean water and wastewater infrastructure.

- Divert an average waste feedstock volume of 350 short ton per day (TPD) and a peak volume of up to 550 TPD from landfills; thereby providing an average dry feedstock volume of 220 TPD, with a peak volume of up to 250 TPD.⁷
- Produce up to 25,000 kilograms per day (kg/day) of carbon-negative renewable hydrogen and up to 50 TPD of vitrified slag byproduct.
- Abate current and future greenhouse gas emissions by displacing fossil fuels and reducing landfill methane emissions.
- Generate renewable hydrogen while minimizing the use of electricity and land.

1.3 APPLICABILITY OF THE CALIFORNIA ENVIRONMENTAL QUALITY ACT

The requested physical and operational changes associated with the proposed Project constitute a “project” as defined by the California Environmental Quality Act (“CEQA,” Public Resources Code Section 21000 *et seq.*) and the State CEQA Guidelines (California Code of Regulations, Title 14, Section 15000 *et seq.*). The proposed Project also requires discretionary action by City wherein the City has the authority to use its judgment in deciding whether or how to carry out or approve the proposed Project. Therefore, the proposed Project is subject to the requirements of CEQA. For the purposes of CEQA, the term “project” refers to the whole of an action that has the potential to result in a direct physical change or a reasonably foreseeable indirect physical change in the environment (CEQA Guidelines Section 15378).

As the public agency with primary land use authority over the proposed Project, the City is the “lead agency” overseeing and administering the CEQA environmental review process. The City has prepared this Environmental Impact Report (EIR) pursuant to CEQA and the State CEQA Guidelines to provide the public and responsible and trustee agencies with information about the potential environmental effects of the proposed Project.

1.4 PURPOSE OF THE EIR

As set forth in various provisions of the CEQA Statute (e.g., Section 21080), before deciding whether to approve a project, a public agency must consider the potentially significant environmental impacts of the project. Pursuant to CEQA Guidelines Section 15064, if any aspect of the proposed project, either individually or cumulatively, may cause a significant effect on the environment which cannot be mitigated to less-than-significant levels, regardless of whether the overall effect of the project is adverse or beneficial, an EIR must be prepared. The EIR must describe the project’s potentially significant environmental effects, identify alternatives to the project, and identify measures to mitigate or avoid adverse impacts that would result from implementation of the project.

This EIR is a factual document, prepared in conformance with CEQA, and written to make the public and decision-makers aware of any potential environmental consequences of the proposed

⁷ The balance of mass volume is evaporated as moisture or returned to the feedstock supplier for recycling or landfilling.

Project. This EIR includes a description of the proposed Project, its environmental context, and an evaluation of the potential environmental impacts of the proposed Project compared to an existing condition or baseline. State CEQA Guidelines section 15125, subdivision (a), states:

An EIR must include a description of the physical environmental conditions in the vicinity of the project. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant. The description of the environmental setting shall be no longer than is necessary to provide an understanding of the significant effects of the proposed project and its alternatives. The purpose of this requirement is to give the public and decision makers the most accurate and understandable picture practically possible of the project's likely near-term and long-term impacts.

The California Supreme Court confirmed that, while conditions at the time of the notice of preparation “normally” constitute the baseline for the environmental analysis under CEQA, the lead agency has flexibility in defining the appropriate baseline (*Communities for a Better Environment v. South Coast Air Quality Mgmt. Dist.* (2010) 48 Cal.4th 310, 328). Therefore, State CEQA Guidelines allow a lead agency some leeway in its determination of the baseline by stating that the environmental setting at the time the notice of preparation is published will “generally” constitute the baseline physical conditions against which the impacts of a project are evaluated; however, historic or projected future conditions may also form the baseline for analysis if those approaches are supported by substantial evidence.

For any adverse environmental impact of the proposed Project that is considered to be potentially significant when compared to the baseline condition, this EIR identifies mitigation measures to avoid or reduce the potentially significant adverse impact to less-than-significant levels. This EIR also identifies and evaluates alternative scenarios to the proposed Project, including a “no project” scenario wherein the project site would continue to serve as industrial equipment storage and not undergo redevelopment. Cumulative impacts of the proposed Project plus other projects planned to occur in the project vicinity are also discussed.

Before any action can be taken to approve the proposed Project, the City must make the necessary findings and certify that the City has reviewed and considered the information in the EIR, that the EIR has been completed in conformity with the requirements of CEQA, and that the EIR reflects the City’s independent judgment and analysis. Certification of an EIR by the decision-making body does not constitute approval or denial of the proposed Project.

Should the proposed Project be approved, the City and other public agencies with permitting authority over the proposed Project must impose mitigation measures as conditions or require project modifications to reduce or avoid the significant adverse impacts of the proposed Project on the environment. The Applicant may also choose to modify the proposed Project to mitigate or avoid potentially significant adverse environmental impacts. The City and permitting agencies may only approve the proposed Project with significant adverse environmental impacts that are not mitigated if the agency finds that specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make imposition of mitigation measures or project alternatives infeasible (CEQA Guidelines Section 15091).

1.5 USE OF THIS EIR BY RESPONSIBLE AGENCIES

In addition to land use permit approval by the City, the proposed Project requires permits from other federal, state and local agencies including the Bay Area Air Quality Management District and the San Francisco Bay Regional Water Quality Control Board. The proposed Project also requires two solid waste facility permits to be issued by the City solid waste Local Enforcement Agency (LEA), one permit to operate as a Transfer/Processing facility and one permit to operate as an Engineered Municipal Solid Waste (EMSW) Conversion facility. California state and regional agencies are considered to be responsible agencies under CEQA and must comply with CEQA by considering the EIR prepared by the lead agency. However, responsible agencies must each reach their own conclusions on whether or how to approve their respective permits for the proposed Project (CEQA Guidelines Section 15096).

The City as Lead Agency must certify the EIR prior to taking action on the requested land use permit. Following these actions by the Lead Agency, the proposed Project requires permits from other federal, state and local agencies, including the agencies listed below.

Local

- City of Pittsburg Community and Economic Development Department
 - Certification of Environmental Impact Report
 - Use Permit
 - Design Review
 - Development Agreement
 - Mitigation Monitoring Program
 - Grading and Building Permits
 - Fire Safety Plans
- City of Pittsburg Environmental Services Department
 - Solid Waste Facility Permits
- Bay Air Quality Management District (BAAQMD)
 - Authority to Construct / Permit to Operate
 - Title V Permit Amendment

- Pacific, Gas and Electric Company (PG&E)

State

- Regional Water Quality Control Board (RWQCB)
 - NPDES Permits for Stormwater
- California Department of Resources Recycling and Recovery (CalRecycle)
- California Public Utilities Commission (CPUC)

1.6 OPPORTUNITIES FOR PUBLIC COMMENT

1.6.1 Notice of Preparation

The City initially released a Notice of Preparation (NOP) for the proposed Project on April 7, 2023 (see Appendix A). The NOP provided notification to interested parties of the City's intent to prepare an EIR to evaluate the potential environmental impacts of the proposed Project. When the project site was updated, the City released a second NOP on September 14, 2023 (see Appendix A). In accordance with State CEQA Guidelines Section 15082, the NOP contained a brief description of the proposed Project and its location, and a list of environmental resource areas that would potentially be affected by the proposed Project and that would be discussed in the EIR. The NOP was posted on the City website, and copies of the NOP were filed with the State Clearinghouse and the City Clerk; were sent via certified mail or emailed to public agencies with permitting authority over the proposed Project or who hold jurisdiction over natural resources that might be affected by the proposed Project; and were mailed to interested parties requesting such notice.

The NOP invited interested individuals, organizations, and agencies to provide comments on the scope of the environmental issues to be evaluated in the EIR. Written comments could be submitted to City staff until 5:00 p.m. on October 16, 2023. The City also accepted spoken comments in response to the NOP, at a public hearing at City Hall held on October 12, 2023. The date of and means to participate virtually in the scoping public hearing via Zoom on October 11, 2023, were included in the NOP. The written NOP comments and the summary of the comments received during the NOP scoping public hearing are included in this EIR as Appendix A.

1.6.2 Draft EIR

The Draft EIR for this proposed Project will be available for a public comment period consisting of no fewer than 45 calendar days. During this public comment period, public agencies, members of the public and any other interested parties may review the Draft EIR and provide written comments to the City on the analysis contained herein. During this public comment period, the City's Community and Economic Development Department - Planning Division, will hold public meetings, online and in-person, to receive live comments on the Draft EIR. Following the close of the public comment period on the Draft EIR, the City will prepare a Final EIR, which will consist of the Draft EIR, comments received on the Draft EIR, written responses to the environmental issues raised in those comments, and revisions to the Draft EIR that may be warranted in response to comments received.

No fewer than 10 days following publication of the Final EIR, the City Planning Division will hold at least one public hearing to consider whether to certify the Final EIR for the proposed Project and to consider the merits of the proposed Project and whether to approve the requested use permit. As described above, the City must certify as to the adequacy of the Final EIR before it can approve the proposed Project; certification of the EIR does not in itself signify approval or denial of the proposed Project.

1.7 ORGANIZATION OF THE EIR

In addition to this Introduction, the EIR contains the following sections.

- **Chapter 2 – Project Description** describes the proposed Project, its location and facilities, an overview of its operation, and schedule.
- **Chapter 3 – Environmental Impact Analysis** describes existing environmental conditions, potential Project-specific impacts and associated mitigation measures, and the reference materials used to prepare the analysis.
- **Chapter 4 – Cumulative Impacts** describes the potential cumulative environmental impacts of the proposed Project when combined with other projects in the vicinity of the project site and lists the projects considered in the evaluation of cumulative impacts.
- **Chapter 5 – Alternatives** describes the alternatives to the proposed Project carried forward for analysis and the alternatives that were considered but eliminated from detailed evaluation.
- **Chapter 6 – Other CEQA Considerations** addresses other required CEQA elements, including potential significant irreversible effects and an evaluation of growth-inducing impacts of the proposed Project.
- **Chapter 7 – List of Preparers** presents information on the individuals who prepared the EIR and their qualifications.

As discussed in Chapter 1, Introduction, this Environmental Impact Report (EIR) examines the potential environmental impacts associated with the H Cycle Pittsburg Renewable Hydrogen Project (Project). Chapter 2 provides a description of the proposed Project, including a project overview, project location, description of the existing site, proposed facility development, and proposed operations. This chapter includes a description of the construction phase of the proposed Project. Potential impacts resulting from construction and operation of the proposed Project are described in Chapter 3.

HC (Contra Costa), LLC (Applicant), is proposing to construct and operate an approximately 12-acre renewable hydrogen facility in Pittsburg, California that would use sorted waste materials as feedstock in a non-combustion thermal conversion process. Hydrogen will be used for direct use in fuel cell vehicles, particularly heavy-duty trucks and buses, and also has the potential to decarbonize the production of renewable fuels.

2.1 PROJECT LOCATION

The project site is in the city of Pittsburg (City) along New York Slough, southeast of the Pittsburg Marina. The proposed project site is at the corner of Arcy Lane where it turns west, approximately 0.4 mile north of the Pittsburg-Antioch Highway. Burlington Northern & Santa Fe (BNSF) railroad tracks extend west to east just south of the site. State Route 4 (SR 4) is south of the project site. The proposed project location is shown on Figure 2-1.

The surrounding project area is mostly vacant with some residual pieces of industrial equipment, a few railroad spurs, five buildings that account for less than one acre, and includes exterior and interior access roads that would be improved and maintained for the proposed Project. There is an existing industrial tenant using one building in the Study Area that could require relocation elsewhere within the Corteva industrial park. Permanent usage of the proposed renewable hydrogen facility would be approximately 12 acres of the 24-acre Study Area.

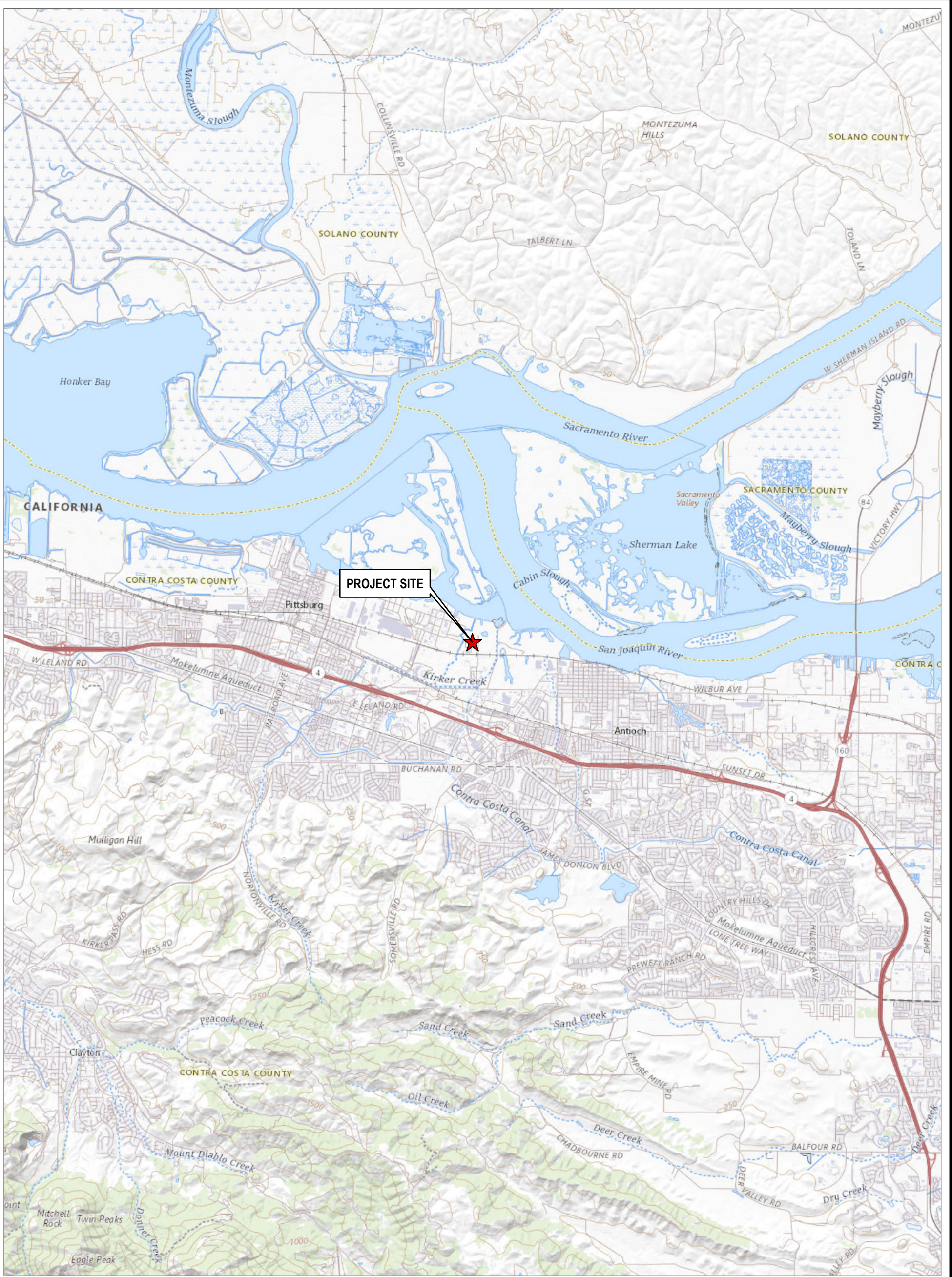
The property is zoned as General Industrial (IG) and classified as Industrial in the City's 2020 General Plan. The proposed Project is consistent with the land use and zoning designations as published in the Draft 2040 Pittsburg General Plan; the property and surrounding area are proposed to remain zoned and designated for industrial land uses (2023).

2.1.1 Surrounding Area

The project area is an open and non-treed grassland valley ringed with low wooded hills with scattered residential properties. Developed lands within 1 mile of the project site include a variety of residential, commercial, industrial and public uses.

Several transportation facilities are also in the surrounding area, including the Burlington Northern & Santa Fe (BNSF) railroad (south), Pittsburg-Antioch Highway (south), Union Pacific Railroad (south), and SR 4 (south).

UPRR and BNSF deliver and ship a variety of industrial commodities associated with fuel production and processing. The nearest residences are south of SR 4 approximately 0.9 mile southwest of the project site.



★ PROJECT SITE



PROJECT: **H CYCLE
 PITTSBURG RENEWABLE HYDROGEN PROJECT
 CONTRA COSTA COUNTY, CALIFORNIA**

TITLE: **REGIONAL LOCATION MAP**

DRAWN BY: S. RAY PROJ. NO.: 506412.0000.0000

CHECKED BY: R. SPRING

APPROVED BY: P. DEMICHELE

DATE: JANUARY 2024

FIGURE 2-1

BASE MAP: USGS COLOR TOPO MAP
 DATA SOURCES: TRC



1:78,000 1" = 6,500'



1850 GATEWAY BLVD, SUITE 1075
 CONCORD, CA 94520
 PHONE: 925.688.1200

FILE: RENEWABLE HYDROGEN PROJECT EIR

2.1.2 Project Site and Existing Facilities

The project site and industrial facilities are all within a contiguous 993-acre area (Figure 2-2). Surrounding properties generally include industrial entities to the north and east, commercial use to the south, and mixed commercial and industrial use to the west. Adjoining properties to the northeast and southwest of the project site are currently occupied by infrastructure associated with the former Dow Chemical manufacturing facility and tenant spaces occupied by Corteva, Generon, and Schlumberger.

The project area is currently graded and covered with an array of graveled ground, disturbed dirt, and concrete slabs that are primarily used for parking and storage. The project site is mostly vacant with some residual pieces of industrial equipment, a few railroad spurs, and five buildings that account for less than one acre. Four buildings are used for material storage, a laboratory, and an empty shed which is currently unused. Unpaved and paved parking and equipment storage and vegetation is throughout the project site. An inactive water tower is in the northeast corner of the project site. Railroad spurs along the southern and southwestern sides of the project site are used for storage by existing tenants. A City water line supplies potable water to the project site. Stormwater collection and infiltration structures are visible throughout the project site.

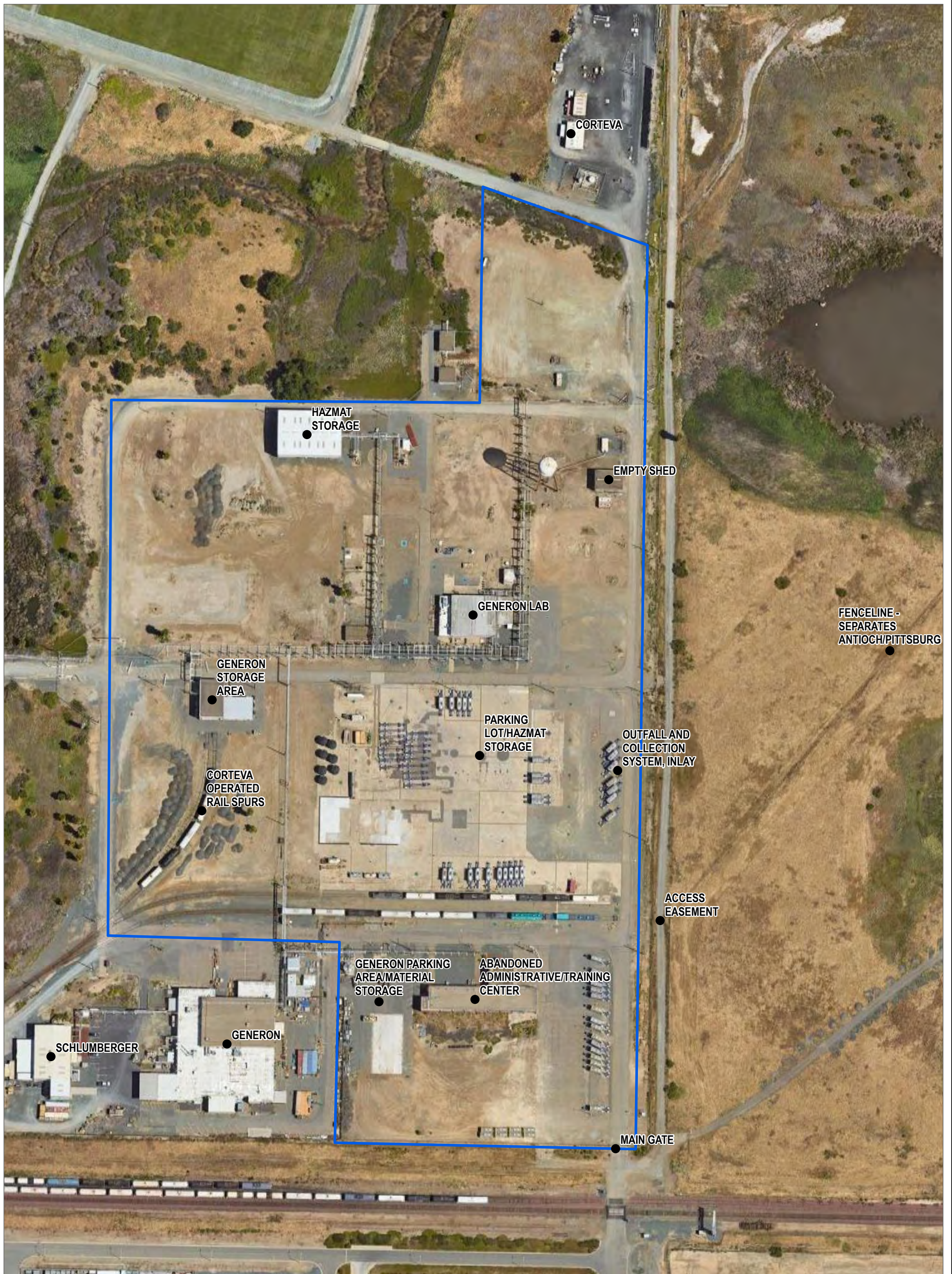
2.2 PROJECT COMPONENTS

2.2.1 Facilities and Infrastructure

The project site shown on Figure 2-3 would encompass approximately 20 acres, including laydown and staging areas. The existing buildings, ancillary structures and equipment would be demolished and/or removed. The proposed Project would comprise an approximately 8,000-square foot office and control building to receive and prepare feedstock; two outdoor storage silos (approximately 4,000 square feet each); 125,000-square foot outdoor hydrogen purification unit, 12,000-square foot OMNI Conversion Technologies waste processing plant, 20,000-square foot wastewater treatment facility; 13,600-square foot substation yard with electrical switch gear; 3,500 feet of security fencing with restricted gate access; and 110,000 square feet of primary and emergency access roads. The maximum building height is expected to be less than 100 feet.

The proposed Project would have the following utility interconnections:

- Interconnection to electrical grid and natural gas pipeline system via Pacific Gas and Electric Company (PG&E).
- Interconnection for water supply via Contra Costa Canal or Delta Diablo.
- Interconnection for wastewater sewer via Delta Diablo, after appropriate treatment.
- Interconnection to lessor, Corteva Agriscience, for various site services as agreed upon, including a small-diameter hydrogen pipeline located within Corteva's industrial park and/or connection to an existing oxygen pipeline.
- Supplemental supply trucks would provide backup oxygen delivery, byproduct disposal, wastewater treatment chemicals, and other consumables on an as-needed basis.



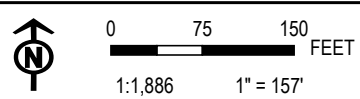
- SITE FEATURE
- ▭ PROJECT SITE BOUNDARY

PROJECT: **H CYCLE
 PITTSBURG RENEWABLE HYDROGEN PROJECT
 CONTRA COSTA COUNTY, CALIFORNIA**

TITLE: **EXISTING PROJECT SITE MAP**

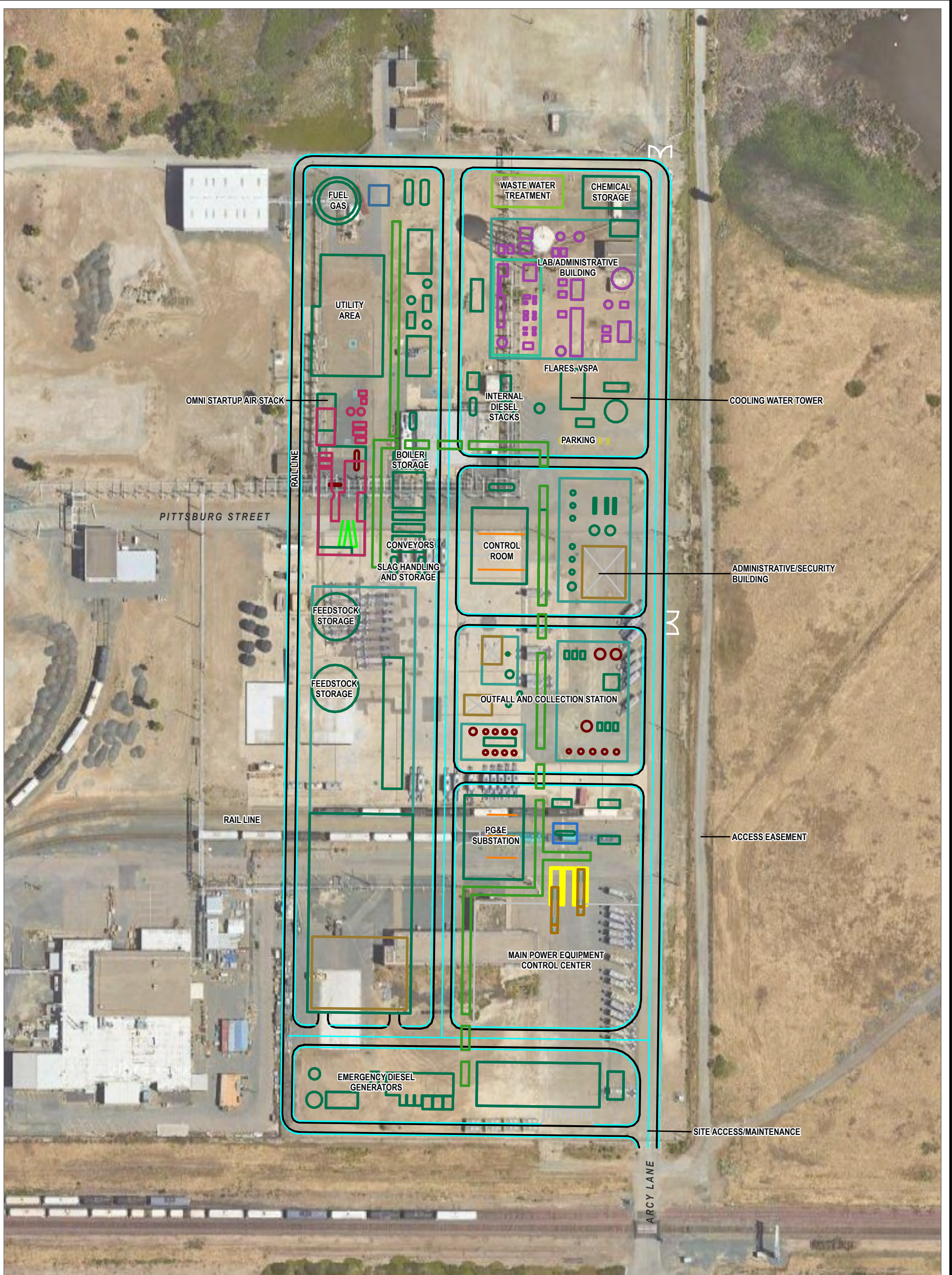
DRAWN BY: S. RAY	PROJ. NO.: 506412.0000.0000
CHECKED BY: R. SPRING	FIGURE 2-2
APPROVED BY: P. DEMICHELE	
DATE: JANUARY 2024	

BASE MAP: USGS COLOR ORTHO IMAGERY
 DATA SOURCES: TRC



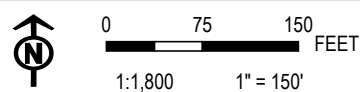
TRC 1850 GATEWAY BLVD, SUITE 1075
 CONCORD, CA 94520
 PHONE: 925.688.1200

FILE: RENEWABLE HYDROGEN PROJECT EIR



PROJECT:		H CYCLE PITTSBURG RENEWABLE HYDROGEN PROJECT CONTRA COSTA COUNTY, CALIFORNIA	
TITLE:		PROPOSED PROJECT SITE MAP	
DRAWN BY:	S. RAY	PROJ. NO.:	506412.0000.0000
CHECKED BY:	R. SPRING	FIGURE 2-3	
APPROVED BY:	P. DEMICHELE		
DATE:	JANUARY 2024		

BASE MAP: USGS COLOR ORTHO IMAGERY
 DATA SOURCES: TRC



1850 GATEWAY BLVD, SUITE 1075
 CONCORD, CA 94520
 PHONE: 925.688.1200

FILE: RENEWABLE HYDROGEN PROJECT EIR

Project components are shown in Table 2-1, below.

Table 2-1: Hydrogen Facility Project Components

Facility Component	Dimensions
Total Lot Area	.595,000 square feet
Total Square Footage of Buildings	63,500 square feet
Lot Coverage for All Structures	11 percent
Floor Area Ratio	35 percent
Total Square Footage of Roads	110,000 square feet
Ratio of Landscape Coverage to Impervious Surfaces	47 percent
Parking Spaces	12 proposed

2.2.2 Site Access

A primary access road would be improved and extended at Arcy Lane to the south of the project site. A portion of the existing privately-owned road is maintained by Delta Diablo. The existing Corteva gate-controlled access point at the northern end of Arcy Lane would be the main entrance into the project site. Two existing roads would provide emergency access, one located on the western side of the project site, along Pittsburg Waterfront Road, and one on the northern side of the project site, along East 3rd Street. The Applicant would enter an agreement for access rights to existing roads and facilities that are currently controlled by Corteva and Delta Diablo.

2.3 DESCRIPTION OF PROPOSED PROJECT

2.3.1 Renewable Fuels Production Overview

Non-combustion thermal conversion of waste into renewable hydrogen is a three-step process. The proposed conversion facility includes the following four processing units described below. A process overview diagram is shown on Figure 2-4.

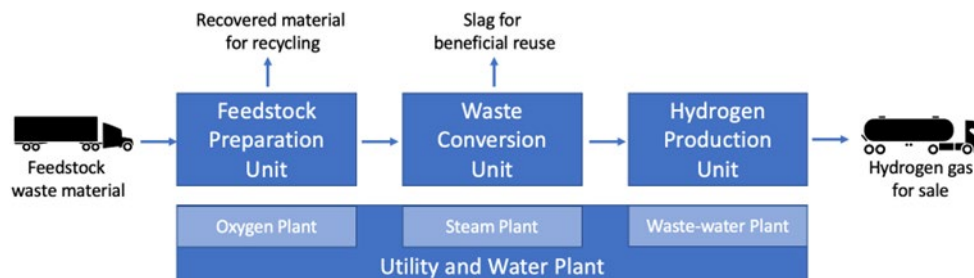


Figure 2-4: Overview of Facility Major Processing Units

2.3.1.1 Feedstock Preparation Unit

A diagram of feedstock preparation is shown on Figure 2-5.

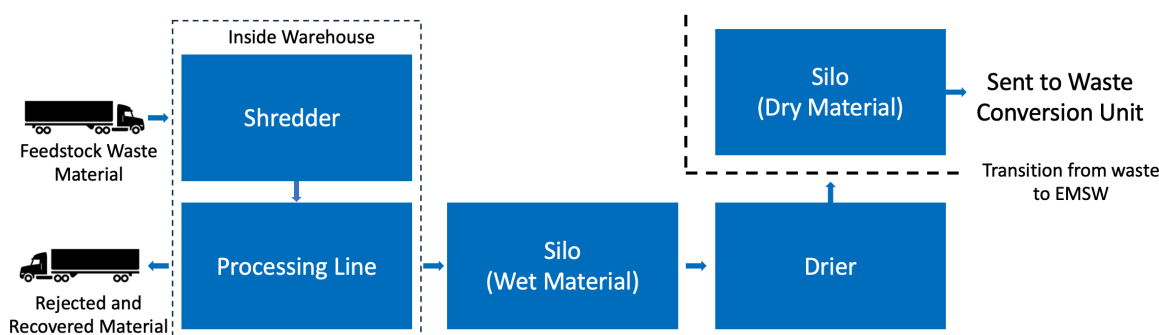


Figure 2-5: Overview of Feedstock Preparation Unit

A warehouse-style control building houses the feedstock preparation unit. The indoor space encloses waste preparation activities to prevent waste dispersion by wind and to provide a barrier from vectors, birds, and other animal species in the area and for noise and odor abatement.

The feedstock will be composed of source-sorted mixed organic waste residuals, delivered to the site. In accordance with CalRecycle guidelines for landfill disposal, the waste supplier(s) will remove electronic waste (“e-waste”) and hazardous waste at their facilities prior to delivery at the project site. No hazardous waste will be accepted. Waste materials will be inspected upon arrival. Any materials that may damage the shredder and processing equipment or that are not suitable for conversion, including large pieces of concrete, will also be removed. The bunker storage system uses loaders and other mobile equipment to manage the inbound material and feed material for further processing.

The feedstock is then shredded to reduce the material to a uniform size (4-inch minus). The shredded feedstock then undergoes a series of processing steps, where inert heavies (glass, rocks), inert fines (sand), ferrous and non-ferrous metals and plastics are partially recovered, leaving an organic-rich feedstock. The processing steps may include a combination of the following: a fines screen (e.g., trommel), a magnetic separator for ferrous removal, an eddy current separator for non-ferrous removal, and an air classifier for heavy materials removal. The recovered material will be recycled (when possible) or disposed of at a landfill. After processing, the sorted feedstock is temporarily stored in an enclosed silo for “wet” material, providing up to two days (48 hours) of processed feedstock storage.

The sorted feedstock is then dried using hot air to reduce its moisture content to approximately 10 percent by weight before being conveyed to an enclosed silo for “dry” material storage, providing up to seven days of feedstock storage. After drying, the prepared feedstock would meet all of the requirements to be classified as Engineered Municipal Solid Waste (EMSW). Automated extraction equipment feeds the dried EMSW feedstock material, now ready for conversion to hydrogen, at a precise rate to the feeding chamber of the Waste Conversion Unit. The feeding chamber is composed of a hopper and an airlock. The feeder serves dual purposes, firstly to precisely dose feedstock into the Waste Conversion Unit and secondly, to seal ambient air from entering the chamber. The entire system is operated under a slight vacuum to assure that the gases in the process

remain sealed within the various processing vessels. Both the wet storage silo and the dry storage silo are equipped with dust and fire suppression systems.

During normal, long-term shutdown operations, silos and bunkers will be emptied to prevent inadvertent putrefaction or unwanted decomposition from occurring. Should significant facility downtime occur, the material in the wet silo will be moved off site for disposal at a permitted facility, so as not to exceed 48 hours of total on-site storage time. Allowable storage time and disposal plans for dry silo material propose up to seven days of feedstock storage time and will be further defined in the solid waste facility permitting process with the City Local Enforcement Agency (LEA). The feedstock receiving and preparation building will be equipped with dust collectors and odor management to prevent tramp dust or odor emissions from the building.

The feedstock preparation unit will accept up to approximately 160,000 wet tons of waste over the course of a year. Following the feedstock preparation described above, the conversion unit will utilize up to approximately 85,000 tons per year of prepared EMSW feedstock. The rest of the weight of the accepted waste consists of moisture lost during drying, as well as the inert materials, metals, and plastics (up to 50,000 tons per year) described earlier that will be sent off-site via truck to the appropriate facility for recycling or disposal.

2.3.1.2 Waste Conversion Unit

From the feeder, the EMSW feedstock enters the Omni Conversion Technologies (Omni CT) unit. The OMNI system converts the feedstock to synthesis gas (syngas), which is a mixture comprised mostly of carbon monoxide and hydrogen gas. A regulated input of steam, a limited amount of oxygen, and some natural gas are utilized in the conversion process. The syngas will then pass through a plasma-based high temperature polisher that will convert all condensable hydrocarbons (known as tars) into additional syngas, while minimizing undesirable tars that can impact downstream processing. The syngas is sent to cyclones to remove particulates, which are recycled back to the conversion step. A waste conversion diagram is presented on Figure 2-6 below.

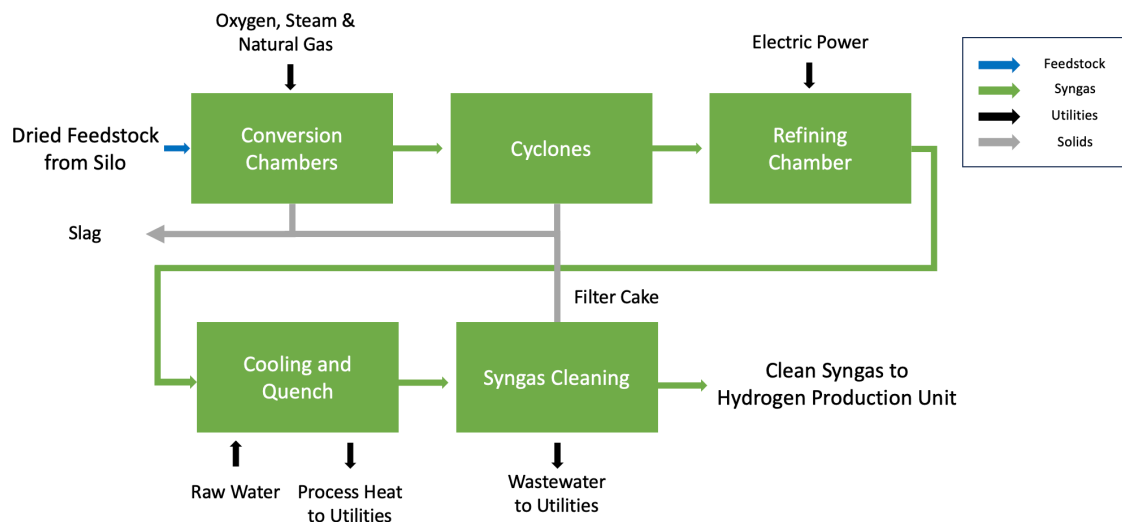


Figure 2-6: Overview of Waste Conversion Unit

During the conversion step, metallic and other inert components in the waste are removed as molten slag, a non-hazardous material. The slag is granulated, stored and transported off site for use as a recycled product, such as construction aggregate, or for disposal. The plant generates up to approximately 20,000 tons per year of slag.

The syngas then undergoes a series of cleaning steps in preparation for hydrogen production. The syngas is first cooled using a heat exchanger, which provides recovery of heat for use elsewhere in the process. It is then rapidly quenched and scrubbed to remove remnant solids using a venturi scrubber. Syngas is then contacted with a caustic solution to remove chlorine and nitrogen species (e.g. hydrogen chloride and ammonia) followed by chilling to remove any remaining tars. Finally, syngas passes through a wet electrostatic precipitator (WESP) to ensure complete capture of remnant contaminants for proper treatment and disposal.

2.3.1.3 Hydrogen Production Unit

The clean syngas is then compressed before entering a two-stage sour-gas-shift reactor, where the syngas reacts with steam to form a hydrogen-rich gas. The hydrogen-rich gas is then treated to remove all sulfur species followed by a pressure-swing-adsorber to generate a high-purity hydrogen gas (approximately 99.97+ percent) and off-gas⁸ which is used in a boiler to generate on-site steam for heat used elsewhere in the process. The hydrogen gas would be compressed and loaded onto trucks for delivery. A diagram of the Hydrogen Processing Unit is shown on Figure 2-7.

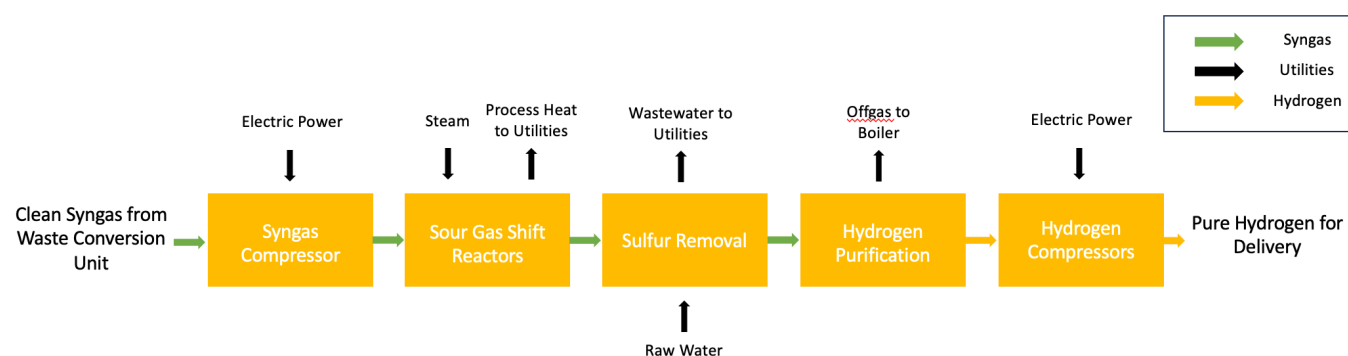


Figure 2-7: Overview of Hydrogen Processing Unit

2.3.1.4 Utilities and Water Units

A Utility & Water plant comprised of oxygen production, steam generation, and waste-water treatment will support various stages of the process. Condensate wastewater from the plant would meet NPDES sewage disposal specifications; approximately 130 gallons per minute (gpm) of wastewater is generated on site. The plant utilizes up to 350 gpm of raw water, a significant portion of which may be lower quality water such as tertiary, non-potable water or recycled service water. Excess heat recovered from the process is supplanted by the off-gas boiler and will be used to

⁸ Off-gases often contain components such as CO₂, CO, hydrocarbons, H₂S, and various organic sulfur compounds. Large quantities of hydrogen-rich off gas are also produced as a byproduct of the high-temperature cracking reaction.

generate steam and for the drying of sorted waste feedstock. A diagram of proposed utilities, water and auxiliary units is shown on Figure 2-8.

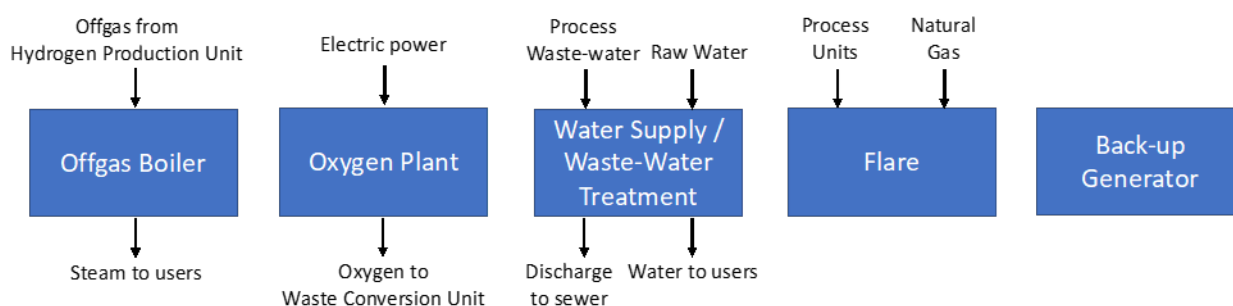


Figure 2-8: Overview of Utilities, Water, and Auxiliary Units

2.3.2 Project Construction

Project construction would commence with site preparation activities, including demolition and removal of existing structures and site clearing. Demolition material would be recycled or disposed of at approved facilities. Once the project site has been cleared, concrete foundations would be installed to support the buildings and equipment. Building materials and equipment modules would be delivered by truck, rail or barge, and installed using cranes. The various plant modules and systems would be connected, tested and commissioned. Equipment to be used in site preparation and demolition for the proposed Project would include lifts, air compressors, industrial saws, cranes, excavators, forklifts, tractors, loaders and welders, and light-duty vehicles (passenger cars and trucks) and heavy-duty vehicles (cement, dump and water trucks).

Approximately 13 acres of grading would be necessary for the proposed Project. During earthwork, soils and other surficial deposits that do not possess sufficient strength and stability to support structures would be removed from the work area. All clean spoils excavated for the proposed Project would be used on site to balance cut and fill calculations, as feasible. All spoils that are not useable and/or contaminated would be sent to a properly licensed landfill facility. It is estimated that 65,000 cubic yards of soil would be graded or relocated during construction.

Trenching would generally be limited to 36 inches below ground surface to install utilities to new work units and foundations for new units and facilities. Depending on the results of the geotechnical analysis, footings for some specific equipment may require deeper foundations.

For interconnection to electricity, natural gas, water supply and wastewater sewer services, utility improvements may be completed by PG&E, Pittsburg Power Company (PPC), Marin Clean Energy (MCE), Delta Diablo, Contra Costa Water District, Corteva or other utility providers.

Construction is anticipated to last 18 to 24 months with 150 to 225 temporary on-site skilled union workers. Construction laydown and staging are anticipated to be included within the Study Area.

2.3.3 Project Operations

The proposed Project would involve operation of a facility to convert sorted municipal solid waste (MSW) materials that are organic-rich from waste suppliers into low-carbon, renewable hydrogen. The renewable hydrogen produced by the facility is expected to be used for direct use in hydrogen-fuel cell vehicles, particularly heavy-duty trucks and buses, and also has the potential to decarbonize the production of renewable fuels.

The Applicant anticipates that operations under the proposed Project would begin in 2026, with a ramp-up to full production capacity occurring throughout 2026. The hydrogen facility would operate twenty-four hours per day, seven days per week and would require approximately 30 full-time employees.

2.3.3.1 Major Equipment and Facilities Components

Major equipment and primary components required for project operations are listed below.

Facility Component/Unit Type	Required Equipment
Office/Control Building	<ul style="list-style-type: none"> • Motor Control Center (MCC)
Feedstock Preparation Unit	<ul style="list-style-type: none"> • MSW receiving area with enclosed tipping floor • Shredder • Silo storage for wet feedstock material • Silo storage for dry feedstock material • Dryer
Waste Conversion Unit	<ul style="list-style-type: none"> • OMNI package • Gas quality conditioning system • Cooling and quenching system • Storage for slag
Hydrogen Production Unit	<ul style="list-style-type: none"> • Syngas compressor • Sour-gas-shift converters • Cooling tower • Sulfur removal and handling system • Hydrogen purification • Hydrogen compressor and interstage cooler • Pressure swing adsorption (PSA) unit and possibly a desiccant dryer • Hydrogen tube trailer loading area and truck dispensing station
Utility and Water Units	<ul style="list-style-type: none"> • Offgas boiler • Oxygen supply via on-site Vacuum Pressure Swing Absorber (VPSA) or pipeline interconnection • Low- and medium-pressure steam generators • Hot- and cold-condensate separators • Water supply • Boiler Feed Water (BFW) preheaters and treatment • Wastewater treatment, including ammonium sulfate production and truck loading area • Ground flare • Back-up generator • Blowdown cooler and closed drain drums
Other equipment	<ul style="list-style-type: none"> • Pumps, compressors, mixers, conveyors

In addition to hydrogen production equipment, the project would include the following ancillary facilities and components:

- Trenches for utilities and services interconnection, with possible small-diameter hydrogen pipeline to Corteva
- Signage and lighting
- Security fencing, access control and egress
- Alternative emergency access
- Parking areas
- Switchgear yard for PG&E operation
- Stormwater collection system
- Firewater system with tank and pump (barrier walls may be used)

2.3.3.2 Truck Trips

Waste feedstock delivery to the proposed facility and return of rejected feedstock would require an average of approximately 23 truck roundtrips per day. Peak volumes may require up to approximately 44 truck roundtrips per day, depending on delivered volumes and whether delivery trucks can be used to backhaul rejected feedstock. The facility is planned to operate twenty-four hours a day, seven days a week. However, most trucks would enter the facility between 6:00 am to 10:00 pm Monday to Saturday.

The proposed facility would produce renewable hydrogen and non-hazardous vitrified slag byproduct. Hydrogen produced by the proposed facility would be transported in tube trailers and would require on average 20, and up to 40 truck roundtrips per day. Non-hazardous, vitrified slag byproduct could potentially be repurposed for beneficial use as a roadbed or concrete aggregate, or alternatively, the slag byproduct could be disposed in a landfill. Supplemental supply and disposal truck traffic, including the transport of slag byproduct, would require up to approximately 10 truck roundtrips per day.

2.3.3.3 Utilities

During normal operations, the hydrogen facility would consume an average of 11 to 12 megawatts (MW) of electricity (with a peak of up to 15 MW), up to 350 gpm of water and a minimal amount of natural gas. During start-up or shutdown, the facility may temporarily consume increased amounts. PG&E will likely provide electricity for plant needs, on-site lighting, and other small power needs. The project will require continued use of the PG&E electrical service that is currently on site in addition to some interconnection and service upgrades within the proposed project site.

The facility would connect to electricity, natural gas, water and sewer service via new interconnections. Existing water pipelines to the project site would be evaluated for condition and serviceability. Most of the facility's water needs may be supplied from recycled or reclaimed water sources, which are currently being evaluated.

The Applicant has completed preliminary engineering design for the proposed Project. As such, the information in this document related to utilities is subject to change based on additional and/or final engineering design, further studies, and ongoing coordination with utility and service providers.

2.3.3.4 PG&E Interconnection and Upgrades

The proposed Project will access PG&E electrical service via interconnection to an existing transmission line near the project site. Several existing transmission line routes with access and easement corridors leading into the Study Area are being considered. PG&E and the Applicant are also considering interconnection of the proposed Project to PG&E's 115 kV transmission system via a new switching station which could enable deliverability of up to approximately 15 megavolt-ampere (MVA).

The California Public Utilities Commission (CPUC) is the lead agency in California with jurisdiction over the siting and design of electrical facilities constructed by public utilities⁹. The proposed Project will comply with CPUC's General Order No. 131-D Section III-B (GO 131-D), which contains permitting requirements for construction of the proposed PG&E-operated electrical facilities. This EIR was prepared as part of an application to obtain a Permit to Construct (PTC) for the proposed Project. Additional information regarding the proposed Project's purpose and need will be provided in the Applicant's PTC application to the CPUC in accordance with GO 131-D.

Construction of the proposed Project would likely include a 13,600-square foot substation yard with electrical switch gear for PG&E operation. The substation and switch gear yard would be located within the proposed project site, on land owned by Corteva and maintained by the Applicant. Construction and operation of the required interconnection facilities would require an easement granted to PG&E by Corteva, as the change of facility ownership demarcation would occur on Corteva property. PG&E could utilize the proposed Project's temporary work areas and staging yard for short-term laydown of construction materials and equipment or transmission line work near the project site.

The substation would be constructed by PG&E and/or the Applicant. The design for the substation would potentially include a foundation, equipment pads, switch racks, transformers, capacitor banks, and equipment room. The proposed Project will potentially require new underground or aboveground transmission lines and poles to be installed between the project site and the nearest suitable PG&E electrical interconnection point. The City Public Works Department would assess undergrounding for feasibility; if undergrounding is infeasible, a new overhead line would tap into the existing transmission system.

As required interconnections are made to power the proposed Project, PG&E could potentially:

- Add reconductor, replace, and/or upgrade towers and poles from the nearest available potential high voltage transmission lines by the proposed project area;

⁹ California Public Utilities Commission (CPUC). (1995). General Order 131-D. Section XIV.B. <https://dot.ca.gov/-/media/dotmedia/programs/environmental-analysis/documents/ser/puc131-d-a11y.pdf>

- Install equipment at existing PG&E substations to upgrade and allow for more capacity, remote monitoring, and/or operation of the proposed substation; and
- Install a new -inch natural gas tie-in line to provide up to approximately 60 MMBtu/hr.

PG&E work activities are considered tentative in the overall construction schedule since the Applicant is not wholly responsible for the work that would be completed. The PG&E electric transmission facilities design and construction timeline would be dependent on the scope defined in the Preliminary Engineering Study (PES) and development process. PG&E is working with the Applicant and other involved parties to determine the most suitable interconnection route to provide the necessary power. As previously mentioned, the information in this document related to utilities is subject to change, pending final engineering design and ongoing coordination.

3 ENVIRONMENTAL IMPACT ANALYSIS, METHODOLOGY, AND BASELINE

Chapter 3 of this Draft Environmental Impact Report (Draft EIR or DEIR) examines the potential environmental impacts of the proposed H Cycle Pittsburg Renewable Hydrogen Project (Project). This chapter includes an analysis of the environmental resource topics listed below:

- 3.1 Aesthetics
- 3.2 Agriculture and Forestry
- 3.3 Air Quality and Greenhouse Gas Emissions
- 3.4 Biological Resources
- 3.5 Cultural and Tribal Cultural Resources
- 3.6 Energy
- 3.7 Geology and Soils
- 3.8 Mineral Resources
- 3.9 Hazards and Hazardous Materials
- 3.10 Hydrology and Water Quality
- 3.11 Land Use and Planning
- 3.12 Noise and Vibration
- 3.13 Population and Housing
- 3.14 Public Services
- 3.15 Recreation
- 3.16 Transportation and Traffic
- 3.17 Utilities and Service Systems
- 3.18 Wildfire

Each environmental resource topic analyzed in this DEIR provides background information and describes the environmental setting to help the reader understand the conditions that exist currently, prior to project implementation, and the relationship between those existing conditions and potential project-related impacts. The effects of the proposed Project are defined as potential changes to the environmental setting that are attributable to project construction or operation. In addition, each section describes the approach to analysis that results in a determination of whether an impact is “potentially significant” or “less than significant.” Finally, individual sections recommend mitigation measures to ensure potentially significant impacts are reduced to less-than-significant levels.

ASSESSMENT METHODOLOGY

CEQA Requires a Baseline for Impact Analysis

The purpose of an EIR is “to provide public agencies and the public in general with detailed information about the effect which a proposed project is likely to have on the environment; to list ways in which the significant effects of such a project might be minimized; and to indicate alternatives to such a project” (Public Resources Code Section 21061). With respect to the environmental setting assumed for the impact analysis, State California Environmental Quality Act (CEQA) Guidelines Section 15125, subdivision (a) states:

An EIR must include a description of the physical environmental conditions in the vicinity of the project. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant. The description of the environmental setting shall be no longer than is necessary to provide an understanding of the significant effects of the proposed project and its alternatives. The purpose of this requirement is to give the public and decision makers the most accurate and understandable picture practically possible of the project's likely near-term and long-term impacts.

The California Supreme Court confirmed that, while conditions at the time of the notice of preparation “normally” constitute the baseline for the environmental analysis under CEQA, the lead agency has flexibility in defining the appropriate baseline (*Communities for a Better Environment v. South Coast Air Quality Mgmt. Dist.* (2010) 48 Cal.4th 310, 328). Therefore, State CEQA Guidelines allow a lead agency some leeway in determining the baseline by stating that the environmental setting at the time the notice of preparation is published will “generally” constitute the baseline physical conditions against which the impacts of a project are evaluated.

Determination of the Project Baseline

CEQA Guidelines Section 15125(a)(1) provides guidance on how the lead agency should describe baseline setting. State CEQA Guidelines Section 15125, subdivision (a)(1) states:

Generally, the lead agency should describe physical environmental conditions as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, from both a local and regional perspective. Where existing conditions change or fluctuate over time, and where necessary to provide the most accurate picture practically possible of the project's impacts, a lead agency may define existing conditions by referencing historic conditions, or conditions expected when the project becomes operational, or both, that are supported with substantial evidence. In addition, a lead agency may also use baselines consisting of both existing conditions and projected future conditions that are supported by reliable projections based on substantial evidence in the record.

As the project site is currently primarily used for storage of industrial equipment, the project baseline has been established by the technical studies conducted on the existing, inactive site as well as an expanded footprint, or “Study Area.”

Significance Criteria

Significance criteria are identified for each environmental issue area; these criteria serve as benchmarks for determining if a component action would result in a potentially significant adverse environmental impact when evaluated against the baseline. According to State CEQA Guidelines Section 15382, a significant effect on the environment means “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project.”

Project Impacts Analysis

Once identified, impacts are classified according to one of the following categories:

- **No Impact** – the proposed Project would not result in any impact to the resource area considered;
- **Beneficial** – the proposed Project would have a beneficial impact;
- **Less than Significant** – the proposed Project would have an adverse impact that does not meet or exceed an environmental resource topic’s significance criteria; or
- **Potentially Significant** – the proposed Project would have a significant adverse impact that meets or exceeds an environmental resource topic’s significance criteria.

If an action creates an adverse impact above the baseline condition, but such impact does not meet or exceed the pertinent significance criteria, the impact is determined to be “less than significant.” An action that provides a significant improvement to an environmental issue area in comparison to baseline conditions is recognized as a “beneficial” impact.

For each impact identified as “potentially significant,” a subsequent determination will be made, based on the analysis of the identified environmental impact and compliance with any recommended mitigation measure, of the level of impact remaining in comparison to pertinent significance criteria. If, after this analysis, a significant adverse impact can be reduced to a less-than-significant level with application of identified mitigation measures, then the impact is deemed “less than significant” after mitigation. If the impact remains significant, at or above the significance criteria even after mitigation, or if mitigation is infeasible or rejected by the Applicant, the impact is deemed to be “significant and unavoidable.”

Formulation of Mitigation Measures

When significant impacts are identified, feasible mitigation measures are formulated to eliminate or reduce the severity of impacts and focus on the protection of sensitive resources. The effectiveness of a mitigation measure is subsequently determined by evaluating the impact remaining after its application. Impacts that still meet or exceed the impact significance criteria after mitigation are considered residual impacts that remain significant. Implementation of more than one mitigation measure may be needed to reduce an impact below a level of significance. The mitigation measures recommended in this document are identified in the respective impact sections.

If any mitigation measures are ultimately incorporated into a project’s design, they are no longer considered as mitigation measures under CEQA. If they eliminate or reduce a potentially significant impact to a level below the significance criteria, they eliminate the potential for that significant impact since the “measure” is now a component of the action. Such measures incorporated into the project design have the same status as any “applicant-proposed measures.”

Cumulative Impacts Analysis

Chapter 4 presents the cumulative impact scenario, the focus of which is to identify the potential impacts of the proposed Project that might not be significant when considered alone, but that might contribute to a significant impact when viewed in conjunction with other concurrent projects.

Impacts of Alternatives

Chapter 5 describes alternatives to the proposed Project. Presentation of each environmental resource topic in Chapter 5 includes the impact analysis for each alternative scenario. A summary

of collective impacts of each alternative in comparison with the impacts of the proposed Project is included within the Executive Summary.

Federal, State and Local Regulations and Policies

Each of the environmental resource topics are considered in terms of the federal, state, regional and local laws, regulations and policies that apply to the environmental resource topic. Applicable federal, state, regional and local laws, regulations and policies are summarized in each of the sections.

3.1 AESTHETICS

This section describes the existing regional visual character, aesthetic resources of the project site, study and area, views of the project area from important public vantage points, and the changes that could occur with implementation of the proposed H Cycle Pittsburg Renewable Hydrogen Project (Project).

3.1.1 Environmental Setting and Regulatory Environment

3.1.1.1 Federal Regulations

There are no federal plans, policies or regulations that are applicable to this resource area.

3.1.1.2 State

3.1.1.2.1 California Scenic Highway Program

California's Scenic Highway Program was created in 1963 to preserve and protect scenic highway corridors from changing in a manner that would diminish the aesthetic value of lands adjacent to highways. The intent of the program is to protect and enhance California's natural scenic beauty and to protect the social and economic values provided by the state's scenic resources (§ 260 et seq.).

3.1.1.3 Local

3.1.1.3.1 City of Pittsburg General Plan 2020: A Vision for the 21st Century. January 2001.

The "Land Use Element," of the City of Pittsburg General Plan, adopted in 2001, and since amended,¹⁰ provides specific goals and policies related to the preservation of existing industrial areas and existing open space and other natural features, such as Suisun Bay, which is a designated scenic waterway. The following General Plan goals and policies are applicable to the proposed Project.

- 2-G-12 Maintain the industrial use and character of the (Northeast Subarea).
- 2-G-13 Protect sensitive marshland habitats along the New York Slough waterfront.
- 2-P-46 Support the permanent preservation of the wetlands and salt marsh habitats along New York and Dowest Sloughs, including Browns Island Regional Shoreline.
- 2-P-39 Encourage the development of "clean" industries along the New York Slough waterfront. Support the modernization of all industrial uses in the area to reduce both air and water pollutant levels.

¹⁰ City of Pittsburg. *City of Pittsburg General Plan 2020: A Vision for the 21st Century*. January 2001

3.1.1.3.2 City of Pittsburg Zoning Ordinance

The purpose of the City of Pittsburg Zoning Ordinance (Title 18 of the Pittsburg Municipal Code [PMC]) is to protect and promote the public health, safety, and general welfare, and to implement the policies of the City's General Plan. The Zoning Ordinance includes development standards to protect the aesthetic and visual character of an area, such as building height (PMC § 18.54.115, 18.54.120, and 18.80.020), outdoor lighting and glare (PMC § 18.82.030); development regulations for industrial districts (PMC § 18.54.115); findings and procedures required for the issuance of use permits, variances; and design review approvals (PMC § 18.16.040, 18.16.050, and 18.36.200). PMC § 18.36.200 requires that the City Planning Commission review the design of any building proposed in an application for a land use permit or a building permit in each land use district (other than single-family residential).



3.1.2 Existing Conditions

In Pittsburg, scenic resources consist of the hills to the south and the Suisun Bay/Sacramento River Delta to the north. Views of the southern hills are available from flatland areas and through streets designed in a north-south configuration. Suisun Bay is visible by drivers in either direction on State Route 4 (SR 4). The project site and Study Area are within a generally level area adjacent to the New York Slough, which connects to Suisun Bay. While the Pittsburg Planning Area contains numerous areas and viewsheds with relatively high scenic value, there are no officially designated scenic vista points in the Planning Area.


The project site is just south of the Dowest Slough and north of Arcy Lane. Topographical elevation is approximately 14 feet above mean sea level, and local topography slopes to the north-northeast. The surrounding area is characterized by open land with scattered roads and waterways, with extensive development and railroads. The project site is in a large industrial area adjacent to New York Slough.

Views from the project site primarily consist of abandoned buildings, overhead electric poles, a conduit station and various electric equipment, empty hazmat storage and shipping containers used for agricultural use. The Burlington Northern & Santa Fe (BNSF) railroad is visible from the southern portion of the project site running west to east. Representative viewpoints under project construction and operation are shown on Figure 3.1-1, Representative View-Points Map. Individual view-point photos are shown on Figures 3.1-2a through 3.1-2f.



-  PHOTO LOCATIONS
-  PROJECT SITE BOUNDARY



PROJECT: H CYCLE PITTSBURG RENEWABLE HYDROGEN PROJECT CONTRA COSTA COUNTY, CALIFORNIA	
TITLE: REPRESENTATIVE VIEWPOINTS MAP	
DRAWN BY: S. RAY	PROJ. NO.: 506412.0000.0000
CHECKED BY: R. SPRING	FIGURE 3.1-1
APPROVED BY: P. DEMICHELE	
DATE: JANUARY 2024	
	
1850 GATEWAY BLVD, SUITE 1075 CONCORD, CA 94520 PHONE: 925.688.1200	
FILE:	RENEWABLE HYDROGEN PROJECT EIR

BASE MAP: USGS COLOR TOPO MAP
 DATA SOURCES: TRC

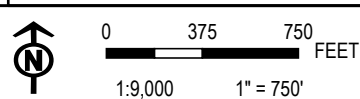




Figure 3.1-2a: Viewpoint 1 Pittsburg-Antioch Highway, Looking Northeast, Existing View

Source: HC (Contra Costa), LLC, November 8, 2023



Figure 3.1-2b: Viewpoint 1 Pittsburg-Antioch Highway, Looking Northeast, Proposed View

Source: HC (Contra Costa), LLC, November 8, 2023



Figure 3.1-2c: Viewpoint 2 Pittsburg-Antioch Highway and Arcy Lane, Looking North, Existing View

Source: HC (Contra Costa), LLC, November 8, 2023



Figure 3.1-2d: Viewpoint 2 Pittsburg-Antioch Highway and Arcy Lane, Looking North, Proposed View

Source HC (Contra Costa), LLC, November 8, 2023



Figure 3.1-2e: Viewpoint 3 West 10th Street and East Verne Roberts Cir, Looking Northwest, Existing View

Source: HC (Contra Costa), LLC, November 8, 2023



Figure 3.1-2f: Viewpoint 3 West 10th Street and East Verne Roberts Cir, Looking Northwest, Proposed View

Source: HC (Contra Costa), LLC, November 8, 2023

3.1.3 Impact Analysis

3.1.3.1 Methodology and Significance Criteria

Aesthetic resources are generally defined as the natural and built features of a landscape that can be viewed from public vantage points. The combination of landform, water, and vegetation patterns represent the natural landscape features that define an area's visual character, while built features such as buildings, roads, and other structures reflect human or cultural modifications to the landscape. These natural and built landscape features contribute to a viewer's experience of the environment. Impact analysis for the proposed Project is based on evaluation of the changes to the existing aesthetic resources that would result from project construction and operation and maintenance activities. In making a determination of the extent and implications of the visual changes, consideration was given to the following factors:

- Specific changes in the affected visual environment's composition and character, and visual quality.
- Context of physical environment and surrounding land uses and built environment.
- If the project Study Area includes places or features that have been designated in plans and policies intended to protect an environmental resource. No state-designated scenic highways are within the project vicinity.

For the purposes of this analysis, the proposed Project would result in significant impacts on aesthetic resources if it would:

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

3.1.4 Impacts and Mitigation Measures

a. Would the proposed Project have a substantial effect on a scenic vista? (AES-1)

No. While the Pittsburg Planning Area contains numerous areas and viewsheds with relatively high scenic value, there are no officially designated scenic vista points in the Planning Area. The Bay Conservation and Development Commission (BCDC) considers the entire bay, including New York

Slough, to be a scenic resource. In addition, views from Brown's Island Regional Shoreline, a portion of the East Bay Regional Park system (0.7 mile from the project site), Sherman Island Waterfowl Management Area (1.5 miles from the project site), and the Dow Wetlands Preserve (0.6 mile from the project site) may also be considered to have scenic vistas. In views from the New York Slough and areas further north, the Dow property and project site appear as highly industrialized areas.

The City of Pittsburg 2020 General Plan states the most Identifying features lending the City a sense of quality and character are the rolling, grassy hills to the south of the City and Suisun Bay/Sacramento River Delta to the north. Implementation of the proposed Project would not obstruct or change the existing views of the Suisun Bay/Delta from the area surrounding the project site. The proposed Project would not result in changes to existing views of southern hills, New York Slough or Suisun Bay. Thus, the proposed Project would result in a less-than-significant impact related to designated scenic vistas.

Significance Level: Less than significant. No mitigation is required.

b. Would the proposed Project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? (AES-2)

No. The closest officially designated state scenic highway is Interstate 680 (I-680), which is approximately 14 miles southwest of the project site. SR-4 is not designated as a state scenic highway. Given this distance, the project site is not visible from scenic roadways. Implementation of the proposed Project would occur within property currently used for general industrial uses and would not damage any scenic resources. Therefore, the proposed Project would not affect scenic resources within view of a state or local scenic highway, and there would be no impact.

Significance Level: No Impact. No mitigation is required.

c. Would the proposed Project substantially degrade the existing visual character or quality of the site and its surroundings? If in an urbanized area, would the Project conflict with applicable zoning and other regulations governing scenic quality? (AES-3)

No. The visual character of the Study Area is characterized by ruderal non-native grasslands and paved areas from previous and current land uses. Vegetation in the Study Area is limited to mostly low-lying grasslands and small trees along the area boundaries.

New York Slough, a waterway that provides access to Browns Island, a 595-acre undeveloped regional preserve. Telephone lines and industrial buildings are visible from the Study Area to the east. Views of the project site are limited to the immediate area.

Demolition, relocation or replacement of existing facilities would change the existing visual character of the project site. A temporary staging area for stockpiled materials, vehicle parking and equipment would be visible from existing access points and would extend beyond the project site.

Pursuant to PMC Chapter 18.36 Design Review, the City is required to review the design of a building proposed in an application for a land use permit or building permit. The proposed Project is subject this chapter and the City is required to make findings regarding the following standards:

(1) Whether the structure conforms with good taste, good design and in general contributes to the character and image of the City as a place of beauty, spaciousness, balance, taste, fitness, broad vistas, and high quality; (2) Whether the structure will be protected against exterior and interior noise, vibrations and other factors which may tend to make the environment less desirable; (3) Whether the exterior design and appearance of the structure is not of inferior quality as to cause the nature of the neighborhood to materially depreciate in appearance and value; (4) Whether the structure is in harmony with proposed developments on land in the general area; and (5) Whether the application conforms with the criteria set forth in any applicable City-adopted design guidelines.

The proposed Project would be consistent with the visual character and overall design guidelines of industrial uses outlined in PMC Chapter 18.36. The proposed Project would have minimal impact on the visual character or quality of the project site and its surroundings. The proposed Project would not conflict with the City's General Plan or applicable zoning codes for industrial development. Therefore, implementation of the proposed Project would have a less-than-significant impact on aesthetic resources.

Significance Level: Less than Significant. No mitigation is required.

d. Would the proposed Project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? (AES-4)

No. The project site is in a highly developed industrial area. Existing exterior lighting within the project vicinity consists of security lighting and intermittent lighting from surrounding industrial uses. Project demolition, relocation, and equipment staging would take place on the existing project site; however, demolition and site clearing work would occur during daylight hours only.

The City of Pittsburg Municipal Code includes performance standards to protect the aesthetic and visual character of an area, such as outdoor lighting and glare (PMC Section 18.82.030, A). The proposed Project would not constitute a source of daytime glare because exterior work would occur on non-reflective surfaces. The proposed project site is in an existing industrial corridor that is currently lighted at night. Exterior lighting would be added to the project site to facilitate night-time facility operations and maintenance. To minimize light and glare impacts to neighboring properties, lighting associated with exterior nighttime operations would be directed toward the interior of the project site (PMC Section 18.82.030, B). The installation of lighting would be consistent with existing lighting in the project area. Because the proposed Project would not result in noticeable sources of light or glare compared to existing conditions, this impact would be less than significant. The proposed project site would be maintained in a clean and orderly state. Nighttime lighting would be directed away from residential areas and have shields to prevent light spillover effects.

Significance Level: Less than Significant. No mitigation is required.

3.1.5 References

California Department of Transportation. List of eligible and officially designated State Scenic Highways and List of Officially Designated County Scenic Highways. Online: <https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways>. Website accessed November 20, 2023.

City of Pittsburg. 2001. City of Pittsburg General Plan 2020: A Vision for the 21st Century.
January.

3.2 AGRICULTURE AND FORESTRY

3.2.1 Introduction

This section describes the effects on agricultural resources during construction and operation with implementation of the proposed Project. The analysis evaluates the project's potential to convert designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. The analysis also examines conflicts with existing zoning on forest land, timberland, and lands designated for agricultural use. The environmental setting section was prepared using information developed from maps of the project vicinity and associated literature cited below.

- California Department of Conservation Farmland Mapping Program
- City/County Williamson Act Contract Database

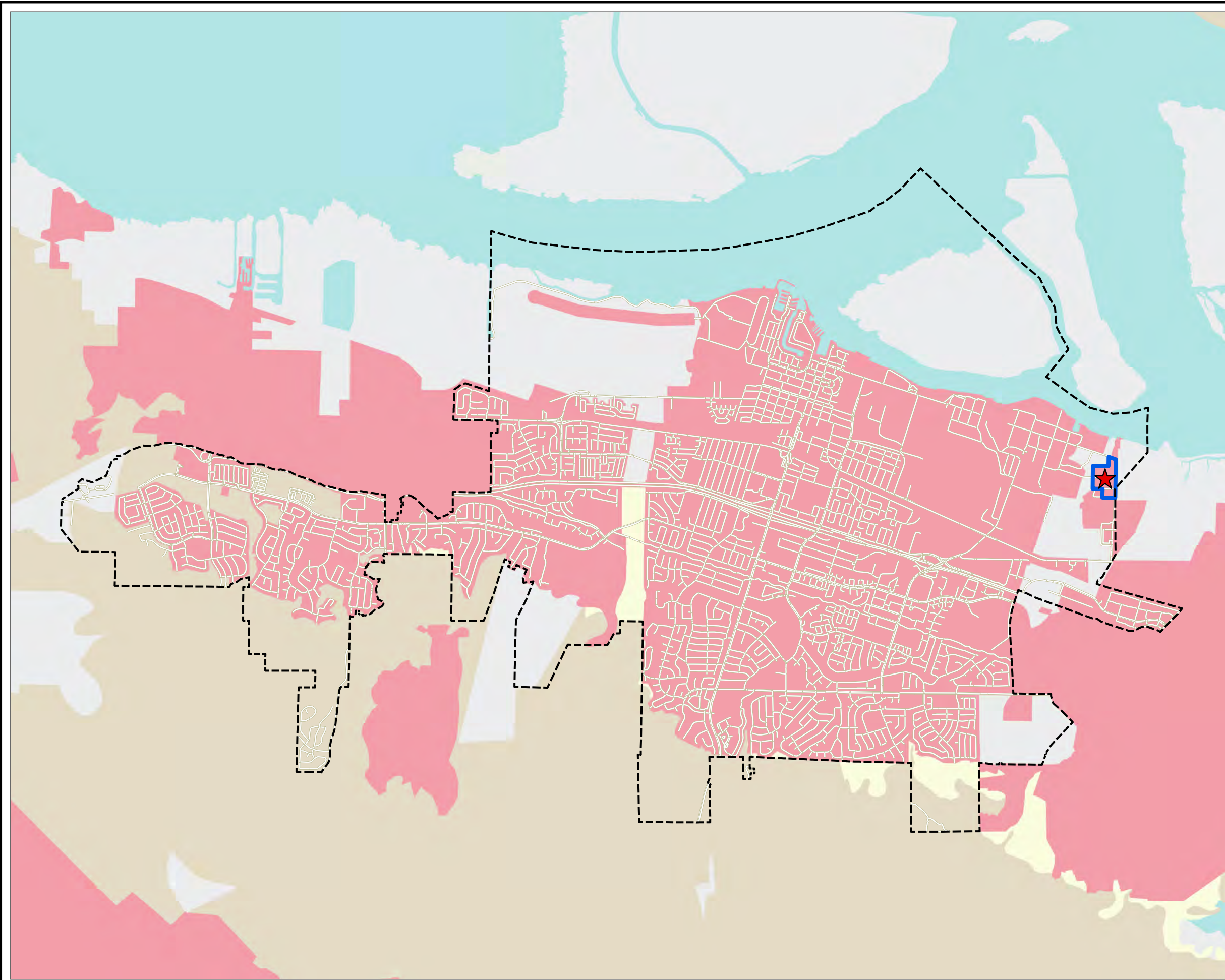
3.2.2 Environmental Setting

The project site is in the city of Pittsburg (City) and comprises 24 acres that are zoned as General Industrial (IG). The City is primarily composed of Urban and Built-Up Land, while tracts of Farmland of Local Importance are found southwest and southeast of Pittsburg (Figure 3.2-1). The City has no lands designated as agricultural (City of Pittsburg 2001). The 2022 Contra Costa County Important Farmland Map indicates that the project site is situated on Urban and Built-Up Land. The land use surrounding the project site is primarily industrial, including Corteva Agriscience's manufacturing facility (to the north), Calpine's Delta Energy Center (to the east), the Delta Diablo wastewater treatment facility (to the east), and multiple, other industrial facilities (to the west). None of the lands within or near the project site are used for timber harvesting.

As per the Contra Costa County General Plan, urbanization has led to a decrease in agricultural acreage since the 1940s. The decline in agricultural land in Contra Costa County over a period of twenty years has occurred gradually, from 168,200 acres in 1997 to 155,572 acres in 2017, which translates to an eight (8) percent decrease in agricultural land. Cropland has been most affected, with a decline from 43,528 acres in 1997 to 20,079 acres in 2017, amounting to a 53.9 percent decrease. Prime Farmland is primarily located in the eastern region of the county, in Brentwood. Contra Costa County had 459 farms in 2017, with almost half (47.5 percent) being between one to nine acres. Field crops, including alfalfa and cereal hay, make up most of the agricultural cultivated acreage (Contra Costa Agricultural Crop Report 2019).

The California Farmland Mapping and Monitoring Program (FMMP) is a state-level program established in 1978 by the California Department of Conservation's Division of Land Resource Protection. The primary goal of the program is to identify and map agricultural land in the state. Agricultural land is rated according to soil quality and irrigation status. The highest quality land, called "Prime Farmland", has the best combination of physical and chemical features able to sustain long-term agricultural production. Characteristics of "Farmland of Statewide Importance" includes high-quality soil but also have features that are inhibitive of agricultural development, such as greater slopes or less ability to store moisture. Farmland of lower quality soils used for the production of the state's leading agricultural crops is rated as "Unique Farmland."

Coordinate System: NAD 1983 StatePlane California III FIPS 0403 Feet, Map Rotation: 0
- Saved By: SRAY on 7/16/2024, 10:42:48 AM, File Path: V:\H-Cycle\506412_Pittsburg_Hydrogen\Project\5-APPX\Renewable Hydrogen Project EIR.aprx, Layout Name: Agricultural Map



-  PROJECT LOCATION
-  PROJECT SITE BOUNDARY
-  ROADS
-  CITY LIMITS
-  GRAZING LAND
-  FARMLAND OF LOCAL IMPORTANCE
-  OTHER LAND
-  URBAN AND BUILT-UP LAND
-  WATER AREA

DATA SOURCES: TRC, STATE OF CALIFORNIA GEOPORTAL, IMPORTANT FARMLAND.



1:45,600
1" = 3,800'



PROJECT: **H CYCLE
PITTSBURG RENEWABLE HYDROGEN PROJECT
CONTRA COSTA COUNTY, CALIFORNIA**

TITLE: **CITY OF PITTSBURG AGRICULTURAL
ZONING DESIGNATIONS**

DRAWN BY: S. RAY PROJ. NO.: 506412.0000.0000

CHECKED BY: R. SPRING

APPROVED BY: P. DEMICHELE

DATE: JANUARY 2024

FIGURE 3.2-1



1850 GATEWAY BLVD, SUITE 1075
CONCORD, CA 94520
PHONE: 925.688.1200

FILE: Renewable Hydrogen Project EIR.aprx

This land is usually irrigated, but may include non-irrigated orchards or vineyards, as found in some climate zones in California. Land of importance to the local agricultural economy, as determined by each county's Board of Supervisors and a local advisory committee, is categorized as Farmland of Local Importance. Grazing land has existing vegetation that is suited to livestock grazing. Table 3.2-1 lists the cultivated crop acreages in Contra Costa County.

Table 3.2-1: Cultivated Crop Acreages in Contra Costa County

Cultivated Crop	2012	2017	2018	2019
Vegetable & Seed Crops	7,088	9,161	7,224	7,125
Field Crops	194,666	197,405	175,557	173,923
Fruit & Nut Crops	3,403	4,234	4,250	4,469
Nursery Products	27	23	24	14
Total	205,184	199,411	187,055	185,531

3.2.3 Regulatory Context

3.2.3.1 Federal

The Natural Resource Conservation Service (NRCS), an agency within the United States Department of Agriculture, is responsible for implementation of the Farmland Protection Policy Act (FPPA). The purpose of the FPPA is to minimize Federal programs' contribution to the conversion of farmland to non-agricultural uses by ensuring that Federal programs are administered in a manner that is compatible with state, local, and private programs designed to protect farmland. The NRCS provides technical assistance to Federal agencies, state and local governments, tribes, and nonprofit organizations that desire to develop farmland protection programs and policies. The NRCS summarizes FPPA implementation in an annual report to the United States Congress.

3.2.3.2 State

The Williamson Act, also known as the California Land Conservation Act of 1965, is a state law that aims to preserve agricultural land and open space in California (Government Code Section 51200-51297.4, as amended). The Williamson Act provides property tax incentives to landowners who agree to maintain their land in agricultural or open space use for a minimum of ten years. In exchange for the tax benefits, landowners agree to abide by certain restrictions on the use of their land, including limits on development and restrictions on subdividing property. The Williamson Act has been used as a tool for preserving agricultural land and open space in California. (California Department of Conservation 2018). Specifically, Government Code Section 51238(a) contains the following provisions regarding agricultural preserves:

- Notwithstanding any determination of compatible uses by the Contra Costa County or City pursuant to this article, unless the board or council after notice and hearing makes a finding to the contrary, the erection, construction, alteration, or maintenance of gas, electric, water, communication, or agricultural laborer housing facilities are hereby determined to be compatible uses within any agricultural preserve.

- No land occupied by gas, electric, water, communication, or agricultural laborer housing facilities shall be excluded from an agricultural preserve by reason of that use.

3.2.3.3 Local

The Contra Costa General Plan includes provisions for the development and maintenance of agricultural land throughout the county. These provisions are designed to support the preservation and promotion of agricultural activities as an important aspect of the local economy and culture.

One key component of the agricultural standards in the Contra Costa General Plan is the establishment of an agricultural land conservation program. This program aims to protect and conserve agricultural lands by encouraging the voluntary participation of landowners in conservation easements and other land preservation agreements. The program also provides incentives for landowners to engage in sustainable agricultural practices that promote soil health, water conservation, and other environmental benefits.

The General Plan also includes provisions for the development of agricultural tourism as a means of promoting and supporting local agriculture. This includes the development of farm tours, educational programs, and other events that showcase the county's agricultural heritage and provide opportunities for residents and visitors to learn about local food production and farming practices.

3.2.4 Impacts and Mitigation Measures

The significance criteria for this analysis were developed from criteria presented in CEQA Guidelines Appendix G. The proposed Project could result in a significant impact on agricultural and forestry resources if it would result in any of the impacts listed below.

Significance Criteria

- a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the California Resources Agency FMMP, to non-agricultural use?
- b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?
- c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?
- d. Result in the loss of forest land or conversion of forest land to non-forest use?
- e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland, to non-agricultural use or conversion of forest land to non-forest use?

Significance Criteria a, b, c, and e:

No. The project site is designated as “Urban and Built-Up” per the California Department of Conservation Farmland Mapping Monitoring Program (FMMP). The proposed Project would not convert farmland, conflict with existing zoning for agricultural uses or forest land and would not result in the loss or conversion of forest land. Because the project site does not contain agricultural uses and is not zoned for such uses, the proposed Project would not require the conversion of any land designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use. The proposed Project would not conflict with any existing agricultural zoning or Williamson Act contracts.

Significance Level: No impact, no mitigation required.

Significance Criteria d:

No. The project site does not include designated forest land or timberland by the State Public Resource Code. Therefore, the proposed Project would not conflict with zoning for forest land, cause a loss of forest land, or convert forest land to a different use. The proposed Project would therefore have no impact on agricultural and forest resources and no mitigation would be required.

Significance Level: No impact, no mitigation required.

3.2.5 References

- California Department of Conservation. 2021. *Contra Costa County Important Farmland*. 2018. Available at: <https://www.conservation.ca.gov/dlrp/fmmp/Pages/ContraCosta.aspx>. Accessed December
- City of Pittsburg. 2001. *City of Pittsburg General Plan 2020: A Vision for the 21st Century*. January.
- Contra Costa County Department of Conservation and Development (CCDCD). 2017. *Contra Costa County Agricultural Preserves Map*. 2016. Available at: <https://www.contracosta.ca.gov/DocumentCenter/View/882/Map-of-Properties-Under-Contract?bidId=>.
- Contra Costa County Department of Agriculture (CCDA). 2019. “Weights & Measures.” *Contra Costa Agricultural Crop Report*. 2012, 2017, 2019. Available at: <https://www.contracosta.ca.gov/2207/Crop-and-Economic-Reports>
- United States Department of Agriculture (USDA). 2023. *National Agricultural Statistics Services*. Available at: <https://quickstats.nass.usda.gov/results/A8BFBDC7-7BF3-399A-B33C-326D86B487AD>

3.3 AIR QUALITY AND GREENHOUSE GAS EMISSIONS

3.3.1 Introduction

This section evaluates the potential air quality and greenhouse gas (GHG) emissions and health impacts from construction and operation of the proposed H Cycle Pittsburg Renewable Hydrogen Project (Project). Sources of emissions from proposed project construction and operation were evaluated by GeoEngineers, Inc. (December 2023; see Appendix B). This section provides a description of existing air quality conditions, an overview of air quality regulations, and an analysis of the potential impacts on regional and local air quality from proposed project construction and operation of air emission sources associated with the proposed Project.

Evaluation of air quality and GHG emissions from proposed project construction and operation starts with an understanding of the construction and processing steps to be used, and quantification of the associated criteria air pollutant (CAP), toxic air contaminant (TAC), and GHG emissions. The quantity of CAP, TAC, and GHG emissions are compared against the established applicable thresholds of significance to determine if there would be a potential significant environmental impact caused by the proposed Project. Further analysis was performed to determine if the proposed Project would conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing emissions. The methods of analysis used for short-term construction and long-term operational emissions were developed based on methodologies established by the Bay Area Air Quality Management District (BAAQMD), California Air Resources Board (CARB), and United States Environmental Protection Agency (EPA).

3.3.2 Existing Environmental Setting

This section provides an overview of the existing environmental setting as it relates to air quality and GHG emissions within the proposed project area air basin. Air quality is affected by the rate and location of air pollutant emissions. Atmospheric conditions such as wind speed, wind direction, and air temperatures interact with features of the landscape to determine the movement and dispersal of air pollutants and have an impact on air quality. Air quality conditions have also been measured and evaluated over time, and this environmental setting description also provides information about existing local and regional air quality conditions.

3.3.2.1 Sensitive Receptors

An element of the air quality analysis is to determine the potential impact on sensitive receptors. For purposes of air quality and health impact analyses, sensitive receptors are land uses with populations that would be particularly susceptible to exposure to air pollutants, dust, noise, or other disturbances associated with proposed project construction and/or operation. Sensitive receptors typically include residences, schools, day care centers, libraries, hospitals, residential care centers, parks and churches. Some receptors are more sensitive than others to the impacts of air pollutants, including children, pregnant women, the elderly, and those with existing health problems. The nearest residences are south of SR 4, approximately 0.9 mile southwest of the proposed project site (see Figure 2-2). Sensitive receptors are discussed in the health risk assessment (HRA) section.

3.3.3 Criteria Air Pollutants (CAPs)

Criteria air pollutants (CAPs) are those pollutants for which EPA or CARB have established air quality standards for ambient (outdoor) concentrations to protect public health. The EPA and CARB standards have been set at levels to protect human health with a determined margin of safety. For some pollutants, there are also secondary standards to protect the environment. EPA has established National Ambient Air Quality Standards (NAAQS) for the following CAPs:

- Ozone (O₃)
- Carbon monoxide (CO)
- Nitrogen dioxide (NO₂)
- Sulfur dioxide (SO₂)
- Particulate matter (inhalable particulate matter [PM₁₀] and fine particulate matter [PM_{2.5}])
- Lead

CARB has established the California Ambient Air Quality Standards (CAAQS) for the six CAPs regulated by the EPA (some of these standards are more stringent than the NAAQS) and in addition, for the following pollutants or air quality conditions:

- Sulfates
- Hydrogen sulfide (H₂S)
- Vinyl chloride
- Particulates reducing visibility

Table 3.3-1 below summarizes the characteristics, health impacts, and sources of these CAPs. A more detailed discussion for each is also provided below.

3.3.3.1 Ozone (O₃)

Ozone is a powerful oxidizing agent that generally exists as a gas and is highly chemically reactive. It is colorless at low concentrations, and blue at higher concentrations. It has a characteristic odor often associated with electrical sparks in low concentrations. Ozone is composed of three oxygen atoms.

In the troposphere (the lowest layer of the Earth's atmosphere), ozone is produced by a photochemical process involving the sun's energy. Ozone is a secondary pollutant formed by a chemical reaction between the precursor compounds, reactive organic gases (ROGs) and oxides of nitrogen (NOX), in the presence of sunlight. So, unlike other typical pollutants, ozone is not emitted directly into the atmosphere from any sources. In the stratosphere (the layer in the atmosphere just above the troposphere), ozone exists naturally and shields the Earth from the harmful effects of incoming ultraviolet radiation.

ROG and NO_x precursor compounds are emitted from combustion sources such as on-road and off-road vehicles, construction equipment, agricultural equipment, power plants, and cement kilns.

Ground-level ozone is a strong irritant that reaches its highest level during the afternoon and early evening hours, with the highest overall levels occurring most often during the summer months. Ozone is a major component of smog, which causes visibility and health impacts including eye

irritation, asthma, emphysema, chronic bronchitis, aggravation of pre-existing heart and lung conditions, and other respiratory system impacts.

3.3.3.2 Reactive Organic Gases (ROGs)

Reactive Organic Gas (ROG) is a photochemically reactive chemical gas, composed of non-methane hydrocarbons, that may contribute to the formation of smog. CARB defines Reactive Organic Gases (ROGs) as any compound of carbon, excluding a specific list of non-reactive gases. ROGs are precursor chemicals required in the atmosphere to form ozone, and are typically found in paints, architectural coatings, cleaning products, adhesives and sealants, and personal care products. No specific, separate health standard exists for ROGs, even though some are toxic, such as benzene.

3.3.3.3 Nitrogen Oxides (NO_x)

Nitrogen oxides (NO_x) are a family of gaseous nitrogen compounds that are precursors to the formation of ozone and particulate matter in the atmosphere. The major component of NO_x is nitrogen dioxide (NO₂), a pungent gas that, along with fine airborne particulate matter, contributes to the reddish-brown haze characteristic of smoggy air in California. NO₂ is composed of one atom of nitrogen and two atoms of oxygen and is a gas at ambient temperatures.

It should be noted that the CAAQS is specifically for NO₂, while the NAAQS is for NO_x as a group, with NO₂ the marker for determining attainment. In both cases; however, the intent is to control NO_x emissions as a group.

NO_x emissions result primarily from the combustion of fossil fuels, particularly in on-road and off-road motor vehicles, construction equipment, power plants, industrial boilers, and cement kilns. NO_x reacts with ROGs in the atmosphere and contributes to smog formation. NO_x emissions are a major component of acid rain.

The health impacts from exposure to NO_x can intensify responses to allergens in allergic asthmatics. In addition, a number of epidemiological studies have demonstrated associations between NO₂ exposure and premature death, cardiopulmonary effects, decreased lung function growth in children, respiratory symptoms, emergency room visits for asthma, and intensified allergic responses.

3.3.3.4 Carbon Monoxide (CO)

Carbon monoxide (CO) is a colorless, odorless, toxic gas composed of one carbon atom and one oxygen atom. It is produced by incomplete combustion of carbon-containing fuels such as gasoline, fuel oil, natural gas, coal, and wood in on-road and off-road vehicles, oil-fired industrial boilers and heaters, coal-fired power plants, and in wood stoves and fireplaces. CO contributes indirectly to climate change because it participates in chemical reactions in the atmosphere that produce ozone.

Exposure to even small amounts CO inhibits the blood's ability to carry oxygen to body tissues and vital organs. Common symptoms of CO exposure are headache, nausea, rapid breathing, weakness, exhaustion, dizziness, and confusion. Acute CO poisoning may result in reversible neurological effects or long-term irreversible brain or heart damage.

3.3.3.5 Sulfur Dioxide (SO₂)

Sulfur dioxide (SO₂) is a colorless, irritating gas with a pungent odor. It is composed of one sulfur atom and two oxygen atoms. SO₂ belongs to a family of chemicals composed of sulfur and oxygen, known collectively as sulfur oxides (SO_x). SO₂ is emitted from combustion sources burning fuel that contains sulfur, and is emitted from motor vehicles, off-road construction equipment, power plants, petroleum refineries, and metal processing plants.

Controlled studies show that people with asthma are more likely to experience adverse responses with SO₂ exposure. These effects are accompanied by respiratory irritation symptoms like wheezing, shortness of breath and chest tightness. These symptoms are exacerbated during physical activity. Exposure at elevated levels of SO₂ (above 1 ppm) may result in increased incidence of pulmonary symptoms and disease, decreased pulmonary function, and increased risk of mortality. The elderly and people with cardiovascular disease or chronic lung disease (such as bronchitis or emphysema) are most likely to experience adverse effects.

3.3.3.6 Particulate Matter (PM)

Particulate matter (PM) is a complex and variable mixture of extremely small particles and liquid droplets, made up of components including acids (such as nitrates and sulfates), organic chemicals, metals, soil, and dust particles. The size of particles is directly linked to their potential for causing adverse health impacts. The greatest impacts are from particles 10 micrometers in diameter or smaller because those pass through the throat and nose and enter the lungs. Once inhaled, PM can aggravate chronic respiratory disease, affect heart and lung functions, and may cause other adverse respiratory system impacts.

For regulatory purposes, PM is classified into two main categories by EPA based on particle size. These are PM₁₀ and PM_{2.5}, which are emitted from carbon-containing fuel combustion sources, construction equipment, motor vehicles, power plants, petroleum refineries, tire and brake dust, fugitive dust, fires, and other sources.

- “Inhalable particles (PM₁₀)” consist of fine dusts and aerosols 10 microns or smaller in diameter. PM₁₀ is also formed in the atmosphere from the reaction of NO_x and SO₂ with ammonia (NH₃) and will scatter light reducing visibility. When inhaled, particles larger than 10 microns are typically caught in the nose and throat and do not enter the lungs. However, particles smaller than 10 microns, PM_{2.5-10}, are deposited in the thoracic region of the lungs. This can cause serious health issues including permanent lung and/or respiratory tract damage.
- “Fine inhalable particles (PM_{2.5})” consist of fine dusts and aerosols 2.5 microns in diameter and smaller. PM_{2.5} includes “ultrafine particles (UFP)” which are particles less than 0.1 micrometer in diameter and analyzed as a component of PM_{2.5}. While UFP mass is a small portion of PM_{2.5}, its ability to penetrate deeply into the lungs and transfer into the bloodstream may result in disproportionate health impacts relative to the mass of their particles.

3.3.3.7 Lead

Lead is a naturally occurring, relatively soft and chemically resistant metal element found in small quantities in the Earth's crust. Lead exists in all parts of the environment, including the air, water, and the biosphere. As an air pollutant, lead exists as small particles. Sources of lead emissions in California have included use of lead-based paints in homes, consumer products, and industrial sources such as ore and metals processing, and lead smelting.

Historically, leaded gasoline-powered automobile engines were a major source of airborne lead. Leaded fuels have been mostly phased out, and over time ambient air concentrations of lead have dropped significantly. However, because lead was emitted in large amounts from leaded gasoline-powered vehicles, it remains present in many soils after being deposited there by airborne dispersion. There remains the possibility that lead in soils could become re-suspended into the air depending on the type of lead compound and characteristics of the soil.

Because lead is only slowly excreted by the human body, exposures to tiny amounts of lead from a variety of sources could accumulate to harmful levels. Effects from inhalation of lead above the level of the ambient air quality standard may include impaired blood formation and nerve conduction. Lead can adversely affect the nervous, reproductive, digestive, and immune systems. Symptoms may include fatigue, anxiety, short-term memory loss, depression, weakness in the extremities, and learning disabilities in children. Exposure to lead may also cause cancer.

3.3.3.8 Sulfates

Sulfates are a family of chemicals that contain the fully oxidized ionic form of sulfur and exist in combination with metal and/or hydrogen ions. Sulfur compound emissions occur mainly from the combustion of fossil fuels containing sulfur. A small amount of sulfate is directly emitted from combustion of sulfur-containing fuels, but most ambient sulfate is formed in the atmosphere.

Sulfates degrade visibility, and because sulfate particles are usually acidic, when dissolved in water they form sulfuric acid. Sulfuric acid deposition typically occurs through acid rain or snow, which damages ecosystems and materials, and increases the acidity of waterways and lakes, inhibiting fertility, growth, and development of fish and other aquatic species.

Populations with greater risk of adverse health from exposure to sulfates include children, asthmatics, and older adults who have chronic heart or lung diseases. The sulfate standard established by CARB is designed to prevent aggravation of respiratory symptoms.

3.3.3.9 Hydrogen Sulfide

Hydrogen sulfide (H₂S) is a colorless gas with a distinct odor of rotten eggs at low concentrations. It is extremely flammable and highly toxic. H₂S is composed of two hydrogen atoms and one sulfur atom. It is used or produced by various industries including petroleum refineries, mining, and oil and natural gas extraction and processing. H₂S also occurs naturally in well water and geothermal fields and may be present in emissions from sewage and wastewater treatment plants, landfills, and other industrial sources.

Exposure to H₂S can cause eye irritation, headache, nausea, and vomiting. Exposure to higher levels of H₂S can induce serious adverse health effects, although these exposures are typically only encountered in occupational or industrial accident situations.

3.3.3.10 Vinyl Chloride

Vinyl chloride monomer (C₂H₃Cl, also known as VCM) is a colorless, flammable gas that does not occur naturally. It is manufactured industrially for commercial uses, primarily to make polyvinyl chloride (PVC). PVC is used to make a variety of plastic products, including pipes, consumer goods, and packaging materials. VCM is contained in the smoke produced from combustion of tobacco, which is the primary source of VCM exposure for the general population. In the environment, the highest levels of vinyl chloride are found in air around factories that produce VCM products. VCM exposure is associated with an increased risk of liver, brain and lung cancers, lymphoma and leukemia cancer (The National Cancer Institute 2021).

3.3.3.11 Visibility-Reducing Particles

Visibility-reducing particles are a mixture of suspended particulate matter consisting of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles degrade visibility by absorbing and scattering light, resulting in less clarity, color, and visual range. The haze caused by these particles can contribute to a range of adverse health effects as described above for PM. The CAAQS for visibility-reducing particles is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

Table 3.3-1: Summary of EPA Criteria Air Pollutants

Pollutant	Characteristics	Health Effects	Major Sources
Ozone (O ₃)	<ul style="list-style-type: none"> A highly reactive gas produced by a photochemical process involving the sun’s energy A secondary pollutant formed by a chemical reaction between ROG and NO_x causing smog 	<ul style="list-style-type: none"> Eye irritation, asthma, emphysema, chronic bronchitis, aggravation of pre-existing heart and lung conditions, and other respiratory system impacts 	Precursor chemical sources: <ul style="list-style-type: none"> Combustion of fossil fuels in in on-road and off-road vehicles Construction equipment Agricultural equipment Power plants Industrial boilers Cement kilns
Nitrogen Oxides (NO _x)	<ul style="list-style-type: none"> Family of chemicals that are precursors to ozone formation Major component is NO₂ Pungent gas Contributes to reddish-brown haze causing visibility impacts 	<ul style="list-style-type: none"> Intensify responses to allergens in allergic asthmatics Premature death Cardiopulmonary effects, decreased lung function growth in children, respiratory symptoms, emergency room visits for asthma, and intensified allergic responses 	Combustion of fossil fuels in: <ul style="list-style-type: none"> On-road and off-road vehicles Construction equipment Agricultural equipment Power plants Industrial boilers Cement kilns
Carbon Monoxide (CO)	<ul style="list-style-type: none"> Odorless, colorless, toxic gas Formed by incomplete combustion of carbon-containing fuels 	<ul style="list-style-type: none"> Inhibits blood’s ability to carry oxygen to body tissues and vital organs Headache, nausea, rapid breathing, weakness, 	Incomplete combustion of carbon-containing fuels in: <ul style="list-style-type: none"> On-road and off-road vehicles

Table 3.3-1: Summary of EPA Criteria Air Pollutants

Pollutant	Characteristics	Health Effects	Major Sources
		<ul style="list-style-type: none"> exhaustion, dizziness, and confusion • Acute CO poisoning may result in reversible neurological effects, or long-term irreversible brain or heart damage 	<ul style="list-style-type: none"> • Oil-fired boilers and heaters • Coal-fired power plants • Wood in stoves and fireplaces
Sulfur Dioxide (SO ₂)	<ul style="list-style-type: none"> • Colorless, irritating gas with pungent odor • Formed by combustion of fuel containing sulfur 	<ul style="list-style-type: none"> • Aggravate chronic respiratory disease • Increase the risk of respiratory system disease • Impair breathing 	<ul style="list-style-type: none"> • Motor vehicles • Construction equipment • Power plants • Petroleum refineries • Metal processing plants
Particulate Matter (PM ₁₀ and PM _{2.5})	<ul style="list-style-type: none"> • Includes “inhalable particles” (fine dusts and aerosols 10 microns in diameter and smaller) • Includes “fine inhalable particles” (fine dusts and aerosols 2.5 microns in diameter and smaller) • Includes “ultrafine particles” (fine dusts and aerosols less than 0.1 microns in diameter) 	<ul style="list-style-type: none"> • Size of particles is directly linked to potential for causing adverse health impacts • Greatest impacts are from particles 10 micrometers in diameter or smaller • Aggravation of chronic respiratory disease • Affect heart and lung function • Cause other adverse respiratory system impacts 	<ul style="list-style-type: none"> • PM₁₀ and PM_{2.5} are emitted from carbon-containing fuel combustion sources, construction equipment, motor vehicles, power plants, petroleum refineries, tire and brake dust, fugitive dust, fires, and other sources.
Lead	<ul style="list-style-type: none"> • Naturally-occurring elemental metal found in the Earth’s crust • Exists in all parts of the environment including air, water, biosphere • Ambient air concentrations have dropped since leaded fuels were phased out. 	<ul style="list-style-type: none"> • Impaired blood formation and nerve conduction • Affects nervous, reproductive, digestive and immune systems • May causes fatigue, anxiety, short-term memory loss, depression, weakness in extremities • May case learning disabilities in children • May cause cancer 	<ul style="list-style-type: none"> • Industrial sources • Combustion of leaded aviation gasoline
<p><i>Sources:</i></p> <ul style="list-style-type: none"> • California Air Resources Board. <i>California Ambient Air Quality Standards (CAAQS)</i>. Available at: https://ww2.arb.ca.gov/resources/california-ambient-air-quality-standards. Accessed October 2023. • Sacramento Metropolitan, El Dorado, Feather River, Placer, and Yolo-Solano Air Districts, <i>Spare the Air website. Air Quality Information for the Sacramento Region</i>. Available at: https://www.sparetheair.com/. Accessed October 2023. • California Air Resources Board. <i>Glossary of Air Pollution Terms</i>. Available at: https://ww2.arb.ca.gov/glossary. Accessed October 2023. 			

3.3.4 Ambient Air Quality Standards

The NAAQS are divided into primary standards, designed to protect public health, and secondary standards, designed to protect public welfare. The standards for each pollutant represent levels that avoid specific adverse health effects. The NAAQS and CAAQS are summarized in Table 3.3-2.

The NAAQS and CAAQS were developed independently with differing purposes and methods. As a result, the federal and State standards differ in some cases. In general, the State of California standards are more stringent than the federal standards, particularly for ozone and PM.

Table 3.3-2: California and National Ambient Air Quality Standards (AAQS)

Pollutant	Averaging Time	California AAQS	National AAQS	
			Primary	Secondary
Ozone (O ₃)	1 Hour	0.09 ppm	--	--
	8 Hour	0.070 ppm	0.070 ppm	0.070 ppm
Carbon Monoxide (CO)	1 Hour	20 ppm	35 ppm	--
	8 Hour	9 ppm	9 ppm	--
Nitrogen Dioxide (NO ₂)	1 Hour	0.18 ppm	100 ppb	100 ppb
	Annual Mean	0.030 ppm	0.053 ppm	0.053 ppm
Sulfur Dioxide (SO ₂)	1 Hour	0.25 ppm	75 ppb	--
	3 Hour	--	--	0.5 ppm
	24 Hour	0.04 ppm	0.14 ppm (certain areas)	--
	Annual Mean	--	0.030 ppm (certain areas)	--
Respirable Particulate Matter (PM ₁₀)	24 Hour	50 µg/m ³	150 µg/m ³	150 µg/m ³
	Annual Mean	20 µg/m ³	--	--
Fine Particulate Matter (PM _{2.5})	24 Hour	--	35 µg/m ³	35 µg/m ³
	Annual Mean	12 µg/m ³	12 µg/m ³	15 µg/m ³
Lead	30 Day Average	15 µg/m ³	--	--
	Calendar Quarter	--	1.5 µg/m ³	1.5 µg/m ³
	Rolling 3-Month Average	--	15 µg/m ³	15 µg/m ³
Sulfates	24 Hour	25 µg/m ³	--	--
Hydrogen Sulfide	1 Hour	0.03 ppm	--	--
Vinyl Chloride	24 Hour	0.01 ppm	--	--

Table 3.3-2: California and National Ambient Air Quality Standards (AAQS)

Pollutant	Averaging Time	California AAQS	National AAQS	
			Primary	Secondary
Visibility-Reducing Particles	8 Hour	See Note 1	--	--

ppm = parts per million
ppb = parts per billion
μg/m³ = micrograms per cubic meter

Note 1: *Statewide Visibility Reducing Particle Standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.*

Source: California Air Resources Board (CARB). Ambient Air Quality Standards. May 4, 2016. Available at: <https://ww2.arb.ca.gov/sites/default/files/2020-07/aaqs2.pdf> Accessed October 2023.

3.3.5 Toxic Air Contaminants (TACs)

The California Health and Safety Code (§39655) defines a Toxic Air Contaminant (TAC) as “an air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health.” In addition, TACs include substances listed as federal Hazardous Air Pollutants (HAPs; pursuant to Section 7412 of Title 42 of the United States Code) under California’s air toxics program. TACs are considered “non-criteria” air pollutants since no NAAQS or CAAQS have been established. TACs are emitted from BAAQMD-regulated stationary sources including chemical manufacturing plants, petroleum refineries, and internal combustion engines (e.g., diesel-powered generators). However, the often more significant common source of TAC emissions is on-road motor vehicles including automobiles, trucks, and buses, and off-road sources such as locomotives and construction equipment. TACs are also emitted from unplanned, accidental releases from industrial facilities.

Carbon-based fossil-fueled combustion engines, including those used in automobiles, trucks, buses, and some off-road vehicles and construction equipment, release numerous different TACs. In terms of health risks, the most volatile contaminants are benzene, formaldehyde, 1,3-butadiene, toluene, xylenes, and acetaldehyde. Gasoline vapors contain several TACs, including benzene, toluene, and xylenes. Diesel engines emit a complex mixture of air pollutants, including both gaseous and solid material.

The solid material in diesel exhaust, DPM, is composed of carbon particles and numerous organic compounds, including known cancer-causing organic substances. Examples of such chemicals include polycyclic aromatic hydrocarbons, benzene, formaldehyde, acetaldehyde, acrolein, and 1,3-butadiene. Diesel exhaust also contains gaseous pollutants, including volatile organic compounds and NOX. Due to the published evidence of a relationship between DPM exposure and lung cancer and other adverse health effects, CARB has identified DPM from diesel-fueled engines as a TAC. Although a variety of TACs are emitted by carbon-based fossil fueled combustion engines, the cancer risk due to DPM exposure represents a more significant risk than the other TACs discussed above.

More than 90 percent of DPM is less than one micrometer in diameter, therefore DPM is a subset of PM_{2.5}. As a California statewide average, DPM comprises about 8 percent of PM_{2.5} in outdoor air, although DPM levels vary regionally due to the non-uniform distribution of sources throughout the state. Most major sources of diesel emissions, such as ships, trains, and trucks, operate in and around ports, rail yards, and heavily traveled roadways. Such areas are often near highly populated areas. Thus, elevated DPM levels are mainly an urban problem, with large numbers of people exposed to higher DPM concentrations, resulting in greater health consequences compared to rural areas.

Due to the high levels of diesel activity, high volume freeways, stationary diesel engines, rail yards and facilities attracting heavy and constant diesel vehicle traffic are identified as having the highest associated health risks from DPM. Reclamation activities can also generate concentrations of DPM from haul trucks and off-road heavy equipment exhaust emissions.

Health risks from TACs are a function of both the concentration of emissions and the duration of exposure. The most significant health risks are typically associated with long-term exposure and the increased possibility of contracting cancer. Health effects of exposure to TACs other than cancer include birth defects, neurological damage, and death. Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, state, and federal level. The identification, regulation, and monitoring of TACs is new compared to criteria for air pollutants established NAAQS or CAAQS. TACs are regulated or evaluated based on human health risk rather than compared to a numerical air quality standard or emission-based threshold.

3.3.6 Nuisance Odors

The BAAQMD California Environmental Quality Act (CEQA) Air Quality Guidelines recommend an assessment of the potential for a proposed Project to cause a public nuisance by subjecting surrounding land uses (receptors) to objectionable odors. BAAQMD Regulation 1 (“General Provisions and Definitions”), Rule 301 (“Public Nuisance”) states that “No person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health or safety of any such persons or the public, or which causes, or has a natural tendency to cause, injury or damage to business or property.”

BAAQMD Regulation 7 (“Odorous Substances”), Rule 101 (“Description”) places general limitations on odorous substances and specific emission limitations on certain odorous compounds. However, the limitations of Regulation 7 are not applicable until the BAAQMD Air Pollution Control Officer “receives odor complaints from 10 or more complainants within a 90-day period, alleging that a person has caused odors perceived at or beyond the property line of such person and deemed to be objectionable by the complainants in the normal course of their work, travel, or residence” (Regulation 7, Rule 702).

Nuisance odors may not cause direct physical harm, but they can be unpleasant, leading to considerable annoyance and distress among the public and can generate citizen complaints to local governments and regulatory agencies. Adverse effects of odors on residential areas and other sensitive receptors generate the most concern, but the impacts also affect land use types where people congregate, such as recreational facilities, worksites, and commercial shopping areas.

The potential for a nuisance odor impact is dependent on several factors including the nature of the odor source, distance between the odor source and receptors, and local meteorological conditions. Distance is arguably the most important factor influencing the potential for an odor impact to occur. The greater the distance from an odor source, the less concentrated the odor would be when reaching the receptor.

Meteorological conditions also affect the dispersion of odor emissions, which determines the exposure concentration at receptor locations. Wind speed and direction influence which receptors are exposed to the odors generated by a nearby source. The prevailing wind direction in the city of Pittsburg (City) is from the west, implying that odors would be typically carried towards receptors to the east. Topography also has some effect on air movement and odor dispersion.

Nuisance odors are generated from various sources of construction and operational activities. Examples of land use types that have a propensity to generate significant odors include domestic wastewater treatment plants, composting/green waste facilities, landfills, recycling facilities, petroleum refineries, chemical manufacturing plants, painting/coating operations, rendering plants, and food packaging plants. Diesel fumes associated with diesel-fueled equipment and heavy-duty trucks, such as from construction activities or freeway traffic, can be found to be objectionable to the public.

3.3.7 Attainment Status and Regional Air Quality Plans

The Federal Clean Air Act (FCAA) and the California Clean Air Act (CCAA) require all areas of California to be classified as attainment, nonattainment, or unclassified as to their status regarding the NAAQS and/or CAAQS. Areas not meeting the NAAQS presented in Table 3.3-2 above are designated by the EPA as nonattainment. Further classifications of nonattainment areas are based on the severity of the nonattainment problem, with marginal, moderate, serious, severe, and extreme nonattainment classifications for ozone. Nonattainment classifications for PM range from marginal to serious. Because of the differences between the NAAQS and CAAQS, the designation of nonattainment areas is different under federal and State regulations.

The FCAA requires areas violating the NAAQS to prepare an air quality control plan referred to as the State Implementation Plan (SIP). The SIP contains the strategies and control measures for states to use to attain the NAAQS. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, rules, and regulations of air basins as reported by the agencies with jurisdiction over them. EPA reviews SIPs to determine if they conform to the mandates of the FCAA amendments and would be expected to achieve air quality goals when implemented. The CCAA requires local air pollution control districts with air quality that is in violation of CAAQS to prepare air quality attainment plans that demonstrate district-wide emission reductions of 5 percent per year averaged over consecutive three-year periods, unless an approved alternative measure of progress is developed.

Table 3.3-3 presents the current attainment status for California, including Contra Costa County. As shown in the table, the area is currently designated as a nonattainment area for the State and federal ozone, State and federal PM_{2.5}, and State PM₁₀ standards. The State is designated attainment or unclassified for all other AAQS.

In compliance with the FCAA and CCAA, the BAAQMD periodically prepares and updates air quality plans that provide emission reduction strategies to achieve attainment of the AAQS, including control strategies to reduce air pollutant emissions through regulations, incentive programs, public education, and partnerships with other agencies. The current air quality plans were prepared in cooperation with the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG).

The most recent federal ozone plan is the 2001 Ozone Attainment Plan, which is a proposed revision to the Bay Area part of the SIP to achieve the federal ozone standard. The plan was adopted on October 24, 2001, and approved by the CARB on November 1, 2001. In August 2023, EPA announced a new review of the Ozone National Ambient Air Quality Standards (NAAQS) to ensure the standards reflect the most current, relevant science. The review is expected to take two years to complete, and EPA would revise the 2001 Ozone Attainment Plan in response to any changes made to the NAAQS for ozone.

The most recent State ozone plan is the 2017 Clean Air Plan, adopted on April 19, 2017. This was developed as a multi-pollutant plan that provides an integrated control strategy to reduce ozone, PM, TACs, and GHGs. The control strategies included building upon existing regional, State, and national programs for emissions reductions. The 2017 Clean Air Plan includes 85 control measures which provide an integrative approach to reducing emissions. Although a plan for achieving the State PM₁₀ standard is not required, the BAAQMD prioritized measures to reduce PM in developing the control measures for the 2017 Clean Air Plan.

The air quality plans discussed above contain control measures for mobile sources, stationary sources, and transportation to be implemented in the region to attain CAAQS and NAAQS. The plans are based on population and employment projections provided by local governments, usually developed as part of the General Plan update process.

On September 22, 2022, CARB finalized the 2022 State Strategy for the State Implementation Plan. This is a Statewide planning document that identifies the strategies and controls under State authority that are needed to reduce emissions of precursor pollutants to reduce ground-level ozone. These measures are needed across California for areas to meet the federal eight-hour ozone standard of 70 parts per billion.

Table 3.3-3: California NAAQS and CAAQS Attainment Status

Pollutant	Averaging Time	California AAQS	Attainment Status	Federal Primary AAQS	Attainment Status
Ozone (O ₃)	1 Hour	0.09 ppm	Nonattainment	--	--
	8 Hour	0.070 ppm	Nonattainment	0.070 ppm	Nonattainment
Carbon Monoxide (CO)	1 Hour	20 ppm	Attainment	35 ppm	Attainment
	8 Hour	9 ppm	Attainment	9 ppm	Attainment
Nitrogen Dioxide (NO ₂)	1 Hour	0.18 ppm	Attainment	100 ppb	Attainment
	Annual Mean	0.030 ppm	--	0.053 ppm	

Table 3.3-3: California NAAQS and CAAQS Attainment Status

Pollutant	Averaging Time	California AAQS	Attainment Status	Federal Primary AAQS	Attainment Status
Sulfur Dioxide (SO ₂)	1 Hour	0.25 ppm	Attainment	75 ppb	Attainment
	3 Hour	--	--	--	unclassified
	24 Hour	0.04 ppm	Attainment	0.14 ppm (certain areas)	Attainment
	Annual Mean	--	Attainment	0.030 ppm (certain areas)	Attainment
Respirable Particulate Matter (PM ₁₀)	24 Hour	50 µg/m ³	Nonattainment	150 µg/m ³	unclassified
	Annual Mean	20 µg/m ³	Nonattainment	--	--
Fine Particulate Matter (PM _{2.5})	24 Hour	--	--	35 µg/m ³	Nonattainment
	Annual Mean	12 µg/m ³	Nonattainment	12 µg/m ³	Attainment
Lead	30 Day Average	15 µg/m ³	--	--	--
	Calendar Quarter	--	--	1.5 µg/m ³	Attainment
	Rolling 3-Month Average	--	--	15 µg/m ³	Attainment
Sulfates	24 Hour	25 µg/m ³	Attainment	--	--
Hydrogen Sulfide	1 Hour	0.03 ppm	unclassified	--	--
Visibility-Reducing Particles	8 Hour	See Note 1	unclassified	--	--

ppm = parts per million

ppb = parts per billion

µg/m³ = micrograms per cubic meter

Note 1: Statewide Visibility Reducing Particle Standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

Source: California Air Resources Board (CARB). Ambient Air Quality Standards. May 4, 2016. Available at: <https://ww2.arb.ca.gov/sites/default/files/2020-07/aaqs2.pdf> Accessed October 2023.

Source: Bay Area Air Quality Management District (BAAQMD). Ambient Air Quality Standards and Attainment Status. January 5, 2017. Available at: <https://www.baaqmd.gov/about-air-quality/research-and-data/air-quality-standards-and-attainment-status>

Accessed October 2023.

3.3.7.1 Local Air Quality Monitoring

The BAAQMD conducts ambient air monitoring in the nine-county area of its jurisdiction, both through a fixed-station network and special short-term studies. The ambient air quality monitoring network consists of over 30 stations that collect local air quality data and measure significant air pollutants. The data from the network and special studies are used to determine which AAQS are being violated, and to direct emission reduction efforts, such as developing attainment plans and rules, and incentive programs. The nearest local air quality monitoring station to the proposed project site is the Concord-2975 Treat Boulevard station, located at 2975 Treat Boulevard in the city of Concord, approximately 11 miles southwest of the proposed project site. Based on the data available from this monitoring station, Table 3.3-4 presents the number of days that the state and federal AAQS were exceeded for the three-year period from 2019 to 2021. It should be noted that because the nearest monitoring station is over 11 miles away from the proposed project site, air quality data can be reasonably inferred, but not precisely gauged, from such measurements.

Table 3.3-4: Days AAQS Exceeded - Concord-2975 Treat Blvd. Monitoring Station, Contra Costa County

Pollutant	Standard	2020	2021	2022
1-Hour Ozone	California	2	1	0
	Federal	0	0	0
8-Hour Ozone	California	3	1	0
	Federal	3	1	0
24-Hour PM _{2.5}	California	Insufficient data	0	No data
	Federal	16.2	2	0
24-Hour PM ₁₀	California	Insufficient data	0	0
	Federal	11.5	0	0

Source: California Air Resources Board. Aerometric Data Analysis and Management (iADAM) System. Available at: <http://www.arb.ca.gov/adam/welcome.html>. Accessed October 2023.

3.3.8 Greenhouse Gas Emissions

To better understand the contents of this section, it is useful to first present some basic concepts concerning global climate change and greenhouse gases (GHGs).

3.3.8.1 The Greenhouse Effect

GHGs trap heat in the Earth's atmosphere and contribute to a natural phenomenon known as the "greenhouse effect." This effect is caused by heating of the Earth's troposphere (the lowest layer of the atmosphere and therefore closest to the Earth's surface) caused by the presence of water vapor, carbon dioxide, methane, nitrous oxide, and certain other gases in the air. Most visible light from the Sun passes through to the Earth's surface. As Earth's surface is heated, some of the heat is radiated back toward space as infrared radiation. This radiation can be absorbed by GHGs in the atmosphere, causing heat to build up on the Earth's surface. The greenhouse effect is a naturally

occurring phenomenon, but the effect is greatly intensified by emissions of GHGs into the Earth's atmosphere as the result of human activity and actions. This diagram shows the greenhouse effect.

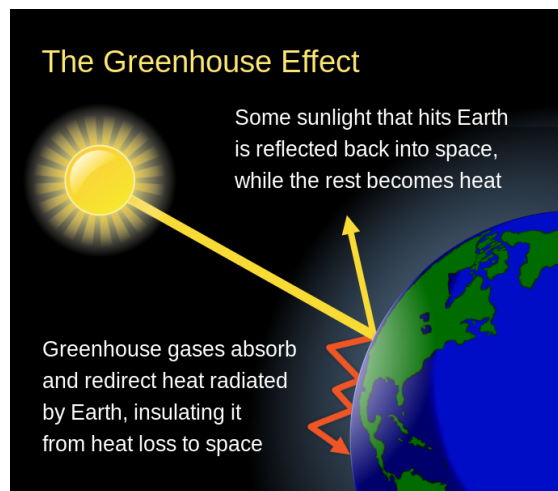


Figure 3.3-1: Greenhouse Effect

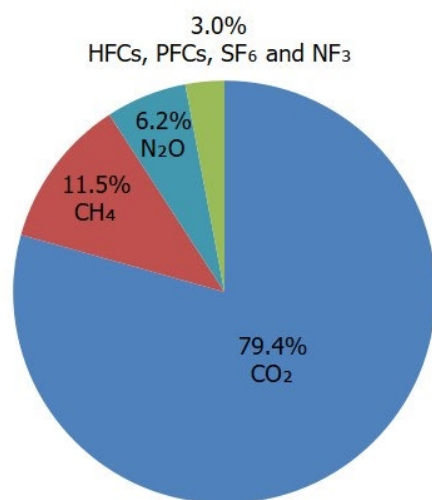
The primary GHGs responsible for the greenhouse effect and global climate change are as follows:

- **Carbon Dioxide:** The chemical formula for carbon dioxide is CO_2 , which means there is one carbon atom attached to two oxygen atoms for every carbon dioxide molecule. Under normal atmospheric pressure and temperature conditions, carbon dioxide is a non-flammable gas that has no odor and is not detected by human smell, and because it has no color, it is not visible in the atmosphere. Carbon dioxide occurs naturally in the Earth's atmosphere, and carbon dioxide emissions come from a variety of sources, some natural, and others resulting from human activities and actions. By far the largest source of carbon dioxide emissions is from the burning or combustion of fossil fuels, such as coal, oil, and gas.
- **Methane:** The chemical formula for methane is CH_4 , meaning that there are four hydrogen atoms attached to one carbon atom for every methane molecule. Under normal atmospheric pressure and temperature conditions, methane is a flammable gas that has no odor, so it is not detected by human smell, and since it has no color, it is not visible in the atmosphere. Methane is the main component of natural gas, but an odorant is added as a safety precaution so that it is detectable by human smell. Methane emissions have steadily increased from human activity since the start of the industrial revolution in the 1700's. Other human activities resulting in methane emissions include oil and gas extraction, waste management, and manure management. Natural sources of methane emissions such as plants, animals, wetlands, and permafrost also play a significant role in atmospheric methane emissions. Methane is attributed to playing a significant role in climate change.
- **Nitrous Oxide:** The chemical formula for nitrous oxide is N_2O , meaning that there are two nitrogen atoms attached to one oxygen atom. Under normal atmospheric pressure and temperature conditions, nitrous oxide is a nonflammable gas that has a slightly sweet odor, but it has no color, so it is not visible in the atmosphere. Nitrous oxide is commonly known as "laughing gas" and has significant applications as an anesthetic in medicine and dentistry.

Emissions of nitrous oxide to the Earth’s atmosphere come from natural sources such as soil underneath vegetation, and others resulting from human activities and actions including agriculture, burning or combustion of fossil fuels, industrial processes, and biomass burning

- Fluorinated Gases:** Nitrogen trifluoride (NF₃), sulfur hexafluoride (SF₆), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs) are commercially produced chemicals that are used in various manufacturing processes and other industrial applications. Under normal atmospheric pressure and temperature conditions, most of these gases are odorless, colorless, and generally nonflammable. A few HFCs are liquids under normal conditions. NF₃ is used in the manufacture of electronics, liquid crystal displays, and solar energy cells. SF₆ is used primarily in electric transmission systems. Many HFC compounds were developed and used mainly in automotive air conditioning and other refrigeration applications, resulting in large quantities of emissions from production, atmospheric releases, and recharging operations. PFC gases are powerful GHGs that are emitted from natural sources, but the most significant sources of human-generated emissions include aluminum production, and semi-conductor manufacturing.

The chart below, prepared by the EPA, shows the contribution of individual GHGs to the total of 6,340 million metric tons (carbon dioxide equivalent [CO₂e]; excluding the land use sector) greenhouse gas emissions in the United States in 2021.



U.S. Environmental Protection Agency (2023). Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2021

Figure 3.3-2: Contributions to Greenhouse Gas Emissions

3.3.8.2 Global Warming Potential

Each GHG has a global warming potential (GWP) value, which is a measure of how much energy the emissions of one (1) ton of a gas will absorb over a given period, as compared to the emissions of one (1) ton of CO₂. The greater the GWP, the more a given GHG warms the Earth compared to

CO₂ over that period, typically 100 years. GWPs are updated occasionally as more data is developed and climate change science evolves.

GWP is calculated by the Intergovernmental Panel on Climate Change based on the intensity of infrared absorption of each GHG. It can be used to estimate the potential impacts of GHG emissions from existing and future operations, and new projects emitting. The GWP of GHGs is listed below.

- Carbon dioxide (CO₂) has a GWP of 1, regardless of the period used, because it is the gas being used as the reference. CO₂ will last for thousands of years in the atmosphere.
- Methane (CH₄) has a GWP of 27 to 36 over 100 years, and an atmospheric lifespan of 10 to 12 years on average, which is much less time than CO₂. However, CH₄ absorbs much more energy than CO₂ and is therefore a more potent GHG.
- Nitrous oxide (N₂O) has a GWP of 275 to 290 over a 100-year timeframe.
- Chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs), hydrochlorofluorocarbons (HCFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆) have GWPs ranging from less than 100 to over 10,000.

Emissions of GHGs are typically expressed in terms of “metric tons of CO₂ equivalent” (MTCO_{2e}). Emissions of non-CO₂ GHGs are converted to CO_{2e} using the GWP values for each GHG. The GWP allows for direct comparison between GHGs.

3.3.8.3 Existing Project-Area GHGs

The City prepared a community wide GHG inventory in 2005, which was updated in 2016. The latest data show that overall, the City emitted 428,563 MTCO_{2e} in 2016. This represents an approximate nine percent reduction in GHG emissions over the 11-year period from the original 2005 inventory. Due to regulations implemented in 2013, industrial emission sources are no longer regulated by the City and as a result, were removed from both the original 2005 inventory and the 2016 update to the GHG inventory to ensure a consistent methodology over time. Therefore, the 2016 GHG inventory reflects sources including transportation, energy, waste, and municipal sources but omits emission sources regulated by BAAQMD.

3.3.9 Regulatory Context

This section discusses air quality and climate change legislation, regulations, orders, and policies adopted by federal, California, and regional government agencies relevant to the proposed Project.

3.3.9.1 Federal Air Quality Provisions

3.3.9.1.1 Federal Clean Air Act

The federal Clean Air Act (FCAA) of 1970 (see 42 United States Code 7401 et seq., as amended in 1977 and 1990) is the federal law that regulates air emissions from area, stationary, and mobile sources. The CAA authorizes the EPA to set primary and secondary NAAQS to protect human

health and the environment and requires states to develop state implementation plans to achieve attainment of the standards by specified dates. As discussed above, NAAQS have been established for ozone, carbon monoxide, nitrous oxide, sulfur dioxide, PM_{2.5}, PM₁₀, and lead. In 2007, the Supreme Court of the United States ruled that carbon dioxide should be defined as an air pollutant under the CAA and that the EPA has authority to regulate GHG emissions. The EPA began regulating GHG emissions from stationary industrial sources under the New Source Review permitting program in 2010. Under authority granted by the FCAA, EPA has developed regulatory programs for CAPs, HAPs, and GHGs.

3.3.9.2 Federal Greenhouse Gas Provisions

3.3.9.2.1 Paris Climate Agreement

The Paris Climate Agreement was adopted by most world nations in 2015 to take action on climate change and reduce, reverse, and/or eliminate its adverse impacts. The agreement essentially superseded the Kyoto Protocol that had been adopted in 1997 at the Conference of the Parties in Kyoto, Japan. The Paris Climate Agreement includes commitments from adopting countries to reduce GHG emissions. The United States committed to the agreement but withdrew due to action by the Trump Administration in 2020. The United States recommitted to the Paris Climate Agreement under the Biden Administration in 2021.

3.3.9.2.2 National Climate Task Force

In 2021, the Biden Administration convened the National Climate Task Force through an Executive Order (EO) to take action on climate change. The Task Force consists of representatives from over 20 federal agencies and offices to encourage collaboration across the government and work to effectively achieve the following goals:

- Reduce United States GHG emissions 50 to 52 percent below 2005 levels by 2030
- Achieve 100 percent carbon pollution-free electricity by 2035
- Achieve a net-zero emissions economy by 2050
- Deliver 40 percent of the benefits from federal investments in climate and clean energy to disadvantaged communities

3.3.9.3 State of California Air Quality Provisions

3.3.9.3.1 Criteria Air Pollutants

The CAA delegates regulation of air pollution control and enforcement of the NAAQS to the states. In California, air quality management and regulation has been legislatively granted to CARB, with subsidiary responsibilities assigned to air quality management districts and air pollution control districts at the regional and county levels. CARB, which became part of the California Environmental Protection Agency (CalEPA) in 1991, is responsible for ensuring implementation of the CCAA of 1988, responding to the CAA, and regulating emissions from motor vehicles and consumer products.

CARB has established the CAAQS, which are generally more restrictive than the NAAQS. The CAAQS describe adverse conditions, meaning that pollution levels must be below these standards before an air basin can attain the standard. Air quality is considered in “attainment” if pollutant levels are continuously below the CAAQS and do not violate the standards more than once each year. The CAAQS for ozone, CO, SO₂ (one-hour and 24-hour), NO₂, PM₁₀, PM_{2.5}, and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. The NAAQS and CAAQS are presented in Table 3.3-2.

3.3.9.3.2 Toxic Air Contaminants/Hazardous Air Pollutants

The State Air Toxics Program was established in 1983 and included a definition and list of TACs. The TAC list identifies more than 700 pollutants, of which carcinogenic and non-carcinogenic toxicity criteria have been established for a subset of these pollutants pursuant to the California Health and Safety Code. The State list of TACs includes the federally designated HAPs.

In 1987, the Legislature enacted the Air Toxics “Hot Spots” Information and Assessment Act of 1987 (AB 2588) to address public concern over the release of TACs into the atmosphere. AB 2588 requires facilities emitting toxic substances to provide local air pollution control districts with information that will allow an assessment of the air toxics problem, identification of air toxics emissions sources, location of resulting hot spots, notification of the public exposed to significant risk, and development of effective strategies to reduce potential risks to the public over five years. TAC emissions from individual facilities are quantified and prioritized. “High priority” facilities are required to perform an HRA, and, if specific thresholds are exceeded, the facility is required to communicate the results to the public in the form of notices and public meetings.

3.3.9.3.3 California Health and Safety Code Section 41700

Health and Safety Code Section 41700 states: “Except as otherwise provided in Section 41705, a person shall not discharge from any source whatsoever quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or that endanger the comfort, repose, health, or safety of any of those persons or the public, or that cause, or have a natural tendency to cause, injury or damage to business or property.” Section 41700 also applies to sources of objectionable odors, and the language of Section 41700 is incorporated into BAAQMD Regulation 7 (“Odors”) as the basis for requiring odor abatement for nuisance odor sources (see Section 3.3.6 Nuisance Odors, above).

3.3.9.3.4 State of California Greenhouse Gas Provisions

The statewide GHG emissions regulatory framework is summarized below. California has adopted numerous climate change initiatives, enacted legislation, implemented executive orders (EOs), and has set GHG reduction goals through numerous legislative and regulatory actions. The following describes how the legislation, regulations, and other plans and policies would directly or indirectly reduce GHG emissions and/or address climate change issues. The following discussion does not include an exhaustive list of applicable regulations; rather, only the most prominent and applicable California legislation related to GHG emissions and climate change is included below.

3.3.9.3.5 State Climate Change Targets

California has taken several actions to address climate change, including EOs, legislation, and CARB plans and requirements, which are summarized below.

3.3.9.4 Executive Order S-3-05

EO S-3-05 (June 2005) established California's GHG emissions reduction targets and laid out responsibilities among the State agencies for implementing the EO and for reporting on progress toward the targets. The EO established the following targets:

- By 2010, reduce GHG emissions to 2000 levels
- By 2020, reduce GHG emissions to 1990 levels
- By 2050, reduce GHG emissions to 80 percent below 1990 levels

EO S-3-05 also directed CalEPA to report biannually on progress made toward meeting the GHG targets and the impacts to California due to global warming, including impacts to water supply, public health, agriculture, the coastline, and forestry. The Climate Action Team was formed, which subsequently issued reports from 2006 to 2010.

3.3.9.5 Assembly Bill 32

To help reach the goals established in EO S-3-05, the Legislature enacted Assembly Bill 32 (AB 32), commonly referred to as the California Global Warming Solutions Act of 2006. AB 32 provided initial direction on creating a comprehensive, multi-year program to limit California's GHG emissions to 1990 levels by 2020 and initiate the transformations required to achieve the State's long-range climate objectives. AB 32 also required that the CARB prepare a "scoping plan" for achieving the maximum technologically feasible and cost-effective GHG emission reductions by 2020. The CARB's Scoping Plan is described in further detail below.

3.3.9.6 Executive Order B-30-15

EO B-30-15 (April 2015) identified an interim GHG reduction target in support of targets previously identified under EO S-3-05 and AB 32. EO B-30-15 set an interim target goal of reducing GHG emissions to 40 percent below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing GHG emissions to 80 percent below 1990 levels by 2050 as set forth in EO S-3-05. To facilitate achieving this goal, EO B-30-15 called for an update to the CARB's Climate Change Scoping Plan: A Framework for Change (Scoping Plan) to express the 2030 target in terms of million metric tons (MMT) CO₂e. The CARB's Scoping Plan is discussed in further detail below. The EO also called for State agencies to continue to develop and implement GHG emission reduction programs in support of the reduction targets.

3.3.9.7 Senate Bill (SB) 32 and Assembly Bill (AB) 197

SB 32 and AB 197 (enacted in 2016) are companion bills. SB 32 codified the 2030 emissions reduction goal of EO B-30-15 by requiring CARB to ensure that statewide GHG emissions are reduced to 40 percent below 1990 levels by 2030. AB 197 established the Joint Legislative Committee on Climate Change Policies, consisting of at least three members of the Senate and three

members of the Assembly, to provide ongoing oversight over implementation of the State’s climate policies. AB 197 also added two members of the Legislature to the Board as non-voting members; requires CARB to make available and update (at least annually via the CARB’s website) emissions data for GHGs, criteria air pollutants, and TACs from reporting facilities; and requires CARB to identify specific information for GHG emissions reduction measures when updating the Scoping Plan.

3.3.9.8 CARB’s Climate Change Scoping Plan

AB 32 requires CARB to prepare and update every five years a scoping plan detailing the approach California will take to reduce statewide emissions of GHGs. The first Scoping Plan was approved by CARB in 2008 and was intended to help California reduce GHG emissions to 1990 levels by 2020. In May 2014 CARB approved the first update to the Scoping Plan (the “2013 Scoping Plan”).

CARB adopted the next update to the Climate Change Scoping Plan in December 2017. The update identified how the State can achieve the 2030 target to reduce GHG emissions by 40 percent from 1990 levels and make substantial advances toward the 2050 goal to reduce GHG emissions by 80 percent below 1990 levels.

The most recent update was approved by CARB in December 2022 and retitled to be the “2022 Scoping Plan for Achieving Carbon Neutrality.” This plan takes the significant step of adding carbon neutrality as a science-based guide for California’s climate change work. The plan outlines how carbon neutrality can be achieved by taking bold steps to reduce GHGs to meet emissions targets and by expanding actions to capture and store carbon through the state’s natural and working lands using a variety of mechanical approaches.

3.3.9.9 CARB’s Regulations for Mandatory Reporting of GHG Emissions

CARB’s Regulation for the Mandatory Reporting of GHG Emissions (17 CCR 95100–95157) incorporated by reference certain requirements that the EPA promulgated in its Final Rule on Mandatory Reporting of GHGs (40 Code of Federal Regulations Part 98). In general, entities subject to the Mandatory Reporting Regulation that emit more than 10,000 MTCO₂e per year are required to report annual GHGs through the California Electronic GHG Reporting Tool. Certain sectors, such as refineries and cement plants, are required to report regardless of emission levels. Entities that emit more than the 25,000 MTCO₂e per year threshold are required to have their GHG emission report verified by a CARB-accredited third party.

3.3.9.10 Senate Bill 1383

Senate Bill 1383 (Lara, Chapter 395, Statutes of 2016) established targets for the reduction of short-lived climate pollutants (SLCP) by reducing the quantity of organic waste being disposed of in landfills and required the California Department of Resources Recycling and Recovery (CalRecycle) to adopt regulations designed to reduce statewide landfill disposal of organic waste. Short-lived climate pollutants are warming compounds that stay in the atmosphere for a shorter period of time than carbon dioxide, including methane and black carbon particles. The decomposition of organic waste in landfills produces GHG emissions, primarily methane, so diverting organic waste from landfilling reduces methane emissions.

3.3.9.11 Senate Bill 97

Senate Bill 97 required that by 2009, the Office of Planning and Research prepare, develop, and distribute to the California Resources Agency guidelines for agencies to feasibly mitigate GHG emissions or their effects as required by CEQA. In 2010, the California Resources Agency adopted amendments to the State Statute and CEQA Guidelines for feasible mitigation of greenhouse gas emissions and its effects. These guidelines allow lead agencies to determine the quantitative or qualitative thresholds of significance for the evaluation and mitigation of GHG and climate change impacts.

3.3.9.12 Low Carbon Fuel Standard

The Low Carbon Fuel Standard (LCFS) was intended to encourage production and use of lower-carbon and renewable alternative transportation fuels in California to reduce GHG emissions and decrease dependence on petroleum-derived fuels used by the transportation sector. The LCFS uses various market mechanisms to incentivize the introduction of lower carbon fuels. The regulation establishes annual performance standards, known as “benchmarks,” that decline over time and allows the market to determine the mix of fuels that would be used to meet the benchmarks. Low carbon fuels below the benchmark generate credits, while fuels above the carbon intensity benchmark generate deficits.

3.3.9.13 Local Air Quality Provisions

3.3.9.13.1 Bay Area Air Quality Management District

The BAAQMD is responsible for regulating stationary sources of air pollution within the nine counties that surround San Francisco Bay: Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, southwestern Solano, and southern Sonoma counties. This area of BAAQMD jurisdiction is known as the San Francisco Bay Area Air Basin (SFBAAB). The BAAQMD Board of Directors has the duty to adopt air pollution regulations for the Air District.

3.3.9.13.2 Regional Air Quality Plans

The BAAQMD prepares and updates air quality plans to achieve CAAQS and NAAQS, comply with State and national air quality planning requirements, and maintain healthy air in the Bay Area. Air quality plans identify potential control measures and strategies, including rules and regulations that could be implemented to reduce air pollutant emissions from industrial facilities, commercial processes, on- and off-road motor vehicles, and other sources. The BAAQMD implements these strategies primarily through its rules and regulations.

3.3.9.13.3 2017 Bay Area Clean Air Plan

The 2017 Bay Area Clean Air Plan provides a regional strategy to protect public health and the climate. To protect public health, the plan describes how the BAAQMD will continue progress toward attaining all CAAQS and NAAQS and eliminating health risk disparities from exposure to air pollution among Bay Area communities. To protect the climate, the plan defines a vision for transitioning the region to a post-carbon-based fuel economy needed to achieve GHG reduction targets for 2030 and 2050 and provides a regional climate protection strategy that will help the Bay

Area achieve the GHG reduction targets. The 2017 Plan includes a wide range of control measures designed to decrease emissions of the air pollutants that are most harmful to Bay Area residents, such as PM₁₀, PM_{2.5}, ozone, TACs, CH₄ and other GHGs that are potent climate impact pollutants.

3.3.9.14 BAAQMD Regulations

Regulation 1 General Provisions & Definitions

Rule 1-301 Public Nuisance Standards

All proposed project emissions sources are subject to Regulation 1-301 (Public Nuisance), which prohibits discharge of air contaminants resulting in public nuisance.

Regulation 2 Permits

Rule 2 New Source Review

Rule 2-2-301 Best Available Control Technology (BACT) Requirement

Per Regulation 2-2-301.1, BACT is triggered for a District BACT pollutant if a new source has a potential to emit (PTE) 10.0 or more pounds per day of that pollutant. BACT is a source and pollutant-specific requirement.

Rule 2-2-302 Offset Requirements, Precursor Organic Compounds and Nitrogen Oxides

Regulation 2-2-302 requires offsets for NO_x and POC emission increases from any new or modified source if the post-project, facility-wide PTE of that pollutant will be more than 10 tpy. If the facility emits or has a potential to emit more than 35 tpy of POC or NO_x emissions then the facility must offset the emissions increase for POC or NO_x at a ratio of 1.15:1. If the facility emits or has a potential to emit more than 10 tpy but less than 35 tpy of NO_x or POC, then offsets must be provided at a 1:1 ratio.

Rule 2-2-303 Offset Requirements, PM_{2.5}, PM₁₀ and Sulfur Dioxide

Regulation 2-2-303 requires offsets for PM_{2.5}, PM₁₀, and SO₂ for emission increases from any new or modified source if the post-project, facility-wide PTE of that pollutant will be 100 tpy or more and if the un-offset cumulative increase in emissions of that pollutant at the facility and any related sources since the baseline date (April 5, 1991 for PM₁₀ and SO₂ and since August 31, 2016 for PM_{2.5}) exceeds 1 tpy.

Rule 2-2-308 NAAQS Protection Requirement

This regulation prohibits the BAAQMD from issuing an Authority to Construct (ATC) for a new or modified source that will result in a significant net increase in emissions of any pollutant for which a National Ambient Air Quality Standard (NAAQS) has been established unless the District determines, based upon a demonstration submitted by the Applicant, that such increase will not cause or contribute to an exceedance of any NAAQS for that pollutant.

Rule 2-2-404 Publication of Notice and Opportunity for Public Comment

This regulation requires a notice to be published stating the preliminary permitting decision of the BAAQMD and inviting written public comment on it. This regulation also allows the public an opportunity to request a public hearing. The provisions of this regulation are triggered for (i) a new major facility or a major modification of an existing major facility; (ii) any new facility, or a modification of any existing facility, that will involve an increase in emissions of CO, NO_x, SO₂, PM₁₀, PM_{2.5}, VOC, or lead in an amount that is significant as defined in Regulation 2-2-227.2; or (iii) a Prevention of Significant Deterioration (PSD) Project.

Rule 2-2-405 Public Inspection

This requirement is triggered for an application for an ATC that is subject to the public notice and comment requirements of Regulation 2-2-404. The provisions of this regulation are triggered for (i) a new major facility or a major modification of an existing major facility; (ii) any new facility, or a modification of any existing facility, that will involve an increase in emissions of CO, NO_x, SO₂, PM₁₀, PM_{2.5}, VOC, or lead in an amount that is significant as defined in Regulation 2-2-227.2; or (iii) a PSD Project. This regulation requires the BAAQMD to make available to the public the information submitted by the Applicant, the preliminary decision to grant or deny the ATC including any proposed conditions, and any other relevant information on which the BAAQMD's preliminary decision is based. The regulation also requires any such information to be transmitted, upon request, to the CARB and EPA Region IX.

Regulation 2, Rule 5, New Source Review of TAC

A new source or a modified source of TAC requiring an ATC/Permit to Operation (PTO) is subject to Regulation 2-5. Pursuant to Regulation 2-5, all TAC emissions from new and modified sources are subject to health risk assessment (HRA) if the emissions of any individual TAC exceed either the acute or chronic emission thresholds defined in Regulation 2-5, Table 2-5-1.

Regulation 3 Fees

BAAQMD Regulation 3 establishes the fees that are required to be paid with applications for ATC and PTO. Regulation 3-302 requires a filing fee of \$593 per source. Also, an initial fee, risk assessment fee, permit to operate fee, and toxic surcharge fee specified in the appropriate fee schedule applicable to the source must be paid with the filing fee.

Regulation 6 General Requirements Particulate Matter-- Common Definitions and Test Methods

Rule 1 General Requirements

Rule 6-1-401 requires the operator to have the means to monitor visual emissions of particulate matter from the operation. Most particulate emissions from these sources will occur during active, staffed operation of the sources, so emissions will be always visible to equipment operators and will be addressed by them if they occur.

Rule 6 Prohibition of Trackout

The proposed Project will be constructed at a site that is considered a large construction site, as defined in Regulation 6-6-208, because the total land area covered by construction activities, bulk material handling operations and disturbed surfaces is greater than one (1) acre. Therefore, the site is subject to Regulation 6-6.

Regulation 7 Odorous Substances

This regulation places general limitations on odorous substances and specific emission limitations on certain odorous compounds. However, the limitations of this regulation are not applicable until the BAAQMD receives odor complaints from ten or more complainants within a 90-day period, alleging that a facility has caused odors perceived at or beyond the property line of such person and deemed to be objectionable by the complainants in the normal course of their work, travel, or residence.

Regulation 8 Organic Compounds

Rule 2, Miscellaneous Operations

Miscellaneous operations include any operation other than those limited by the other rules of Regulation 8, the rules of Regulation 10, Regulation 12-12, or limited by compliance with Regulation 13-5-301.

Rule 8, Wastewater Collection and Separation Systems

The facility Wastewater Treatment Plant is expected to be subject to Regulation 8-8.

Rule 10, Process Vessel Depressurization

The proposed Project is a hydrogen manufacturing plant, classified under NAICS code 325120, and is therefore a chemical plant as defined in Regulation 8-10-201. Regulation 8-10 applies to all process vessels with a volume of 100 cubic feet or more used in a continuous process operation at chemical plants and refineries. Process vessels may not be opened until they are completely emptied of their contents in accordance with this rule. All off-spec gases, and vessels emptied during start up, shutdown and upset conditions will be vented to a ground-level flare.

Rule 18, Equipment Leaks or Regulation 8, Rule 22, Valves and Flanges at Chemical Plants

The proposed Project is a hydrogen manufacturing plant, classified under NAICS code 325120 and SIC code 281399005. Therefore, it is a chemical plant as defined in regulations 8-18-203 and 8-22-207. Fugitive sources (Equipment and Piping Components) will be subject to either Regulation 8-18 or Regulation 8-22 depending upon the total count of valves. If a facility includes 100 or more valves (excluding commercial natural gas service and low vapor pressure liquids), it will be subject to Regulation 8-18. Otherwise, it will be subject to Regulation 8-22.

Rule 28, Episodic Releases from Pressure Relief Devices at Refineries and Chemical Plants

The proposed Project is a hydrogen manufacturing plant, classified under NAICS code 325120. Therefore, it is a chemical plant as defined in Regulation 8-28-201. Pressure relief devices at chemical plants are subject to this regulation, except pressure relief devices on storage tanks (Regulation 8-28-112) and pressure relief devices that exclusively handle organic compounds exhibiting a 10 percent evaporation point greater than 150 degrees Celsius (302 degrees Fahrenheit) when using ASTM D-86 and/or inorganic compounds not listed in Regulation 8-28-401.5 (Regulation 8-28-111).

Regulation 9 Inorganic Gaseous Pollutants

Rule 1, Sulfur Dioxide

Rule 9-1-301 limits the ground level concentrations of SO₂ to 0.5 ppm continuously for 3 consecutive minutes or 0.25 ppm averaged over 60 consecutive minutes, or 0.05 ppm averaged over 24 hours. Per Regulation 9-1-501 area monitoring to demonstrate compliance with the ground level SO₂ concentration is at the discretion of the BAAQMD.

Rule 2, Hydrogen Sulfide

Regulation 9-2-301 limits the ground level concentration of hydrogen sulfide (H₂S) during any 24-hour period to 0.06 ppm averaged over 3 minutes or 0.03 ppm averaged over 60 minutes. H₂S is identified by its characteristic rotten egg smell and can be detected by its odor at concentrations as low as 0.0005 parts per million per volume (ppmv). H₂S emissions are usually detected by smell well before the concentrations approach the limits in Regulation 9-2-301. H₂S is usually produced from decomposition of organic matter in reducing atmosphere or anaerobic conditions.

Rule 7, NO_x and CO from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters

Regulation 9-7-307.5 limits emissions of NO_x to 9 ppmv, dry at 3 percent O₂ and CO to 400 ppmv, dry at 3 percent O₂ from boilers fired on gaseous fuel with a rated heat input between 20 and 75 MMBtu/hr.

Rule 8, NO_x and CO from Stationary Internal Combustion Engines

This rule limits the emissions of nitrogen oxides and carbon monoxide from stationary internal combustion engines with an output rated by the manufacturer at more than 50 brake horsepower.

Regulation 11 Hazardous Pollutants

Rule 10, Hexavalent Chromium Emissions from All Cooling Towers and Total Hydrocarbon Emissions from Refinery Cooling Towers

This rule prohibits operation of any cooling tower that uses hexavalent chromium chemicals.

3.3.9.15 Local Greenhouse Gas Provisions

3.3.9.15.1 City of Pittsburg Sustainability Plan

The Pittsburg Sustainability Plan is a living document designed to engage, excite, and empower the community to take incremental steps towards a healthier, more sustainable future. The plan is the City's first step towards reducing GHG emissions and establishing practices the community can implement that are practical and result in real, positive change. The primary focus of the plan is to create a more sustainable, equitable, and healthy city, while maintaining a strong economy and reducing emissions to support California's climate goals.

The plan defines sustainability as meeting the needs of the present without compromising the ability of future generations to meet their need, and it is supported by three primary pillars: economic viability, environmental protection, and social responsibility. The plan established a framework for the community to work together to create positive change, with sustainability and GHG emission reductions at its core.

3.3.9.15.2 Contra Costa County Conservation & Development

The Climate Action Plan is the Contra Costa County's (County's) strategic approach to reduce greenhouse gas (GHG) emissions from sources throughout the unincorporated area. The Climate Action Plan reflects the County's programs and actions to decrease energy use, improve energy efficiency, develop renewable energy, reduce vehicle miles traveled (VMT), increase multi-modal travel options, expand green infrastructure, reduce waste, and improve the efficiency of government operations. The CAP also forecasts the County's GHG emissions and sets reduction targets and strategies.

The County is updating its most recent, 2015 Climate Action Plan, and has developed Interim Climate Action Work Plans (2021-2022 Interim Climate Action Work Plan and 2023-- 2024 Interim Climate Action Work Plan) and prepared a 2022 Progress Report updating progress on these interim measures.

3.3.9.15.3 City of Pittsburg, California Greenhouse Gas Emissions Inventory

In 2019, the City completed an inventory of GHG emissions for data year 2016 from sources (municipal facilities, operations, community as a whole) within the City boundaries. A previous inventory was completed in 2008 for 2005. The inventory was to be used to understand where the highest GHG emissions in Pittsburg originate and where the greatest opportunities for emissions reductions exist.

In April 2022, the City issued the Notice of Preparation for the General Plan Environmental Impact Report (2040 Pittsburg General Plan Update). Upon adoption, the 2040 General Plan will replace the City's existing 2020 General Plan which was adopted in 2001. A Notice of Completion was issued December 12, 2023 for public review. Included in the 2040 Plan Project Objectives is "conserving natural resources; and addressing environmental effects, including methods to adapt to the effects of a changing climate and sea level rise". The CEQA review topics of GHGs, climate change, and energy will be addressed in the EIR, and include a GHG emissions analysis using the BAAQMD's methodology and thresholds for evaluating a project's GHG emissions. The General Plan EIR

addresses the potential for the 2040 General Plan to conflict with an existing adopted plan or other regulations to reduce GHG emissions. This section of the General Plan EIR addresses anticipated energy consumption associated with buildout of the 2040 General Plan, and proposed or potential energy conservation measures.

Due to regulations implemented in 2013, industrial emission sources are no longer regulated by the City and as a result, were removed from both the original 2005 inventory and the 2016 update to the GHG inventory for data consistency across time. Therefore, the 2016 GHG inventory reflects sources including transportation, energy, waste, and municipal sources but omits emission sources regulated by BAAQMD.

3.3.10 Impacts And Mitigation Measures

This section describes the standards of significance and methodology used to analyze and determine the proposed Project's potential impacts related to air quality and GHG emissions. A discussion of the proposed Project's impacts, and mitigation measures where necessary, is also presented.

This section describes how Chapter 3 of the BAAQMD CEQA Air Quality Guidelines ("Thresholds of Significance") lays out the framework for analyzing a proposed Project to determine if it will result in any significant adverse impact on the environment, either by itself, or when considered cumulatively with other projects.

3.3.10.1 Standards of Significance – 2023 State CEQA Statute and Guidelines

Based on BAAQMD recommendations, City standards, and consistent with Appendix G of the BAAQMD CEQA Air Quality and GHG Guidelines, the proposed Project would result in a significant impact related to CAP, TAC, and GHG emissions if the proposed Project would result in any of the following:

- Conflict with or obstruct implementation of the applicable air quality plan
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)
- Expose sensitive receptors to substantial pollutant concentrations (including localized CO concentrations and TAC emissions)
- Result in other emissions (such as those leading to odors) affecting a substantial number of people
- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment
- Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs

3.3.10.2 Criteria Air Pollutants – BAAQMD CEQA Air Quality Guidelines

The BAAQMD CEQA Air Quality Guidelines contain nonbinding recommendations intended to assist lead agencies in evaluating the potential impacts of a proposed Project. Chapter 5 (“Project-Level Air Quality Impacts”) presents guidance on how to conduct an air quality analysis for a project. The analysis should conduct the necessary evaluations to determine if the proposed Project will result in any significant adverse impacts on the environment, whether considered individually, or cumulatively. The first step is to evaluate if the proposed Project would have any significant impact by itself. The next step is to evaluate if the project may contribute to a significant impact when cumulatively considered with other past, present, and foreseeable future projects that also contribute to the same impact.

The Guidelines establish thresholds of significance for CAPs, local health risks and hazards, accidental releases of acutely hazardous TACs/HAPs, and odors. Table 3.3-5, below, taken from the Guidelines provides the air quality thresholds of significance for projects.

Table 3.3-5: BAAQMD CEQA Air Quality Guidelines-- Air Quality Thresholds of Significance (Project Level)

	Construction-Related (1)	Operational	
Criteria Air Pollutants and Precursors (Reg.)			
Pollutant	Avg. Daily Emissions (lb/day)	Avg. Daily Emissions (lb/day)	Max. Annual Emissions (ton/yr)
ROG	54	54	10
NO _x	54	54	10
PM ₁₀	82 (exhaust)	82	15
PM _{2.5}	54 (exhaust)	54	10
PM ₁₀ /PM _{2.5} (fugitive dust)	Best Management Practices (2)	None	
Local CO	None		
Local Risks and Hazards			
Risk and hazards for new sources and receptors (cumulative threshold)	Same as operational thresholds	<u>Cancer Risk</u> : > 100/million (from all local sources) <u>Non-cancer Risk</u> : > 10.0 Hazard Index (chronic, from all local sources) <u>PM_{2.5}</u> : 0.08 µg/m ³ annual average (from all local sources)	<i>OR</i> Compliance with Qualified Community Risk Reduction Plan
Risk and hazards for new sources and receptors (individual project)	Same as operational thresholds	<u>Increased Cancer Risk</u> : > 10.0/million <u>Increased Non-cancer Risk</u> : > 1.0 Hazard Index (chronic or acute) <u>PM_{2.5}</u> increase: 0.3 µg/m ³ annual average	<i>OR</i> Compliance with Qualified Community Risk Reduction Plan
Accidental Release of Acutely Hazardous Air Pollutants			

Table 3.3-5: BAAQMD CEQA Air Quality Guidelines-- Air Quality Thresholds of Significance (Project Level)

	Construction-Related (1)	Operational
	None	Storage or use of acutely hazardous materials locating near receptors or new receptors or used acutely hazardous materials considered significant
Odors		
	None	Five confirmed complaints per year averaged over 3 years
<p>Notes: $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter; CO = carbon monoxide; lb/day = pounds per day; NO_x = oxides of nitrogen; $\text{PM}_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; ppm = parts per million; ROG = reactive organic gases; TACs = toxic air contaminants; tpy = tons per year; VMT = vehicle miles traveled.</p> <p>The air quality project-level thresholds of significance were adopted by the Air District's Board of Directors on June 2, 2010.</p> <p>(1) The Air District recommends for construction projects that require less than one year to complete, lead agencies should annualize impacts over the scope of actual days that peak impacts would occur rather than over the full year. Additionally, for phased projects that results in concurrent construction and operational emissions. Construction-related exhaust emissions should be combined with operational emissions for all phases where construction and operations overlap.</p> <p>(2) $\text{PM}_{10}/\text{PM}_{2.5}$ (fugitive dust) is also recognized to impact local communities. The Air District strongly recommends implementing all feasible fugitive dust management practices especially when construction projects are located near sensitive communities, including schools, residential areas, or other sensitive land uses.</p>		

3.3.10.3 Local Carbon Monoxide – BAAQMD CEQA Air Quality Guidelines

To provide a conservative indication of whether a project would result in localized CO emissions that would exceed the applicable threshold of significance, the BAAQMD has established screening criteria for localized CO emissions to determine if the CO impacts are significant. If a detailed analysis of a project indicates that localized CO emissions could exceed the 1-hour and 8-hour CAAQS of 20.0 parts per million (ppm) and 9.0 ppm, respectively, the BAAQMD would consider the project to result in a significant impact to air quality. However, according to the BAAQMD screening criteria, a project would result in a less-than-significant impact related to local CO emission concentrations if all the following criteria are met:

- The proposed Project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans
- The proposed project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour
- The proposed project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, or underpass)

3.3.10.4 TAC Emissions – BAAQMD CEQA Air Quality Guidelines

According to the BAAQMD CEQA Air Quality Guidelines, a significant impact related to TACs would occur if a project would cause any of the following:

- An increase in cancer risk levels of more than 6 persons in one million
- A non-cancer (chronic or acute) hazard index greater than 1.0
- An annual average $PM_{2.5}$ concentration of 0.3 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) or greater

A cumulative impact associated with TACs would also occur if the aggregate total of all past, present, and foreseeable future sources within a 1,000-foot radius from the fence line of a source, or from the location of a receptor, plus the contribution from the proposed Project, would exceed the following:

- An increase in cancer risk levels (from all local sources) of more than 100 persons in one million
- A chronic non-cancer hazard index (from all local sources) greater than 10.0
- An annual average $PM_{2.5}$ concentrations (from all local sources) of 0.8 $\mu\text{g}/\text{m}^3$ or greater

3.3.10.5 Health Risk Assessment

An HRA evaluates the potential public health effects from TAC emissions generated by construction and operation of the proposed Project. TACs are compounds designated by the California's Environmental Protection Agency's (Cal/EPA) Office of Health Hazard Assessment (OEHHA) as known or suspected to cause adverse health effects after short-term (acute) or long-term (chronic) exposure. In addition to naming certain chemicals as TACs, OEHHA also provides information that allows the prediction of health impacts associated with the public's potential exposure to TACs. This information is used in an HRA as described in this section to estimate the potential public health impacts resulting from TAC emissions from the proposed Project.

The determination of health risks in this HRA required calculation of average exposures to chemicals depending on the type of health impact being analyzed. Cancer risks are based on the evaluation of a 30-year exposure for residents, and a 25-year exposure for workers. Conservative annual emission rates during proposed project construction and operation were used to calculate cancer risk and chronic non-cancer effects. Maximum 1-hour emission rates were used to determine the acute hazard index (HI) because the acute HI is based on an exposure period of 1 hour.

Since BAAQMD prescribes CEQA significance thresholds for $PM_{2.5}$ emissions, impacts of $PM_{2.5}$ emissions from proposed project construction and operation were also evaluated.

The first step in the HRA process is to calculate emissions of TACs and $PM_{2.5}$. CalEEMod and MOVES 3.0 models were used to estimate emissions from mobile sources, such as vehicles and off-road equipment. Emissions from stationary sources were estimated using methods, equations, or default emission factors approved by CARB, BAAQMD, or EPA. Offsite concentrations of TACs and $PM_{2.5}$ emissions were then calculated using EPA's AERMOD air dispersion modeling program. Site-specific factors impacting the transport of pollutants in the atmosphere (e.g., meteorological conditions, site configuration, emission release characteristics, surrounding terrain) are used in the

dispersion model. Then, health risks in terms of cancer risk and hazard indices were estimated using the modeled concentrations of TACs and CARB's Hot Spots Analysis and Reporting Program (HARP2) model, in accordance with BAAQMD's Air Toxics Control Programs HRA Guidelines (December 2021) and Appendix E of the BAAQMD 2023 CEQA Guidelines.

Cancer risk and chronic hazard index were evaluated for residential and off-site worker receptors and the maximally exposed individual resident (MEIR), and the maximally exposed individual worker (MEIW) were identified. For acute hazard index the point of maximum impact was identified. Student risks at schools were not evaluated as there are no K-12 schools within 1,000 feet of the project site. The closest school is Martin Luther King Junior High School, located about 1.44 miles southwest of the project site.

The resulting cancer risks, chronic hazard index (CHI), acute hazard index (AHI) and annual average $PM_{2.5}$ concentration as described above, are compared to the BAAQMD CEQA thresholds to determine whether the impact is significant.

3.3.10.6 GHG Emissions - BAAQMD CEQA Air Quality Guidelines

3.3.10.6.1 Stationary Sources of GHG Emissions – Thresholds of Significance

The 2022 BAAQMD CEQA Air Quality Guidelines applicability is a bright-line generation threshold of 10,000 MTCO₂e per year. A project with stationary source GHG emissions less than 10,000 MTCO₂e has less-than-significant impact related to GHG emissions. If operational greenhouse gas emissions are greater than 10,000 MTCO₂e, the project would have a significant impact from GHG emissions.

Construction emissions are temporary and variable, and as a result, the BAAQMD has not developed quantitative thresholds of significance for construction related GHG emissions. Regardless, this EIR includes an estimate of GHG emissions from proposed project construction activities. The BAAQMD recommends that, even though there are no thresholds of significance for construction-related GHG emissions, projects should incorporate the “Best Management Practices for Construction-Related Fugitive Dust Emissions” in Table 5-2 and “Best Management Practices for Construction-Related GHG Emissions” in Table 6-1 of the BAAQMD CEQA Air Quality Guidelines to reduce construction-related GHG emissions.

3.3.10.6.2 Stationary Sources of GHG Emissions – Cumulative Thresholds of Significance

Global climate changes are cumulative in their impacts. This means that GHG emissions from millions of sources around the world together create significant climate impacts. The effects of future projects and GHG emissions will contribute further to the negative impacts of global climate change. And although the GHG emissions from any individual project or source are not likely to cause any detectable climate change on a global basis, they will contribute to the significant cumulative impact caused by the historical and future projects and GHG emissions. This EIR will determine if the greenhouse gas emissions from the proposed Project are cumulatively considerable. Cumulatively considerable means that the incremental effect of the specific project under review will be significant

when viewed in the context of the overall cumulative problem (State Statute and CEQA Guidelines Section 21803[b][2]).

3.3.10.6.3 GHG Emissions - Method of Impact Analysis

A numerical comparison of estimated project-related emissions to the thresholds discussed above allows determination of the significance of potential impacts to air quality and climate change resulting from the proposed Project. Emissions from the proposed Project exceeding the applicable thresholds could significantly affect regional air quality and attainment of the CAAQS and NAAQS. Where potentially significant air quality impacts are identified, mitigation measures are described that would reduce or eliminate the impact.

3.3.10.6.4 Construction and Operations Emissions

CAP, TAC, and GHG emissions from construction, motor vehicles, and heavy equipment, were estimated using the California Emissions Estimator Model (CalEEMod) software (version 2020.4.0). This is a statewide model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify air quality emissions, including GHG emissions, from land use projects. The model applies inherent default values for various land uses, including construction data, trip generation rates, vehicle mix, trip length, average speed, compliance with the CBSC. Where project-specific information is available, it was used in the model.

Construction emissions estimates were compared against the applicable thresholds of significance to determine the associated level of impact. All CalEEMod results are included in Appendix B.

CAP and TAC emissions from proposed project stationary source operations were calculated using approved CARB, BAAQMD and EPA methods. Mobile source emissions were calculated using CalEEMod. These estimates and supporting calculations are included in the BAAQMD permit application submitted by HC (Contra Costa), LLC (Applicant). Operational emission estimates were compared against the applicable thresholds of significance to determine the associated level of impact. The emission estimates are included in Appendix B.

3.3.11 Project-Specific Impacts and Mitigation Measures

The following impact discussion is based on the proposed Project's implementation compared with the significance standards identified above.

3.3.11.1 Construction-Related Impacts

a. Would the proposed Project conflict with or obstruct implementation of the applicable air quality plan during project construction. (AQ-C1)

No. During proposed project construction, several types of heavy equipment and vehicles would temporarily operate on the project site. CAP, TAC, and GHG emissions during the construction period would be generated from construction equipment, demolition, site preparation (fugitive dust including PM₁₀ and P_{2.5}), underground and aboveground construction activities, worker commutes,

and material deliveries. These activities would involve the use of diesel- and gasoline-powered equipment that would generate emissions.

The BAAQMD recommends implementing the “Basic Best Management Practices for Construction-Related Fugitive Dust Emissions” provided in the BAAQMD CEQA Air Quality Guidelines (Table 5-2) and the “Enhanced Best Management Practices for Construction-Related Fugitive Dust Emissions” in Table 5-3 of the Guidelines. The BAAQMD also recommends incorporating the “Best Management Practices for Construction-Related GHG Emissions” in Table 6-1 of the Guidelines. The proposed Project would result in maximum unmitigated construction criteria air pollutant emissions as shown in Table 3.3-6.

Table 3.3-6: Maximum Unmitigated Construction Emissions (lb/day)

Pollutant	Project Construction Emissions	Threshold of Significance	Exceeds Threshold?
ROG	17.6	54	NO
NO _x	14.7	54	NO
PM ₁₀ (exhaust)	0.52	82	NO
PM _{2.5} (exhaust)	0.48	54	NO
GHG	5,572 ⁽¹⁾	N/A	N/A

*Note (1): Total GHG emissions estimated for proposed project construction are 1,275 MTCO₂e.
N/A = Not applicable*

While no mitigation would be required, all heavy-duty diesel equipment will meet the requirements of CARB and EPA Tiers based on their horsepower resulting in actual emissions lower than the unmitigated quantities.

Significance Level: Less than significant. No mitigation required.

b. Would the proposed Project expose sensitive receptors to substantial pollutant concentrations during project construction. (AQ-C2)

No. Construction-related activities would result in the generation of CAPs, TACs (specifically DPM), and GHGs, but at less than significant levels. Emissions would occur from on-road haul trucks, off-road heavy-duty diesel equipment used for site grading, paving, utility trenching, steel erection, and other construction activities. See discussion below.

Significance Level: Less than significant. No mitigation required.

3.3.11.2 Construction TAC Emissions Health Risk Assessment

TAC emissions from construction of a project include exhaust emissions from diesel-powered and gasoline-powered vehicles and heavy off-road equipment. Exhaust particulate matter emissions from diesel-fueled engines are modeled as diesel particulate matter, which is considered a TAC. Emissions from gasoline-powered worker cars and light duty trucks contain TACs such as benzene,

ethylbenzene, toluene, xylene, etc. Health risk from these TACs and PM_{2.5} emissions were evaluated using the methodology summarized above.

The detailed results of the air dispersion modeling and risk analysis for proposed project construction are included in Appendix B and the health impacts from proposed project construction are summarized in Table 3.3-7, below. As shown in the figures, the maximally exposed individual residential receptor is southwest of the project site. The maximally exposed individual worker receptor is located west of the project site.

Table 3.3-7: Maximum Mitigated Cancer Risk, Hazard Index, and PM_{2.5} from Construction DPM Emissions

	Cancer Risk (per million persons)	Acute Hazard Index	Chronic Hazard Index	PM _{2.5} (µg/m ³ annual average)
Result at Maximally Exposed Individual Residential Receptor	0.659	0.0002	NA	NA
Result at Maximally Exposed Individual Worker Receptor	3.25	0.0150	NA	NA
Result at Point of Maximum Impact	NA	NA	0.011	0.098
Threshold of Significance	6.0	1.0	1.0	0.3
Exceeds Threshold?	NO	NO	NO	NO
<i>Sources: AERMOD and HARP 2</i>				

Health risks from TACs are a function of the concentration of emissions and the duration of exposure. As shown in Table 3.3-7, emissions related to proposed project construction would result in health impacts below the respective thresholds of significance.

Significance Level: Less than significant. No mitigation required.

3.3.11.3 Operational Impacts

a. Would the proposed Project conflict with or obstruct implementation of the applicable air quality plan during project operation. (AQ-O1)

Potentially, without mitigation. During the proposed Project's operation, emissions would be generated from processing equipment, off-road heavy equipment, material delivery, product shipment and transport, and worker commute trips. These activities would involve the use of natural gas, diesel, and gasoline fuel that would generate emissions of CAPs including ROG, NOX, and PM₁₀ and PM_{2.5}, and TAC missions including DPM.

Before starting construction, the proposed Project must obtain an ATC/PTO from the BAAQMD. In processing the ATC/PTO application, the BAAQMD will review all stationary source emissions calculations and identify all applicable regulations and rules. As shown in Table 3.3-8, the ATC/PTO

would impose conditions to ensure that the proposed Project does not exceed maximum permitted emissions levels.

Table 3.3-8: Maximum Unmitigated Operational Source Emissions (lb/day)

Pollutant	Stationary Project Emissions		Mobile Project Emissions		Threshold of Significance		Exceeds Threshold?
	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	
ROG	183.1	33.4	0.9	0.2	54	10	YES
NO _x	535.3	97.7	4.9	0.9	54	10	YES
PM ₁₀	107.7	19.7	0.2	0.03	82	15	YES
PM _{2.5}	49.3	9.0	0.2	0.03	54	10	NO
GHG	N/A	36,768 (metric)	N/A	9,996 (metric)	N/A	10,000 (metric)	YES

lb/day = pounds per day
N/A = not applicable
ton/yr = tons per year

As shown in the table, unmitigated Emissions of PM_{2.5} would be below the BAAQMD’s thresholds of significance, and the impact would be less than significant. Also as shown, unmitigated operational emissions of ROG, NO_x, and PM₁₀ would be above the BAAQMD’s specific thresholds of significance, and the impact would be significant.

GHG emissions of 36,768 MTCO_{2e} per year are above the 10,000 MTCO_{2e} threshold of significance, and therefore the impact would be significant.

Mitigation Measure AQ-O1a: To mitigate the potential for a significant impact from operational ROG, NO_x, and PM₁₀ emissions, BAAQMD-approved emissions abatement equipment will be installed.

Mitigation Measure AQ-O1b: To reduce GHG emissions, the land use project design elements as specified in the BAAQMD CEQA Air Quality Guidelines (Table 3.3-9) will be implemented. In addition, Project Feedstock Design Feature incorporating the avoidance of landfill emissions with feedstock selection will offset the annual GHG emissions such that the emissions increase will be less than the 10,000 MTCO_{2e} threshold. This measure is described in detail in Table 3.3-10 below.

Table 3.3-9: Land Use Project Design Elements - Buildings

1.a)	The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).
1.b)	The project will not result in any wasteful, inefficient, or unnecessary energy use as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.

Table 3.3-10: Mitigated Operational Source Emissions (lb/day)

Pollutant	Stationary Project Emissions		Mobile Project Emissions		Threshold of Significance		Exceeds Threshold?
	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	
ROG	52.8	9.6	0.9	0.2	54	10	NO
NO _x	26.5	4.8	4.9	0.9	54	10	NO
PM ₁₀	8.5	1.6	0.2	0.03	82	15	NO
PM _{2.5}	8.1	1.5	0.2	0.03	54	10	NO
GHG	N/A	4,075 (metric)	N/A	See Stationary Emissions for Total	N/A	10,000 (metric)	NO

lb/day = pounds per day
N/A = not applicable
ton/yr = tons per year

Mitigated ROG, NO_x, PM₁₀, and PM_{2.5} emissions are below the thresholds of significance and require no additional mitigation. Therefore, the impact from ROG, NO_x, PM₁₀, and PM_{2.5} would be less than significant with mitigation.

With implementation of the Project Feedstock Design Feature as described in impact AQ-5 below, operational GHG emissions will be reduced to a level such that the impact would be less than significant with mitigation. Implementation of **Mitigation Measures AQ-O1a and AQ-O1b**, BAAQMD approval conditions and Applicant proposed project design measures, would ensure that potential impacts of the proposed Project would be less than significant.

Significance Level: Less than significant with mitigation incorporated.

b. Would the proposed Project expose sensitive receptors to substantial pollutant concentrations during project operation. (AQ-O2)

No. Operations-related activities would result in the generation of CO, CAPs, TACs, and GHGs, but at less than significant levels. Emissions will occur from processing equipment, on-road motor vehicles, and off-road heavy-duty diesel equipment. See discussion below.

3.3.11.4 Localized CO Emissions

Localized concentrations of CO are related to the levels of traffic and congestion along streets and at intersections. Concentrations of CO approaching the AAQS are only expected where background levels are high, and traffic volumes and congestion levels are also high. Implementation of the proposed Project would increase traffic volumes on streets near the project site, and therefore, the proposed Project would be expected to increase local CO concentrations.

The statewide CO Protocol document “Transportation Project-Level Carbon Monoxide Protocol (Revised December 1997)” identifies signalized intersections operating at level of service (LOS) E or F, or projects that would result in the worsening of signalized intersections to LOS E or F, as

having the potential for emissions to result in localized CO concentrations exceeding the AAQS. This is primarily the result of many motor vehicles idling at stop lights.

To provide a conservative indication of whether a project would result in localized CO emissions that would exceed the applicable threshold of significance, the BAAQMD has established screening criteria for determining if a project could cause any given intersection to be a potential CO hotspot. According to BAAQMD, a project would result in a less-than-significant impact related to localized CO emission concentrations if all the following conditions are true for the project:

- The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans.

The Contra Costa Transportation Authority (CCTA) is the applicable Congestion Management Agency for the proposed Project. As discussed in Chapter 3.16, Transportation and Traffic, implementation of the proposed Project would not conflict with applicable CCTA guidance and is therefore consistent with the Congestion Management Program. It can also be noted that the SFBAAB has been in attainment of CAAQS and NAAQS for CO for more than 20 years. Considering this, plus advances in vehicle emissions technologies, the likelihood that any single project would create a CO hotspot is minimal.

- The proposed project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- The proposed project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, or underpass).

Based on data provided in the Transportation Impact Assessment (Appendix C) prepared for the proposed Project, the maximum traffic volume anticipated at any affected intersection would not reach 44,000 vehicles per hour. In addition, development of the proposed Project would not result in the increase of traffic volumes beyond 24,000 vehicles per hour at any intersection where vertical and/or horizontal mixing is substantially limited. Therefore, based on the BAAQMD's screening criteria for localized CO emissions, the proposed Project would not be expected to result in substantial levels of localized CO at surrounding intersections or generate localized concentrations of CO that would exceed standards or cause health hazards.

3.3.11.5 Operations TAC Emissions Health Risk Assessment

For the proposed Project's operation phase, this HRA evaluated all stationary sources of TACs and PM_{2.5}, including those that are subject to and those that are exempt from BAAQMD air permit requirements. In addition, the HRA also evaluated mobile sources such as off-road equipment, on-road mobile and idling trucks and passenger cars. Health risk from these TACs and PM_{2.5} emissions were evaluated using the methodology summarized above.

The detailed results of the air dispersion modeling and risk analysis are included in Appendix B. MEIR, MEIW, and particulate matter index (PMI) for project operation are included in Appendix B and the health impacts from proposed project operation are summarized in Table 3.3-11. As shown in the figures, the maximally exposed individual residential receptor is located southeast of the project site. The maximally exposed individual worker receptors are located west of the project site.

Table 3.3-11: Maximum Mitigated Cancer Risk and Hazard Index from Operations TAC Emissions

	Cancer Risk (per million persons)	Acute Hazard Index	Chronic Hazard Index	PM _{2.5} (µg/m ³ annual average)
Result at Maximally Exposed Individual Residential Receptor	0.481	0.0021	N/A	N/A
Result at Maximally Exposed Individual Worker Receptor	1.93	0.1129	N/A	N/A
Result at Point of Maximum Impact	N/A	N/A	0.638	0.274
Threshold of Significance	6.0	1.0	1.0	0.3
Exceeds Threshold?	NO	NO	NO	NO
<i>Sources: AERMOD and HARP 2</i>				

TAC emissions from proposed stationary source operations do not exceed the applicable thresholds for cancer risk, acute hazard index, and chronic hazard index, and the impact would be less than significant.

Significance Level: Less than significant. No mitigation required.

3.3.11.6 Construction and Operational Impacts

c. Would the proposed Project result in other emissions (such as those leading to odors) affecting a substantial number of people. (AQ-3)

No. Pollutants of principal concern include emissions leading to odors, emission of dust, or emissions considered to constitute CAPs or TACs. CAPs and TACs are discussed in impacts AQ-1 and AQ-2 above. Therefore, the following discussion focuses on emissions of dust and odors.

3.3.11.6.1 Dust

For a project to have a less-than-significant impact related to construction-related fugitive dust, it must implement all the BAAQMD's "Best Management Practices for Construction-Related Fugitive Dust Emissions" as provided in Table 5-2 of the BAAQMD CEQA Air Quality Guidelines and presented in Table 3.3-12:

Table 3.3-12: Best Management Practices for Construction-Related Fugitive Dust Emissions

BMP ID	Basic Best Management Practice
B-1	All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
B-2	All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
B-3	All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
B-4	All vehicle speeds on unpaved roads shall be limited to 15 mph.
B-5	All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
B-6	All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.
B-7	All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
B-8	Unpaved roads providing access to sites located 100 feet or further from a paved road shall be treated with a 6- to 12-inch layer of wood chips, mulch, or gravel.
B-9	Publicly visible signs shall be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's General Air Pollution Complaints number shall also be visible to ensure compliance with applicable regulations.

In addition to the mitigation measures described in Table 3.3-12, projects are strongly encouraged to implement the enhanced best management practices in Table 5-3 of the BAAQMD CEQA Air Quality Guidelines and presented in Table 3.3-13 to control fugitive dust emissions. These enhanced measures are especially important when there are schools, residential areas, or other sensitive land uses located near the construction site.

Table 3.3-13: Enhanced Best Management Practices for Construction-Related Fugitive Dust Emissions

EBMP ID	Enhanced Best Management Practice
E-1	Limit the simultaneous occurrence of excavation, grading, and ground-disturbing construction activities.
E-2	Install wind breaks (e.g., trees, fences) on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity.
E-3	Plant vegetative ground cover (e.g., fast-germinating native grass seed) in disturbed areas as soon as possible and watered appropriately until vegetation is established.
E-4	Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.
E-5	Minimize the amount of excavated material or waste materials stored at the site.
E-6	Hydroseed or apply non-toxic soil stabilizers to construction areas, including previously graded areas, that are inactive for at least 10 calendar days.

Implementation of these best management practices (BMPs) will ensure that construction of the proposed Project does not result in substantial emissions of dust. Following proposed project construction, the development area would be paved or landscaped and would not include any exposed topsoil. Therefore, proposed project operations would not generate any dust that would adversely affect the local population.

3.3.11.6.2 Odors

Nuisance odors are also discussed in Section 3.3.6. The BAAQMD CEQA Air Quality Guidelines note that the ability to detect odors varies considerably among the population and can be subjective. Reactions to odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). The presence of an odor impact is dependent on a number of variables including the nature of the odor source, the frequency of odor generation, the intensity of odor, the distance of odor source to sensitive receptors, wind direction; and sensitivity of the receptor. Typical odor-generating land uses include domestic wastewater treatment plants, landfills, and composting facilities.

Construction activities often include diesel-fueled equipment and heavy-duty trucks which could create odors associated with diesel fumes. These odors may be considered objectionable. However, construction activities would be temporary, and hours of operation for construction equipment would be restricted to the hours of 8:00 AM and 5:00 PM Monday through Friday per City of Pittsburg Municipal Code Section 18.82.040. Project construction would also be required to comply with all applicable BAAQMD rules and regulations, particularly associated with permitting of air pollutant sources. These regulations would help to minimize emissions, including those leading to odors. Accordingly, substantial objectionable odors would not be expected to occur during construction activities.

Furthermore, the BAAQMD regulates objectionable odors through Regulation 7, Odorous Substances, which do not become applicable until the Air Pollution Control Officer (APCO) receives odor complaints from ten or more complainants within a 90-day period. Once triggered, Regulation 7 places general limitations on odorous substances and specific emission limitations on certain odorous compounds. These limitations remain effective until no citizen complaints are received by the APCO for one year. The limits of Regulation 7 become applicable again when the APCO receives odor complaints from five or more complainants within a 90-day period. Although not anticipated, if odor complaints are made after the proposed Project is developed, the BAAQMD would ensure that mitigation of such odors is addressed, and any potential odor effects are minimized or eliminated.

Project operations have the potential to generate odors. The primary odor sources are:

- Feedstock Preparation Building
- Wet Feedstock Storage Silo
- Dryer
- Dried Feedstock Storage Silo

The waste handling and receiving building would be operated under negative pressure through fans to prevent air from leaving through the bay doors. Air flow through the fans would be tied into the

air egress systems of the enclosed conveyor system and wet and dry storage silos. Captured air would be routed through emissions control equipment, as required by the air permit issued by the BAAQMD. As a result, odor sources at the facility are expected to be adequately controlled in compliance with BAAQMD Regulation 7.

Based on the reasons discussed above, construction and operation of the proposed Project would not result in emissions (such as those leading to odors) adversely affecting many people, and the impact would be less than significant.

Significance Level: Less than significant. No mitigation required.

d. Would the proposed Project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or State ambient air quality standard. (AQ-4)

No. As shown in Table 3.3-14, the SFBAAB is considered in non-attainment for ozone, PM10, and PM2.5. Construction and operation of the proposed Project would cause emissions of ozone precursor pollutants (ROG and NOx), PM10, and PM2.5 that would contribute to the cumulative regional air quality setting. This section discusses the proposed Project’s operational emissions contribution to the cumulative increase in the SFBAAB. According to BAAQMD CEQA Guidelines, construction activities result in one-time, relatively short-term emissions, and are generally not considered to contribute to cumulative emissions.

3.3.11.7 Cumulative Impacts of Nonattainment Pollutant Emission

BAAQMD CEQA Air Quality Guidelines Appendix E contains thresholds of significance for air pollutants emitted from a new project, and for cumulative exposures that include emissions from a new project plus emissions from existing sources. The goal of the thresholds is to ensure that no source creates a significant adverse impact from any individual project and that the total exposure from all nearby sources does not result in a significant adverse impact. If a project exceeds the identified project-level significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts. Table 3.3-14 shows the pollutants for which California is in nonattainment status.

Table 3.3-14: California NAAQS and CAAQS Nonattainment Pollutants

Pollutant	Averaging Time	California AAQS	Attainment Status	Federal Primary AAQS	Attainment Status
Ozone (O ₃)	1 Hour	0.09 ppm	Nonattainment	--	--
	8 Hour	0.070 ppm	Nonattainment	0.070 ppm	Nonattainment
Respirable Particulate Matter (PM ₁₀)	24 Hour	50 µg/m ³	Nonattainment	150 µg/m ³	unclassified
	Annual Mean	20 µg/m ³	Nonattainment	--	--
	24 Hour	--	--	35 µg/m ³	Nonattainment

Table 3.3-14: California NAAQS and CAAQS Nonattainment Pollutants

Pollutant	Averaging Time	California AAQS	Attainment Status	Federal Primary AAQS	Attainment Status
Fine Particulate Matter (PM _{2.5})	Annual Mean	12 µg/m ³	Nonattainment	12 µg/m ³	Attainment
<p><i>ppm = parts per million</i> <i>ppb = parts per billion</i> <i>µg/m³ = micrograms per cubic meter</i> <i>Source: California Air Resources Board (CARB). Ambient Air Quality Standards. May 4, 2016. Available at: https://ww2.arb.ca.gov/sites/default/files/2020-07/aqs2.pdf Accessed October 2023.</i> <i>Source: Bay Area Air Quality Management District (BAAQMD). Ambient Air Quality Standards and Attainment Status. 2023. Available at: https://www.baaqmd.gov/about-air-quality/research-and-data/air-quality-standards-and-attainment-status Accessed October 2023.</i></p>					

Operational emissions of nonattainment pollutants are shown in Table 3.3-15.

Table 3.3-15: Mitigated Operational Emissions of Nonattainment Criteria Air Pollutants

Pollutant	Emissions (avg. lb/day)	Threshold of Significance (avg. lb/day)	Exceed Threshold
Ozone (O ₃) precursors: ROG NO _x	ROG = 53.7 NO _x = 31.4	ROG = 54 NO _x = 54	ROG = NO NO _x = NO
Respirable Particulate Matter (PM ₁₀)	8.7	82	NO
Fine Particulate Matter (PM _{2.5})	8.3	54	NO

3.3.11.8 Cumulative Health Risk Analysis

In accordance with BAAQMD CEQA guidelines, a cumulative HRA was conducted for cancer risk and chronic hazard index at maximally exposed residential and worker receptors created by the proposed Project and at point of maximum impact for PM_{2.5} concentration. The assessment requires identification of all existing and near future stationary and mobile sources (roadways and railways) within 1,000 feet of the project boundary and aggregation of health impacts (cancer risk, chronic hazard index, PM_{2.5} cumulative impact) from these sources with the proposed Project's health impacts. BAAQMD's Stationary Source Screening Maps and Mobile Source Screening Maps were used to identify sources within 1,000 feet of the proposed project's property boundary. Health risks values of identified sources were also obtained from these screening maps. The health risks provided in the screening maps are overly conservative. If more reliable sources of health risk information were available, then those were used in lieu of the screening health risk values. Distances of MEIR,

MEIW, and PMI due to the proposed Project from these sources were estimated and decay factors were applied to the health risk values for individual stationary sources or facilities identified within 1,000 feet of the project boundary. These adjusted health risk values were added to the health risk values from mobile sources and from the proposed Project at MEIR and MEIW for cancer risk and CHI and at PMI for PM_{2.5}.

The AQ-4 cumulative HRA discussion in this section (Tables 3.3-16 and 3.3-17) is limited to the non-attainment pollutant PM_{2.5}. Cancer risk and chronic hazard index, along with details of the complete HRA process may be found in Appendix B.

Table 3.3-16: Maximum Mitigated Cumulative Cancer Risk, Hazard Indices, and PM_{2.5} Concentration from Construction Emissions

	Cancer Risk (Chances per Million)	Chronic Hazard Index	PM _{2.5} (µg/m ³ Annual Average)
Result at Maximally Exposed Individual Residential Receptor	80.802	0.022	N/A
Result at Maximally Exposed Individual Worker Receptor	83.390	0.037	N/A
Result at Point of Maximum Impact	N/A	N/A	0.312
Thresholds of Significance	100.0	10.0	0.8
Exceed Thresholds?	NO	NO	NO

Table 3.3-17: Maximum Mitigated Cumulative Cancer Risk, Hazard Indices, and PM_{2.5} Concentration from Operation Emissions

	Cancer Risk (Chances per Million)	Chronic Hazard Index	PM _{2.5} (µg/m ³ Annual Average)
Result at Maximally Exposed Individual Residential Receptor	80.624	0.024	N/A
Result at Maximally Exposed Individual Worker Receptor	82.072	0.135	N/A
Result at Point of Maximum Impact	N/A	N/A	0.457
Thresholds of Significance	100.0	10.0	0.8
Exceed Thresholds?	NO	NO	NO

PM_{2.5} Emissions Concentration Modeling

PM_{2.5} emissions from mobile sources, such as offroad equipment and onroad vehicles, were estimated using CalEEMod and EMFAC emissions models. PM_{2.5} emissions from stationary sources were estimated using methods, equations, or default emission factors approved by CARB, BAAQMD, or EPA. Annual average PM_{2.5} concentrations were estimated using EPA’s AERMOD

air dispersion modeling program. Annual average $PM_{2.5}$ concentrations were modeled individually for four years of meteorological data from Dow Chemical meteorological station and the highest of maximum annual average $PM_{2.5}$ concentration out of the four years is presented in the tables above.

As shown in Table 3.3-17 above, operational emissions of non-attainment pollutants, ROG, NOX, PM_{10} , and $PM_{2.5}$, would be less than the applicable BAAQMD thresholds of significance, and the impact would be less than significant. In addition, since the emissions do not exceed the identified project-level significance thresholds, the emissions would not be cumulatively considerable.

Significance Level: Less than significant. No mitigation required.

e. Would the proposed Project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, or conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. (AQ-5)

Potentially, without mitigation. As discussed below, GHG emissions from project operations would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs, GHG emissions would be less than significant, and as a result, the proposed project's incremental contribution is not cumulatively considerable, and the impact is less-than-significant with implementation of the Feedstock Project Design Feature.

3.3.11.9 Construction GHG Emissions Impacts

Construction-related GHG emissions were calculated using the CalEEMod computer model. Construction of the proposed Project would result in GHGs emissions of 1,227 MTCO₂e over the estimated 21 to 24-month construction period. The BAAQMD CEQA Air Quality Guidelines do not contain any threshold of significance for construction related GHG emissions. However, the Guidelines state that for a project to have a less-than-significant CAP impact related to construction-related fugitive dust, it must implement all the BAAQMD's "Best Management Practices for Construction-Related GHG Emissions" as provided in the BAAQMD CEQA Air Quality Guidelines and presented below in Table 3.3-18.

Mitigation Measure AQ-C2: In addition to the dust mitigation measures described above, the BAAQMD CEQA Air Quality Guidelines state that even though a numerical threshold of significance for construction-related GHG emissions has not determined, in order to minimize GHG and other air quality pollutants emissions, projects should incorporate Table 6-1 "Best Management Practices for Construction-Related GHG Emissions" in the BAAQMD CEQA Air Quality Guidelines and presented in Table 3.3-18 below.

Table 3.3-18: Best Management Practices for Construction-Related GHG Emissions

Use zero-emission and hybrid-powered equipment to the greatest extent possible, particularly if emissions are occurring near sensitive receptors or located within a BAAQMD-designated Community Air Risk Evaluation (CARE) area or Assembly Bill 617 community.
--

Require all diesel-fueled off-road construction equipment be equipped with EPA Tier 4 Final compliant engines or better as a condition of contract.

Table 3.3-18: Best Management Practices for Construction-Related GHG Emissions

Require all on-road heavy-duty trucks to be zero emissions or meet the most stringent emissions standard, such as model year (MY) 2024 to 2026, as a condition of contract
Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to no more than 2 minutes (A 5-minute limit is required by the state airborne toxics control measure [Title 13, Sections 2449(d)(3) and 2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the site and develop an enforceable mechanism to monitor idling time to ensure compliance with this measure.
Prohibit off-road diesel-powered equipment from being in the “on” position for more than 10 hours per day.
Use California Air Resources Board–approved renewable diesel fuel in off-road construction equipment and on-road trucks.
Use United States Environmental Protection Agency SmartWay certified trucks for deliveries and equipment transport.
Require all construction equipment to be maintained and properly tuned in accordance with manufacturer’s specifications. Equipment should be checked by a certified mechanic and determined to be running in proper condition prior to operation.
Where grid power is available, minimize portable diesel engines and provide electrical hook ups for electric construction tools, such as saws, drills, and compressors, and use electric tools whenever feasible.
Where grid power is not available, use alternative fuels, such as propane or solar electrical power, for generators at construction sites.
Encourage and provide carpools, shuttle vans, transit passes, and/or secure bicycle parking to construction workers and offer meal options on site or shuttles to nearby meal destinations for construction employees.
Reduce electricity use in the construction office by using LED bulbs, powering off computers every day, and replacing heating and cooling units with more efficient ones.
Minimize energy used during site preparation by deconstructing existing structures to the greatest extent feasible.
Recycle, divert, or salvage nonhazardous construction and demolition debris, with a goal of recycling at least 15 percent more by weight than the diversion requirement in Title 24.
Use locally sourced or recycled materials for construction materials (goal of at least 20 percent based on costs for building materials and based on volume for roadway, parking lot, sidewalk and curb materials). Wood products used should be certified through a sustainable forestry program.
When feasible, use low-carbon concrete, and/or minimize the amount of concrete used. When feasible and if more efficient or lower emitting, produce concrete on-site instead of transporting ready-mix.
Develop a plan to efficiently use water for adequate dust control since substantial amounts of energy can be consumed during the pumping of water.
Include all requirements in applicable bid documents, purchase orders, and contracts, with successful contractors demonstrating the ability to supply the compliant on- or off-road construction equipment for use prior to any ground-disturbing and construction activities

In addition to the mitigation measures described in Table 3.3-18, projects are strongly encouraged to implement enhanced best management practices to control fugitive dust emissions. These enhanced measures are especially important when there are schools, residential areas, or other sensitive land uses located near the construction site and are presented in Table 3.3.19.

Table 3.3-19: Enhanced Best Management Practices for Construction-Related Fugitive Dust Emissions

EBMP ID	Enhanced Best Management Practice
E-1	Limit the simultaneous occurrence of excavation, grading, and ground-disturbing construction activities.
E-2	Install wind breaks (e.g., trees, fences) on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity.
E-3	Plant vegetative ground cover (e.g., fast-germinating native grass seed) in disturbed areas as soon as possible and watered appropriately until vegetation is established.
E-4	Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.
E-5	Minimize the amount of excavated material or waste materials stored at the site.
E-6	Hydroseed or apply non-toxic soil stabilizers to construction areas, including previously graded areas, that are inactive for at least 10 calendar days.

3.3.11.10 Operations GHG Emissions Impacts

Operation of the proposed Project would generate GHG emissions from stationary and mobile sources. Operations-related mobile source GHG emissions were calculated using the CalEEMod computer model. Stationary source GHG emissions were calculated using standard, approved CARB, BAAQMD and EPA methodologies. GHG emissions generated by indirect sources, such as those from purchased electricity, purchased water for process operations, and electricity consumption for purchase off-site wastewater treatment services, are included. The total GHG emissions exceed the 10,000 MTCO₂e threshold of significance, and therefore the impact would be significant.

Mitigation Measure AQ-O2: To mitigate the potential for a significant impact from operational GHG emissions to a less than significant level, land use project design elements per the BAAQMD CEQA Air Quality Guidelines (Table 3.3-18) will be incorporated. Also, use of a Feedstock GHG Emissions Project Design Feature will be incorporated. MSW feedstock results in significant avoided landfill methane emissions, as recognized and quantified by the California Air Resources Board (CARB) in Low-Carbon Fuel Standard (LCFS) pathways and CalRecycle in its SB1383 Article 2 Technology Determination process. The Applicant’s estimate for avoided landfill methane emissions reflects an assumed MSW feedstock composition, and this estimate has been evaluated by CalRecycle and CARB in their assessment of the Applicant’s SB1383 Article 2 application (2023). Accordingly, this feedstock selection will avoid landfill emissions, and is considered mitigation that will offset the annual operational GHG emissions.

Table 3.3-20: Land Use Project Design Elements - Buildings

1.a)	The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).
1.b)	The project will not result in any wasteful, inefficient, or unnecessary energy use as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.

Table 3.3-21: Operations Greenhouse Gas Emissions Summary

Stationary Sources	CO ₂ (tons/yr)	CH ₄ (tons/yr)	N ₂ O (tons/yr)	CO _{2e} (tons/yr)
S-25 Solid Residue Melter & Refiner Natural Gas Burners	2,757	0.05	0.005	2,760
S-36 Flare	336	0.006	0.0006	337
S-40 Boiler	28,985	0.91	0.14	29,050
S-75 Emergency Diesel-fired ICE Generator	47.8	0.0019	3.74E-04	47.9
S-80 Emergency Diesel-fired ICE Fire Water Pump	5.00	0.0002	3.92E-05	5.02
Fugitive Equipment	--	--	--	328.42
On-road and off-road mobile sources	9,962	0.40	0.08	1,655
Indirect Emissions	--	--	--	3,315
Total	36,710	1.38	0.31	37,498
Project Feedstock GHG Emissions Design Feature	--	--	--	(33,423)
Total Mitigated GHG Operational Emissions				4,075

Considering implementation of the Land Use Project Design Element for Buildings and the Project Feedstock GHG Emissions Design Feature to offset the annual GHG emissions to below the 10,000 MTCO_{2e} significance threshold, the impact would be less than significant with mitigation. Implementation of **Mitigation Measures AQ-O2** and **AQ-C2**, in addition to BAAQMD approval conditions and Applicant proposed project design measures, would ensure that potential impacts of the proposed Project would be less than significant.

Significance Level: Less than significant with mitigation incorporated.

3.3.12 References

AB 32 Global Warming Solutions Act of 2006 | California Air Resources Board

Airgas. February 14, 2018. Safety Data Sheet Nitrogen Dioxide. Accessed October 2023.
[001041.pdf \(airgas.com\)](#)

Airgas. September, 29, 2021. Safety Data Sheet Sulfur Dioxide. Accessed October 2023.
[001014.pdf \(airgas.com\)](#)

American Petroleum Institute (API). 2009. Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Gas Industry. Equation 5-6. August.
http://www.api.org/ehs/climate/new/upload/2009_ghg_compendium.pdf.

- Bay Area Air Quality Management District (BAAQMD). 2017. Final 2017 Clean Air Plan. Accessed October 2023. https://www.baaqmd.gov/~media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-_proposed-final-cap-vol-1-pdf.pdf
- Bay Area Air Quality Management District (BAAQMD). 2023. Air Quality Plans. Accessed November 2023. <https://www.baaqmd.gov/plans-and-climate/air-quality-plans>
- Bay Area Air Quality Management District (BAAQMD). 2023. Ambient Air Monitoring. Accessed October 2023. <https://www.baaqmd.gov/about-air-quality/air-quality-measurement>
- Bay Area Air Quality Management District (BAAQMD). 2023. California Environmental Quality Act Air Quality Guidelines. Accessed September 2023. Bay Area Air Quality Management District (BAAQMD). 2023. Current Plans. Accessed November 2023. <https://www.baaqmd.gov/plans-and-climate/air-quality-plans/current-plans>
- Bay Area Air Quality Management District (BAAQMD). 2023. Interactive Data Maps. Accessed October 2023. [Interactive Data Maps \(baaqmd.gov\)](#)
- Bay Area Air Quality Management District (BAAQMD). June 2023. 2023 Annual Air Monitoring Network Plan. Accessed October 2023. [Microsoft Word - 2023 ANP.docx \(baaqmd.gov\)](#)
- Bay Area Air Quality Management District California Environmental Quality Act Air Quality Guidelines (baaqmd.gov)
- CalEEMod. 2017. California Emissions Estimator Model. Accessed October 2023. <http://www.aqmd.gov/caleemod/home>
- California Air Pollution Control Officers Association (CAPCOA). 2021. Handbook for Analyzing Greenhouse Gas
- California Air Resources Board (CARB). 2022. Mandatory GHG Reporting – Asset Controlling Supplier. Accessed August 2023. [Mandatory GHG Reporting – Asset Controlling Supplier | California Air Resources Board](#)
- California Air Resources Board (CARB). 2023. 2022 Scoping Plan Documents. Accessed November 2023. <https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents>
- California Air Resources Board (CARB). 2023. 2022 Scoping Plan for Achieving Carbon Neutrality – Executive Summary. Accessed November 2023. <https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp-es.pdf>
- California Air Resources Board (CARB). 2023. AB 32 Climate Change Scoping Plan. Accessed November 2023. <https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan>
- California Air Resources Board (CARB). 2023. AB 32 Global Warming Solutions Act of 2006. Accessed November 2023.

- California Air Resources Board (CARB). 2023. California Ambient Air Quality Standards. Accessed October 2023. <https://ww2.arb.ca.gov/resources/california-ambient-air-quality-standards>
- California Air Resources Board (CARB). 2023. California Ambient Air Quality Standards. Accessed October 2023. <https://ww2.arb.ca.gov/resources/california-ambient-air-quality-standards>
- California Air Resources Board (CARB). 2023. Carbon Monoxide and Health. Accessed October 2023. <https://ww2.arb.ca.gov/resources/carbon-monoxide-and-health>
- California Air Resources Board (CARB). 2023. Emissions by Air Basin. Accessed October 2023. [Emissions by Air Basin | California Air Resources Board](#)
- California Air Resources Board (CARB). 2023. GHG Global Warming Potentials. Accessed September 2023. <https://ww2.arb.ca.gov/ghg-gwps>
- California Air Resources Board (CARB). 2023. Glossary. Accessed October 2023. <https://ww2.arb.ca.gov/glossary>
- California Air Resources Board (CARB). 2023. Greenhouse Gas Inventory. Accessed November 2023. [Greenhouse Gas Inventory | California Air Resources Board](#)
- California Air Resources Board (CARB). 2023. Health & Air Pollution. Accessed October 2023. <https://ww2.arb.ca.gov/resources/health-air-pollution>
- California Air Resources Board (CARB). 2023. Hydrogen Sulfide & Health. Accessed October 2023. <https://ww2.arb.ca.gov/resources/hydrogen-sulfide-and-health>
- California Air Resources Board (CARB). 2023. iADAM: Air Quality Data Statistics <https://www.arb.ca.gov/adam/>
- California Air Resources Board (CARB). 2023. Lead & Health. Accessed October 2023. <https://ww2.arb.ca.gov/resources/lead-and-health>
- California Air Resources Board (CARB). 2023. Local Government Operations Protocol for the Quantification and Reporting of Greenhouse Gas Emissions Inventories, Version 1.1. May 2010. Accessed August 2023. [Local Government Operations Protocol for Greenhouse Gas Assessments | California Air Resources Board](#)
- California Air Resources Board (CARB). 2023. Low Carbon Fuel Standard. Accessed November 2023. <https://ww2.arb.ca.gov/our-work/programs/low-carbon-fuel-standard/about>
- California Air Resources Board (CARB). 2023. Mandatory Greenhouse Gas Emissions Reporting. Accessed November 2023. <https://ww2.arb.ca.gov/our-work/programs/mandatory-greenhouse-gas-emissions-reporting>

- California Air Resources Board (CARB). 2023. Nitrogen Dioxide and Health. Accessed October 2023. <https://ww2.arb.ca.gov/resources/nitrogen-dioxide-and-health>
- California Air Resources Board (CARB). 2023. Sulfate & Health. Accessed October 2023. <https://ww2.arb.ca.gov/resources/sulfate-and-health>
- California Air Resources Board (CARB). 2023. Visibility-Reducing Particles & Health. Accessed October 2023. <https://ww2.arb.ca.gov/resources/visibility-reducing-particles-and-health>
- California Air Resources Board (CARB). 2023. Visibility-Reducing Particles & Health. Accessed October 2023. <https://ww2.arb.ca.gov/resources/visibility-reducing-particles-and-health>
- California Air Resources Board (CARB). September 22, 2022. 2022 State Strategy for the State Implementation Plan. Accessed October 2023. https://ww2.arb.ca.gov/sites/default/files/2022-08/2022_State_SIP_Strategy.pdf
- California Department of Resources Recycling and Recovery (CalRecycle). 2023. New Statewide Mandatory Organic Waste Collection. Accessed August 2023. [New Statewide Mandatory Organic Waste Collection - CalRecycle Home Page](#)
- California Department of Resources Recycling and Recovery (CalRecycle). 2020. Short-lived Climate Pollutants (SLCP): Organic Waste Reductions. Accessed August 2023. [2021Sep3NonADAFinalRegulationText.pdf](#)
- California Department of Resources Recycling and Recovery (CalRecycle). 2023. SB1383 Article 2: Determination of Technologies that Constitute a Reduction in Landfill Disposal. Accessed August 2023. [SB 1383 Article 2: Determination of Technologies that Constitute a Reduction in Landfill Disposal - CalRecycle Home Page](#)
- California Environmental Protection Agency and California Air Resources Board. 2005. Air Quality and Land Use: A Community Health Perspective. Accessed November 2023. <https://files.ceqanet.opr.ca.gov/221458-6/attachment/Unr-g159CW-r0G4DR8q6daNdAKT3RJTd8gGQCfz4wqFfl-eNdZNQEqjf8tfls1x6Gsae7YqpXwtFIZBd0>
- California Legislative Information. 2023. AB-1395 The California Climate Crisis Act (2021-2022). Accessed November 2023. [Bill Text - AB-1395 The California Climate Crisis Act](#).
- California Office of Environmental Health Hazard Assessment (OEHHA). 2023. Toxic Air Contaminants. Accessed October 2023. <https://oehha.ca.gov/air/toxic-air-contaminants>
- California Office of Environmental Health Hazard Assessment (OEHHA). 2023. Notice of Adoption of Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments 2015. Accessed November 2023. [Notice of Adoption of Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments 2015 - OEHHA \(ca.gov\)](#)

- California Office of Environmental Health Hazard Assessment (OEHHA). 2022. Guidance Manual for the Preparation of Health Risk Assessments. Accessed November 2023. [February 2015, Air Toxics Hot Spots Program Risk Assessment \(ca.gov\)](#)
- California Senate. 2016. Senate Bill 1383 Short-lived climate pollutants: methane emissions: dairy and livestock: organic waste: landfills. Accessed August 2023. [SB 1383 Senate Bill - CHAPTERED \(ca.gov\)](#)
- California.Public.Law. 2023. CA Health & Safety Code Section 41700. Accessed November 2023. [California Health and Safety Code Section 41700 \(public.law\)](#)
- Centers for Disease Control and Prevention – The National Institute for Occupational Safety and Health (NIOSH). June 21, 2019. Sulfur Dioxide. <https://www.cdc.gov/niosh/topics/sulfurdioxide/default.html>
- Centers for Disease Control and Prevention. July 7, 2019. Carbon Monoxide. Accessed October 23, 2023. <https://www.cdc.gov/niosh/topics/co-comp/default.html>
- CEQA Portal. 2023. Thresholds of Significance. Accessed October 2023. [CEQA Portal Topic Paper – Thresholds of Significance \(00568752\).DOCX](#)
- City of Pittsburg, CA. 2023. City of Pittsburg Greenhouse Gas Emission Inventories Updated 2005 and 2016. Accessed October 2023. [637598869093930000 \(pittsburgca.gov\)](#)
- City of Pittsburg, CA. 2023. Transportation Section. Accessed November 2023. <https://www.pittsburgca.gov/services/public-works/engineering/transportation>
- City of Pittsburg, California, 2023, City of Pittsburg Sustainability Plan.
- City of Pittsburg, California. 2023. Notice of Availability Harborview Project Draft Environmental Impact Report. Accessed September 2023. [City of Pittsburg \(pittsburgca.gov\)](#)
- City of Pittsburg, California. 2023. Notice of Preparation 2040 General Plan Update Draft Environmental Impact Report. Accessed September 2023. https://static1.squarespace.com/static/5c741fe1b10f25b8de62226a/t/625f27893fef641ebd979dff/1650403212123/Pittsburg_GPU_NOP_Print.pdf
- City of Pittsburg, California. 2023. Sustainability Overview. Accessed September 2023. <https://www.pittsburgca.gov/services/environmental-services/climate-action-pages>
- City of Pittsburg. 2023. General Plan Existing Conditions Report. Accessed October 2023. [General Plan Existing Conditions Report Now Available! | News | City of Pittsburg \(pittsburgca.gov\)](#)
- City of Richmond, California. 2023. Chevron Richmond Refinery Modernization Project. Accessed September 2023. [Chevron Richmond Refinery Modernization Project | Richmond, CA - Official Website](#)

- Definitions of VOC and ROG. 2009. Accessed October 2023. https://airknowledge.gov/ILT/TOXC106/Current/CI/04TOXC107_Handout2.pdf
- Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity. Accessed August 2023. [Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity \(airquality.org\)](#)
- GSC International. Lead Safety Data Sheet. December 15, 2014. Accessed October 2023. [gsc-lead-safety-data-sheet.pdf \(fishersci.com\)](#)
- International Financial Institutions Technical Working Group on Greenhouse Gas Accounting. 2020. Default Energy Intensity Factors for Water Supply Systems. Accessed September 2023. [AHS-004 Default Energy Intensity Factors for Water Supply Systems_v1.pdf \(unfccc.int\)](#)
- Law Insider. 2023. Reactive Organic Gases Definition. Accessed October 2023. [Reactive organic gases Definition | Law Insider](#)
- Legal Information Institute. 2023. Cal. Code Regs. Tit. 17, § 18983.1 - Landfill Disposal and Recovery. Accessed September 2023. <https://www.law.cornell.edu/regulations/california/14-CCR-18983.1>
- Legal Information Institute. 2023. Cal. Code Regs. Tit. 17, § 95100 - Purpose and Scope. Accessed September 2023. <https://www.law.cornell.edu/regulations/california/17-CCR-95100>
- Legislative Counsel's Digest. 2007. SB 97, Dutton. CEQA: greenhouse gas emissions. Accessed September 2023. [Senate Bill No. 97 \(ca.gov\)](#)
- Morgan, Lewis, & Bockius LLP. 2023. California Air Resources Board Finalizes 2022 Scoping Plan. Accessed November 2023. <https://www.morganlewis.com/pubs/2023/01/california-air-resources-board-finalizes-2022-scoping-plan>
- National Cancer Institute. 2023. Vinyl Chloride. Accessed October 2023. [NCI Search Results - NCI \(cancer.gov\)](#)
- National Library of Medicine. 2023. Reactive organic carbon emissions from volatile chemical products. Accessed October 2023. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8193795/>
- Newsweek. 2023. Methane vs. CO2: Which Is the Most Potent Greenhouse Gas as White House Unveils New Pledge. Accessed October 2023. [Methane Vs CO2: Which Is the Most Potent Greenhouse Gas As White House Unveils New Pledge \(newsweek.com\)](#)
- Occupational Safety and Health Administration. 2023. Hydrogen Sulfide. Accessed October 2023. [Hydrogen Sulfide - Overview | Occupational Safety and Health Administration \(osha.gov\)](#)

- OZONE Solutions. October, 2, 2023. Safety Data Sheet for Ozone (Formerly MSDS). Accessed October 2023. [MSDSSafetySheet.pdf \(ozonesolutions.com\)](#)
- Pacific Gas and Electric (PG&E). 2023. Corporate Sustainability Report. Accessed October 2023. [PG&E's 2023 Corporate Sustainability Report: A Year of Progress Building a Safer, Cleaner and More Innovative Energy System for Customers - PGE Currents](#)
- RxList. 2023. Definition of Airway. Accessed October 2023. <https://www.rxlist.com/airway/definition.htm>
- State of California Department of Transportation, Division of Transportation Planning. October 13, 2010. Searchable PDF Version of CO Protocol. <https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/co-protocol-searchable-a11y.pdf>
- Thomson Reuters Westlaw. 2023. Article 2. Mandatory Greenhouse Gas Reporting. Accessed September 2023. [https://govt.westlaw.com/calregs/Browse/Home/California/CaliforniaCodeofRegulations?guid=IFFF348B05A2011EC8227000D3A7C4BC3&originationContext=documenttoc&transitionType=Default&contextData=\(sc.Default\)](https://govt.westlaw.com/calregs/Browse/Home/California/CaliforniaCodeofRegulations?guid=IFFF348B05A2011EC8227000D3A7C4BC3&originationContext=documenttoc&transitionType=Default&contextData=(sc.Default))
- United States Environmental Protection Agency (EPA). 2023. Overview of Greenhouse Gases. Accessed November 2023. <https://www.epa.gov/ghgemissions/overview-greenhouse-gases>
- United States Environmental Protection Agency (EPA). 2023. Climate Change Indicators: Greenhouse Gases. Accessed November 2023. <https://www.epa.gov/climate-indicators/greenhouse-gases>
- United States Environmental Protection Agency (EPA). 2023. Climate Change Indicators: Greenhouse Gases. Accessed September 2023. [GHG Emission Factors Hub | US EPA](#)
- United States Environmental Protection Agency (EPA). 2023. Greenhouse Gas Inventory Guidance Indirect Emissions from Purchased Electricity. Accessed September 2023. [Greenhouse Gas Inventory Guidance: Indirect Emissions from Purchased Electricity \(epa.gov\)](#)
- United States Environmental Protection Agency (EPA). 2023. Greenhouse Gas Equivalency Calculator. Accessed September 2023. [Greenhouse Gas Equivalencies Calculator | US EPA](#)
- United States Environmental Protection Agency (EPA). 2023. Greenhouse Gas Equivalencies Calculator – Calculations and References. Accessed September 2023. [Greenhouse Gases Equivalencies Calculator – Calculations and References | US EPA](#)
- United States Environmental Protection Agency (EPA). 2023. Health and Environmental Effects of Particulate Matter (PM). Accessed October 2023. [Health and Environmental Effects of Particulate Matter \(PM\) | US EPA](#)

- United States Environmental Protection Agency (EPA). 2023. Learn about Lead. Accessed October 2023.[Learn about Lead | US EPA](#)
- United States Environmental Protection Agency (EPA). 2023. Ozone-Depleting Substances. Accessed November 2023. [Ozone-Depleting Substances | US EPA](#)
- United States Environmental Protection Agency (EPA). 2023. Particulate Matter (PM) Basics. Accessed October 2023.[Particulate Matter \(PM\) Basics | US EPA](#)
- United States Environmental Protection Agency (EPA). 2023. Sulfur Dioxide Basics. Accessed October 2023.<https://www.epa.gov/so2-pollution/sulfur-dioxide-basics>
- United States Environmental Protection Agency (EPA). 2023. Understanding Global Warming Potentials. Accessed October 2023. [Understanding Global Warming Potentials | US EPA](#)
- United States Environmental Protection Agency (EPA). August 21, 2023. EPA Initiates New Review of the Ozone National Ambient Air Quality Standards to Reflect the Latest Science. Accessed October 2023.<https://www.epa.gov/newsreleases/epa-initiates-new-review-ozone-national-ambient-air-quality-standards-reflect-latest>
- What's Your Impact. 2023. Main Sources of Nitrous Oxide. Accessed October 2023.<https://whatsyourimpact.org/greenhouse-gases/nitrous-oxide-emissions>
- Wikipedia. 2023. Greenhouse Effect. Accessed September 2023. [Greenhouse effect - Wikipedia](#)
- Wikipedia. 2023. Methane Emissions. Accessed November 2023.https://en.wikipedia.org/wiki/Methane_emissions
- Wikipedia. 2023. Sulfate. Accessed October 2023. [Sulfate - Wikipedia](#)

3.4 BIOLOGICAL RESOURCES

3.4.1 Introduction

This section addresses the potential impacts of the proposed Project on existing natural resources during proposed project construction and operation. A site assessment, including a thorough review of natural resources data sets and field survey, was performed to evaluate the proposed Project and surrounding environs for the possible presence of special-status species and sensitive habitats subject to federal or state jurisdiction. For this assessment, guidelines and key sources of data reviewed include the following:

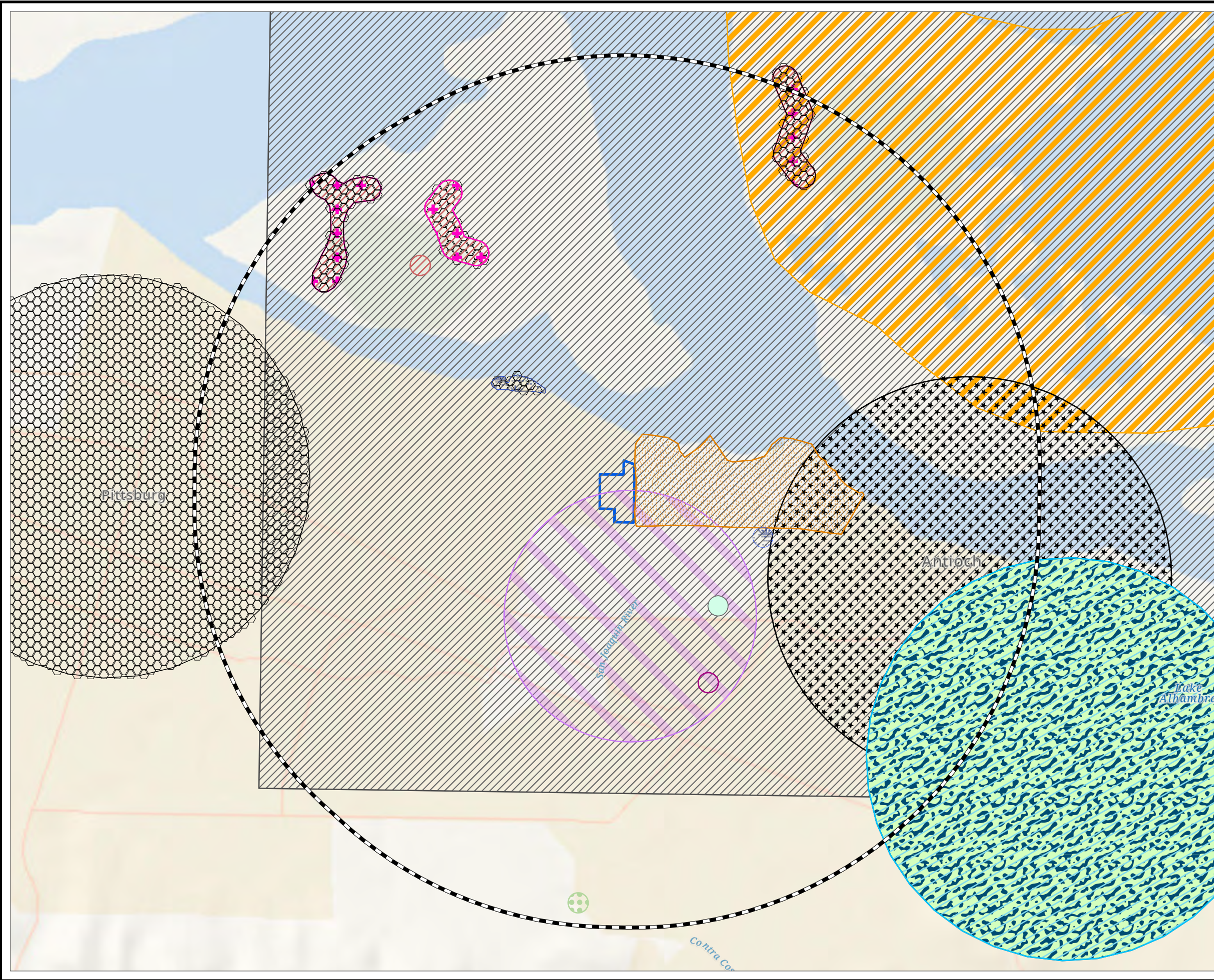
- Biological Technical Memorandum for H Cycle Project dated October 2023 (TRC 2023a; Appendix D.1 of this EIR)
- Wetland and Waterbody Delineation Report dated October 2023 (TRC 2023b; Appendix D.2 of this EIR)
- Federal and state-listed endangered and threatened species
- Federal designated critical habitats
- State designated sensitive natural communities
- Federal and state candidates for listing
- Species proposed for listing
- State species of special concern
- Species protected under other regulations (e.g., the Migratory Bird Treaty Act)
- Species listed as rare or endangered by the California Native Plant Society
- Species that receive special consideration during environmental review under the California Environmental Quality Act (CEQA)

3.4.2 Existing Environmental Setting

The project site is an inactive industrial facility with rail yard constructed on historically placed fill material. The project site is developed with gravel, unpaved, and impervious work areas, rail unloading sidings, industrial process equipment, paved vehicle staging and storage lots, and office structures present. Maintained gravel and dirt access roads are present on the project site. Stormwater collection and infiltration structures are visible throughout the Study Area. An existing stormwater outfall and collection system is also present along the eastern boundary of the project site.

The project site is flat and appears to be built on historically placed fill material above the elevation of the surrounding estuarine wetlands (Google Earth Pro 2022). The biological resources assessment for the proposed Project was conducted within the Study Area, defined as the project site plus a 150-foot buffer (Figures 3.4-1 through 3.4-4). The surrounding landscape is flat with elevations of approximately 10 to 25 feet above mean sea level within and adjacent to the Study Area. Surrounding land uses include developed industrial lands to the south and west of the project site. The New York Slough, Corteva Wetlands Preserve, and Kirker Creek/Dowest Slough are estuarine wetlands immediately adjacent to the north, east, and west of the project site.

Coordinate System: NAD 1983 StatePlane California III FIPS 0403 Feet, Map Rotation: 0
 - Saved By: S.RAY on 1/16/2024, 10:42:48 AM, File Path: V:\H-Cycle\506412_Pittsburg_Hydrogen\Project\5-APPX\Renewable Hydrogen Project EIR.aprx, Layout Name: CNDDDB Map - Terrestrial

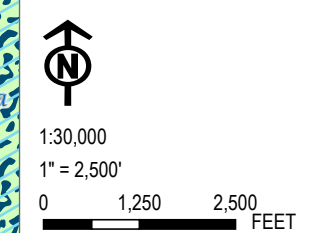


- AMERICAN BUMBLE BEE
- CALIFORNIA BLACK RAIL
- CALIFORNIA RED-LEGGED FROG
- CALIFORNIA TIGER SALAMANDER - CENTRAL CALIFORNIA DPS
- CROTCH BUMBLE BEE
- LANGE'S METALMARK BUTTERFLY
- NORTHERN CALIFORNIA LEGLESS LIZARD
- SUISUN SONG SPARROW
- BURROWING OWL
- SALT-MARSH HARVEST MOUSE
- SALTMARSH COMMON YELLOWTHROAT
- SONG SPARROW ("MODESTO" POPULATION)
- WESTERN POND TURTLE
- WESTERN RED BAT
- WHITE-TAILED KITE
- 2-MILE SEARCH RADIUS
- PROJECT SITE BOUNDARY

NOTES:
 EXPLANATION OF STATE AND FEDERAL LISTING CODES:
 FEDERAL LISTING CODES:
 -FE: FEDERALLY ENDANGERED SPECIES
 -FT: FEDERALLY THREATENED SPECIES
 CALIFORNIA LISTING CODES:
 -CE: STATE-LISTED AS ENDANGERED CALIFORNIA RARE PLANT RANK:
 -1B.1: RARE, THREATENED OR ENDANGERED IN CALIFORNIA AND ELSEWHERE; SERIOUSLY THREATENED IN CALIFORNIA
 -1B.2: RARE, THREATENED OR ENDANGERED IN CALIFORNIA AND ELSEWHERE; FAIRLY THREATENED IN CALIFORNIA
 -2.1: RARE, THREATENED OR ENDANGERED IN CALIFORNIA, BUT MORE COMMON ELSEWHERE; SERIOUSLY THREATENED IN CALIFORNIA
 -4.2: UNCOMMON IN CALIFORNIA; FAIRLY THREATENED IN CALIFORNIA

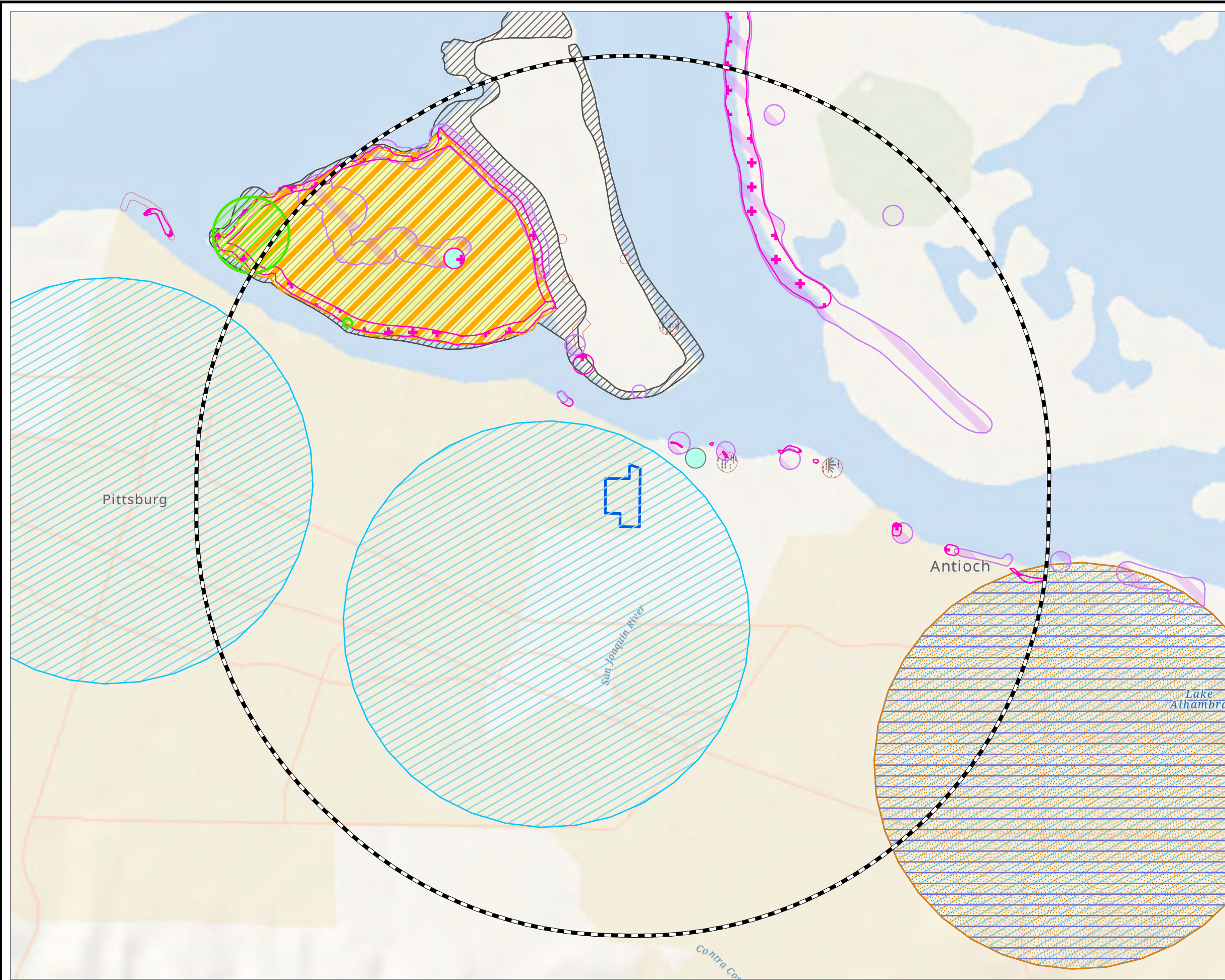
TERRESTRIALS INCLUDE THE FOLLOWING TAXONOMY CLASSES:
 AMPHIBIANS, BIRDS, MAMMALS, REPTILES, AND INSECTS

DATA SOURCES: TRC, CALIFORNIA NATURAL DIVERSITY DATABASE (CNDDDB)



PROJECT: H CYCLE PITTSBURG RENEWABLE HYDROGEN PROJECT CONTRA COSTA COUNTY, CALIFORNIA	
TITLE: SENSITIVE SPECIES WITHIN A 2-MILE RADIUS OF THE PROJECT AREA	
DRAWN BY: S. RAY	PROJ. NO.: 506412.0000.0000
CHECKED BY: R. SPRING	FIGURE 3.4-1
APPROVED BY: P. DEMICHELE	
DATE: JANUARY 2024	
1850 GATEWAY BLVD, SUITE 1075 CONCORD, CA 94520 PHONE: 925.688.1200	
FILE:	Renewable Hydrogen Project EIR.aprx

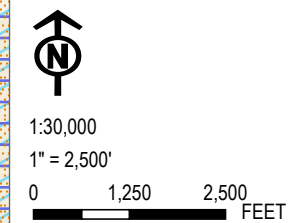
Coordinate System: NAD 1983 StatePlane California III FIPS 0403 Feet, Map Rotation: 0
 - Saved By: SRAY on 7/16/2024, 10:42:48 AM, File Path: V:\H-Cycle\506412_Pittsburg_Hydrogen\Project\5-APPX\Renewable Hydrogen Project EIR.aprx, Layout Name: CNDDDB Map - Landcover, Vegetation and Wildlife Habitats



- ANTIOCH DUNES EVENING-PRIMROSE
- BOLANDER'S WATER-HEMLOCK
- COASTAL BRACKISH MARSH
- CONTRA COSTA GOLDFIELDS
- CONTRA COSTA WALLFLOWER
- DELTA MUDWORT
- DELTA TULE PEA
- MASON'S LILAEOPSIS
- MT. DIABLO BUCKWHEAT
- SUISUN MARSH ASTER
- BIG TARPLANT
- 2-MILE SEARCH RADIUS
- PROJECT SITE BOUNDARY

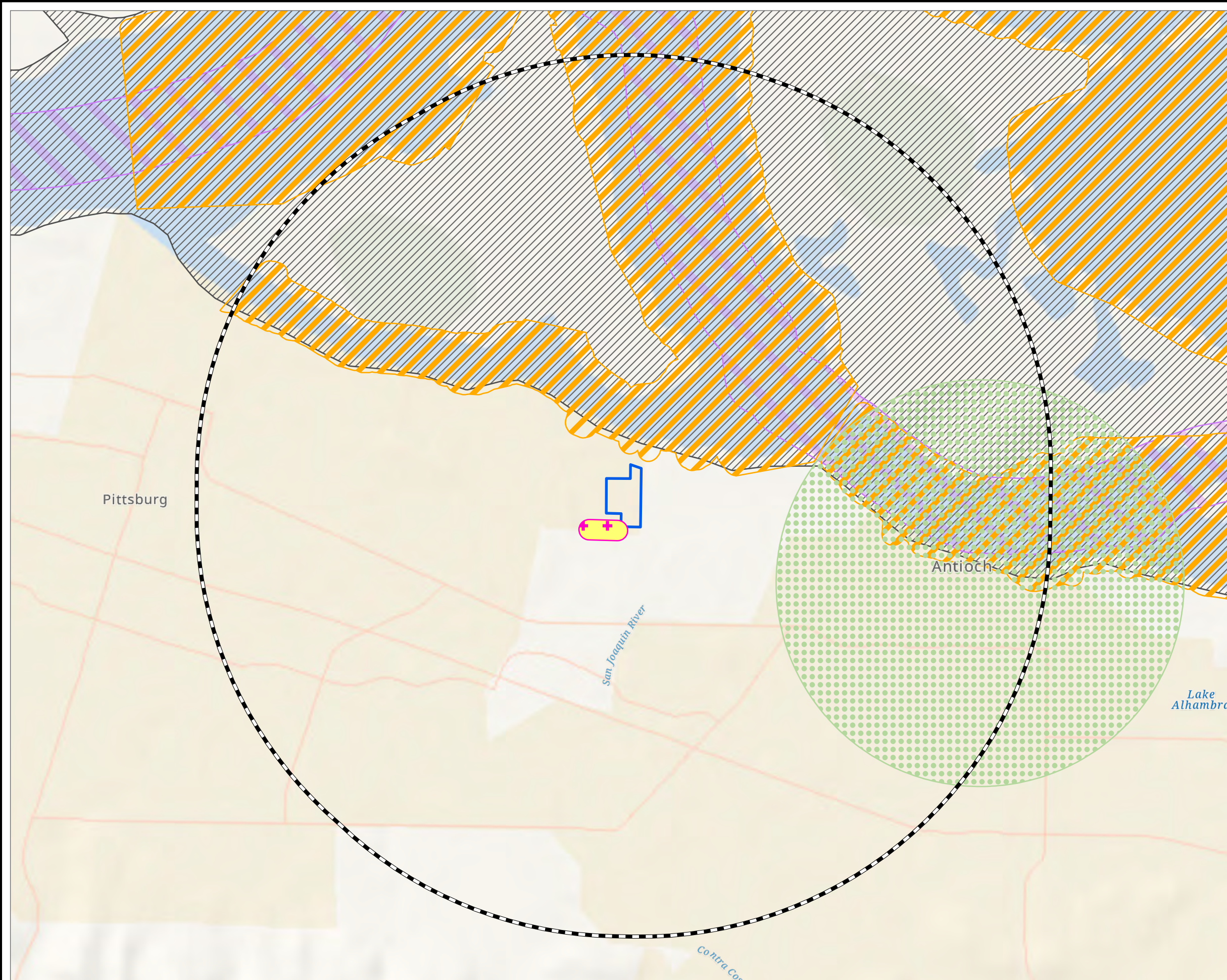
NOTES:
 EXPLANATION OF STATE AND FEDERAL LISTING CODES:
 FEDERAL LISTING CODES:
 -FE: FEDERALLY ENDANGERED SPECIES
 -FT: FEDERALLY THREATENED SPECIES
 CALIFORNIA LISTING CODES:
 -CE: STATE-LISTED AS ENDANGERED CALIFORNIA RARE PLANT RANK:
 -1B.1: RARE, THREATENED OR ENDANGERED IN CALIFORNIA AND ELSEWHERE; SERIOUSLY THREATENED IN CALIFORNIA
 -1B.2: RARE, THREATENED OR ENDANGERED IN CALIFORNIA AND ELSEWHERE; FAIRLY THREATENED IN CALIFORNIA
 -2.1: RARE, THREATENED OR ENDANGERED IN CALIFORNIA, BUT MORE COMMON ELSEWHERE; SERIOUSLY THREATENED IN CALIFORNIA
 -4.2: UNCOMMON IN CALIFORNIA; FAIRLY THREATENED IN CALIFORNIA

LANDCOVER, VEGETATION, AND WILDLIFE HABITATS INCLUDE THE FOLLOWING TAXONOMY CLASSES: DICOTS, AND MARSH
 DATA SOURCES: TRC, CALIFORNIA NATURAL DIVERSITY DATABASE (CNDDDB)



PROJECT:		H CYCLE PITTSBURG RENEWABLE HYDROGEN PROJECT CONTRA COSTA COUNTY, CALIFORNIA	
TITLE:		LAND COVER, VEGETATION, AND WILDLIFE HABITATS IN THE STUDY AREA	
DRAWN BY:	S. RAY	PROJ. NO.:	506412.0000.0000
CHECKED BY:	R. SPRING	FIGURE 3.4-2	
APPROVED BY:	P. DEMICHELE		
DATE:	JANUARY 2024		
		1850 GATEWAY BLVD, SUITE 1075 CONCORD, CA 94520 PHONE: 925.688.1200	
FILE:		Renewable Hydrogen Project EIR.aprx	

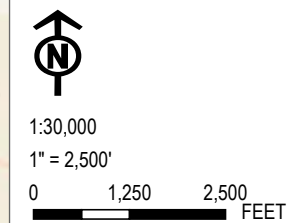
Coordinate System: NAD 1983 StatePlane California III FIPS 0403 Feet, Map Rotation: 0
 - Saved By: S.RAY on 7/16/2024, 10:42:48 AM, File Path: V:\H-Cycle\506412_Pittsburg_Hydrogen\Project\5-APPX\Renewable Hydrogen Project EIR.aprx, Layout Name: CNDDDB Map - Aquatic



- CALIFORNIA LINDERIELLA
- GREEN STURGEON - SOUTHERN DPS
- LONGFIN SMELT
- STEELHEAD - CENTRAL VALLEY DPS
- VERNAL POOL FAIRY SHRIMP
- WESTERN RIDGED MUSSEL
- 2-MILE SEARCH RADIUS
- PROJECT SITE BOUNDARY

NOTES:
 EXPLANATION OF STATE AND FEDERAL LISTING CODES:
 FEDERAL LISTING CODES:
 -FE: FEDERALLY ENDANGERED SPECIES
 -FT: FEDERALLY THREATENED SPECIES
 CALIFORNIA LISTING CODES:
 -CE: STATE-LISTED AS ENDANGERED CALIFORNIA RARE PLANT RANK:
 -1B.1: RARE, THREATENED OR ENDANGERED IN CALIFORNIA AND ELSEWHERE; SERIOUSLY THREATENED IN CALIFORNIA
 -1B.2: RARE, THREATENED OR ENDANGERED IN CALIFORNIA AND ELSEWHERE; FAIRLY THREATENED IN CALIFORNIA
 -2.1: RARE, THREATENED OR ENDANGERED IN CALIFORNIA, BUT MORE COMMON ELSEWHERE; SERIOUSLY THREATENED IN CALIFORNIA
 -4.2: UNCOMMON IN CALIFORNIA; FAIRLY THREATENED IN CALIFORNIA






AQUATICS INCLUDE THE FOLLOWING TAXONOMY CLASSES: FISH, MOLLUSKS, AND CRUSTACEANS
 DATA SOURCES: TRC, CALIFORNIA NATURAL DIVERSITY DATABASE (CNDDDB)



PROJECT:		H CYCLE PITTSBURG RENEWABLE HYDROGEN PROJECT CONTRA COSTA COUNTY, CALIFORNIA	
TITLE:		AQUATIC SPECIES IN THE STUDY AREA	
DRAWN BY:	S. RAY	PROJ. NO.:	506412.0000.0000
CHECKED BY:	R. SPRING	FIGURE 3.4-3	
APPROVED BY:	P. DEMICHELE		
DATE:	JANUARY 2024		
		1850 GATEWAY BLVD, SUITE 1075 CONCORD, CA 94520 PHONE: 925.688.1200	
FILE:		Renewable Hydrogen Project EIR.aprx	

Coordinate System: NAD 1983 StatePlane California III FIPS 0403 Feet, Map Rotation: 0
-- Saved By: SRAY on 1/16/2024, 10:42:48 AM, File Path: V:\H-Cycle\506412_Pittsburg_Hydrogen\Project\5-APPX\Renewable Hydrogen Project EIR.aprx, Layout Name: NWI Map




-  150-FOOT SEARCH RADIUS
-  PROJECT SITE BOUNDARY
- WETLAND TYPE**
-  ESTUARINE AND MARINE WETLAND
-  FRESHWATER POND
-  RIVERINE

DATA SOURCES: TRC, NATIONAL WETLANDS INVENTORY (NWI).



1:2,400
1" = 200'
0 100 200 FEET

PROJECT: H CYCLE PITTSBURG RENEWABLE HYDROGEN PROJECT CONTRA COSTA COUNTY, CALIFORNIA	
TITLE: NWI WETLANDS MAP	
DRAWN BY: S. RAY	PROJ. NO.: 506412.0000.0000
CHECKED BY: R. SPRING	FIGURE 3.4-4
APPROVED BY: T. HIGGINS	
DATE: JANUARY 2024	
	1850 GATEWAY BLVD, SUITE 1075 CONCORD, CA 94520 PHONE: 925.688.1200
FILE:	Renewable Hydrogen Project EIR.aprx

The project site is within the Level III region of Central California Foothills and Coastal Mountains and Level IV Ecoregion of Suisun Terraces and Low Hills (USGS 2016). The Central California Foothills and Coastal Mountains ecoregion is characterized as having a Mediterranean climate of hot dry summers and cool moist winters. The vegetation associated with this ecoregion is primarily chaparral and oak woodlands. Suisun Terraces and Low Hills ecoregion occurs on mostly Quaternary alluvium, surrounding Suisun Bay, upland from the lower part of the Delta (EPA 2016).

3.4.2.1 Regional Setting

The San Francisco Bay Estuary is a critically important biological resource, providing winter feeding habitat for over a million migratory birds, a nursery for juvenile fish and shellfish, migratory corridors for anadromous fish and year-round habitat for diverse plants and animal species.

The estuary is typically divided into five segments: Sacramento-San Joaquin River Delta (Delta), Suisun Bay, San Pablo Bay, Central Bay and South Bay. The Delta is the easternmost, or most upstream, segment. The Delta is a 1,150-square-mile triangle-shaped region roughly bounded on the north by the city of Sacramento, on the south by the city of Tracy and on the west by Chipps Island. The Sacramento and San Joaquin Rivers and their tributaries flowing into the Delta drain about half the surface area of California and establish the extent of brackish water habitat in Suisun Bay.

Suisun Bay is a shallow estuarine bay bounded by Chipps Island on the east and the Benicia-Martinez Bridge on the west. Suisun Marsh, the largest brackish water marsh in the United States and the largest wetland in California, forms its northern boundary. Suisun Bay is connected to San Pablo Bay via the Carquinez Strait, a narrow, 12-mile-long band of water that extends from the Benicia-Martinez Bridge to Mare Island.

3.4.2.2 Biological Communities

Vegetation within the Study Area is primarily ruderal weeds and invasive species that include alkali mallow (*Malvella leprosa*), bristly oxtongue* (*Helminthotheca echioides*), Canada horseweed (*Erigeron canadensis*), fivehorn smotherweed* (*Bassia hyssopifolia*) sea fig* (*Carpobrotus chilensis*), stinkwort* (*Dittrichia graveolens*), telegraph weed (*Heterotheca grandiflora*), Mexican fan palm* (*Washingtonia robusta*) and Coyote brush (*Baccharis pilularis*). (Non-native plants are marked with an asterisk.)

A combination of native and non-native vegetation is located along and just outside of the Study Area's northern border. Native shrubs and trees include coast live oak (*Quercus agrifolia*) and coyote brush. Non-native shrubs and herbs include Himalayan blackberry* (*Rubus armeniacus*), short-podded mustard* (*Hirschfeldia incana*), and perennial pepperweed* (*Lepidium latifolium*). (* denotes invasive species)

Off-site estuarine wetlands are present within the Study Area to the north, east, and west of the project site. Because they were mostly behind fenced areas, these wetlands were observed mostly with binoculars. Off-site wetlands were comprised primarily of cattails (*Typha* sp.), common reed (*Phragmites* sp.), and bulrushes (*Schoenoplectus* sp.). At the edges of the wetlands, black willow

(*Salix goodingii*), perennial pepperweed*, salt grass (*Distichlis spicata*), and alkali mallow (*Malvella leprosa*) were observed, among other native and non-native species. (*denotes invasive species)

3.4.2.3 Special Status Species

Special-status species include the following categories of plant and animals:

- Plants or animals that are listed, candidates or proposed for listing as threatened or endangered under ESA or the California Endangered Species Act (CESA).
- Plants listed as rare under the California Native Plant Protection Act.
- Plants that meet the CEQA definition of rare or endangered, including those considered by the CNPS to be “rare, threatened, or endangered in California” (CNPS Lists 1B and 2).
- Riparian vegetation protected under the California Fish and Game Code.
- Animals fully protected under the California Fish and Game Code.
- Animal species of special concern to the California Department of Fish and Wildlife (CDFW).
- Bat species considered “red or high” and “yellow or medium” priority species by the Western Bat Working Group.

A list of special-status species with potential to occur in the Study Area was compiled from California Natural Diversity Database (CNDDDB; CDFW 2023), United States Fish & Wildlife Service (USFWS) Information for Planning and Consultation (USFWS 2023), and California Native Plant Society (CNPS 2023). The potential for each species to occur was assessed based on the species’ known distribution and habitat requirements. Species that were determined not to have potential to occur in the Study Area are not discussed further. Table 3.4-1 provides an overview of these species.

A pedestrian field survey for site reconnaissance was performed to verify the conditions of the Study Area and surrounding environment. It was an assessment to identify and characterize Study Area habitats and to document species and/or species indicators observed to be present at the time of field survey. The field survey was used to determine the Study Area’s potential to support special-status species and sensitive habitats.

Table 3.4-1: Federal and State Sensitive Species Identified as Potentially Occurring in The Study Area

Species Name	Status	Habitat Requirements	Potential for Occurrence
Plants			
Abram” lupine, <i>Lupinus albifrons</i> var. <i>abramsii</i>	CNPS/3.2	Broad-leafed upland forest, Chaparral, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland	None: No suitable habitat for this species exists in the project study area.
Alkali milk-vetch, <i>Astragalus tener</i> var. <i>tener</i>	CNPS/1B.2	Playas, Valley and foothill grassland, Vernal pools	None: No suitable habitat for this species exists in the project study area.

Table 3.4-1: Federal and State Sensitive Species Identified as Potentially Occurring in The Study Area

Species Name	Status	Habitat Requirements	Potential for Occurrence
Antioch Dunes buckwheat, <i>Eriogonum nudum</i> var. <i>psychicola</i>	CNPS/1B.1	Inland dunes	None: No suitable habitat for this species exists in the project study area.
Antioch Dunes evening-primrose, <i>Oenothera deltooides</i> ssp. <i>howellii</i>	CNPS/1B.1, FE, CE	Inland dunes	None: No suitable habitat for this species exists in the project study area.
Bearded popcornflower, <i>Plagiobothrys hystriculus</i>	CNPS/1B.1	Valley and foothill grassland, Vernal pools	None: No suitable habitat for this species exists in the project study area.
Big tarplant, <i>Blepharizonia plumosa</i>	CNPS/1B.1, CNDDDB	Valley and foothill grassland	None: No suitable habitat for this species exists in the project study area.
Bolander's water-hemlock, <i>Cicuta 3.4-8ole 3.4-8ate</i> var. <i>bolanderi</i>	CNPS/2B.1, CNDDDB	Marshes and swamps	Low: No suitable habitat for this species exists on the project site; however, suitable habitat does exist on adjacent land. If industrial stormwater controls and best management practices (BMPs) are put in place, this species would not be affected by the proposed Project.
Colusa grass, <i>Neostaplia colusana</i>	FT	Vernal pools	None: No suitable habitat for this species exists in the project study area.
Contra Costa goldfields, <i>Lasthenia conjugens</i>	CNPS/1B.1, FE	Cismontane woodland, Playas, Valley and foothill grassland, Vernal pools	None: No suitable habitat for this species exists in the project study area.
Contra Costa wallflower, <i>Erysimum capitatum</i> var. <i>angustatum</i>	CNPS/1B.1, FE, CE	Inland dunes	None: No suitable habitat for this species exists in the project study area.
Crownscale, <i>Atriplex 3.4-8ole 3.4-8ate</i> var. <i>coronata</i>	CNPS/4.2	Inhabits chenopod scrub, valley and foothill grassland, and vernal pools.	None: No suitable habitat for this species exists in the project study area.
Delta mudwort, <i>Limosella australis</i>	CNPS/2B.1, CNDDDB	Inhabits marshes, swamps, and riparian scrub.	Low: Wetlands mapped in the Study Area provide potential habitat. If industrial stormwater controls and BMPs are put in place, this species would not be affected by the proposed Project.

Table 3.4-1: Federal and State Sensitive Species Identified as Potentially Occurring in The Study Area

Species Name	Status	Habitat Requirements	Potential for Occurrence
Delta tule pea, <i>Lathyrus jepsonii</i> var. <i>jepsonii</i>	CNPS/1B.2, CNDDDB	Grows in marshes and swamps.	Low: Wetlands mapped in the Study Area provide potential habitat. If industrial stormwater controls and BMPs are put in place, this species would not be affected by the proposed Project.
Diamond-petaled California poppy, <i>Eschscholzia rhombipetala</i>	CNPS/1B.1	Found in valley and foothill grassland.	None: No suitable habitat for this species exists in the project study area.
Dwarf downingia, <i>Downingia pusilla</i>	CNPS/2B.2	Found in valley and foothill grassland and vernal pools.	None: No suitable habitat for this species exists in the project study area.
Fragrant fritillary, <i>Fritillaria liliacea</i>	CNPS/1B.2	Grows in cismontane woodland, Coastal prairie, Coastal scrub, and Valley and foothill grassland.	None: No suitable habitat for this species exists in the project study area.
Hogwallow starfish, <i>Hespererax caulescens</i>	CNPS/4.2	Inhabits valley and foothill grassland, and vernal pools.	None: No suitable habitat for this species exists in the project study area.
Hoover's cryptantha, <i>Cryptantha hooveri</i>	CNPS/1A	Inhabits inland dunes and Valley and foothill grassland.	None: No suitable habitat for this species exists in the project study area.
Keck's checkerbloom, <i>Sidalcea keckii</i>	CNPS/1B.1, FE	Grows in cismontane woodland and Valley and foothill grassland	None: No suitable habitat for this species exists in the project study area.
Mason's lilaeopsis, <i>Lilaeopsis masonii</i>	CNPS/1B.1, CR	Found in marshes, swamps, and riparian scrub.	Low: Wetlands mapped in the Study Area provide potential habitat. If industrial stormwater controls and BMPs are put in place, this species would not be affected by the proposed Project.
Mt. Diablo buckwheat, <i>Eriogonum truncatum</i>	CNPS/1B.1	Grows in chaparral, Coastal scrub, and Valley and foothill grassland.	None: No suitable habitat for this species exists in the project study area.
San Joaquin spearscale, <i>Extriplex joaquinana</i>	CNPS/1B.2	Inhabits chenopod scrub, Meadows and seeps, Playas, and Valley and foothill grassland.	None: No suitable habitat for this species exists in the project study area.

Table 3.4-1: Federal and State Sensitive Species Identified as Potentially Occurring in The Study Area

Species Name	Status	Habitat Requirements	Potential for Occurrence
Small spikerush, <i>Eleocharis parvula</i>	CNPS/4.3	Found in marshes and swamps.	Low: Wetlands mapped in the Study Area provide potential habitat. If industrial stormwater controls and BMPs are put in place, this species would not be affected by the proposed Project.
Small-flowered morning-glory, <i>Convolvulus simulans</i>	CNPS/4.2	Grows in chaparral, Coastal scrub, and Valley and foothill grassland.	None: No suitable habitat for this species exists in the project study area.
Soft salty bird's-beak, <i>Chloropyron 3.4-10ole ssp. Molle</i>	CNPS/1B.2, FE, CR	Found in marshes and swamps.	Low: Wetlands mapped in the Study Area provide potential habitat. If industrial stormwater controls and BMPs are put in place, this species would not be affected by the proposed Project.
Stinkbells, <i>Fritillaria agrestis</i>	CNPS/4.2	Grows in chaparral, Cismontane woodland, Pinyon and juniper woodland, and Valley and foothill grassland.	None: No suitable habitat for this species exists in the project study area.
Suisun Marsh aster, <i>Symphotrichum lentum</i>	CNPS/1B.2, CNDDB	Found in marshes and swamps.	Low: Wetlands mapped in the Study Area provide potential habitat. If industrial stormwater controls and BMPs are put in place, this species would not be affected by the proposed Project.
Sweet marsh ragwort, <i>Senecio hydrophiloides</i>	CNPS/4.2	Found in lower montane coniferous forest, and Meadows and seeps.	None: No suitable habitat for this species exists in the project study area.
Invertebrates			
California linderiella, <i>Linderiella occidentalis</i>	CNDDB	Occurs in vernal pool habitats in the Central Valley of California.	None: No suitable habitat for this species exists in the project study area.
Delta green ground beetle, <i>Elaphrus viridis</i>	FT	Occurs in vernal pool habitats	None: No suitable habitat for this species exists in the project study area.

Table 3.4-1: Federal and State Sensitive Species Identified as Potentially Occurring in The Study Area

Species Name	Status	Habitat Requirements	Potential for Occurrence
Lange's metalmark butterfly, <i>Apodemia mormo langei</i>	FE	Inhabits stabilized dunes along the San Joaquin River.	None: No suitable habitat for this species exists in the project study area.
Vernal pool fairy shrimp, <i>Branchinecta lynchi</i>	FT	Endemic to the grasslands of the central valley, central coast mountains, and south coast mountains, in astatic rain-filled pools.	None: No suitable habitat for this species exists in the project study area.
Vernal pool tadpole shrimp, <i>Lepidurus packardii</i>	FE	Inhabits vernal pools and swales in the Sacramento valley containing clear to highly turbid water.	None: No suitable habitat for this species exists in the project study area.
Fish			
Delta smelt, <i>Hypomesus transpacificus</i>	CE, FT	Tidally influenced areas of the Sacramento-San Joaquin Delta.	Moderate: Wetlands mapped in the project study area provide potential habitat. If industrial stormwater controls and BMPs are put in place, this species would not be affected by the proposed Project.
Longfin smelt, <i>Spirinchus thaleichthys</i>	CT	Found in the open water of freshwater and saltwater estuaries.	Moderate: Wetlands mapped in the project study area provide potential habitat. If industrial stormwater controls and BMPs are put in place, this species would not be affected by the proposed Project.
Amphibians			
California red-legged frog, <i>Rana draytonii</i>	CDFG, FT	Associated with quiet perennial to intermittent freshwater ponds, stream pools and wetlands. Prefers shorelines with extensive vegetation; may disperse through upland habitats after rains.	None: No suitable habitat for this species exists in the project study area.

Table 3.4-1: Federal and State Sensitive Species Identified as Potentially Occurring in The Study Area

Species Name	Status	Habitat Requirements	Potential for Occurrence
California tiger salamander, <i>Ambystoma californiense</i>	FT	Lowland species restricted to annual grasslands and foothill oak savanna and woodland regions where its breeding habitat occurs. Breeding habitat consists of temporary ponds or pools, some permanent waters, and rarely slower portions of streams.	None: No suitable habitat for this species exists in the project study area.
Reptiles			
Giant garter snake, <i>Thamnophis gigas</i>	CT, FT	Prefers freshwater wetland and low gradient streams. This species has adapted to drainage canals and irrigation ditches.	Low: Wetlands mapped in the project study area provide potential habitat. Species has occurred along the San Joaquin River within 3 miles east of the project site. If industrial stormwater controls and BMPs are put in place, this species would not be affected by the proposed Project.
Northern California legless lizard, <i>Anniella pulchra</i>	CNDDDB	Inhabits sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks.	Low: According to CNDDDB, this species occurred in the project study area historically (1940's) and is presumed extant. However, very little suitable habitat for this species exists on the proposed development area.
Western pond turtle, <i>Emys marmorata</i>	CNDDDB	Prefers rivers, creeks, small lakes and ponds, marshes, irrigation ditches, and reservoirs.	Moderate: Wetlands mapped in the Study Area provide potential habitat. According to the CNDDDB, the species has been observed within about 0.5 mile downstream and upstream of the project site. If present, pond turtles may use uncompacted soils and organic litter adjacent to the project site for nesting or estivation, including the site's uncompacted fill soils observed around the edge of the project site.

Table 3.4-1: Federal and State Sensitive Species Identified as Potentially Occurring in The Study Area

Species Name	Status	Habitat Requirements	Potential for Occurrence
Mammals			
Salt marsh harvest mouse, <i>Reithrodontomys raviventris</i>	FE, CE	Prefers salt and brackish marshes.	Unlikely: Wetlands mapped in the project study area may provide potential habitat, however this species prefers pickleweed marshes, which are not present. If industrial stormwater controls and BMPs are put in place, this species would not be affected by the proposed Project.
San Joaquin kit fox, <i>Vulpes macrotis mutica</i>	FE	Prefers open habitat such as grasslands, scrublands, and meadows.	Unlikely: Nearest CNDDDB record is almost 3 miles to the south. Species can use small remnants of habitat within urban development; however, extensive burrow systems of the right size (> 7 inches) were not observed in the project study area.
Birds			
Burrowing owl, <i>Athene cunicularia</i>	CNDDDB	Breeds in grasslands, rangelands, agricultural areas, deserts, vacant lots in urban areas, or any other open, dry area with low vegetation.	Low: Most soils are compacted or paved within the project site; however, some pre-existing burrows exist in portions of the project study area adjacent to the project site. Ground squirrels were not observed during the field survey. The nearest CNDDDB record is within 1 mile, but species may be extirpated. More recent occurrences within about 2 miles have been recorded in eBird (eBird 2023).
California Ridgway's rail, <i>Rallus obsoletus obsoletus</i> [<i>R. longirostris obsoletus</i>]	FE	Breeds in clumps of vegetation or in shrubs in tidal salt and brackish marshes.	Low: Wetlands mapped in the project study area provide potential habitat. If industrial stormwater controls and BMPs put in place, this species would not be affected by the proposed Project. Nearest CNDDDB record is 8 miles west.

Table 3.4-1: Federal and State Sensitive Species Identified as Potentially Occurring in The Study Area

Species Name	Status	Habitat Requirements	Potential for Occurrence
California least tern, <i>Sterna antillarum brownii</i>	FE	Nests on the ground in beaches, mudflats, and sand dunes, usually near shallow estuaries and lagoons with access to the near open ocean.	None: No suitable nesting habitat for this species exists in the project study area.
Suisun song sparrow, <i>Melospiza melodia maxillaris</i>	CNDDDB	Nests in tidal salt and brackish marshes.	Moderate: Wetlands mapped in the Study Area provide potential habitat. Nearest CNDDDB record is within 0.5 mile. If industrial stormwater controls and BMPs are put in place, this species would not be affected by the proposed Project.
White-tailed kite, <i>Elanus leucurus</i>	CFP	Nests in open-country trees growing in isolation, or at the edge of or within a forest.	Low: There are a few potential nest trees along the edges of the project study area. No nests were observed in any of the trees.

3.4.2.3.1 Special-Status Plants

Of the 28 plant species identified as having the potential to occur during the desktop review, the following seven species were determined as having potential to be present at or near the project study area following the field survey:

- Bolander's water-hemlock (*Cicuta maculate* var. *bolanderi*)
- Delta mudwort (*Limosella australis*)
- Delta tule pea (*Lathyrus jepsonii* var. *jepsonii*)
- Masons' lilaeopsis (*Lilaeopsis masonii*)
- Soft salty bird's-beak (*Cordylanthus molle* ssp. *molle*)
- Small spikerush (*Elocharis parvula*)
- Suisun Marsh aster (*Symphytrichum lentum*)

3.4.2.3.2 Special-Status Wildlife

Of the 19 wildlife species identified as having the potential to occur during the desktop review, the following 11 species were determined as having potential to be present at or near the Study Area following the field survey:

- Delta smelt (*Hypomesus transpacificus*).
- Longfin smelt (*Spirinchus thaleichthys*).
- Northern California legless lizard (*Anniella pulchra*)

- Western pond turtle (*Emys marmorata*).
- Giant garter snake (*Thamnophis gigas*)
- California Ridgway's rail (*Rallus obsoletus obsoletus*).
- Burrowing Owl (*Athene cunicularia*)
- Suisun song sparrow (*Melospiza melodia maxillaris*).
- White-tailed kite (*Elanus leucurus*).
- Salt marsh harvest mouse (*Reithrodontomys raviventris*).
- San Joaquin kit fox (*Vulpes macrotis mutica*)

The project site is located within the USFWS Designated Critical Habitat for delta smelt (Federally Threatened, State Endangered), an anadromous fish endemic to the upper reaches of the San Francisco Bay Bay-Delta Estuary. There is suitable estuarine wetland and slough habitat for delta smelt and longfin smelt (State Threatened) adjacent to the Study Area. The species are known to inhabit tidally influenced sloughs and edge waters. In addition to the special-status species mentioned above, numerous migratory and native bird species and bat species have potential to use portions of the project site.

3.4.2.3.3 Nonindigenous Aquatic Species

San Francisco Bay Estuary has been described as one of the most invaded ecosystems in North America. Nonindigenous aquatic species dominate many parts of the San Francisco Bay, to the extent that in some locations only introduced species can be found. The shipping industry has been identified as one of the major vectors of nonindigenous aquatic species, and vessel biofouling and ballast water are considered the largest contributors of nonindigenous species to the San Francisco Bay (CSLC 2021). A total of 18 percent of established nonindigenous aquatic species are tied to vessel biofouling as the primary likely vector and 9 percent for ballast water; however, when considering established species with multiple possible vectors, 60 percent may have been introduced via vessel biofouling as one of several possible vectors, and 53 percent may have been introduced via ballast water as one of several possible vectors (OSPR 2011).

Invasive species may compete directly with native species for food or space, or prey upon native species. They can also change the food chain or physical environment to the detriment of native species. Approximately 42 percent of the species on the federal threatened or endangered species list are at risk primarily because of predation, parasitism and competition from nonindigenous invasive species (OSPR 2011).

3.4.2.4 Aquatic Resources

A wetland and waterbody investigation was performed within the project site and Study Area (TRC 2023b). The objective of the wetland and waterbody investigation was to identify and delineate the spatial extent and location of wetlands, streams, and other aquatic resources within the project site. Aquatic resources that are considered Waters of the United States are subject to regulation under Section 404 of the Clean Water Act (CWA). The jurisdictional regulatory authority of these resources is the United States Army Corps of Engineers (USACE) San Francisco District (San Francisco Regulatory Office) and the San Francisco Bay (2) Regional Water Quality Control Board. In addition to the federal authority, project actions that have the potential to alter or impact wetlands,

waters, and/or riparian zones in the state of California must also comply with California Fish and Game Code Rule 1602.

Based on field observations, no wetlands or waterbodies were identified within the project site. Off-site estuarine wetlands are present within the Study Area (within 150 feet of the project site boundary) to the north, east, and west of the project site. As such, the proposed Project is not anticipated to be subject to United States Clean Water Act Section 404 regulation. Referrals for the proposed Project have been sent to the San Francisco Bay Regional Water Quality Control Board and CDFW to determine state jurisdiction and permitting requirements for the adjacent off-site wetlands and waterbodies.

3.4.3 Regulatory Context

3.4.3.1 Federal

3.4.3.1.1 Federal Endangered Species Act

The Federal Endangered Species Act (ESA) (16 United States Code [USC] Sections 1531-1544) provisions protect federally listed threatened or endangered species and their habitats from unlawful take. *Take* is defined under the ESA as to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any of the specifically enumerated conduct.” The United States Fish and Wildlife Service (USFWS) regulations define *harm* as “an act which actually kills or injures wildlife.” Activities that may result in take of individuals are regulated by the USFWS or National Marine Fisheries Service (NMFS). It should be noted that plants listed as federally threatened or endangered are not protected from take on private property; however, they are protected from take (e.g., collecting or vandalizing) on federally managed lands.

3.4.3.1.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 USC Sections 703-712) prohibits killing, possessing, or trading in migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, bird nests, and eggs. Nest destruction that results in the unpermitted take of migratory birds or their eggs is illegal under the MBTA. Disturbances that result in the incidental loss of fertile eggs or nestlings due to nest abandonment are considered a violation of the MBTA. The MBTA does not contain any prohibition that applies to the destruction of a bird nest alone (without birds or eggs), provided that no possession occurs during the destruction.

3.4.3.1.3 Bald and Golden Eagle Protection Act

In the United States, eagles are protected under the Bald and Golden Eagle Act (BGEPA), initially enacted in 1940 to protect the bald eagle and later expanded in 1962 to protect the golden eagle as well (16 United States Code [USC] § 668-668d). The Act imposes criminal penalties for all individuals, associations, and corporations who “take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or in any manner any bald eagle commonly known as the American eagle or any golden eagle, alive or dead, or any part, nest, or egg thereof” without a permit (16 USC § 668a). If planned project development is in close proximity to

an eagle foraging site, roosting site, or nest, the USFWS may require an eagle incidental take permit regardless of its activity status. If it is determined that a possibility of non-intentional take could result from project activities, the USFWS may issue a programmatic take permit pending the analysis of preliminary site investigations, which would be subject to conditions or mitigation measures to avoid or minimize project impacts. Ongoing monitoring at project sites is typically required with issuance of the take permit and results will be presented to the USFWS in post-construction monitoring and annual reports (50 Code of Federal Regulations [CFR] 22.26).

3.4.3.1.4 Clean Water Act

Areas meeting the regulatory definition of waters of the United States (jurisdictional waters) are subject to the jurisdiction of the USACE. The USACE, under provisions of Section 404 of the Clean Water Act of 1972 (CWA) (33 USC Sections 1251-1376) and Section 10 of the Rivers and Harbors Act of 1899, has jurisdiction over waters of the United States. The Navigable Waters Protection Rule of 2020 provides four categories of federally protected waters: 1) the territorial seas and traditional navigable waters; 2) perennial and intermittent tributaries to those waters; 3) certain lakes, ponds and impoundments; and 4) wetlands adjacent to jurisdictional waters.

3.4.3.1.5 Estuary Protection Act

The Estuary Protection Act (16 USC Sections 1221-1226) provides a means for federal agencies to consider the need to protect, conserve, and restore estuaries during the permit-approval process.

3.4.3.1.6 Rivers and Harbors Act

The Rivers and Harbors Act of 1899 (33 USC Sections 401, 403, 407) addresses projects and activities in navigable waters, and harbor and river improvements. Under Section 10 of this act, any construction or alteration of a navigable water is required to first obtain the approval of the chief of the United States Army Corps of Engineers (USACE).

3.4.3.1.7 Executive Order 13112, Invasive Species

EO 13112 was established in 1999 to facilitate coordination and response of federal agencies on the negative effects and issues regarding invasive species. It provides policy direction to encourage organized efforts of federal, state, and local agencies in managing invasive species through preventing, detecting, monitoring, evaluating, and controlling the spread of invasive species, as well as increasing awareness of scientific research and public outreach to curb the spread and impacts of invasive species.

3.4.3.1.8 Sustainable Fisheries Act

The Sustainable Fisheries Act of 1996 (Public Law No. 104-267) reauthorized the Magnuson-Stevens Act and amended the habitat provisions of the Magnuson-Stevens Act to direct the NMFS, Fishery Management Councils, and federal agencies to protect, conserve and enhance essential fish habitat (EFH). EFH is defined as waters and substrate necessary for spawning, breeding, feeding and rearing of federally managed fish species. Under the Magnuson-Stevens Act, all federal agencies must consult with the NMFS prior to authorizing projects that may adversely affect EFH.

Habitat Areas of Particular Concern (HAPCs) are a subset of EFH that exhibit one or more of the following traits: rare, stressed by development, provide important ecological functions for federally managed species, or are especially vulnerable to anthropogenic (or human impact) degradation. HAPCs do not receive additional regulatory protection under the Magnuson-Stevens Act, but projects with potential adverse impacts to HAPCs receive additional scrutiny during the consultation process.

3.4.3.1.9 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) (16 USC Sections 1801-1882) established jurisdiction over marine fisheries in the United States exclusive economic zone (EEZ) through fishery management plans (FMPs). The Pacific Fishery Management Council drafted three FMPs (the Pacific Groundfish Fishery Management Plan, Coastal Pelagic Fishery Management Plan, and Pacific Salmon Fishery Management Plan) to describe the habitat essential to the fish being managed and to describe threats to that habitat from both fishing and non-fishing activities.

3.4.3.1.10 Marine Mammal Protection Act

The Marine Mammal Protection Act of 1972 (MMPA) (16 USC Sections 1361-1421) prohibits take and importation of marine mammals in United States waters and by United States citizens on the high seas. The MMPA has been amended numerous times to authorize and regulate take related to prescribed activities, mainly related to weapons testing by the United States military.

3.4.3.1.11 Nonindigenous Aquatic Nuisance Prevention and Control Act

The Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (NANPCA) established the first major federal program to prevent the introduction and control the spread of introduced aquatic nuisance species. NANPCA was amended in 1996 by the National Invasive Species Act to implement voluntary ballast water exchange guidelines for vessels entering United States waters from outside the United States EEZ. Since 2004, ballast water exchange has been mandatory; the program is overseen by the United States Coast Guard.

3.4.3.1.12 The Oil Pollution Act

The Oil Pollution Act of 1990 (OPA) (33 USC Sections 2701-2761) provides new requirements for contingency planning by industry such that owners or operators of vessels and certain facilities that pose a serious threat to the environment must prepare facility response plans (FRPs). OPA also authorizes trustee agencies to seek monetary compensation for injured natural resources.

3.4.3.2 State

3.4.3.2.1 California Environmental Quality Act

Rare or endangered plant or wildlife species are defined in the CEQA Guidelines Section 15380 as a species that is either presently threatened with extinction or that it is likely to become endangered within the foreseeable future or as a species that survival and reproduction in the wild are in immediate jeopardy, respectively. A species of animal or plant shall be presumed to be rare or

endangered if it is listed in 14 California Administrative Code (CAC) 670.2 or 670.5, or 50 CFR 17.11 or 17.12 pursuant to the ESA as threatened or endangered.

3.4.3.2.2 California Endangered Species Act

Provisions of the CESA protect state-listed threatened and endangered species. The CDFW regulates activities that may result in take of individuals (i.e., “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill”). Habitat degradation or modification is not included in the definition of take under the California Fish and Game Code. Any project that has the potential to take listed species must apply for an incidental take permit pursuant to Sections 2081 (B) and (C) of the California Fish and Game Code.

3.4.3.2.3 Other Provisions of the California Fish and Game Code

The California Fish and Game Code Sections 3511, 4700, 5050 and 5515 prohibit take of fully protected bird, mammal, reptile and amphibian and fish species, respectively. Species that are classified as fully protected species, or parts thereof, may not be taken or possessed at any time, nor may licenses be issued for their take.

Sections 3503 and 3503.5 of the California Fish and Game Code outlaw take, possession or destruction of birds and raptors, respectively, and their nests. Disturbance during the breeding season that results in the incidental loss of fertile eggs or nestlings, or otherwise leads to nest abandonment, is also considered take by the CDFW.

The CDFW promulgates various lists of sensitive species for which analysis of project impacts is required under CEQA. These lists include Species of Special Concern lists for invertebrates, fish, amphibians and reptiles, mammals and birds.

3.4.3.2.4 Porter-Cologne Water Quality Control Act

Areas meeting the regulatory definition of waters of the State are subject to the jurisdiction of the California State Water Resources Control Board. Waters of the State means any surface water or groundwater, including saline waters, within the boundaries of the State (California Water Code, Section 1305I).

3.4.3.2.5 Marine Invasive Species Act

The Marine Invasive Species Act (MISA) of 2003, made permanent by the Coastal Ecosystems Protection Act of 2006, requires ballast water and biofouling management for all vessels that intend to discharge ballast water in California waters. Regulations depend on the vessel’s size and origin of voyage. Under MISA, CSLC administers the Marine Invasive Species Program (MISP), a multiagency program tasked with preventing the introduction of non-indigenous aquatic species from ballast water and biofouling. All vessels covered under the law are required to complete and submit a ballast water report form to the CSLC upon departure from each port of call in California and must comply with good housekeeping practices.

3.4.3.3 Local

3.4.3.3.1 Suisun Marsh Habitat Management, Preservation, and Restoration Plan

The Suisun Marsh Habitat Management, Preservation, and Restoration Plan (2013) is a 30-year comprehensive plan designed to address the various conflicts regarding use of marsh resources, with the focus on achieving an acceptable multi-stakeholder approach to the restoration of tidal wetlands and the management of managed wetlands and their functions. The Suisun Marsh Habitat Management, Preservation, and Restoration Plan addresses habitats and ecological process, public and private land use, levee system integrity, and water quality through restoration and managed wetland activities. As such, the Suisun Marsh Habitat Management, Preservation, and Restoration Plan is intended to be a flexible, science-based, management plan for Suisun Marsh, consistent with the revised Suisun Marsh Preservation Agreement and CALFED Bay-Delta Program (CALFED).

3.4.3.3.2 Delta Reform Act

The Delta Reform Act of 2009 established two coequal goals: securing a reliable water supply for California; and protecting, restoring, and enhancing the Sacramento-San Joaquin Delta ecosystem and the fish, wildlife, and recreation it supports. The Delta Reform Act recognized the Delta as an “evolving” environment and outlined a state policy of reduced reliance on Delta water exports, opting for a strategy of improved conservation, the development and enhancement of regional supplies, and water use efficiency.

The Delta Reform Act established an independent state agency – the Delta Stewardship Council – to develop and implement a plan that facilitates the declared coequal goals. The act also established the Delta Independent Science Board and authorized it to research, monitor, and assess programs pursued under the Delta Plan, advising the Council of its findings.

Under the authority of the act, a Delta Plan was originally adopted in May 2013. It incorporated 14 regulatory policies and 73 non-regulatory recommendations that contributed to the realization of the coequal objectives, including reduced reliance on Delta exports; final approval and adoption of the Bay Delta Conservation Plan; enhanced water quality standards; protection of the Delta’s unique ecosystem; mitigation of the multiple stressors affecting the Delta; improvement of emergency preparedness throughout the Delta region; reduction of flood risk; and prioritized state investment in levee maintenance and upgrading.

Since the original adoption date (2013), to ensure that the Delta Plan evolves appropriately with time, the Delta Reform Act requires that the Council review the comprehensive management plan at least once every five years and revise it as the Council deems appropriate.

In 2018, the Council began an initial review of the Delta Plan with three objectives in mind: (1) to reflect on the successes and challenges of implementation efforts across agencies; (2) to focus and prioritize the Council’s near-term implementation efforts; and (3) to identify planning topics and emerging issues that may inform future updates. To summarize findings, in 2019, the Council published a detailed report summarizing these objectives alongside a highlights companion piece. Portions of the Delta Plan were amended in 2023.

3.4.3.3.3 San Francisco Bay Plan

The San Francisco Bay Plan, originally adopted by the California Legislature in 1969, contains the policies that the San Francisco Bay Conservation and Development Commission (BCDC) uses to determine whether permit applications can be approved for projects within the Commission's jurisdiction—consisting of the San Francisco Bay, salt ponds, managed wetlands, certain waterways, and land within 100 feet of the Bay. On October 6, 2011, the BCDC unanimously approved an amendment to the Plan to update the 22-year-old sea level rise findings and policies and more broadly address climate change adaptation.

Plan Map 3 of the San Francisco Bay Plan shows the Suisun Bay and Marsh area. Browns Island and portions of the City's western waterfront, both within the City's Planning Area, are within the jurisdictional boundary for the Plan.

3.4.3.3.4 San Francisco Bay Basin (Region 2) Water Quality Control Plan

The San Francisco Bay Region (Region) is approximately 4,603 square miles in area, which is roughly the size of the State of Connecticut. It is characterized by its dominant feature, consisting of 1,100 square miles of the 1,600-square-mile San Francisco Bay Estuary (Estuary), the largest estuary on the west coast of the United States, where fresh waters from California's Central Valley mix with the saline waters of the Pacific Ocean. The Region also includes coastal portions of Marin and San Mateo counties, from Tomales Bay in the north to Pescadero and Butano Creeks in the south.

The San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan) includes a summary of beneficial water uses, water quality objectives needed to protect the identified beneficial uses, and actions. The Basin Plan establishes water quality standards for all the ground and surface waters of the region. The term "water quality standards," as used in the CWA, includes both the beneficial uses of specific water bodies and the levels of quality that must be met and maintained to protect those uses. The Basin Plan includes an implementation plan describing the actions by the RWQCB and others that are necessary to achieve and maintain the water quality standards. The RWQCB regulates waste discharges to minimize and control their effects on the quality of the region's ground and surface water. Permits are issued under several programs and authorities. The terms and conditions of these discharge permits are enforced through a variety of technical, administrative, and legal means. Water quality problems in the region are listed in the Basin Plan, along with the causes, where they are known. For water bodies with quality below the levels necessary to allow all the beneficial uses of the water to be met, plans for improving water quality are included. The Basin Plan reflects, incorporates, and implements applicable portions of several national and statewide water quality plans and policies, including the California Water Code and the CWA.

3.4.3.3.5 City of Pittsburg

The City's general plan, *General Plan Pittsburg 2020: A Vision for the 21st Century*, was adopted in 2001 (City of Pittsburg 2001). The project site is within the Northeast River Planning Subarea, characterized by industrial facilities and vacant lands. Major industrial facilities within this subarea include USS-Posco (UPI), Dow Chemical, and the Delta Diablo Wastewater Treatment Plant. Brown Island, located approximately 0.9 mile northeast of the project site, is recognized as a Regional Shoreline Preserve. Wetlands are identified within a 150-foot buffer of the defined Study Area, particularly along Kirker Creek and its confluence with the New York Slough and San Jaquin

River. In the General Plan, the following goals related to plants, wildlife, and habitat have been established for the Northeast River Planning Subarea:

Northeast River Goals:

2-G-13 Protect sensitive marshland habitats along the New York Slough waterfront.

Northeast River Policies:

2-P-43 Ensure that all proposed projects in the Northeast River area complete an assessment of biological resources, including wetlands, before site layout and design is completed.

2-P-44 Ensure—through a combination of on- and off-site mitigation—that new development results in no net loss of wetlands. Dowest Slough is an excellent example of wetlands restoration adjacent to industrial properties.

2-P-46 Support the permanent preservation of the wetlands and salt marsh habitats along New York and Dowest Sloughs, including Browns Island Regional Shoreline.

The proposed Project is consistent with the goals and policies presented above and is a compatible use with the General Industrial (IG) Zoning District. The proposed Project would not introduce a land use not covered by pre-existing land use regulations. Per the zoning requirements outlined in the Pittsburg Municipal Code, major utility uses in General Industrial (IG) Districts such as those included in this proposed Project would require the approval of a use permit (City of Pittsburg 2020).

3.4.4 Impact Analysis

3.4.4.1 Methodology for Impact Analysis

Impacts on vegetation and wildlife were based on the information provided in the Biological Technical Memorandum (Appendix D.1) summarizing the biological desktop review and site reconnaissance survey of the Study Area. Discussion of impacts from operations focuses on the particular characteristics of the proposed Project.

3.4.4.2 Significance Criteria

For the purposes of this analysis, a project impact was considered to be significant and to require mitigation 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 CDFW or USFWS?
- b. have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies and regulations or by the CDFW or USFWS?
- c. have a substantial adverse effect on state or federally protected wetlands (including but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption or other means?

- d. interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?
- e. conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?
- 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?

3.4.5 Impacts and Mitigation Measures

Based on the field investigation, the developed, but inactive, industrial project site would be well-suited for the proposed Project to avoid and minimize the impacts to special status species from the construction and operation of a renewable hydrogen processing facility. The following habitats were identified within or adjacent to the Study Area that could result in the need for consultation, approval, or permit:

- Trees, shrubs, and other vegetation within and adjacent to the Study Area may contain active bird nests during nesting season.
- There is a low potential of burrowing owl nesting or foraging activity within the Study Area.
- There is a low potential for white-tailed kite nesting activity in the few trees adjacent to the Study Area.
- There is a moderate potential for western pond turtle activity in the adjacent wetlands and ruderal and natural upland areas with uncompacted soils within and around the project site. Western pond turtle is known to occur within 0.5 mile east and west of the project site. Wetlands adjacent to the Study Area provide suitable wetland habitat, and upland areas adjacent to and within a 150-foot buffer of the Study Area provide suitable habitat for nesting and estivation. If the proposed Project provides fencing and/or biological monitors during periods of likely pond turtle movement, the proposed Project's effects on pond turtles would be negligible. May through July typically captures the pond turtle nesting season; however, consultation with CDFW is recommended to determine local seasonal movements, including overland movements for estivation. Alternatively, surveys could be conducted to confirm the presence of pond turtle activity in the vicinity.
- The estuarine wetlands and waters adjacent to the Study Area could provide habitat for aquatic associated special-status species. If no ground disturbing activities would occur that directly impact wetlands or waters, then the proposed Project would avoid direct impacts to aquatic associated species. Construction related indirect impacts (air quality, water quality, noise, etc.) would be avoided using pollution prevention best management practices as required by local and state regulations. Operations-related impacts would be minimized or avoided through project engineering design, operations environmental management plans and procedures, and best management practices (BMPs). Based on these anticipated criteria,

the proposed Project's effects on aquatic and wetland-associated species would likely be negligible.

If no ground-disturbing activities in or adjacent to mapped wetlands or waterbodies will occur and industrial stormwater controls and BMPs are implemented, a letter requesting concurrence with the finding that federally listed species may be affected but are not likely to be adversely affected by the proposed Project may be submitted to the USFWS.

The federal Migratory Bird Treaty Act protects migratory birds and their eggs and nests from hunting, capturing, killing or other taking, and the California Fish and Game Code and AB 454 prohibit these actions even if incidental to otherwise lawful activities. Therefore, compliance with existing laws protecting migratory birds and raptors would protect nesting birds. TRC recommends that a pre-construction survey for active bird nests, including Suisun song sparrow, burrowing owl, and white-tailed kite, be conducted within the designated work area and up to 1,000-foot buffer by a qualified biologist if construction, including staging, is to begin during nesting season (February 1 to August 31), and before work is re-initiated during nesting season if work has been discontinued for more than 14 days. Pre-construction surveys should include abandoned structures. If an active nest is identified in proximity to the work area, recommendations of a qualified biologist should be implemented following CDFW guidance to ensure compliance with applicable laws.

3.4.5.1 Impact Determination

- a. Would the proposed Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS? (BIO-1)

Potentially, without mitigation. As discussed below, some special-status plant and wildlife species have potential to occur within the Study Area. Based on this information, noise and disruption associated with construction of the proposed Project would have the potential to impact these species. Therefore, mitigation measures have been identified to reduce potential impacts to special-status species to a less-than-significant level. Implementation of the **BIO-1 Mitigation Measures** would ensure that potential impacts of the proposed Project would be less than significant.

3.4.5.1.1 Fish

The project site is located within the USFWS Designated Critical Habitat for delta smelt (Federally Threatened, State Endangered), an anadromous fish endemic to the upper reaches of the San Francisco Bay Bay-Delta Estuary. There is potentially suitable estuarine wetland and slough habitat for delta smelt and longfin smelt (State Threatened) adjacent to the project site. The species are known to inhabit tidally influenced sloughs and edge-waters.

Open water habitat north of the Study Area could be degraded by poor housekeeping, accidental spill of fuel or hazardous materials and polluted stormwater runoff. Substantial loss of individuals of special-status fish species caused by degradation of suitable open water, marsh and wetlands could result in a significant impact on special status fish species. Implementation of **Mitigation Measure BIO-1a: General Work Site Best Management Practices**, would ensure that best management practices are employed during construction of the proposed Project. Implementation of **Mitigation**

Measure BIO-1b: Spill and Accidental Discharge Prevention, and Mitigation Measure BIO-1c: Emergency Spill and Containment Plan, would ensure that the proposed Project minimizes the risk of spills or accidental discharge of fuels or hazardous materials. Although proposed project construction would not trigger the requirement for a construction stormwater permit, implementation of **Mitigation Measure BIO-1d: Stormwater Pollution Prevention Plan (SWPPP)** for construction of the proposed Project would ensure that potential impacts from stormwater runoff are reduced to less than significant. Implementation of **Mitigation Measures BIO-1a to BIO-1i** would ensure that potential impacts of the proposed Project would be less than significant.

3.4.5.1.2 Plants

The project site does not provide habitat for special-status plants. However, suitable habitat for special-status plant species occurs in marsh and wetland habitats adjacent to the project site. Special-status species with potential to occur or that are likely to occur in the adjacent marsh and wetland habitats are:

- Bolander's water-hemlock (*Cicuta maculate* var. *bolanderi*)
- Delta mudwort (*Limosella australis*)
- Delta tule pea (*Lathyrus jepsonii* var. *jepsonii*)
- Mason's lilaeopsis (*Lilaeopsis masonii*)
- Soft salty bird's-beak (*Cordylanthus molle* ssp. *molle*)
- Small spikerush (*Elocharis parvula*)
- Suisun Marsh aster (*Symphytrichum lentum*)

Soft salty bird's beak was not detected during special-status species and sensitive habitats assessment. However, brackish marsh and wetland habitat adjacent to the project site provides suitable habitat for these species. If the federally protected soft salty bird's beak were to be located in construction work areas on the project site, individuals could be inadvertently trampled during construction, with the loss resulting in a potentially significant adverse impact. Implementation of **Mitigation Measure BIO-1** Error! Reference source not found.g: **Preconstruction Focused Soft-Bird's Beak Surveys**, would ensure that soft bird's beak is absent from the project site prior to construction.

No construction activity would occur within vegetated areas. Marshlands and wetlands do not occur within the Study Area but are found adjacent to the project site. A tarp to catch inadvertently dropped tools or material would be secured below the scaffolding for work in any area where pipe repairs are required. However, in areas where only heat tracing and insulation are required, construction workers would descend from the scaffolding to retrieve dropped tools or materials. When workers descend from the scaffolding into vegetated areas to retrieve accidentally dropped tools or materials, they could crush or injure individual special-status plants if present. Loss of special-status plants could potentially result in a significant adverse impact. **Mitigation Measure BIO-1e: Demarcation of Limits of Work** would require that the limits of work areas are clearly marked, further reducing the potential for accidental crushing or injuring of individual special-status plants.

Work over vegetated areas has the potential to introduce nonnative invasive plant seeds from vehicles and equipment or being tracked in on workers' boots, leading to habitat degradation. Impacts on any or all of the special-status plants with potential to occur in the project site could be

significant. Habitat degradation for special status plants through the introduction of weed species into sensitive habitat would result in a significantly adverse impact. However, implementation of **Mitigation Measure BIO-1f: Weed Spread Prevention**, would ensure that construction does not introduce weeds to the project site, thereby reducing impacts to special-status plants to a less-than-significant level.

Degradation of off-site marsh habitat could also occur from an accidental spill of fuel or other hazardous material. Habitat degradation caused by accidental spill into or near sensitive habitat for special status plants could be a potentially significant adverse impact. Implementation of **Mitigation Measure BIO-1c: Emergency Spill and Containment Plan** and **Mitigation Measure BIO-1b: Spill and Accidental Discharge Prevention**, would reduce this impact to a less-than-significant level.

Implementation of the **BIO-1 Mitigation Measures** would ensure that potential impacts of the proposed Project would be less than significant.

3.4.5.1.3 Mammals

The marshland and open areas adjacent to the Study Area could provide suitable habitat for salt marsh harvest mouse and San Joaquin kit fox, although it is not likely they would utilize habitats within the Study Area. Construction noise and activity could disturb individual animals if present. However, individuals that are temporarily displaced by construction noise and activity would be able to retreat to adjacent habitat. However, no construction would occur in vegetated areas. Habitat degradation for special status mammals caused by introduction of weed species or spills from the project site would result in a significant adverse impact. Implementation of mitigation measures described above for plants would ensure protection of habitat for special-status mammals. Implementation of the **BIO-1 Mitigation Measures** would ensure that potential impacts of the proposed Project would be less than significant.

3.4.5.1.4 Birds

Potentially suitable habitat for special-status birds is located within the project site. The proposed Project could have temporary adverse impacts on four special-status birds, including burrowing owl, white-tailed kit, Suisun song sparrow, and California Ridgway's rail, and other nesting migratory birds and raptors through increased levels of disturbance from increased human presence, noise and/or equipment vibrations, facility construction and demolition. Such disturbances may disrupt normal behavioral patterns of breeding, foraging, sheltering and dispersal.

Noise and disturbance from project construction can cause stress to nesting birds, causing them to abandon their eggs or young and resulting in nest failure, resulting in a significant adverse impact. Implementation of **Mitigation Measure BIO-1h: Preconstruction Nesting Bird Surveys**, and **Mitigation Measure BIO-1i: California Ridgway's Rail Surveys**, would require the Applicant to conduct preconstruction nesting bird surveys and establish protective buffers to avoid impacts to nests if present, reducing this impact to a less than significant level. Implementation of the **BIO-1 Mitigation Measures** would ensure that potential impacts of the proposed Project would be less than significant.

Significance Level: Less than Significant with Mitigation Incorporated.

3.4.5.2 **BIO-1 Mitigation Measures**

- **Mitigation Measure BIO-1a: General Work Site Best Management Practices.** The following measures shall be included on all plans and employed by HC (Contra Costa), LLC (Applicant) and its contractors to avoid and minimize impacts to water quality and other beneficial characteristics of wetlands adjacent to the project site:
 - No debris, soil, silt, sand, cement, concrete or washings thereof, or other construction-related materials or wastes, oil or petroleum products, or other organic or earthen material shall be allowed to enter into or be placed where it may be washed by rainfall or runoff into marshes or open water/ditches adjacent to the work areas.
 - All personnel and their equipment shall be required to stay within the designated construction area to perform job-related tasks and shall not be allowed to enter wetlands, drainages and habitat of listed species.
 - Pets shall not be allowed in or near the construction area.
 - Firearms shall not be allowed in or near the construction area, except for armed security officers who may periodically patrol work sites. No intentional killing or injury of wildlife shall be permitted.
 - The construction site shall be maintained in a clean condition. All trash (e.g., food scraps, cans, bottles, containers, wrappers, cigarette butts and other discarded items) shall be placed in closed containers and properly disposed off-Site.
 - After construction is completed, final cleanup shall include removal of all stakes, temporary fencing, flagging and other refuse generated by construction. Vegetation in marshes or open water/ditches adjacent to the project site shall not be removed or disturbed in the cleanup process.

- **Mitigation Measure BIO-1b: Spill and Accidental Discharge Prevention.** The following measures shall be included on all plans and employed by the Applicant and its contractors. The Applicant and its contractors shall be responsible for structuring operations in a manner that minimizes the risk of spills or the accidental discharge of fuels or hazardous materials. The Applicant and its contractors shall, at a minimum, ensure that:
 - All employees handling fuels and other hazardous materials are properly trained.
 - All equipment is in good operating order and inspected regularly.
 - Hazardous materials, including chemicals, fuels and lubricating oils, shall not be stored within 200 feet of a wetland or water body. This applies to storage of these materials and does not apply to normal operation or use of equipment in these areas.
 - If refueling is needed on-site, it will occur at least 100 feet from a surface water feature, and in a designated refueling area with secondary containment/plastic sheeting and a spill containment kit.

- **Mitigation Measure BIO-1c: Emergency Spill and Containment Plan.** The following measures shall be included on all plans and employed by the Applicant and its contractors. In the event of an accidental spill, the Facility Oil Spill Contingency Plan shall be implemented. Site-specific provisions shall be listed on the Safe Work Permit and included within the job plan maintained on-Site. At a minimum, the Applicant and its contractors shall:
 - Ensure that each construction crew (including clean-up crews) has sufficient supplies of absorbent and barrier materials on-Site to allow the rapid containment and recovery of

- spilled materials, and that each construction crew knows the procedure for reporting spills.
- Ensure that each construction crew has sufficient tools and material on Site to stop leaks.
 - Know the contact names and telephone numbers for all the Applicant contacts and local, state and federal agencies (including, if necessary, the United States Coast Guard and the National Response Center) that might need to be notified in the event of a spill.
 - Follow the requirements of those agencies in cleaning up the spill, excavating and disposing soils or other materials contaminated by a spill, and collecting and disposing waste generated during spill cleanup.
- **Mitigation Measure BIO-1d: Stormwater Pollution Prevention Plan (SWPPP).** The proposed Project shall develop, adhere to, and implement the requirements of a SWPPP during project construction.
 - Applicable SWPPP measures shall be incorporated into the construction plans by a qualified specialist and implemented prior to construction.
 - **Mitigation Measure BIO-1e: Demarcation of Limits of Work.** The Applicant and its contractors shall clearly demarcate the limits of work in the field. All project-related activity shall be confined to the designated work areas; no entry into adjacent areas shall be allowed by project personnel. Upon project completion, material used to mark the work boundary shall be removed.
 - **Mitigation Measure BIO-1f: Weed Spread Prevention.** The Applicant and its contractors shall implement measures to ensure that boots, clothing, vehicles and equipment are free of soils and plant parts prior to entering work areas.
 - **Mitigation Measure BIO-1g: Preconstruction Focused Soft-Bird's Beak Surveys.** Focused surveys for soft-bird's beak shall be conducted by a qualified biologist each year during the appropriate blooming period (June 1 through September 30) prior to construction to confirm its absence. Locations of rare plants in proposed construction areas will be recorded using a GPS unit and flagged for avoidance or project proponent will consult with the appropriate agency regarding the potential to relocate the plants. When construction is occurring in the area of the flagged plants, a qualified biologist shall monitor construction activities occurring in the vicinity of the flagged plants to ensure that no direct or indirect impacts occur.
 - **Mitigation Measure BIO-1h: Preconstruction Nesting Bird Surveys.** No more than 5 days prior to construction during the nesting bird season (February 1 through September 15), a qualified biologist shall conduct a survey for nesting birds. If work within an area lapses for more than 14 days during the nesting season, the survey shall be repeated. The survey shall encompass all work areas and those areas within a buffer of 250 feet for passerines, 500 feet for small raptors, and 1,000 feet for large raptors. Where accessible, the location of active nests will be recorded using a handheld global-positioning system unit. Should an active nest be discovered, the area of the nest and an appropriate buffer area will be cordoned off during construction activities that could cause disturbance of the nest. The qualified biologist conducting the nesting surveys should prepare a report that provides details about the nesting

outcome and the removal of buffers. This report should be submitted to the City for review and approval prior to the time that buffers are removed at the end of the project, at which time the biologist will confirm that the nests were not disturbed.

- **Mitigation Measure BIO-1i: California Ridgway's Rail Surveys.** Prior to construction occurring during the rail nesting season (February 1 through August 31) within 700 feet of suitable rail habitat, surveys shall be conducted for California Ridgway's rail in accordance with the USFWS Survey protocol for California Ridgway's rail. Surveys should be initiated between January 15 and February 1. For each survey station, four surveys are to be conducted. Surveys should be spaced at least two weeks apart and should cover the time period from the date of the first survey through the end of March or mid-April. If California Ridgway's rail are detected during the survey, no work within 700 feet of the rail calling centers (identified via compass bearing and distance estimate during surveys) shall occur between February 1 and August 31, unless otherwise approved by USFWS and CDFW.

b. Would the proposed Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies and regulations or by the CDFW or USFWS? (BIO-2)

Potentially, without mitigation. The wetland and waterbodies delineation and habitat assessment identified that no wetland or marsh habitats occur within the project site; however, wetlands were identified adjacent to the Study Area. Also, the Study Area is located within the USFWS Designated Critical Habitat for delta smelt (Federally Threatened, State Endangered), an anadromous fish endemic to the upper reaches of the San Francisco Bay Bay-Delta Estuary. There is suitable estuarine wetland and slough habitat for delta smelt and longfin smelt (State Threatened) adjacent to the project site. However, implementation of **Mitigation Measures BIO-1a** through **BIO-1f** would ensure that potential impacts of the proposed Project would be less than significant.

Significance Level: Less than Significant with Mitigation Incorporated.

3.4.5.3 BIO-2 Mitigation Measures

- **Mitigation Measure BIO-1a:** General Work Site Best Management Practices
- **Mitigation Measure BIO-1b:** Spill and Accidental Discharge Prevention
- **Mitigation Measure BIO-1c:** Emergency Spill and Containment Plan
- **Mitigation Measure BIO-1d:** Stormwater Pollution Prevention Plan (SWPPP)
- **Mitigation Measure BIO-1e:** Demarcation of Limits of Work
- **Mitigation Measure BIO-1f:** Weed Spread Prevention

c. Would the proposed Project have a substantial adverse effect on state or federally protected wetlands (including but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption or other means? (BIO-3)

Potentially, without mitigation. The wetland and waterbodies delineation and habitat assessment identified that no wetland or marsh habitats occur within the project site, however wetlands were identified adjacent to the project study area. Implementation of **Mitigation Measures BIO-1a** through **BIO-1f** would ensure that potential impacts of the proposed Project would be less than significant.

Significance Level: Less than Significant with Mitigation Incorporated.

3.4.5.4 **BIO-3 Mitigation Measures**

- **Mitigation Measure BIO-1a:** General Work Site Best Management Practices
- **Mitigation Measure BIO-1b:** Spill and Accidental Discharge Prevention
- **Mitigation Measure BIO-1c:** Emergency Spill and Containment Plan
- **Mitigation Measure BIO-1d:** Stormwater Pollution Prevention Plan (SWPPP)
- **Mitigation Measure BIO-1e:** Demarcation of Limits of Work
- **Mitigation Measure BIO-1f:** Weed Spread Prevention

d. Would 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 wildlife nursery sites? (**BIO-4**)

Potentially, without mitigation. Special-status fish that could be present or migrating through the wetlands adjacent to the project site during construction include the federally endangered delta smelt and state threatened longfin smelt. However, implementation of the **BIO-1 Mitigation Measures** would ensure that potential impacts of the proposed Project would be less than significant.

Significance Level: Less than Significant with Mitigation Incorporated.

BIO-4 Mitigation Measures

To ensure that marsh areas are protected from accidental habitat degradation, implementation of the following mitigation measures would reduce impacts to native nursery sites such that impacts would be less than significant:

- **Mitigation Measure BIO-1a:** General Work Site Best Management Practices
- **Mitigation Measure BIO-1b:** Spill and Accidental Discharge Prevention
- **Mitigation Measure BIO-1c:** Emergency Spill and Containment Plan
- **Mitigation Measure BIO-1e:** Demarcation of Limits of Work
- **Mitigation Measure BIO-1f:** Weed Spread Prevention

- To ensure protection for the movement of any native resident or migratory fish or wildlife species, established native resident or migratory wildlife corridors, and the use of wildlife nursery sites, implementation of the following mitigation measures is required:

- **Mitigation Measure BIO-1h:** Preconstruction Nesting Bird Surveys
- **Mitigation Measure BIO-1i:** California Ridgway's Rail Surveys

e. Would the proposed Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? (BIO-5)

No. There are no protected trees located on the project site. The proposed Project complies with the Tree Preservation and Protection policies in Article XIX of Chapter 18.84 of the Pittsburg Municipal Code (PMC).

Significance Level: No impact. No mitigation required.

f. Would the proposed Project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan? (BIO-6)

No. The proposed Project is not located within the East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan (ECCC HCP/NCCP) Plan Area, and the land cover map associated with the HCP does not show a designation for the project site.

Significance Level: No impact. No mitigation required.

3.4.6 References

California Department of Fish and Wildlife (CDFW). 2023. California Natural Diversity Database (CNDDDB): RareFind 5 application. Department of Fish & Wildlife Biogeographic Data Branch, Sacramento, CA. <https://www.wildlife.ca.gov/data/cnddb>.

California Native Plant Society (CNPS) Rare Plant Program. 2023. Inventory of Rare and Endangered Plants (online edition, v9-01 0.0). <http://www.rareplants.cnps.org/>

California State Lands Commission (CSLC) 2021. 2021 Biennial Report on the California Marine Invasive Species Program. Produced for the California State Legislature. Online: <https://www.slc.ca.gov/content-types/2021-biennial-report-on-the-marine-invasive-species-program/>

Contra Costa County. 2005. Contra Costa County General Plan 2005-2020.

City of Pittsburg, 2001. *General Plan Pittsburg 2020: A Vision for the 21st Century, City of Pittsburg, 2020*. "Land Use." Available at: <https://www.pittsburgca.gov/home/showpublisheddocument/4674/637479142624630000>

- City of Pittsburg. 2020. "Chapter 18.54 Industrial Districts (I)." City of Pittsburg Municipal Code, City of Pittsburg, 2020. Available at: <https://www.codepublishing.com/CA/Pittsburg/html/Pittsburg18/Pittsburg1854.html#18.54>
- Google Earth Pro. 2022. Imagery of 38° 1'15.48"N, 121° 50'38.73"W.
- National Cancer Institute. 2022. Vinyl Chloride. Accessed October 2023. <https://search.nih.gov/search?utf8=%E2%9C%93&affiliate=nih&query=vinyl+chloride+monomer&commit=Search>
- Office of Spill Prevention and Response (OSPR). 2011. "2011 Triennial Report on the California Department of Fish and Game's Marine Invasive Species Program." California State Legislature, Sacramento, CA.
- TRC. 2023a. Desktop Review and Site Biological Reconnaissance Survey Memorandum, Renewable Hydrogen Production Project. Prepared for H Cycle, Mountain View, CA, October 2023.
- TRC. 2023b. Wetland and Waterbody Delineation Report, Renewable Hydrogen Production Project. Prepared for H Cycle, Mountain View, CA, October 2023.
- United States Environmental Protection Agency (EPA). 2016. Ecoregions of the Southwest (Arizona, California, Nevada). EPA, National Health and Ecological Effects Research Laboratory, Western Ecology Division, Corvallis, Oregon. Map scale 1:2,000,000. <https://www.epa.gov/eco-research/ecoregion-download-files-region#pane-09>
- United States Fish and Wildlife Service (USFWS). 2023, Information for Planning and Conservation (IPaC). <https://ecos.fws.gov/ipac/>. Accessed August 2023.
- United States Geological Survey (USGS). 2016. Level III and IV Ecoregions of the Continental United States. Available at: <https://www.epa.gov/eco-research/level-iii-and-iv-ecoregions-continental-united-states>

3.5 CULTURAL AND TRIBAL CULTURAL RESOURCES

3.5.1 Introduction

This chapter describes the cultural and tribal cultural resources that might be affected by the proposed H Cycle Pittsburg Renewable Hydrogen Project (Project). The purpose of the chapter is to identify and evaluate the potential for the proposed Project to adversely affect archaeological, historical, and tribal cultural resources.

The following sections provide information on the regulatory context, including state and local laws and policies as well as providing information on the regional setting and existing conditions within the proposed project area. A qualitative analysis of potential effects to cultural and paleontological resources associated with the proposed Project is provided in Section 3.7, Geology and Soils. Mitigation measures to reduce, avoid or eliminate effects to a less than significant level are also provided, where appropriate.

Guidelines and key sources of data used in the preparation of this chapter include the following:

- Northwest Information Center of the California Historical Resources Information System;
- City of Pittsburg General Plan (City of Pittsburg, 2001);
- Archeological Reconnaissance Survey (TRC, October 2023; Appendix E of this EIR)
- Native American Heritage Commission

3.5.2 Environmental Setting

The following sections provide information on the regulatory context, including state and local laws and policies as well as providing information on the regional proposed Project setting and cultural resources within the proposed project area.

3.5.2.1 Regulatory Context

Numerous laws and policies pertain to the protection or handling of fossils, prehistoric and historic artifacts, burials, sites of religious or cultural significance to Native American groups, and historic structures. The following discussion includes the criteria outlined in federal, state and local regulations for a resource to be considered as having cultural or historical significance. The criteria for evaluating significant impacts to cultural resources under CEQA are provided in the Section 3.5.3, “Impact Analysis.”

3.5.2.1.1 State Regulations

California Environmental Quality Act (CEQA), California Public Resources Code (PRC) § 21083.2 and 21074 and CEQA Guidelines California Code of Regulations (CCR), Title 14, Section 15064.5

CEQA Guidelines Section 15064.5 provides specific guidance for determining the significance of impacts on historic and unique archaeological resources. Under CEQA, these resources are called historical resources whether they are of historic or prehistoric age. CEQA PRC § 21084.1 defines historical resources as those listed, or eligible for listing, in the California Register of Historical Resources (CRHR), or those listed in the historical register of a local jurisdiction (county or city). NRHP historic properties located in California are considered historical resources for the purposes of CEQA and are also listed in the CRHR. The CRHR criteria for listing such resources are based on, and are very similar to, the NRHP criteria. CEQA PRC § 21083.2 and CEQA Guidelines § 15064.5(c) provide further definitions and guidance for archaeological sites and their treatment. Section 15064.5 also prescribes a process and procedures for addressing the existence of, or probable likelihood of, Native American human remains, as well as the unexpected discovery of any human remains within the proposed project area. This includes consultations with appropriate Native American tribes.

California Register of Historical Resources (CRHR)

The CRHR is a guide to cultural resources that must be considered when a government agency undertakes a discretionary action subject to CEQA. CRHR, in PRC § 5024.1(a), helps government agencies identify and evaluate California's historic resources, and indicates which properties are to be protected, to the extent prudent and feasible, from substantial adverse change. Any resource listed in or eligible for listing in CRHR is to be considered during the CEQA process.

To determine its historical significance, a cultural resource is evaluated under four CRHR criteria that are very similar to the NRHP criteria. For a resource to have historical significance, it must be in accordance with the one or more of the following criteria specified in PRC § 15064.5(a)(3):

- Is associated with events that have made a significant contribution to the broad pattern of California's history and cultural heritage;
- Is associated with the lives of persons important in our past;
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- Has yielded, or may be likely to yield, information important in prehistory or history.

CRHR criteria are similar to NRHP criteria and are tied to CEQA; any resource that meets the above criteria and retains sufficient historic integrity, is a historical resource under CEQA.

In addition to meeting one or more of the above criteria, CRHR requires that sufficient time must have passed to allow a "scholarly perspective on the events or individuals associated with

the resource.” Fifty years is specified as an estimate of the time needed to understand the historical importance of a resource in California Code of Regulations (CCR) Title 14(11.5) §4852 (d)(2). The California Office of Historic Preservation (OHP) recommends documenting and taking into consideration during the planning process, any cultural resource that is 45 years or older.

CRHR also requires a resource to possess integrity, which is defined as “the authenticity of a historical resource’s physical identity evidenced by the survival of characteristics that existed during the resource’s period of significance.” Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association.

Resources that are significant, meet the age guidelines, and possess integrity will generally be eligible for listing in the CRHR.

California PRC § 5097

As part of the determination made pursuant to PRC § 21080.1, the lead agency will determine whether a project may have a significant effect on archaeological resources.

CEQA defines a “unique archaeological resource” as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets one or more of the following criteria:

- Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information;
- Has a special and particular quality such as being the oldest of its type or the best available example of its type; or
- Is directly associated with a scientifically recognized important prehistoric or historic event or person. CEQA further defines a “historical resource” as a resource that meets any of the following criteria:
 - A resource listed in, or determined to be eligible for listing in, CRHR;
 - A resource listed in a local register of historical resources, as defined in PRC §5020.1(k);
 - A resource identified as significant (e.g., rated 1-5) in a historical resource survey meeting the requirements of PRC §5024.1(g); or
 - Determined to be a historical resource by a project’s lead agency.

Any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be a historical resource.

If the cultural resource in question is an archaeological site, CEQA requires that the lead agency first determine if the site is a historic resource as defined in CCR Title 14(3) § 15064.5(a).

If the site qualifies as a historical resource, potential adverse impacts must be considered in the same manner as a historical resource. If the archaeological site does not qualify as a historical resource but does qualify as a unique archaeological site, then the archaeological site is regulated by PRC § 21083.2.

If an impact to a historic or unique archaeological resource is significant, CEQA requires feasible measures to minimize the impact. Mitigation of significant impacts must lessen or eliminate the physical impact that a project will have on the resource. Generally, the use of drawings, photographs, and/or displays does not mitigate the physical impact on the environment caused by demolition or destruction of a historic resource. However, CEQA requires that all feasible mitigation be undertaken even if it does not mitigate impacts to a level that is less than significant.

Tribal Cultural Resources

On September 25, 2014, California's Governor signed Assembly Bill No. 52 (AB 52) creating an environmental resource category called "tribal cultural resources" that must be considered under CEQA.

"Tribal cultural resources" are defined as either of the following:

1. sites, features, places cultural landscapes, sacred places and objects with cultural value to a California Native American tribe" that are included in the state register of historical resources or a local register of historical resources, or that are determined to be eligible for inclusion in the state register; or
2. resources determined by the lead agency, in its discretion, to be significant based on the criteria for listing in the state register.

AB 52 recognizes that tribes may have expertise with regard to their tribal history and practices and requires lead agencies to provide notice to tribes that are traditionally and culturally affiliated within the geographic area of a proposed project if they have requested notice of projects proposed within that area.

If a tribe requests consultation within 30-days upon receipt of the notice, the lead agency must consult with the tribe. Consultation may include discussing the type of environmental review necessary, the significance of tribal cultural resources, the significance of the project's impacts on the tribal cultural resources, and alternatives and mitigation measures recommended by the tribe.

The parties must consult in good faith, and consultation is deemed concluded when either the parties agree to measures to mitigate or avoid a significant effect on a tribal cultural resource (if such a significant effect exists) or when a party concludes that mutual agreement cannot be reached.

TRC Solutions, Inc. (TRC) sent the Sacred Lands File Request to the NAHC on July 21, 2023 and forwarded the NAHC's response to the City to begin Tribal Consultation. On August 2, 2023, the City sent a formal invitation to consult on the proposed Project to the following tribal representatives:

Amah Mutsun Tribal Band of Mission San Juan Bautista

- Irene Zwierlein, Chairperson

Chicken Ranch Rancheria of Me-Wuk Indians

- Lloyd Mathiesen, Chairperson

Confederated Villages of Lisjan Nation

- Cheyenne Gould, Tribal Cultural Resource Manager
- Corrina Gould, Chairperson

Guidiville Rancheria of California

- Donald Duncan, Chairperson
- Michael Derry, Historian

Indian Canyon Mutsun Band of Costanoan

- Ann Marie Sayers, Chairperson
- Kanyon Sayers-Roods, MLD Contact

Muwekma Ohlone Indian Tribe of the SF Bay Area

- Monica Arellano, Vice-Chairwoman

Nashville Enterprise Miwok-Maidu-Nishinam Tribe

- Cosme Valdez, Chairperson

North Valley Yokuts Tribe

- Katherine Perez, Chairperson
- Timothy Perez

The Ohlone Indian Tribe

- Andrew Galvan, Chairperson
- Desiree Vigil, THPO
- Vincent Medina, Tribal Consultant

Tule River Indian Tribe

- Joey Garfield, Tribal Archaeologist
- Kerri Vera, Environmental Department
- Neil Peyron, Chairperson

Wilton Rancheria

- Dahlton Brown, Director of Administration
- Jesus Tarango, Chairperson
- Steven Hutchason, THPO

The consultation will not limit the ability of the tribe to submit information to the City regarding the significance of the tribal cultural resources, the significance of the proposed Project's impact on tribal cultural resources, or any appropriate measures to mitigate the potential impacts. To date the City has not received any requests for consultation from any tribes or representatives listed above.

3.5.2.1.2 Local Regulations

City of Pittsburg 2020 General Plan

The City of Pittsburg 2020 General Plan (2020) contains the following policies in the “Resource Conservation Element,” which are relevant to the proposed Project:

- Policy 9-P-39: Ensure the protection of known archeological resources in the City by requiring a records review for any development proposed in areas of known resources. If such resources are found, urban development in the vicinity is either limited or the resources must be accounted for.
- Policy 9-P-40: In accordance with State law, ensure the preparation of a resource mitigation plan and monitoring program by a qualified archaeologist in the event that archeological resources are uncovered.
 - CEQA requires the evaluation of any archeological resource on the site of a development project. State law also protects these resources. City involvement in the identification, mitigation, and monitoring of project impacts on these resources will ensure the protection of Pittsburg's cultural heritage.
- Policy 9-P-41: If archeological resources are found during ground-breaking for new urban development, halt construction immediately and conduct an archeological investigation to collect all valuable remnants.

In addition to the goals and policies listed above, the General Plan includes an inventory of historical resources within the City limits. The resource sites are all located outside of the proposed project area and within the 0.5-mile buffer, and as such, none would be affected as a result of the proposed Project.

3.5.2.2 Regional Setting and Existing Condition

3.5.2.2.1 Natural Conditions

The project site is located along the New York Slough and south of Suisun Bay in Contra Costa County (County), California, within the larger San Francisco Bay Area. The region in which the

proposed Project is located has a Mediterranean climate and supports a variety of wetland communities and grasslands. The project area was marshland until the 1950's, and the continuous presence of water in the surrounding area can be witnessed through the soil formations of alluvial fans and stream terraces. Capay Clay (CaA) is on slopes of 0-3 percent and Rincon Clay Loam (RbD) is on slopes of 9-15 percent. In general, the project site slopes to the north-northeast and sits 14 feet above sea level.

3.5.2.2.2 Historic Resources

The Pittsburg area's modern history began when the Mexican government granted 8,859 acres of land to Jose Antonio Mesa and Jose Miguel Garcia to found Rancho Los Medanos (Sand Dune Ranch) in 1839. Jonathan D. Stevenson purchased half of Rancho Los Medanos in 1847 and laid out a town site originally named New York of the Pacific. The name was later changed to New York Landing when it served as a way station during the California Gold Rush. The City's reputation as an industrial area was established in 1855 when coal was discovered in the southern hills, and its residents adopted the name Black Diamond after the mining firm that built the Black Diamond Coal Mining Railroad to nearby Nortonville. In 1911, with the opening of the first steel mill, the residents changed the name to Pittsburg in honor of the hub of the steel industry, Pittsburgh, Pennsylvania (City of Pittsburg, 2001), and in celebration of the town's growing industrial potential.

Camp Stoneman, a United States Army military reservation, was activated in Pittsburg in 1942 during the early years of World War II. Some 45,000 troops were stationed at the camp during the war, which served as a major staging area and point of embarkation for the Pacific Theater. At the end of the war, activity in Pittsburg declined, just as it did in other wartime boomtowns, signaling an end to much of the prosperity the City had enjoyed. Camp Stoneman saw a slight resurgence in activity during the Korean War, but in 1954, shortly after the end of the war, the camp was placed on inactive status and many local businesses closed or relocated, often to neighboring communities where commercial development was thriving. Today, however, Pittsburg is an important industrial center for the County (City of Pittsburg, 2001).

On September 25, 2023, a records search was conducted for the proposed project site and a 0.5-mile buffer at the California Historical Resources Information System (CHRIS) Northwest Information Center (NWIC). The records search included review of the NRHP, CRHR, California Historical Landmarks (CHL), California Points of Historical Interest, and the California OHP's Historic Resource Inventory listings for the County. The *Contra Costa County Historic Inventory Draft Update 2010*, includes what once was the Dow Chemical Company's Pittsburg plant as a structure of historic significance: "Production began July 1, 1916, at [T]he Dow Chemical Company's Pittsburg plant. Owned then by the Great Western Electro-Chemical Company, the Pittsburg plant has grown to become the largest chemical production complex in the Western United States. The plant, which now occupies 450 acres of land and one mile of frontage along the San Joaquin River, was formerly a part of the old Rancho Los Medanos" (CCCCDD 2010).

3.5.2.2.3 Archeological Resources

Ethnography

The project site lies within the traditional territory of the Bay Miwok, and the property was likely inhabited by the Ompin tribelet. This conclusion is based on examination of ethnographic accounts and historic maps (Heizer 1971; Levy 1978).

The Bay Miwok is one of five separate linguistic and cultural groups comprising the Eastern Miwok, which also includes the Plains Miwok and Northern Sierra, Central Sierra, and Southern Sierra Miwok. The Bay Miwok, or Saclan, occupied the eastern portions of the County from Walnut Creek eastward to the Sacramento-San Joaquin delta (Levy 1978). The primary political unit was the tribelet. Composed of several semi-sedentary settlements and numerous seasonally occupied camps, the tribelet represented an independent, sovereign nation that defined and defended a territory. The tribelet chief served as the voice of legal and political authority in the tribelet; this was usually a hereditary position. The basic subsistence strategy of the Bay Miwok was mobile hunting and gathering. This was motivated by seasonal variations in resource availability, which forced the Bay Miwok to exploit resources outside the immediate vicinity of its permanent settlements. Hunting was accomplished with the aid of the bow and arrow, traps, and snares. Animal foods consisted of deer; elk; antelope; rodents; waterfowl; quail, pigeons, flickers and other birds; freshwater mussels and clams; land snails; fish; and a variety of insects. The staple harvest was acorns, although various seeds, roots, and green plants were also procured, and the only cultivated crop was tobacco. An ample supply of seed-bearing annuals and forage for game was assured by intentional burning in August. Bay Miwok houses were thatched structures, built by arranging poles in a conical framework and applying brush, grass, or tules externally. Two types of assembly houses were constructed. One was a large, semi-subterranean type where community activities occurred; the other was a circular brush structure used for summer mourning ceremonies. Miwok technology included bone, stone, antler, wood, and textile tools. Basketry items included seed beaters, cradles, sifters, rackets used in ball games, and baskets for storage, winnowing, parching, and carrying burdens. Other textiles included mats and cordage. Tule balsas were constructed for navigation on rivers and in the Delta. A sweathouse (used for the curing of disease and for purification prior to deer hunting), acorn granaries, menstrual huts, and conical grinding huts over bedrock mortars were also found in Bay Miwok settlements.

The Eastern Miwok first came into contact with Europeans in the second half of the eighteenth century, when Spanish explorers entered Miwok territory. The Bay Miwok were the first to be affected by attempts of Spanish missionaries to convert Native Americans to Christianity. It appears that many Bay and Plains Miwok tribelets disappeared from their homelands through combined effects of population removal to the missions at San Francisco and San Jose as well as disease introduced by Europeans. The first recorded Bay Miwok converts came from the Saclan tribelet to Mission San Francisco de Solano in Sonoma in 1794 (Levy 1978:400). Over the first decades of the 19th century, the Eastern Miwok suffered significant population loss as they succumbed to European-introduced diseases. After California was annexed by the United States, some Miwok were displaced to Central Valley locations, yet many remained on the rancherias established in the Sierra Nevada foothills. During the late 19th and early 20th centuries, the Miwok living on the foothill rancherias adapted to new economic patterns, including seasonal wage labor on ranches and farms, augmenting subsistence through hunting and gathering (Levy 1978:400-401). Although this early contact with settlers had a profoundly negative impact on the Miwok population,

both through disease and violent actions, the Miwok people survive and maintain strong communities and action-oriented organizations.

3.5.3 Impact Analysis

3.5.3.1 Methodology

3.5.3.1.1 Cultural Resources

A desktop review including a records search of the NRHP, the CRHR, CHL, California Points of Historical Interest, and The California OHP's Historic Resource Inventory listings for the County was conducted on September 25, 2023, covering the area of the project site and a 0.5-mile buffer. Three previous cultural resources surveys were conducted partially within the current proposed project area (see Table 3.5-1), however no archaeological resources were identified in the proposed project sites. A search of the Sacred Lands File maintained by the Native American Heritage Commission (NAHC) was also completed on August 7, 2023. This search failed to indicate the presence of Native American cultural resources in the immediate proposed Project area (NAHC 2023). An archeological reconnaissance survey of structures that would be demolished as a result of the proposed Project was conducted on September 22, 2023. This search failed to indicate the presence of Native American cultural resources in the immediate proposed project area but did document two historic era items within the immediate proposed project area. These included one historic water tower (REJ-092223-STR-01) previously used by the Dow Chemical Plant, and three railway spurs (P-07-000806) which divert from the Atchison, Topeka, and Santa Fe Railroad.

Table 3.5-1: Previous Cultural Resources Studies Within 0.5 Mile of the Project Area

Report Number	Author	Year	Report Title	Relationship to Project Area
S-007386	David Chavez	1985	Cultural Resources Evaluation for the Delta Landing EIR/EIS, Antioch, Contra Costa County, California.	Outside (within 0.5 mile)
S-007647		1985	Cultural Resource Investigation of the Proposed Pittsburg Marina Expansion Project.	Within Project Area
S-031405	James M. Allan	2006	Archaeological Survey and Cultural Resources Assessment for the city of Antioch's proposed Antioch Recycled Water Pipeline project (letter report)	Outside (within 0.5 mile)
S-035196	Allen Estes, Aimee Arrigoni, David Buckley, James Allan, and William Self	2006	Cultural Resource Assessment Delta Diablo Sanitation District and the city of Antioch Recycled Water Pipeline Extension Project, Antioch, Contra Costa County, California	Outside (within 0.5 mile)
S-035196	Milford Wayne Donaldson and Susan M. Fry	2007	BUR070508H; Proposed Extension of a Recycled Water Pipeline with the city of Antioch, Contra Costa County, California (07-SCAO-086)	Outside (within 0.5 mile)

Table 3.5-1: Previous Cultural Resources Studies Within 0.5 Mile of the Project Area

Report Number	Author	Year	Report Title	Relationship to Project Area
S-037097	Aimee Arrigoni and Thomas Young	2010	Cultural Resource Assessment Report Supplement Delta Diablo Sanitation District and the city of Antioch Recycled Water Pipeline Extension Project, Antioch, Contra Costa County, California	Outside (within 0.5 mile)
S-046909	Aisha Rahimi-Fike	2015	Delta Diablo Recycled Water System Expansion Project, Historical Resources Inventory and Evaluation Report, Contra Costa County, California	Outside (within 0.5 mile)
S-046909		2015	Delta Diablo Recycled Water System Expansion Project, Archaeological Inventory Report, Contra Costa County, California	Outside (within 0.5 mile)
S-050521	Heidi Koenig	2017	Antioch Brackish Water Desalination Project, Cities of Antioch And Pittsburg, Contra Costa County, Cultural Resources Survey Report	Within Project Area
S-050521	Heidi Koenig	2019	Cultural Resources Survey Report, Antioch Brackish Water Desalination Project, Cities of Antioch and Pittsburg, Contra Costa County, Revised 2019	Within Project Area
S-010040	Allan Bramlette, Mary Praetzellis, Adrian Praetzellis, and David A. Fredrickson	1988	Archaeological and Historical Resources Within the Los Vaqueros/Kellogg Study Area, Contra Costa and Alameda Counties, California	Outside (within 0.5 mile)
S-010040	Allan G. Bramlette, Mary Praetzellis, Adrian Praetzellis, Katherine M. Dowdall, Patrick Brunmeier, and David A. Fredrickson	1991	Archaeological Resources Inventory for Los Vaqueros Water Conveyance Alignments, Contra Costa County, California	Outside (within 0.5 mile)
S-018352		1976	East/Central Contra Costa County Wastewater Management Plan, California: Cultural Resources Survey	Outside (within 0.5 mile)
S-018352	Adam Cvijanovic and Larry Aull	1976	Assessment of Historical and Architectural Resources	Outside (within 0.5 mile)
S-018352	Colin I. Busby	1976	Assessment of Archaeological Resources: East/Central Contra Costa County Wastewater Management Plan	Outside (within 0.5 mile)
S-018440	G. James West and Patrick Welch	1996	Class II Archaeological Survey of the Contra Costa Canal, Contra Costa County, California	Outside (within 0.5 mile)

Table 3.5-1: Previous Cultural Resources Studies Within 0.5 Mile of the Project Area

Report Number	Author	Year	Report Title	Relationship to Project Area
S-022929	Sara M. Atchley	2000	Positive Archaeological Survey and Historic Resources Evaluation Report for the State Route 4/Loveridge Road Flood Relief Project - Kirker Creek, city of Pittsburg, Contra Costa County	Outside (within 0.5 mile)
S-022929	Aimee Dour-Smith	2000	State Route 4 Flood Relief Project on Kirker Creek- Supplement to Archaeological Survey Report	Outside (within 0.5 mile)
S-022929	Janice C. Calpo	2000	Historic Architectural Survey Report for the State Route 4/Loveridge Road Flood Relief Project- Kirker Creek, city of Pittsburg, Contra Costa County	Outside (within 0.5 mile)
S-024322	Sally Morgan and Bruce Bachand	1998	Pittsburg District Energy Facility, Cultural Resources Technical Report (Appendix K)	Outside (within 0.5 mile)
S-024322	Sally Morgan and Bruce Bachand	1998	Pittsburg District Energy Facility, Cultural Resources Technical Report (Supplement to Appendix K)	Outside (within 0.5 mile)
S-024322		2000	Pittsburg District Energy Facility Cultural Resources, Technical Report Addendum 1, Appendix K (Additional Construction Laydown Area)	Outside (within 0.5 mile)
S-030387	Bai "Tom" Tang, Michael Hogan, Josh Smallwood, and Terri Jacquemain	2005	Historical Resources Compliance Report, Burlington Northern Santa Fe Railway Double Track Project (Segment 2), Oakley (MP 1146.1) to Port Chicago (MP 1164.4), In and Near the Cities of Oakley, Antioch, and Pittsburg, and the Port Chicago Naval Weapons Station, Contra Costa County, California	Outside (within 0.5 mile)
S-030387	Bai "Tom" Tang, Michael Hogan, Josh Smallwood, and Terri Jacquemain	2005	Archaeological Survey Report/Historical Resource Evaluation	Outside (within 0.5 mile)
S-030579	Colin I. Busby	2004	Cultural Resources Report, Delta Energy Center Site (DEC) and Associated Linears, Cities of Pittsburg and Antioch, Contra Costa County, California, California Energy Commission (CEC), Project 98- AFC-3C	Within Project Area
S-035861	Bai "Tom" Tang	2009	Historic Property Survey Report, proposed undertaking to upgrade the capacity of the Burlington Northern Santa Fe (BNSF) Railway's mainline from Mile Post (MP) 1146.1 to MP 1164.4, between the city of Oakley and the Port Chicago Naval Weapons Station in Contra Costa County	Outside (within 0.5 mile)

Table 3.5-1: Previous Cultural Resources Studies Within 0.5 Mile of the Project Area

Report Number	Author	Year	Report Title	Relationship to Project Area
S-035861	Bai "Tom" Tang, Michael Hogan, Josh Smallwood, and Terri Jacquemain	2009	Archaeological Survey Report/Historical Resource Evaluation Report, Burlington Northern Santa Fe Railway Double Track Project (Segment 2), In and near the Cities of Oakley, Antioch, and Pittsburg and the Port Chicago Naval Weapons Station, Contra Costa County, California	Outside (within 0.5 mile)

The records search identified three previously recorded historic-era resources within 0.5-mile of the project area yet zero within the project location (see Table 3.5-2). These resources include one railroad, the approximate location of the Great Western Electrical-Chemical Company (the western part of the Dow Facility), and the former site of the Camp Stoneman Wastewater Treatment facility and associated features. It is anticipated that none of these previously recorded resources within the 0.5-mile radius will be impacted by the proposed Project.

Table 3.5-2: Previously Recorded Cultural Resources Within 0.5 Mile of the Project Area

Primary Number	Trinomial	Resource Type	Description	Recorder(s) and Year(s)	Relationship to Project Area	NRHP/CRHR Status
P-07-000806	CA-CCO-000732H	Historic (AH7; HP39)	Atchison, Topeka & Santa Fe Railroad	1995 (Brian Hatoff, Woodward Clyde); 1995 (Brian Hatoff, Woodward Clyde); 1995 (Brian Hatoff, Woodward Clyde); 1995 (Brian Hatoff, Woodward Clyde); 1996 (Ward Hill, [none]); 1998 (S. Ashkar, Jones & Stokes Associates, Inc.); 1998 (Meta Bunse, JRP Historical Consulting); 1999 (S. Atchley, G. Roark, Jones & Stokes Associates, Inc.); 2004 (Josh Smallwood, CRM Tech); 2009 (J. Lang, GANDA); 2016 (Polly S. Allen, JPR Historical Consulting)	Outside (within 0.5 mile)	Recommended Not Eligible
P-07-001086	N/A	Historic building (HP08)	Great Western Electrical	1976 (C. A. Faren, Contra Costa County Planning Dpt.)	Outside (within 0.5 mile)	Unknown

Table 3.5-2: Previously Recorded Cultural Resources Within 0.5 Mile of the Project Area

Primary Number	Trinomial	Resource Type	Description	Recorder(s) and Year(s)	Relationship to Project Area	NRHP/CRHR Status
			Chemical, Dow Chemical Co			
P-07-004995	CA-CCO-000869H	Historic site (AH2; AH4)	Camp Stoneman Wastewater Treatment Facility	2022 (Ronnie Johnson, TRC Companies)	Outside (within 0.5 mile)	Recommended Not Eligible

3.5.3.1.2 Standards of Significance

Criteria for determining the significance of impacts related to cultural resources are based on the environmental checklist form in Appendix G of the State CEQA Guidelines § 15000 et seq. An impact related to cultural resources would be considered significant if any of the following would occur with implementation of the proposed Project:

- a. Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5;
- b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5;
- c. Disturb any human remains, including those interred outside of dedicated cemeteries.
- d. Cause a substantial, adverse change in the significance of a tribal resource as defined in PRC 21074 §

Areas of No Project Impact.

The above significant impacts a, b, and d can be managed for the proposed Project and result in a finding of No Impact by following the Mitigation Measures outlined in Section 3.5.3.2 Impact Determinations below. Impact analysis and mitigation measures for impact c are covered in Chapter 3.7 with the discussion of the proposed Project in relation to geology and soils.

A cultural resources records search was conducted for the proposed Project on September 25, 2023, by the staff at the CHRIS Northwest Information Center. The records search included review of the NRHP, the CRHR, CHL, California Points of Historical Interest, and the California OHP's Historic Resource Inventory listings for the County.

The record search revealed that the western portion of the Dow Facility, which was part of the Great Western Electro-Chemical Company of 1916, is on the Office of Historical Preservation list of historic properties for the County as of April 5, 2012, under a 7R code (identified reconnaissance level survey not evaluated) and assigned the identification tag P-07-001086. However, this portion of the Dow Facility is generally west of Loveridge Road and would not be

affected by the proposed Project. The record search also revealed that the Atchison Topeka and Santa Fe Railroad (P-07-000806), just south of the Dow Facility, is considered a historic resource as of August 2009. In addition, Camp Stoneman Wastewater Treatment Facility (P-07-004995) was included in a survey in 2022 and is considered a historic site, however it is located outside of the project area and will not be affected.

One cultural resources reconnaissance survey of structures and cultural resources that would be demolished or affected as a result of the proposed Project was conducted on September 22, 2023. The survey consisted of walking the proposed project area and noting any structures in the Area of Potential Effect (APE) that appeared to be at least 50 years old. The site visit, documentation provided by Dow, and review of aerial photographs and topographic maps revealed one water tower and three railway spurs within the proposed project site that dated to the 1950's. Topographic maps also showed the presence of the Dowest Slough which ran through the northwest portion of the current project area between 1937 and 1952. The slough was backfilled and is no longer visible on topographic maps or aerial photographs. As a result of extensive development by previous property owners to enhance the area, the entirety of the project area has experienced substantial disturbance. This has led to a limited presence of native soils, with a significant portion of the property being covered by pavement and fill materials.

The historic-era water tower, REJ-092223-STR-01, is located in the northeastern section of the project area. It was in use from the 1950's to the 1980's and stands at approximately 100-feet tall with a diameter of 30-feet. The structure is composed of a circular tank that is supported by four steel support columns and a central riser pipe. Surrounding the tank is a balcony with a handrail. The southeast leg features a ladder extending from the ground up to the tank, as well as three levels of support struts and four levels of tie rods. No artifacts or features were identified in association with this water tower.

The three railway spurs (P-07-000806/CA-CCO-732) are situated in the southwestern section of the project area and extend beyond it to the southwest. Two of the railway spurs extend from P-07-000806, running the entire length of the project area in a west-to-east direction, covering approximately 875 feet. The third railway spur runs north to south for 400 feet, leading to an unknown storage building. Each rail is currently occupied by train cars. There was also an isolated railway spike identified adjacent to the middle railway spur on the north side.

These structures do not appear to have been significant within the context of Pittsburg's industrial history or Dow's company history, nor do the structures appear to be associated with persons who made significant contributions to history. They also do not display architectural significance. Lacking historical significance, the structures do not meet the criteria for listing in the CRHR and, therefore, are not considered historical resources for the purpose of CEQA.

No additional archaeological or historical resources were identified in the project area. The overall heavily disturbed context of the project area and presence of imported soils lessen that chance of encountering intact subsurface cultural resources and human remains during the construction and operation of the proposed Project.

3.5.3.2 Impact Determination

3.5.3.2.1 Construction-Related Impacts

- a. **Would the construction of the proposed Project cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5e? (CR-C1)**

Potentially, without mitigation. Construction activities are associated with the demolition and removal of the current structures in place, which includes ground disturbing activities (e.g., grading or excavation). The cultural resources record search found no previously recorded historical resources within the project footprint but indicated that a total of 27 cultural resource studies had been completed within a 0.5-mile of the project site, three of which included part of the current project area. During the survey of the current project area, one historic-era water tank was recorded, and a site update was made to include three railway spurs, all of which were deemed to be insignificant. During background research it was discovered that the property is graded and much of the soil has been previously disturbed or is sterile fill. As a result, Phase 1 of the proposed Project would have little to no impact on previously unrecorded historical resources, and the potential for subsurface historical sites is relatively low. Such resources could be discovered through subsurface construction activities, such as proposed grading and excavation at these Phase 2 work areas. If buried historical resources are encountered during construction, disturbance could result in the loss of integrity of cultural deposits, loss of information, and the alteration of a historical site setting. Inadvertent exposure of historic-era archaeological resources in an accessible area could make the resources susceptible to vandalism. Inadvertent discovery of historic-era archaeological resources during construction would result in a potentially significant impact. Implementation of **Mitigation Measures CR-C1a** and **CR-C1b**, which involves the implementation of an inadvertent discovery plan during any proposed grading and construction activities and preconstruction worker awareness training, would ensure that potential impacts of the proposed Project would remain less than significant.

Significance Level: Less than Significant with Mitigation Incorporated.

CR-C1 Mitigation Measures

- **Mitigation Measure CR-C1a: Prepare and Implement an Inadvertent Discovery Plan.** The following measures shall be included on all plans and employed by the Applicant and its contractors to avoid and minimize impacts to historical and archaeological resources at the project site:
 - A plan for the inadvertent discovery of historic or cultural resources, or human remains will be prepared. If unanticipated cultural resources (historic or prehistoric artifacts, concentrations of shell, burnt or unburnt bone, stone features, etc.) are uncovered during grading or excavation activities, work immediately within 50 feet of the discovery of the find shall be halted, the City of Pittsburg Planning Division shall be notified, and a professional archaeologist that meets the Secretary of the Interior's Standards and Guidelines for Professional Qualifications in archaeology and/or history shall be retained to determine the significance of the discovery. A mitigation plan shall include such measures as avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures.

The City shall consider mitigation recommendations presented in the mitigation plan. The Applicant shall be required to implement any mitigation necessary for the protection of cultural resources before ground-disturbing activities may resume.

- **Mitigation Measure CR-C1b: Provide Preconstruction Worker Awareness Training.** The following measure shall be included on all plans and employed by the Applicant and its contractors to avoid and minimize impacts to historical and archaeological resources at the project site:
 - As part of construction personnel training, the city of Pittsburg (City) shall ensure that all construction personnel receive training that includes: 1) information on the possibility of encountering human or animal remains during construction; 2) the types of cultural resources are likely to be seen; and 3) proper procedures in the event of any inadvertent discovery. Worker training shall be prepared and presented by a qualified archaeologist.

b. Would the construction of the proposed Project cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5? (CR-C2)

Potentially, without mitigation. Construction activities are associated with the demolition and removal of the current structures in place, which includes ground disturbing activities (e.g., grading or excavation). The archaeological record search found no previously recorded archaeological resources within the project footprint but indicated that a total of 27 cultural resource studies had been completed within a 0.5-mile of the project site, three of which included part of the current project area. During background research it was discovered that the property is graded and much of the soil has been previously disturbed or is sterile fill. As a result, Phase 1 of the proposed Project would have little to no impact on previously unrecorded archeological resources, and the potential for subsurface intact archaeological sites is relatively low. Such resources could be discovered through subsurface construction activities into native soils, such as proposed grading and excavation at these Phase 2 work areas. If buried cultural resources are encountered during construction, disturbance could result in the loss of integrity of cultural deposits, loss of information, and the alteration of an archaeological site setting. Inadvertent exposure of pre-historic or historic-era archaeological resources in an accessible area could make the resources susceptible to vandalism. Inadvertent discovery of pre-historic or historic-era archaeological resources during construction would result in a potentially significant impact. Implementation of **Mitigation Measures CR-C2a** and **CR-C2b**, which involves the implementation of an inadvertent discovery plan during any proposed grading and construction activities and preconstruction worker awareness training, would ensure that potential impacts of the proposed Project would be less than significant..

Significance Level: Less than Significant with Mitigation Incorporated.

CR-C2 Mitigation Measures

- **Mitigation Measure CR-C1a: Prepare and Implement an Inadvertent Discovery Plan.**

Mitigation Measure CR-C1b: Provide Preconstruction Worker Awareness Training. c. Would the construction of the proposed Project potentially disturb human remains, including those interred outside of formal cemeteries? (CR-C3)

Potentially, without mitigation. No formal cemeteries or human burials are known to have occurred on or near the project site, and any human remains that could be encountered would likely be associated with archeological or historical contexts. Activities associated with the demolition of existing structures and the construction of new structures would include ground disturbing activities (e.g., grading or excavation), therefore, Phase 2 of the proposed Project could have a potential impact on human remains, including those interred outside of formal cemeteries, however, the proposed Phase 2 Plan components occur on sites that have previously been subjected to grading and other earth-disturbing activities. The potential for human remains to be present and for construction activities to disturb these resources is extremely low. Implementation of **Mitigation Measures CR-C1a, CR-C1b, and CR-C2** would reduce potential impacts to a level that is less than significant. These consist of implementation of an inadvertent discovery plan, providing preconstruction worker awareness training, and include measures for the protection and treatment of burials in the event of discovery. Altogether, Implementation of the **CR-3 Mitigation Measures** ensure that potential impacts of the proposed Project would be less than significant.

Significance Level: Less than Significant with Mitigation Incorporated.

CR-C3 Mitigation Measure

- **Mitigation Measure CR-C1a: Prepare and Implement an Inadvertent Discovery Plan.**
- **Mitigation Measure CR-C1b: Provide Preconstruction Worker Awareness Training.**
- **Mitigation Measure CR-C2: Excavation/Grading Halt upon Human Burial or Bone Discovery.** The following measures shall be included on all plans and employed by HC (Contra Costa), LLC (Applicant) and its contractors to avoid and minimize impacts to historical and archaeological resources at the project site:
 - In the event of the discovery of a burial, human bone, or suspected human bone: 1) all excavation and grading in the vicinity of the find shall be halted immediately; 2) the area of the find shall be cordoned off; and 3) the Applicant shall immediately notify the County Coroner of the find and comply with provisions of PRC § 5097 with respect to Native American involvement, burial treatment, and re-burial, if necessary. If the coroner's office determines that the remains are Native American and not under its purview, it shall contact the Native American Heritage Commission as mandated by PRC § 5097.

3.5.3.2.2 Operational-Related Impacts

- a. **Would the operation of the proposed Project potentially disturb previously unrecorded historical or archaeological resources, or human remains? (CR-O1)**

No. During regular operations and maintenance activities of the proposed project there would be no impacts to archaeological resources or human remains, as no excavation would occur.

Significance Level: Less than Significant. No mitigation required.

b. Would the proposed Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074? (CR-02)

No. CEQA section 21074.2 requires the lead agency to consider the effects of a project on tribal cultural resources. As defined in section 21074, tribal cultural resources are sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are listed or determined to be eligible for listing on the national, state, or local register of historic resources. Pursuant to CEQA section 21080.3.1(d), on August 2, 2023, the City of Pittsburg Planning Department contacted regional Native American individuals and organizations, providing a description of the project and requesting comments on the identification, presence, and significance of tribal cultural resources in the project vicinity. During the 30-day comment period, no Native American tribal representatives contacted the planning department to request consultation.

Project-related impacts on tribal cultural resources are site-specific and generally limited to a project's construction area. As noted above, Native American tribal representatives for the project area were contacted and asked to comment on the identification, presence, and significance of tribal cultural resources in the project vicinity; none of these representatives contacted the planning department to request consultation. In addition, TRC conducted a records search with the California Historical Resources Information System and did not identify any previously recorded precontact archaeological or tribal cultural resources. TRC also conducted an intensive level pedestrian survey to identify cultural resources. No precontact cultural resources were identified during this survey. The project area was heavily disturbed by prior industrial development and grading. For these reasons, the proposed project is not anticipated to have a significant impact on tribal cultural resources.

Significance Level: Less than Significant. No mitigation required.

3.5.4 References

BCDC. 1968. San Francisco Bay Plan. Retrieved August 24, 2015, from http://www.bcdc.ca.gov/laws_plans/mcateer_petris.shtml.

Beardsley, R.K. 1954. *Temporal and Areal Relationships in Central California Archaeology*. University of California Survey Reports 24-25. Berkeley, CA.

Bennyhoff, J.A., and Richard E. Hughes. 1987. *Shell Bead and Ornament Exchange Networks between California and the Western Great Basin*. Anthropological Papers of the American Museum of Natural History 64(2). American Museum of Natural History, New York.

Borgwardt, R. 1996. *Our Heritage-The First 50 Years*, The Review, Western Railway Museum.

- Bramlette, A. 1988. *Phased Archaeological Research within the Los Vaqueros Locality, Contra Costa and Alameda Counties, California*. Paper presented at the 22nd Annual Meeting, Society for California Archaeology, Redding, California.
- Bramlette, A., M. Praetzellis, A. Praetzellis, D.A. Fredrickson. 1988. *Archaeological and Historical Resources within the Los Vaqueros/Kellogg Study Area Contra Costa and Alameda Counties, California*. Anthropological Studies Center, Sonoma State University, Academic Foundation, Inc. Prepared for Jones and Stokes Associates, Inc., Sacramento, California.
- Busby, Colin. 2004. *Cultural Resources Report: Delta Energy Center Site (DEC) and Associated Linear Cities of Pittsburg and Antioch Contra Costa County, California*. California Energy Commission (CEC); Project 98-AFC-3C. Prepared for Calpine, Pittsburg, CA and CH2M Hill, Sacramento, CA.
- Caipo, Janice C. 1999. *Architectural Survey Report for the State Route 4 Flood Relief Project - Kirker Creek, Pittsburg, California*.
- California Natural Resources Agency (CNRA). 2015a. Proposed Guidelines Amendments & Related Materials. Available online at http://resources.ca.gov/ceqa/guidelines/proposed_guidelines_amendments_and_related_materials.html.
- CCCCDD. 2010. *Draft Historic Resources Inventory*. Contra Costa, CA: Contra Costa County Community Development Department.
- CCCCGP. 2005. *Contra Costa County General Plan (CCCCGP) 2005-2020*. Contra Costa, CA: Contra Costa County.
- CCHMP. 2015. *Contra Costa County Hazardous Materials Area Plan*. Martinez: Contra Costa Health Services Hazardous Materials Programs Office.
- Chartkoff, J.L., and K.K. Chartkoff. 1984. *The Archaeology of California*. Stanford University Press, Stanford.
- City of Pittsburg. 2001. *General Plan Pittsburg 2020: A Vision for the 21st Century*. Pittsburg. January
- City of Pittsburg. 2009. *Railroad Avenue Station Area Specific Plan, Draft Environmental Impact Report*.
- City of Pittsburg. 2010. *General Plan Pittsburg 2020: A Vision for the 21st Century*. Available online at <http://www.ci.pittsburg.ca.us/index.aspx?page=228>.
- City of Pittsburg. 2013. Pittsburg Municipal Code (PMC). City of Pittsburg.
- City of Pittsburg. 2015. Retrieved from City of Pittsburg: <http://www.ci.pittsburg.ca.us/index.aspx?page=439>. November 16.

- Contra Costa County. 2005. *Contra Costa County General Plan 2005-2020*. Martinez: CCC Department of Conservation and Development.
- The Dow Chemical Company (Dow). 2008. *Introduction to Dow's Position on Energy and Climate Change*.
- The Dow Chemical Company (Dow). 2015. *2015 Sustainability Goals*. <http://www.dow.com/en-us/scienceand-sustainability/sustainability-reporting/2015-sustainability-goals>.
- The Dow Chemical Company (Dow). 2015a. *Dow Chemical Pittsburg, California Site Consolidated Contingency Plan*. February. The Dow Chemical Company.
- The Dow Chemical Company (Dow). (2015b). *The Dow Chemical Company Pittsburg, CA Injury and Illness Prevention Program*. The Dow Chemical Company.
- Dow Environmental. 1995. *Corrective Measures Study Report*. Pittsburg, CA: The Dow Chemical Company.
- Environmental Science Associates. 2007. *Dow Chemical Company MEI Project. Initial Study*. Pittsburg: City of Pittsburg.
- Fredrickson, D.A. 1973. *Early Cultures of the North Coast Ranges, California*. Unpublished Ph.D. dissertation. University of California, Davis.
- Fredrickson, David A. 1974. *Cultural Diversity in Early Central California: A view from the North Coast Ranges*. *Journal of California Anthropology*: 1:41-53. California State College, Sonoma, CA.
- Fredrickson, David A. and James A. Bennyhoff. 1994. *Archaeological Taxonomy in Central California Reconsidered*. In R.E. Hughes (ed.), *Toward a New Taxonomic Framework for Central California Archaeology: Essays by James A. Bennyhoff and David A. Fredrickson*. Contributions of the University of California Archaeological Research Facility No. 52, Berkeley.
- Governor's Office of Planning and Research. 1998. *CEQA, California Environmental Quality Act Statutes and Guidelines*. Governor's Office of Planning and Research, Sacramento, California.
- Groza, R. 2002. *An AMS Chronology for Central California Olivella Shell Beads*. Master's thesis, Department of Anthropology, San Francisco State University, San Francisco, California.
- Harre, D. 1986. *California's Electric Railways Interurbans Special No. 100*, Interurban Press, Glendale, CA.
- HCP/NCCP. 2006. *Final East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan Final EIR*. Contra Costa County, CA: Contra Costa County.

- Heizer R.F. 1971. *The California Indians: A Source Book*. Compiled and edited by R.F. Heizer and M.A. Whipple. 2nd ed. University of California Press, Berkeley.
- Hoover, M.B., H.E. Rensch, E.G. Rensch, and W.N. Abeloe. 1990. *Historic Spots in California*. Revised by Douglas E. Kyle. Stanford University Press. Stanford, California.
- Hughes, R.E. 1994. *Toward a New Taxonomic Framework for Central California Archaeology: Essays by James A. Bennyhoff and David A. Fredrickson*. Contributions of the University of California Archaeological Research Facility No. 52, Berkeley.
- Kelly, I. 1978. Coast Miwok. In *California*, edited by R.F. Heizer, pp.414-425. Handbook of North American Indians, Vol.8, W.C. Sturtevant, general editor, Smithsonian Institution. Washington, D.C.
- Koenig, H. 2017. Antioch Brackish Water Desalination Project, Cities of Antioch and Pittsburg, Contra Costa County; Cultural Resources Report. Prepared for the City of Antioch.
- Levy, R. 1978. Eastern Miwok. (Vol. 8). CA: Handbook of North American Indians.
- Lillard, J.B., R.F. Heizer, and F. Fenenga. 1939. *An Introduction to the Archaeology of Central California*. Sacramento Junior College, Department of Anthropology, Bulletin 2.
- McGowan, J.A. 1961. *History of the Sacramento Valley*. Lewis Historical Publishing Company. New York.
- Milliken, R.T, and J.A. Bennyhoff. 1993. Temporal Changes in Beads as Prehistoric California Grave Goods. In *There Grows a Green Tree: Essays in Honor of D. A. Fredrickson*, edited by Greg White, Pat Mikkelsen, William R. Hildebrandt, and Mark E. Basgall, pp. 381–395. Center for Archaeological Research at Davis Vol. 11. University of California, Davis.
- Milliken, Randall, Richard T. Fitzgerald, Mark G. Hylkema, Randy Groza, Tom Origer, David G. Bieling, Alan Leventhal, Randy S. Wiberg, Andrew Gottfield, Donna Gillette, Vaviana Bellifemine, Eric Strother, Robert Cartier, and David A. Fredrickson. 2007. *Punctuated Culture Change in the San Francisco Bay Area Prehistoric California: Colonization, Culture, and Complexity*. Edited by T.L. Jones and K.A. Klar, AltaMira Press. pp. 99-124.
- Moratto, M.J. 1978. *Archaeology & California's Climate*. Californian Indian Library Collections. Berkeley. 1984 California Archaeology. Academic Press. San Diego.
- NAHC. 2023. Sacred Lands File. Native American Heritage Commission.
- Nationwide Environmental Title Research, LLC (NETR). 2023. Historic Aerials. Electronic Resource, <http://www.historicaerials.com/?javascript>, accessed September 14, 2023.
- Nelson, N.C. 1909. *Shellmounds of the San Francisco Bay Region*. University of California Publications in American Archaeology and Ethnology 7(4).

- PAR Environmental. 1993. *National Register of Historic Places Determination of Eligibility for Three Historic Sites in Contra Costa and San Joaquin Counties, California*. Prepared by M. L. Maniery and L.R. Fryman, Sacramento, California. Prepared for Jones & Stokes Associates, Inc. Sacramento.
- Ragir, S.R. 1972. *The Early Horizon in Central California Prehistory*. Contributions to the University of California Archaeological Research Facility 15. University of California, Berkeley
- Smith, A.D. 2000. *Positive Archaeological Survey and Historic Resources Evaluation Report for the State Route 4/Loveridge Road Floor Relief Project – Kirker Creek, City of Pittsburg, Contra Costa County*. Prepared for Mark Thomas & Company, Walnut Creek, CA and City of Pittsburg, Pittsburg, CA.
- Thompson, J. 1958. *The Settlement of Geography of the Sacramento-San Joaquin Delta, California*. University Microfilms International, Dissertation Information Service. Ann Arbor, Michigan.
- TRC. 2023. *Phase I Environmental Site Assessment*. Former Corteva Property on Pittsburg Waterfront Road, APN 073-220-049-8, Pittsburg, California 94565. Prepared for H Cycle, Mountain View, California.
- TRC. 2023. *Cultural Resources Assessment for the H-Cycle Pittsburg Renewable Hydrogen Project, City of Pittsburg, Contra Costa County, California*. Prepared for H-Cycle, Mountain View, California.
- United States Department of Agriculture Natural Resources Conservation Service (USDA NRCS). 2023. Web Soil Survey, Washington. Electronic resource, <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>, accessed September 14, 2023.
- William Self Associates. 1993. *Archaeological Survey Report, Montezuma Wetlands Project, Solano County, California*. Prepared by Williams Self Associates, Orinda, CA. Prepared for Brady and Associates, Berkeley. Report S-16522 on file at the Northwest Information Center of the California Historical Resources Information System, Sonoma State University, Rohnert Park, California
- Woodward-Clyde Consultants. 1985. *Cultural Resource Investigation of the Proposed Pittsburg Marina*

3.6 ENERGY

3.6.1 Introduction

This chapter describes the existing environmental setting, regulatory context, and potential environmental impacts related to energy resources that could result from construction and operation of the proposed H Cycle Renewable Hydrogen Project (Project). Where significant energy-related environmental impacts would result from construction and operation of the project, mitigation measures are identified that could reduce or eliminate the impact.

3.6.2 Existing Environmental Setting

This section provides an overview of the existing environmental setting as it relates to energy use by the proposed project. Energy in the context of this EIR concerns the following:

- Electricity, typically expressed in kilowatts (kW), megawatts (MW), or gigawatts (GW): used by the proposed Project primarily for lighting process equipment, pumps, compressors, mechanical equipment, power tools, and HVAC systems.
- Natural gas, typically expressed in British thermal units (Btu) or cubic feet: used by the proposed Project for boiler fuel, flare purge and pilot, and the OMNI conversion unit.
- Hydrogen (H₂), typically expressed in pounds or metric tons, is an “alternative fuel”¹¹: the primary output of the project.
- Liquid fuel such as gasoline and diesel, typically expressed in gallons or liters: used by the proposed Project for on-road motor vehicles, and off-road motor vehicles and heavy equipment.
- Renewable energy, such as from wind or the sun, typically expressed in kW, MW, or GW, is energy from a source that is not depleted when used: used by the proposed Project for operation vehicles, equipment, and systems.
- Energy efficiency, typically expressed as a percent of total energy input minus waste energy divided by energy output, defined by the US Department of Energy as “the use of less energy to perform the same task or produce the same result” (US DOE 2023): used by the proposed Project to minimize wasting energy.

¹¹ The energy in 2.2 pounds (1 kilogram) of hydrogen gas is about the same as the energy in 1 gallon (6.2 pounds, 2.8 kilograms) of gasoline (DOE 2023b).

3.6.2.1 Electricity

3.6.2.1.1 State of California

In 2022, based on California Energy Commission (CEC) data, 203,257 gigawatt hours (GWh) of electricity were generated in the State, using a mix of coal, natural gas, oil, nuclear, biomass, and other generators. An additional 83,962 GWh were imported, so the total State usage for 2022 was 287,220 GWh.

3.6.2.1.2 Contra Costa County

Pacific Gas & Electric (PG&E) is the primary provider of electricity for many of the cities throughout Contra Costa County (County). However, in 2018, Marin Clean Energy (MCE) became the primary electricity provider for several cities and portions of unincorporated Contra Costa County. In 2022, based on CEC data, 8,338 gigawatt hours (GWh) of electricity were consumed in the County.

3.6.2.1.3 City of Pittsburg

Pittsburg Power Company (PPC) is a California municipal Joint Powers Agency (JPA) established in 1997 between the city of Pittsburg (City) and the City's Redevelopment Agency. As a California JPA, PPC performs as an electric and natural gas municipal utility, with the authority to provide wholesale and retail electric and gas utility services under authorized franchise agreements within California.

3.6.2.2 Natural Gas

3.6.2.2.1 State of California

Natural gas plays a significant role in California's energy generation and use. Approximately 45 percent of natural gas consumed in the State is burned to generate electricity. California depends on imports of natural gas for about 90 percent of the total natural gas consumed on an annual basis.

3.6.2.2.2 Contra Costa County

Data provided by the CEC shows that for 2022, total natural gas consumption in the County was 89.5 million MMBtu.

3.6.2.3 Hydrogen

3.6.2.3.1 United States

Approximately 10 million metric tons of hydrogen currently produced in the United States each year, almost all of which is used for refining petroleum, treating metals, producing fertilizer, and processing foods (DOE 2023b).

3.6.2.3.2 State of California

California is leading the nation in building hydrogen fueling stations. As of 2023, 52 retail hydrogen stations were open to the public in California, and 45 more were in various stages of construction or planning (DOE 2023b).

3.6.2.4 Liquid Fuel Use

3.6.2.4.1 State of California

The sector consuming the most liquid fuel in California is transportation, primarily gasoline and diesel. According to the California Department of Tax and Fee Administration, a total of 13.6 billion gallons of gasoline and 3.2 billion gallons of diesel fuel were sold in the state in 2022.

3.6.2.4.2 Renewable Energy

As of 2021, the state has reported 31 percent of electricity was sourced from certified renewable sources (United States Energy Information Administration, 2023).

3.6.3 Regulatory Context

3.6.3.1 Federal Energy-Related Provisions

3.6.3.1.1 Energy Policy Act of 1992

This act sets forth requirements for energy conservation for certain commercial and industrial equipment, energy efficiency in industrial facilities, and process-oriented industrial energy efficiency. Section 301(2) of the act identifies hydrogen as an alternative fuel.

3.6.3.1.2 Energy Policy Act of 2005

The Energy Policy Act of 2005 provided for renewed and expanded tax credits for electricity generated by qualified energy sources and provided bond financing, tax incentives, grants, and loan guarantees for a clean renewable energy and rural community electrification plus a federal purchase requirement for renewable energy.

3.6.3.1.3 Regional Clean Hydrogen Hubs

On October 13, 2023, the United States Department of Energy announced a \$7 billion program for Regional Clean Hydrogen Hubs (H2Hubs) to accelerate the commercial-scale deployment of low-cost, clean hydrogen. Among the hubs chosen was the California Hydrogen Hub (Alliance for Renewable Clean Hydrogen Energy Systems), which plans to develop clean energy technologies to produce hydrogen exclusively from renewable energy and biomass.

3.6.3.2 State of California Energy-Related Provisions

3.6.3.2.1 CEQA Statute and Guidelines

The CEQA statute requires that EIRs contain a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy (Public Resources Code section 21100(b)(3)). Appendix F, Energy Conservation, of the CEQA Guidelines notes that conserving energy implies the wise and efficient use of energy and lists energy-related setting, impact, mitigation, and other items that should be considered in an EIR. Appendix G of these Guidelines lists energy-related topics in a Checklist

Form. Applicable and relevant items contained in these lists are addressed in this Energy section. Section 15064.3 of the Guidelines notes that “vehicle miles traveled is the most appropriate measure of transportation impacts.” Since vehicles consume energy with each mile traveled, this factor is also addressed in this section.

3.6.3.2.2 California Energy Commission

Senate Bill (SB) 1389 (Statutes of 2002) required the California Energy Commission (CEC) to:

“[C]onduct assessments and forecasts of all aspects of energy industry supply, including production, transportation, delivery and distribution, demand, and prices. The commission shall use these assessments and forecasts to develop and evaluate energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the state’s economy, and protect public health and safety” (Public Resources Code Section 25301(a)).

This work provides the inputs for the Integrated Energy Policy Report (IEPR). CEC adopts an IEPR every two years and an update every other year. The Draft 2023 IEPR is the most recent update, issued November 13, 2023. The 2023 IEPR provides a summary of priority energy issues currently facing the state, including strategies and recommendations to further the state’s goal of ensuring reliable, affordable, and environmentally responsible energy sources.

3.6.3.2.3 California Public Utility Commission

The California Public Utility Commission (CPUC) has implemented a California Energy Efficiency Strategic Plan that sets forth ambitious goals for the development of zero net energy buildings. These include the goal that all commercial construction will be Zero Net Energy by 2030.

3.6.3.2.4 Senate Bill 1078: California Renewables Portfolio Standard Program

SB 1078 (Chapter 516, Statutes of 2002) established the California Renewable Portfolio Standard (RPS) for electricity supply. The RPS required that retail sellers of electricity provide 20 percent of their supply from renewable sources by 2017 and increase their renewable share by at least one percent each year.

3.6.3.2.5 Senate Bill X1-2: California Renewable Energy Resources Act

SB X1-2 of 2011 revised the Renewable Energy Resources Program to require all California utilities to increase the quantity of electricity generated from eligible energy resources per year, so that the quantity of retail electrical sales in California was at least 33 percent from renewables by December 31, 2020.

3.6.3.2.6 Senate Bill 350: Clean Energy and Pollution Reduction Act of 2015

The Clean Energy and Pollution Reduction Act of 2015 (SB 350) requires the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources to be increased to 50 percent by December 31, 2030. This act also requires doubling of the energy

efficiency savings in electricity and natural gas for retail customers through energy efficiency and conservation by December 31, 2030.

3.6.3.2.7 California Building Standards Code

The California Building Standards Code, Title 24 of the California Code of Regulations, contains the regulations that govern the construction of buildings in California. Title 24, Part 6 (California Energy Code) contains energy conservation standards applicable to most residential and nonresidential buildings throughout California. Title 24, Part 11 is the California Green Building Standards (also known as CALGreen) and includes regulations for energy efficiency and conservation, material conservation, resource efficiency, and environmental quality.

3.6.3.3 Local Energy-Related Provisions

3.6.3.3.1 City of Pittsburg, CA

In 2017, the City elected to join MCE, a “Community Choice Aggregation” energy program administrator. MCE offers a default option of 50 percent renewable energy plus an option of 100 percent renewable energy. The City’s website contains information on how businesses can improve energy efficiency. The City of Pittsburg Municipal Code references the California Building Standards Code, which includes the California Energy Code (Title 24, Part 6).

In 2023, the City adopted a Sustainability Plan. This plan was designed to be a first step towards reducing greenhouse gas (GHG) emissions in the City and to establish practices the community can implement that are practical and result in real, positive change. The plan notes that largest source of the City’s GHG emissions are produced by the energy sector (55 percent). To reduce these emissions, the plan describes strategies to electrify the building stock, decarbonize electricity, and increase use and storage of local renewable energy. The plan includes an Energy Security goal of increasing the uninterrupted availability of energy sources in the community at an affordable price and from local sources.

3.6.3.3.2 Contra Costa County

The Climate Action Plan is the County’s strategic approach to reduce GHG emissions from sources throughout the unincorporated area. The Climate Action Plan reflects the County’s programs and actions to decrease energy use, improve energy efficiency, develop renewable energy, reduce vehicle miles traveled, increase multi-modal travel options, expand green infrastructure, reduce waste, and improve the efficiency of government operations. The Climate Action Plan also forecasts the County’s GHG emissions and sets reduction targets and strategies. The County has issued a draft for public review of the 2024 Climate Action Plan Update to its 2015 Climate Action Plan, and in the meantime has developed a 2023-2024 Interim Climate Action Work Plan and prepared a 2022 Progress Report updating progress on these interim measures.

In April 2023, the Contra Costa Transportation Authority issued its Countywide Vehicle Miles Traveled (VMT) Mitigation Program Framework (Contra Costa County 2023).

3.6.4 Impact Analysis

This section describes the methodology used to analyze and determine the proposed Project's potential impacts and the significance criteria used to conclude whether an impact would be significant.

3.6.4.1 Impact Analysis Methodology

3.6.4.1.1 Construction

HC (Contra Costa), LLC (Applicant) has stated that it may use some electrically powered equipment during construction. For the below analysis, however, it is assumed that during construction of the proposed Project, all energy use would come from natural gas. Although both diesel and gasoline fuels would be used in on-road vehicles for material hauling and worker commute trips, for simplicity, estimated gallons of diesel and gasoline fuels are combined in this analysis. The same assumptions of construction equipment numbers, horsepower ratings, and load factors used to estimate construction CO₂ emissions (see Section 3.3 Air Quality and Greenhouse Gas Emissions) were used to calculate construction-related fuel use. Mobile and stationary emissions calculations are in Appendix F of this EIR.

3.6.4.1.2 Operations

Energy use calculated for operation of the proposed Project includes natural gas for the boiler, diesel fuel for the emergency generator and emergency firewater pump, purchased electricity for fixed and portable electrical equipment, and fuel from transportation sources (diesel and gasoline). Transportation fuel-use estimates were calculated by applying average fuel usage rates per vehicle mile to VMT data related to the proposed Project. CARB's EMFAC2017 model includes average fuel usage rates by vehicle class, fuel type (e.g., diesel, gasoline, electric, and natural gas), speed bin, calendar year, and county. Fuel usage rates from EMFAC2017 representing the County in 2026 were applied to the proposed Project's VMT data. Daily VMT were adjusted to annual VMT using a conversion factor of 347, which accounts for holidays and weekday/weekend business operations.

3.6.4.1.3 State CEQA Guidelines Appendix F

To ensure that energy implications are considered in project decisions, CEQA requires that EIRs include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. Appendix F of the State CEQA Guidelines discusses the goal of conserving energy implies the wise and efficient use of energy. The means of achieving this goal include:

1. Decreasing overall per capita energy consumption
2. Decreasing reliance on fossil fuels such as coal, natural gas, and oil
3. Increasing reliance on renewable energy sources

These considerations listed in Appendix F are used as the basis for conclusions in this chapter.

3.6.4.1.4 Significance Criteria

Neither the State of California, the County, nor the City have quantitative thresholds for evaluation of energy-related impacts. However, Appendix G of the State CEQA Guidelines has the following qualitative thresholds that can be used to evaluate the significance of energy impacts resulting from project construction and operation. A significant impact would occur if the proposed Project would:

- a. Result in a wasteful, inefficient, or unnecessary consumption of energy during construction and operational activities; or
- b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

3.6.5 Impacts and Mitigation Measures

The following impact discussion is based on the proposed Project's implementation compared with the significance criteria identified above.

3.6.5.1 Construction-Related Impacts

- a. **Would the proposed Project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction. (ENG-C1)**

Potentially, without mitigation. Project construction is considered a temporary activity, requiring the use of energy in the form of gasoline, diesel fuel, and electricity. Table 3.6-1 shows the total gallons of gasoline and diesel fuel estimated to be consumed during construction of the proposed Project. To construct the proposed project components, energy would be consumed by on-road vehicles, primarily by those transporting construction equipment and materials to and from the project site, and by off-road equipment working at the project site, primarily by heavy, diesel-powered construction equipment such as trucks, bulldozers, front end loaders, cranes, and forklifts. The table shows that on-road construction-related vehicle trips would consume 65,102 gallons of gasoline and diesel fuel during the construction period, and off-road construction equipment would consume an estimated 11,462 gallons of fuel.

Table 3.6-1: Gallons of Fuel for Construction

Construction Equipment Type	Combine Gasoline and Diesel Fuel Use (gals)
On-road vehicles	65,102
Off-road heavy-duty vehicles	11,462

The project will use heavy equipment meeting current regulatory standards and comply with regulations requiring replacement or retrofitting of heavy-duty on- and off-road vehicles and equipment, including limitations on the idling of on-site construction equipment to five minutes. To encourage the elimination of idling, mitigation measures are recommended to require or provide incentives for use of electrically powered trucks and equipment on the project site during construction.

Construction contractors would be required to use the best available engineering techniques, construction and design practices, and equipment operating procedures, thereby ensuring that the wasteful consumption of fuels and use of energy would not occur. To encourage construction waste minimization, mitigation measures are recommended to require or provide incentives for the construction contractor to meet CalGreen’s goal of recycling, diverting, or salvaging debris from construction and demolition.

There is a significant financial incentive for contractors to use energy-consuming resources in an efficient manner since fuel costs are a sizable portion of a contractor’s cost. To encourage the use of electricity or renewable energy for on-site construction related activities, mitigation measures are recommended to require or provide incentives for zero emission delivery trucks to use the facility and construction workers to use electric vehicles, transit, bicycles, or carpool.

Due to the temporary nature of construction, and in consideration of the information presented above, the construction phase of the project would not result in wasteful, inefficient, and unnecessary consumption of energy. Additionally, implementation of **Mitigation Measures ENG-C1a** through **ENG-C1d** would ensure that potential impacts of the proposed Project would be less than significant.

Significance Level: Less than Significant with Mitigation Incorporated.

3.6.5.1.1 ENG-C1 Mitigation Measures

Mitigation Measure ENG-C1a: Provide incentives for construction workers to use electric vehicles, transit, bicycles, or carpool.

As examples, construction workers could be provided preferential parking, stipends, and assistance to take advantage of the numerous federal and state electric vehicle incentives.¹² Bicyclists can be provided electric bike subsidies through California’s CalBike Program.¹³ Carpoolers can be provided reward programs (such as prize drawings), and employees can be encouraged to form carpools through rideshare matching and through other assistance.¹⁴

Mitigation Measure ENG-C1b: Provide incentives for zero emission delivery trucks to use the facility.

Since California requires 100 percent zero emission truck sales beginning in 2036,¹⁵ most major truck manufacturers already have such vehicles on the market today. Incentives could involve preferences in vendor selection, preferred scheduling, free or low-cost recharging on site, and purchase incentives.

Mitigation Measure ENG-C1c: Provide incentives for the construction contractor to use electric powered equipment on site.

¹² <https://fueleconomy.gov/feg/taxcenter.shtml>, <https://www.solarreviews.com/blog/ev-incentives>

¹³ https://www.calbike.org/bike_purchase_incentives/

¹⁴ <http://www.cleanairpartnerstx.org/resources/Carpool%20Incentive%20Programs%20-%20EPA.pdf#:~:text=Carpool%20incentive%20programs%20may%20incorporate%20a%20variety%20of.can%20help%20employees%20form%20carpools%20through%20rideshare%20matching>

¹⁵ <https://ww2.arb.ca.gov/resources/fact-sheets/path-zero-emission-trucks-faq>

Mitigation Measure ENG-C1d: Provide incentives for the construction contractor to minimize and reuse waste generated on site.

b. Would the proposed Project conflict with or obstruct a state or local plan for renewable energy or energy efficiency. (ENG-C2)

Potentially, without mitigation. As discussed above, the project will use heavy-duty on- and off-road vehicles and equipment. Mitigation measures are recommended to require or provide incentives for use of electrically powered trucks and equipment for hauling equipment and materials on the project site during construction. Implementation of recommended mitigation measures ENG-C1 (a-d) would benefit the County's Climate Action Plan goals to decrease energy use, reduce vehicle miles traveled, and increase multi-modal travel options, and the state's three "wise and efficient energy use" goals, stated CEQA Guidelines Appendix F to: (1) decrease overall per capita energy consumption, (2) decrease reliance on fossil fuels such as coal, natural gas, and oil, and (3) increase reliance on renewable energy.

Due to the temporary nature of construction, and in consideration of the information presented above, the construction phase of the project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Additionally, implementation of **Mitigation Measures ENG-C1a** through **ENG-C1d** would ensure that potential impacts of the proposed Project would be less than significant.

Significance Level: Less than Significant with Mitigation Incorporated.

3.6.5.1.2 ENG-C2 Mitigation Measures

Mitigation Measure ENG-C1a: Provide incentives for construction workers to use electric vehicles, transit, bicycles, or carpool.

Mitigation Measure ENG-C1b: Provide incentives for zero emission delivery trucks to use the facility.

Mitigation Measure ENG-C1c: Provide incentives for the construction contractor to use electric powered equipment on site.

Mitigation Measure ENG-C1d: Provide incentives for the construction contractor to minimize and reuse waste generated on site.

3.6.5.2 Operational Impacts

a. Would the proposed Project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project operation. (ENG-O1)

The proposed Project is designed to be as efficient as possible. Nonetheless, operation of the proposed Project would result in consumption of electricity, natural gas, and liquid fossil fuel by the facility and by vehicles traveling to and from the site. Table 3.6-2 shows the electricity, natural gas, and combined gasoline plus diesel consumption for project operations on an annual basis. The

values shown are based on the expected hours of operation and energy consumption rate for each stationary source, the estimated quantity of electricity to be purchased, and fuel use rates based on estimated miles travelled for motor vehicles, and hours of operation for heavy equipment.

Table 3.6-2: Operational and Stationary Energy Use (annual)

Stationary Sources	Operation	Fuel Quantity Used
S-25 OMNI Unit natural gas consumption	192 hours/year	51,959 MMB _{tu} ⁽¹⁾
S-36 Flare purge/pilot natural gas consumption	8,760 hours/year	6,773 MMB _{tu} ⁽¹⁾
S-40 Boiler natural gas consumption	8,760 hours/year	344,320 MMB _{tu} ⁽¹⁾
S-75 Emergency Generator diesel consumption	50 hours/year	650 gallons
S-80 Emergency firewater pump diesel consumption	50 hours/year	500 gallons
Purchased Electricity Consumption	8,760 hours/year	93,688 MWh
Total vehicles and mobile equipment diesel and gasoline combined consumption	2,112,793 miles/year	620,661 gallons

Note (1): MMB_{tu} = 1,000,000 British Thermal Units; MWh = megawatt hour

On-site operation of the proposed Project would result in consumption of electrical energy by mechanical drive processing equipment, natural gas by gas-fired processing equipment, diesel by the emergency generator and firewater pump, diesel by heavy equipment, and gasoline and diesel by on-site and off-site motor vehicles. These operations would consume approximately 93,688 MWh of electricity and an estimated 403,052 million British thermal unit (MMB_{tu}) of natural gas on an annual basis. The average need for the facility would be 8 to 9 MW of electricity with a peak of up to 13 MW.

Off-site travel to and from the project site by motor vehicles, including automobiles, trucks, and heavy equipment, would consume fuel during project operations. Based on energy use estimations contained within the CalEEMod model, project operation-related vehicle trips would result in approximately 6,262,491 vehicle miles traveled and consume an estimated 1,305,255 gallons of gasoline and diesel combined, annually.

The project would make use of the energy inherent in the municipal solid waste that would otherwise be wasted in landfills if it is not recovered by methane capture systems. Thus, from the perspective of the overall municipal solid waste system, the project would not result in wasteful, inefficient, or unnecessary consumption of energy during operation.

Purchased electricity will be used to power lighting, heating, ventilating and air conditioning (HVAC) systems, process equipment including pumps, compressors, fan motors, and instrumentation. All electrical equipment will be selected to meet or current energy efficiency standards. The proposed Project would be designed in accordance with the California Building Standards Code Title 24 energy efficiency standards. Title 24 includes energy conservation requirements that apply to the structural, mechanical, electrical, and plumbing systems in buildings. These standards help reduce the amount of energy required for lighting, water heating, and heating and air conditioning and promote energy conservation.

The Bay Area Rapid Transit (BART) station is approximately 2 miles from the project site, and the Eastern Contra Costa Transit Authority (Tri Delta Transit) operates 15 local bus lines serving the area (Eastern Contra Costa Transit Authority 2023). This allows for use of public transit to the City in proximity to the project site.

The proposed project site is within 1 mile of SR 4, providing efficient, direct access for deliveries of materials, shipment of product hydrogen, and worker commutes. SR 4 is a significant regional route of travel.

The proposed Project would use motor vehicles that comply with CARB fuel economy standards. To encourage the use of electricity or renewable energy for on-site construction related activities, mitigation measures are recommended to require or provide incentives for zero emission delivery trucks to use the facility and on-site recharge locations be provided for commuters or delivery vehicles.

Proposed Project operations would strictly follow equipment operating procedures and manufacturer's recommendations for properly maintaining equipment. In accordance with California Code of Regulations, Title 13, Sections 2449(d)(3) and 2485, idling of trucks and heavy equipment on the project site would be limited to no more than five minutes. To encourage the elimination of idling, mitigation measures are recommended to require or provide incentives for use of electrically powered trucks and equipment on the project site during construction.

Stationary sources that consume fuel would be permitted by the BAAQMD, limiting the firing rates and therefore fuel consumption rates to maximum levels based on health impacts and other considerations. Exceeding these limits would be in violation of BAAQMD regulations and permit conditions, so there is significant incentive for compliance with the imposed limits. There is also a significant financial incentive for the proposed Project to use energy-consuming resources in an efficient manner since fuel costs are a large portion of overall operating costs.

In consideration of the information presented above, including the recommended mitigation, operations of the proposed Project would not result in wasteful, inefficient, and unnecessary consumption of energy. Implementation of Mitigation Measures ENG-O1a through ENG-O1g would ensure that potential impacts of the proposed Project would be less than significant.

Significance Level: Less than Significant with Mitigation Incorporated.

3.6.5.2.1 ENG-O1 Mitigation Measures

Mitigation Measure ENG-O1a: Require the Applicant to install EV charging stations.

Mitigation Measure ENG-O1b: Require 10 percent of on-road commercial trucks entering the facility to be zero emission by 2030 and 100 percent zero emission by 2045.

Mitigation Measure ENG-O1c: Require all buildings to comply with the adopted California Green Building Standards Code.

Mitigation Measure ENG-O1d: Require the Applicant to prioritize parking for zero emission vehicles.

Mitigation Measure ENG-O1e: Provide incentives for facility workers and visitors to use electric vehicles, bicycles, or transit, or to walk or carpool to the site.

Mitigation Measure ENG-O1f: Require the Applicant to participate in one or more of the numerous zero emission truck purchase programs if funding is available. For example, CARB¹⁶ provides funding assistance, planning resources, and other support to entities such as the Applicant to purchase zero-emission vehicles.

Mitigation Measure ENG-O1g: Require 25 percent of all on-site forklifts, yard trucks, and company vehicles other than off-road equipment to be zero emissions by 2030 and 100 percent to be zero emissions by 2045.

b. Would the proposed Project conflict with or obstruct a state or local plan for renewable energy or energy efficiency. (ENG-O2)

The following features of the proposed Project would affect the potential environmental impact from conflicts with or obstruction of a state or local plan during operation:

- The proposed Project would produce low-carbon, renewable hydrogen for use in fuel cell vehicles, particularly heavy-duty trucks and buses, thereby advancing the goals of California legislation, such as SB32, and regulatory programs, including the Low Carbon Fuel Standard (LCFS) and Advanced Clean Fleets programs.
- The proposed Project would help meet the growing demand for renewable fuels in California. The project proposes to construct and operate a renewable hydrogen production facility that will convert organic waste into high-purity hydrogen gas for use in the transportation and industrial sectors. This supports the State's goals for increasing renewable energy supplies, while also supporting the objectives of SB 1383/AB 939 (see chapter 3.2 Air Resources) for the reduction of short-lived climate pollutants by reducing the quantity of organic waste being disposed in landfills. This directly supports the California Department of Resources Recycling and Recovery (CalRecycle) regulations designed to reduce statewide landfill disposal of organic waste. The proposed Project is consistent with many elements of the County's Climate Action Plan to improve energy efficiency, develop renewable energy, and reduce waste.

In consideration of the information presented above, operations of the proposed Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Additionally, implementation of **Mitigation Measures ENG-O1a** through **ENG-O1g** would ensure that potential impacts of the proposed Project would be less than significant.

Significance Level: Less than Significant with Mitigation Incorporated.

¹⁶ <https://ww2.arb.ca.gov/our-work/programs/medium-and-heavy-duty-fleet-zero-emission-vehicle-purchasing-support-sb-372>

3.6.5.2.2 ENG-O2 Mitigation Measures

Mitigation Measure ENG-O1a: Require the Applicant to install EV charging stations.

Mitigation Measure ENG-O1b: Require 10 percent of on-road commercial trucks entering the facility to be zero emission by 2030 and 100 percent to be zero emission by 2045.

Mitigation Measure ENG-O1c: Require all buildings to comply with the adopted California Green Building Standards Code.

Mitigation Measure ENG-O1d: Require the Applicant to prioritize parking for zero emission vehicles.

Mitigation Measure ENG-O1e: Provide incentives for facility workers and visitors to use electric vehicles, bicycles, or transit, or to walk or carpool to the site.

Mitigation Measure ENG-O1f: Require the Applicant to participate in one or more of the numerous zero emission truck purchase programs if funding is available. For example, CARB¹⁷ provides funding assistance, planning resources, and other support to entities such as the Applicant to purchase zero-emission vehicles.

Mitigation Measure ENG-O1g: Require 25 percent of all on-site forklifts, yard trucks, and company vehicles other than off-road equipment to be zero emission by 2030 and 100 percent to be zero emission by 2045.

3.6.6 References

Building Standards Commission. 2021. <https://www.dgs.ca.gov/BSC>

California Department of Tax and Fee Administration. 2023. Fuel Taxes for all Fuel Tax Programs. Accessed November 2023. <https://www.cdtfa.ca.gov/taxes-and-fees/spftrpts.htm>

California Energy Commission. 2023. 2023 Integrated Energy Policy Report. Accessed November 2023. <https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2023-integrated-energy-policy-report>

California Energy Commission (CEC). 2023. California Electricity Data. Accessed November 2023. <https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data>

California Energy Commission (CEC). 2023. California's Natural Gas Market. Accessed November 2023. <https://www.energy.ca.gov/data-reports/energy-almanac/californias-natural-gas-market>

¹⁷ <https://ww2.arb.ca.gov/our-work/programs/medium-and-heavy-duty-fleet-zero-emission-vehicle-purchasing-support-sb-372>

- California Energy Commission (CEC). 2023. California Gasoline Data, Facts, and Statistics. Accessed November 2023. <https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/california-gasoline-data-facts-and-statistics>
- California Open Data Portal. 2023. California Natural Gas Consumption Database. Accessed November 2023. <https://data.ca.gov/dataset/california-natural-gas-consumption-database>
- California Public Utilities Commission. 2021. Clean Energy and Pollution Reduction Act of 2015. Accessed November 2023. <https://www.cpuc.ca.gov/industries-and-topics/natural-gas/implementation-of-sb-350>
- California Public Utilities Commission. 2008. California's Long Term Energy Efficiency Strategic Plan. Accessed November 2023. <https://www.cpuc.ca.gov/-/media/cpuc-website/files/legacyfiles/e/5305-eestrategicplan.pdf>
- City of Pittsburg, California. 2023. Business Energy Use. Accessed November 2023. [Business Energy Use | City of Pittsburg \(pittsburgca.gov\)](#)
- City of Pittsburg, California. 2023. Climate Action Plan. Accessed November 2023. [Climate Action Plan | Contra Costa County, CA Official Website](#)
- City of Pittsburg, California. 2023. MCE Clean Energy. Accessed November 2023. [MCE Clean Energy | City of Pittsburg \(pittsburgca.gov\)](#)
- City of Pittsburg, California. 2023. Sustainability Overview. Accessed November 2023. <https://www.pittsburgca.gov/services/environmental-services/climate-action-pages>
- Clean Energy Connection 2023. Heat Pump vs Gas Furnace: Which Is More Efficient? February. Accessed December 2023. <https://www.cleanenergyconnection.org/article/heat-pump-vs-gas-furnace-which-more-efficient>
- Contra Costa Transportation Authority. 2023. Contra Costa Countywide Vehicle Miles Traveled (VMT) Mitigation Program Framework. April. Accessed December 2023. https://ccta.net/wp-content/uploads/2023/08/CCTA_VMT_Mitigation_Framework_Final_maindoc.pdf
- Contra Costa Conservation & Development. 2022. Climate Action Plan. Accessed November 2023. <https://www.contracosta.ca.gov/8678/Climate-Action-Plan>
- Eastern Contra Costa Transit Authority (Tri Delta Transit). 2023. Schedules & Fares. Accessed November 2023. https://www.actransit.org/website/uploads/HSP_PITT-sched.pdf
- Enapter 2023. What is the energy content of hydrogen? Accessed December 2023. https://www.enapter.com/kb_post/what-is-the-energy-content-of-hydrogen
- Energy Sage. 2023. How much energy does a solar panel produce? Vikram Aggarwal. December 11. Accessed December 2023. <https://www.energysage.com/solar/solar-panel-output/>

- Energy Wire. 2022. EPA floats sharply increased social cost of carbon. November 21. Accessed December 2023. <https://www.eenews.net/articles/epa-floats-sharply-increased-social-cost-of-carbon/>
- EPRI. 2014. M. Sweeney, et. al. Induction Cooking Technology Design and Assessment, in ACEEE Summer Study on Energy Efficiency in Buildings. Accessed December 2023. <https://www.aceee.org/files/proceedings/2014/data/papers/9-702.pdf>
- International Renewable Energy Agency (IRENA). 2021. Renewable Power Generation Costs in 2020. Accessed December 2023. [Renewable Power Generation Costs in 2020 \(irena.org\)](https://www.irena.org/Newsroom/Press-releases/2021/09/2021-09-10-renewable-power-generation-costs-in-2020)
- Legislative Counsel’s Digest. 2002. SB 1078, Sher. Renewable energy: California Renewable Portfolio Standard Program. Accessed November 2023. http://www.leginfo.ca.gov/pub/01-02/bill/sen/sb_1051-1100/sb_1078_bill_20020912_chaptered.html
- NREL. 2023. Electric Vehicle Efficiency Ratios for Light-Duty Vehicles Registered in the United States
- Mark Singer, Caley Johnson, Edward Rose, Erin Nobler, and Luna Hoopes. National Renewable Energy Laboratory. March. Accessed December 2023. <https://www.nrel.gov/docs/fy23osti/84631.pdf>
- Purificati, Darryl. 2020. How to Minimize the Impact of Engine Idling on Your Equipment. February 28. Accessed December 2023. <https://www.forconstructionpros.com/equipment/fleet-maintenance/article/21119191/petrocanada-lubricants-how-to-minimize-the-impact-of-engine-idling-on-your-equipment-fleet#:~:text=Construction%20managers%20and%20operators%20are%20increasingly%20noticing%20the,used%20each%20hour%20a%20vehicle%20is%20left%20idling.>
- University of Michigan. 2018. Michael Sivak and Brandon Schoettle, Relative Costs of Driving Electric and Gasoline Vehicles in the Individual U.S. States. January. Accessed December 2023. https://public.websites.umich.edu/~umtristwt/PDF/SWT-2018-1_Abstract_English.pdf
- United States Department of Energy (DOE). 2023. Biden-Harris Administration Announces \$7 Billion For America’s First Clean Hydrogen Hubs, Driving Clean Manufacturing and Delivering New Economic Opportunities Nationwide. October 13. Accessed November 2023. [Biden-Harris Administration Announces \\$7 Billion For America’s First Clean Hydrogen Hubs, Driving Clean Manufacturing and Delivering New Economic Opportunities Nationwide | Department of Energy](https://www.energy.gov/biden-harris-administration-announces-7-billion-for-americas-first-clean-hydrogen-hubs-driving-clean-manufacturing-and-delivering-new-economic-opportunities-nationwide)
- United States Department of Energy (DOE). 2023a. Energy Efficiency Policies and Programs. Accessed November 2023. <https://www.energy.gov/scep/spsc/energy-efficiency-policies-and-programs>
- United States Department of Energy (DOE). 2023b. Hydrogen Basics. Alternative Fuels Data Center. Accessed December 2023. https://afdc.energy.gov/fuels/hydrogen_basics.html

United States Energy Information Administration. 2023. California State Profile and Energy Estimates. Accessed November 2023. <https://www.eia.gov/state/analysis.php?sid=CA>

United States Environmental Protection Agency (EPA). 2023. Energy Efficiency for Water Utilities. Accessed November 2023. <https://www.epa.gov/sustainable-water-infrastructure/energy-efficiency-water-utilities>

EPA 2023a. Tailpipe Greenhouse Gas Emissions from a Typical Passenger Vehicle. June. Accessed December 2023. <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockkey=P1017FP5.pdf>

University of California Davis Center for Water-Energy Efficiency. 2023. Energy Intensity of Water. Accessed September 2023. [Energy Intensity of Water • Center for Water-Energy Efficiency \(ucdavis.edu\)](#)

3.7 GEOLOGY AND SOILS

3.7.1 Introduction

This section describes the environmental conditions and impacts analysis of geology, sediments and seismicity issues associated with construction and operation of the proposed Project. Also included is an analysis of the potential impacts of the proposed Project. Geologic issues associated with the proposed Project primarily involve the effects of seismic events on structures and systems.

Guidelines and key sources of data used in the preparation of this section include the following:

- Site plans
- Geologic maps
- Hazard maps

3.7.2 Existing Environmental Setting

The proposed Project includes construction and operation of a renewable hydrogen facility that would use waste organic materials as feedstock in a non-combustion thermal conversion process.

The project site is located at 901 Loveridge Road, 0.9 mile northeast of the intersection of Pittsburg-Antioch Highway and Loveridge Road. The project site, with laydown and staging yard, would be up to 20 acres of the approximately 24-acre Study Area. The Study Area is mostly vacant with some residual pieces of industrial equipment, a few railroad spurs, five buildings that account for less than one acre, and includes exterior and interior access roads that would be improved and maintained for the project. Permanent usage of the proposed renewable hydrogen facility would be approximately 12 acres of the 24-acre Study Area. The Study Area is currently graded and covered with an array of graveled ground, disturbed dirt, and concrete slabs that are primarily used for parking and storage.

The land use surrounding the project site is primarily industrial, including Calpine's Delta Energy Center (south), the Delta Diablo wastewater treatment facility (south), and Corteva Agriscience's manufacturing facility (west). Several transportation facilities are also in the surrounding area, including the Burlington Northern & Santa Fe (BNSF) railroad (south), Pittsburg-Antioch Highway (south), Union Pacific Railroad (south), and State Route 4 (south). New York Slough is north of the project site. The nearest residences are south of State Route 4 approximately 0.9 mile southwest of the project site.

3.7.2.1 Regional Geology

Most of the Bay Area is located within the Coast Ranges geomorphic province. The Coast Range province spans approximately 400 miles from Oregon into Southern California and is characterized by a series of northwest trending ridges and valleys that roughly parallel the San Andreas fault zone. Much of the Coast Range province is composed of marine sedimentary and volcanic rocks located east of the San Andreas Fault, while the region west of the San Andreas Fault is underlain by a mass

of basement rock that is composed of mainly marine sandstone and various metamorphic rocks. Unconsolidated alluvial deposits, artificial fill, and estuarine deposits (including Bay Mud) underlie the low-lying region along the margins of the Carquinez Straight and Suisun Bay (ABAG 2017).

3.7.2.2 Regional Seismicity

The San Francisco Bay Area lies along the San Andreas Fault system, which forms the boundary between the Pacific and North American tectonic plates. Movement between the plates has created several other active faults within the larger San Andreas Fault system, including the Hayward, Concord-Green Valley, Greenville, Rodgers Creek and San Gregorio Faults. The United States Geological Survey (USGS) Working Group on California Earthquake Probabilities has evaluated the probability of one or more earthquakes occurring in the Bay Area and concluded that there is a 63 percent likelihood of a magnitude 6.7 or higher earthquake occurring in the Bay Area by 2037 (USGS 2008; ABAG 2017). A summary of active faults in the region is included in Table 3.7-1.

Table 3.7-1: Regional Active Faults

Fault	Recent Movement	Historical Seismicity	Maximum Moment Magnitude (M _w)
Hayward	1868 (Holocene)	M6.8, 1868; many <M4.5	7.1
San Andreas	1989 (Holocene)	M7.1, 1989; M8.25, 1906; M7.0, 1838; many <M6	7.9
Rogers Creek-Healdsburg	1969 (Holocene)	M6.7, 1898; M5.6, 5.7, 1969	7.0
Concord-Green Valley	1955 (Holocene)	Historical active creep	6.9
Marsh Creek-Greenville	1980 (Holocene)	M5.6, 1980	6.9
San Gregorio-Hosgri	Holocene; Late Quaternary	Many M3-6.4	7.3
West Napa	2000 (Holocene)	M5.2, 2000	6.5
Maacama	Holocene	Historical active creep	7.1
Calaveras	1990 (Holocene)	M5.6-M6.4, 1861; M4 to M4.5 swarms 1970, 1990	6.8
Mount Diablo Thrust	Quaternary	N/A	6.7
<i>Source: ABAG 2017</i> <i>M = Magnitude</i> <i>N/A = Not applicable</i>			

Several major earthquakes have occurred within the Bay Area on these faults. A magnitude 6.8 earthquake occurred in 1868 along the Hayward Fault, which is located approximately 25 miles from the project site. Major earthquakes also occurred in 1861 on the Calaveras Fault, which is located approximately 20 miles from the project site, and in 1898 along the Rodgers Creek Fault, which is approximately 15 miles from the project site. The 1838, 1906 and 1989 earthquake events along the

San Andreas fault comprises the most significant earthquakes that have occurred in the region within the past 200 years and caused major damage to structures in the Bay Area.

3.7.2.3 Project Site Seismicity

As discussed above, the project site is located in a region defined by a number of fault zones associated with the San Andreas Fault system, which marks the tectonic boundary between the North American and Pacific plates. The major earthquake faults in the region are the San Andreas, the Hayward, and the Calaveras fault zones; other active Holocene faults close to the project site are the Concord-Green Valley fault, and the West Napa and Rogers Creek faults (Jennings and Bryant 2010; ABAG 2017).

The project site is not located in an Alquist-Priolo Earthquake Fault Zone (DOC 2019); however, a major seismic event on any of the surrounding active faults could cause significant ground shaking at the project site.

Ground movement intensity during an earthquake depends on several factors, including earthquake magnitude, distance to the fault, focus of earthquake energy and type of geological material. Areas underlain by bedrock tend to experience less ground shaking than those underlain by unconsolidated sediments. Earthquake ground shaking may have secondary effects, including liquefaction, seismically induced settlement, and lateral spreading.

Liquefaction is the transformation of saturated granular soils from a solid to liquefied state, caused by increased pore pressure and decreased effective stress usually induced by earthquakes. Areas susceptible to liquefaction can be determined based on characteristics such as soil type, soil density and depth to groundwater. Liquefaction occurs in areas underlain by loose, saturated silt, sand and/or gravel. A study of the nine-county San Francisco Bay Area, conducted by the USGS and Association of Bay Area Governments (ABAG) identify the project site as moderately susceptible to liquefaction (Knudsen et al. 2000; ABAG 2020).

The project site is located in a generally flat area, and the ABAG Hazard Viewer Map shows that the project site is not located in landslide hazard zone (ABAG 2020).

3.7.3 Regulatory Context

This section provides a summary of laws and regulations that may affect geologic resources and seismicity analyses.

3.7.3.1 Federal

3.7.3.1.1 Earthquake Hazards Reduction Act

The Earthquake Hazards Reduction Act of 1977 (42 USC, 7701 et seq.) requires the establishment and maintenance of an earthquake hazards reduction program by the federal government. Under the National Earthquake Hazards Reduction Program (NEHRP), four federal agencies have responsibility for long-term earthquake risk reduction: the USGS, the National Science Foundation (NSF), the Federal Emergency Management Agency (FEMA), and the National Institute of

Standards and Technology. NEHRP’s mission includes improved understanding, characterization, and prediction of hazards and vulnerability; improvements of building codes and land use practices; risk reduction through post-earthquake investigation and education; development and improvement of design and construction techniques; improvement of mitigation capacity; and accelerated application of research results.

3.7.3.1.2 Executive Order 12699

Signed in January 1990, Presidential EO 12699 implements provisions of the Earthquake Hazards Reduction Act for “federal, federally assisted or federally regulated new building construction” and requires the development and implementation of seismic safety programs by Federal agencies.

3.7.3.2 State

3.7.3.2.1 Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act is overseen by the California Department of Conservation, California Geological Survey. Alquist-Priolo earthquake fault zones are regulatory zones surrounding the surface traces of active faults in California, and the purpose of the Act is to reduce losses from surface fault rupture. If an active fault has the potential for surface rupture, a structure for human occupancy cannot be placed over the fault and must be a minimum distance from the fault. The Alquist-Priolo Act defines an active fault as one that has ruptured in the last 11,000 years.

3.7.3.2.2 California Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act was established in 1990 and directs the Department of Conservation, California Geological Survey to identify and map areas prone to earthquake hazards, including liquefaction, landslides, and ground shaking. The purpose of the Act is to reduce the threat to public safety and to minimize the loss of life and property by identifying and mitigating seismic hazards. The Act requires the State Geologist to establish regulatory zones and to issue Seismic Hazard Zone maps.

3.7.3.2.3 California Building Standards Code

The California Building Standards Code (California Code of Regulations, Title 24) includes provisions for earthquake safety based on factors including occupancy type, soil and rock profile, the strength of the ground and distance to seismic sources.

3.7.3.3 Local

3.7.3.3.1 Contra Costa County

Contra Costa Health Services Hazardous Materials Programs administers the California Accidental Release Prevention (CalARP) Program (California Code of Regulations, Title 19, Division 2, Chapter 4.5). Through CalARP, businesses that handle more than a threshold quantity of certain regulated substances must develop a Risk Management Plan (RMP). An RMP is a detailed engineering analysis of the potential accident factors, including seismic considerations, present at a

business, as well as the mitigation measures that can be implemented to reduce this accident potential.

3.7.4 Impacts and Mitigation Measures

The following impact determinations for geology and soils were made for the proposed Project:

a. **Would the proposed Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving:**

- **Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (GEO-1a)**

No. As discussed above, the project site is located in a region defined by a number of fault zones associated with the San Andreas and Hayward Fault systems, but the project site is not located in any Alquist-Priolo Earthquake Fault Zone (DOC 2019). The closest faults include an unnamed fault approximately 1 mile to the west of the Clayton Fault (within the Greenville Fault Zone), located approximately 1 mile to the south of the project site; the Montezuma Hills Fault (within the Vaca Fault Zone), located approximately 1 mile north of the project site; and the Antioch Fault, located approximately 3 miles to the east of the project site. Therefore, direct rupture from an earthquake fault would be unlikely, and the impact is less than significant.

Significance Level: Less than Significant. No mitigation required.

- **Strong seismic ground shaking? (GEO-1b)**

Potentially significant, without mitigation. Because the project site is located in a region with several major fault zones, it may experience strong ground shaking associated with seismic activity along these faults. The extent and strength of ground shaking depends on the magnitude and intensity of the earthquake, distance from the epicenter and geologic conditions. The ABAG Hazard Viewer Map indicates that the project site is located in an area susceptible to severe shaking hazard (ABAG 2020). Ground shaking at the project site has the potential to directly or indirectly cause potential substantial adverse effects. Upset conditions at the proposed facility could result in impacts if the structural design of the facility does not address strong seismic ground shaking.

Therefore, the proposed facility and related equipment must be designed to comply with the California Building Code requirements. The California Building Code represents a standard safeguard against major structural failures and loss of life, and it requires that structures will: 1) resist minor earthquakes without damage; 2) resist moderate earthquakes without structural damage, but with some non-structural damage and 3) resist major earthquakes without collapse, but with some structural and non-structural damage.

New structures and equipment at the project site would require building permits from the City of Pittsburg Community and Economic Development Department, Building Division, as applicable. Building permit applications and plans are reviewed by third-party plan checkers for compliance with the California Building Code; therefore, issuance of building permits from the local authority

will assure compliance with the California Building Code requirements. Implementation of **Mitigation Measure GEO-1** would ensure that potential impacts of the proposed Project would be less than significant.

Significance Level: Less than significant with mitigation incorporated.

GEO-1 Mitigation Measures

- **Mitigation Measure GEO-1: Compliance with California Building Code requirements.** As described above, the proposed facility and related equipment must be designed to comply with the California Building Code requirements. The California Building Code represents a standard safeguard against major structural failures and loss of life, and it requires that structures will: 1) resist minor earthquakes without damage; 2) resist moderate earthquakes without structural damage, but with some non-structural damage and 3) resist major earthquakes without collapse, but with some structural and non-structural damage.
 - **Seismic-related ground failure, including liquefaction? (GEO-1c)**

Potentially, without mitigation. Liquefaction is the transformation of saturated granular soils from a solid to liquefied state, caused by increased pore pressure and decreased effective stress, and usually induced by earthquakes. Areas susceptible to liquefaction can be determined based on characteristics such as soil type, soil density and depth to groundwater. Liquefaction occurs in areas underlain by loose, saturated silt, sand and/or gravel. A study of the nine-county San Francisco Bay Area, conducted by the United States Geological Survey (Knudsen et al., 2000) and the ABAG Hazard Viewer Map identify the project site as moderately susceptible to liquefaction (ABAG 2020).

Therefore, before the issuance of building permits, plans for the proposed Project would have to be reviewed and found to comply with applicable California Building Code requirements and recommendations in the geotechnical report and soil study. Any structures at the project site would be built and maintained in accordance with these regulations. Implementation of **Mitigation Measure GEO-1** would ensure that potential impacts of the proposed Project would be less than significant.

Significance Level: Less than significant with mitigation incorporated.

- **Mitigation Measure GEO-1: Compliance with California Building Code requirements.** As described above, the proposed facility and related equipment must be designed to comply with the California Building Code requirements. Plans for the proposed Project would have to be reviewed and found to comply with applicable California Building Code requirements and recommendations in the geotechnical report and soil study. Any structures at the project site would be built and maintained in accordance with these regulations.
 - **Landslides? (GEO-1d)**

No. The project site is located in a generally flat area, and the ABAG Hazard Viewer Map shows that the project site is not located in landslide hazard zone (ABAG 2020). Therefore, without steep slopes or large changes in grade across the property, impacts from landsliding would be less than significant.

Significance Level: Less than Significant. No mitigation required.

b. Would the proposed Project result in substantial soil erosion or the loss of topsoil? (GEO-2)

No. project construction activities may temporarily increase the exposure of soils to erosion from grading and excavation activities. Projects that disturb one or more acre of soil are required to obtain coverage under the National Pollutant Discharge Elimination System (NPDES) Construction Storm Water General Permit. Project construction activities subject to this permit may include clearing, grading and/or other disturbances to the ground such as stockpiling or excavation.

Because the proposed Project would disturb more than one acre, a Stormwater Pollution Prevention Plan (SWPPP) must be prepared for the proposed Project. Construction associated with the proposed Project would be required to provide proper controls so that stormwater runoff would be contained and only allowed to drain off-site when appropriately managed, with drainage velocities adjusted using engineering controls as needed to minimize erosion.

Due to the limited grading and excavation on the generally flat site, the proposed Project is not expected to result in substantial soil erosion or loss of topsoil and impacts would be less than significant.

Significance Level: Less than significant. No mitigation required.

c. Would the proposed Project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse? (GEO-3)

Potentially significant, without mitigation. Unconsolidated alluvial deposits, artificial fill, and estuarine deposits (including Bay Mud) underlie the low-lying region along the margins of the Carquinez Straight and Suisun Bay (ABAG 2017), and these soils may be unstable. Any new structures and/or equipment associated with the proposed Project would be constructed in compliance with California Building Code requirements and recommendations in the geotechnical report and soil study.

The potential for liquefaction at the project site is discussed above. The project site is located in a generally flat area, and there are no substantial slopes in the vicinity that would pose a landslide hazard, nor are there unsupported conditions susceptible to significant lateral spreading. Additionally, implementation of **Mitigation Measure GEO-1** would ensure that potential impacts of the proposed Project would be less than significant.

Significance Level: Less than significant with mitigation incorporated.

- **Mitigation Measure GEO-1: Compliance with California Building Code requirements.**

d. Would the proposed Project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property? (GEO-4)

Potentially, without mitigation. Expansive soils are soils with the potential to undergo significant changes in volume due to their composition and moisture content. This periodic shrinking and/or swelling of expansive soils may cause damage to structures and roads. The project site is located in an area of predominantly clay soils, including Clear Lake clay, Rincon clay loam, and Joice muck (USDA 2023), which may be expansive.

Any new structures and/or equipment associated with the proposed Project would be constructed in compliance with California Building Code requirements and recommendations in the geotechnical report and soil study. Implementation of **Mitigation Measure GEO-1** would ensure that potential impacts of the proposed Project would be less than significant.

Significance Level: Less than significant with mitigation incorporated.

- **Mitigation Measure GEO-1: Compliance with California Building Code requirements.**

d. Would the proposed Project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater? (GEO-5)

No. For interconnection to utilities such as water supply and wastewater sewer services, improvements may be completed by Delta Diablo Sanitary District, Contra Costa Water District, or other utility providers and will comply with necessary requirements. No significant impacts on soils from septic tanks or alternative wastewater disposal systems are expected and the proposed Project would have a less than significant impact.

Significance Level: Less than Significant. No mitigation required.

e. Would the proposed Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (GEO-6)

No. As discussed in the Cultural Resources section, three previous cultural resources surveys were conducted partially within the current project area; however, no archaeological resources were identified in the project site. Therefore, it is unlikely that paleontological resources would be disturbed by construction or operation of the proposed Project. The project site is therefore not likely to contain significant paleontological resources and impacts from the proposed Project would be less than significant.

Significance Level: Less than Significant. No mitigation required.

3.7.5 References

Association of Bay Area Governments (ABAG). 2017. Plan Bay Area 2040 – Final Environmental Impact Report. July. SCH No. 2016052041. Online: <http://2040.planbayarea.org/reports>. Accessed online: October 19, 2023.

- Association of Bay Area Governments (ABAG). 2020. Hazard Viewer Map, last updated March 2020. Online: <https://abag.ca.gov/our-work/resilience/data-research/hazard-viewer>. Accessed online: October 19, 2023.
- California Department of Conservation (DOC). 2019. California Geologic Survey – Alquist-Priolo Earthquake Fault Zones. Online: <https://www.conservation.ca.gov/cgs/alquist-priolo>. Accessed online: October 19, 2023.
- Jennings, Charles W. and Bryant, William A. 2010. California Geological Survey Geologic Data Map No. 6. Fault Activity Map of California. Online: <https://maps.conservation.ca.gov/cgs/fam/>. Accessed online: October 19, 2023.
- Knudsen, Keith L., Sowers, Janet M., Witter, Robert C., Wentworth, Carl M., and Helley, Edward J. 2000. U.S. Geologic Survey Open-File Report 00-444, Preliminary Maps of Quaternary Deposits and Liquefaction Susceptibility, Nine-County San Francisco Bay Region, California.
- United States Department of Agriculture (USDA), Natural Resources Conservation Service NRCS. 2023. Web Soil Survey, last updated September 2023. Online: <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>. Accessed online: October 19, 2023.
- United States Geological Survey (USGS). 2008. Working Group on California Earthquake Probabilities (WG02), Fact Sheet 2008-2037, Forecasting California’s Earthquakes – What Can We Expect in the Next 30 Years? Online: <http://pubs.usgs.gov/fs/2008/3027/fs2008-3027.pdf>. Accessed online: October 19, 2023.
- United States Geological Survey (USGS). 2018. *2018 Long-term National Seismic Hazard Map*. Online: <https://www.usgs.gov/media/images/2018-long-term-national-seismic-hazard-map>. Accessed online: October 19, 2023.

3.8 MINERAL RESOURCES

3.8.1 Introduction

This section describes the mineral resources in the study area, the regulatory environment regarding conservation and use of resources, and the potential impacts from construction of the proposed Project.

3.8.2 Existing Environmental Setting

Per the city of Pittsburg's (City's) General Plan, the City contains one of two places in the San Francisco Bay Area where coal was mined (City of Pittsburg 2020). The discovery of coal in the 1850s led to the construction of Black Diamond Mines. Due to competition from other energy sources, the mines closed in 1949. Underground mining for sand began in the 1920s, however, competition from exterior glass-making companies led to the closing of the local steel foundry and the ultimate cessation of sand mining by 1949 (East Bay Regional Parks District 2023). Coal mining and any other mining operations in the Planning Area are no longer active, and no significant mineral deposits remain (City of Pittsburg 2020). The hills south of City limits may contain mineral deposits, though their significance is unknown.

3.8.3 Regulatory Context

3.8.3.1 State

The Surface Mining and Reclamation Act (SMARA) of 1975 established policies for the conservation, development, and reclamation of mineral lands. It also contained specific provisions for the California Geological Survey to classify the regional significance of mineral resources through the use of Mineral Resource Zones (MRZs). The project site area is classified by the California Department of Conservation as MRZ-1. This designation means that the State has determined adequate information exists to indicate "that no significant mineral deposits are present" or to judge that "little likelihood exists for their presence" (California Department of Conservation 2023). No important mineral resources have been identified on the project site. Furthermore, mineral resource extraction is a limited allowed use within the project's zone that will not be pursued (City of Pittsburg 2020).

3.8.3.2 Local

Chapter 8, Conservation Element, of the Contra Costa General Plan contains goals and policies relevant to the mineral resources in Contra Costa County (County). These include Goals 8-M, 8-N and 8-O, and Policies 8-56, 8-57 and 8-59, which call upon the County to ensure continued viability of mineral extraction operations while ensuring that surrounding land uses and the natural environment are not negatively impacted by mining activities. Figure 8-4 of the General Plan Conservation Element designates areas of the County as important mineral resources areas.

3.8.4 Impacts and Mitigation Measures

For the purposes of this analysis, the proposed Project is considered to have a significant impact to mineral resources if the project site is located on a state- or county-designated mineral resource, if the proposed Project would disrupt mineral extraction operations and if the proposed Project would:

- a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.
- b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on local general plan, specific plan or other land use plan.

No. The project site has been developed for industrial use for several years and there is no history of mining resources on or near the project site. As mining practices in the project area in Pittsburg and/or unincorporated County lands are not present and there are no significant mineral deposits or mineral resource recovery sites nearby, the proposed Project would not result in the loss of availability of a known mineral resource or a locally important mineral resource recovery site. Therefore, no impact would occur and no mitigation would be required.

Significance Level: No impact. No mitigation required.

3.8.5 References

- California Department of Conservation. (2023). The California Mineral Resources Program. Available at: <https://www.conservation.ca.gov/cgs/minerals/program>.
- City of Pittsburg. 2001. *City of Pittsburg General Plan 2020: A Vision for the 21st Century*. January. Available at: <https://www.pittsburgca.gov/home/showpublisheddocument/1391/637479142624630000>.
- City of Pittsburg. 2020. "Chapter 18.54 Industrial Districts (I)." City of Pittsburg Municipal Code. Available at: <https://www.codepublishing.com/CA/Pittsburg/html/Pittsburg18/Pittsburg1854.html#18.54>.
- East Bay Regional Parks District. (2023). "Black Diamond Mines Regional Preserve." East Bay Parks, East Bay Regional Parks District, 22 Apr. 2023. Available at: <https://www.ebparks.org/parks/black-diamond#history>.

3.9 HAZARDS AND HAZARDOUS MATERIALS

3.9.1 Introduction

This section describes the potential hazards to the environment that would result from implementation of the proposed Project. Existing regulations governing use, cleanup and transport of hazardous materials are summarized, as well as, potential cleanup efforts of suspect lead impacted soil, and preventative measures implemented as part of the construction, start-up, and operation of the facility.

Guidelines and key sources of data used in the preparation of this section include the following:

- Aerial photography
- Site plans and project renderings
- County Land Use and Emergency Response Plans
- TRC Phase I Environmental Site Assessment for the property dated August 2023 (Appendix G)

3.9.2 Existing Environmental Setting

The project site is currently owned by Dow Chemical Company and four buildings used for material storage, a laboratory, an empty shed (currently unused), an inactive water tower (in the northeast corner of the project site), as well as rail spurs along the southern and southwestern property boundaries are present on the project site. The existing buildings are utilized by Corteva, Generon, and Schlumberger primarily for storage and the railroad spurs are also utilized by Corteva. The remainder of the project site is unpaved and paved parking as well as equipment storage and vegetation. A stormwater outfall and collection system is also present along the eastern property boundary. Currently, hazardous material storage from current tenants (Generon and Schlumberger) occupies approximately 7,000 square feet in the northern portion of the project site.

Ethyl Corporation operated on the project site between 1958 and 1963. Based on review of waste discharge requirements (San Francisco Bay Regional Water Quality Control Board's Order No. R2-2002-0007, Ethyl Corporation used and stored chemicals to manufacture tetraethyl lead prior to DOW Chemical Company's purchase of the property in 1982. Soil samples collected in 1979 (California Regional Water Quality Control Board San Francisco Bay Region tentative order with The Dow Chemical Company, Undated) detected lead in surface soils from 50 to 638 mg/kg and in 1990 groundwater sampling detected carbon tetrachloride, chloroform, and trichloroethylene up to 10, 1.4, and 1.2 mg/L respectively. The project site was incorporated into the corrective action under the Hazardous Waste Management Program oversight at the DOW Chemical Company property that is now under the direction of the San Francisco Bay Regional Water Quality Control Board (Board) -ORDER No. R2-2002-0007. The project site was considered part of the Dow 900/1000 Block Solid Waste Management Unit (SWMU) which is now considered closed. Groundwater monitoring was previously performed in accordance with the cleanup order. Groundwater extraction wells were installed to contain an isolated low level Volatile Organic Compounds (VOC) plume and were operated between April 1992 and February 1995. A Workplan for groundwater investigation

was submitted to the Board in August 2002, but was not implemented. Groundwater concentrations of contaminants were reported to be low to non-detect during the final sampling event.

3.9.3 Regulatory and Policy Context

3.9.3.1 Federal

3.9.3.1.1 The Federal Toxic Substances Control Act (1976) and the Resource Conservation and Recovery Act of 1976

These acts established a program administered by the United States Environmental Protection Agency (EPA) for the regulation of the generation, transportation, treatment, storage and disposal of hazardous waste. This federal regulation is codified in 40 Code of Federal Regulations (CFR). The Resource Conservation and Recovery Act (RCRA) was amended in 1984 by the Hazardous and Solid Waste Act, which affirmed and extended the “cradle-to-grave” system of regulating hazardous wastes. Among other things, the Hazardous and Solid Waste Act prohibited use of certain techniques for the disposal of some hazardous wastes. Individual states, including California, may implement their own hazardous waste programs under the RCRA with approval by the EPA. In 1992, the California Department of Toxic Substances Control (DTSC) received authorization from the EPA to implement RCRA, Subtitle C requirements and the associated regulations in California.

3.9.3.1.2 The Comprehensive Environmental Response, Compensation and Liability Act (Enacted 1980), Amended by the Superfund Amendments and Reauthorization Act (1986)

This law provides broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. Among other things, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) established requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at these sites, and established a trust fund to provide for cleanup when no responsible party could be identified. CERCLA also enabled revision of the National Contingency Plan, which provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants or contaminants. The National Contingency Plan also established the National Priorities List.

3.9.3.1.3 EPA Emergency Planning and Community Right-to-Know Act

The objectives of the Emergency Planning and Community Right-to-Know Act (EPCRA) are to: (1) allow state and local planning for chemical emergencies, (2) provide for notification of emergency releases of chemicals, and (3) address communities' right-to-know about toxic and hazardous chemicals. EPCRA Section 302 requires facilities to notify the State Emergency Response Commission and local Emergency Response Committees of the presence of "extremely hazardous substances" (40 CFR Part 355 lists specific substances) if it has such a substance in excess of the substance's threshold planning quantity, and directs the facility to appoint an emergency response coordinator. Implementation of EPCRA has been delegated to the State of California. The California Emergency Management Agency requires businesses to develop a Hazardous Materials Business Plan if they handle (including storage) hazardous materials in quantities equal to or greater

than 55 gallons, 500 pounds or 200 cubic feet of gas or extremely hazardous substances above the threshold planning quantity. The Plan includes inventories of hazardous materials, an emergency plan, and implements a training program for employees. This plan is required to be submitted to the Certified Unified Permitting Agency (CUPA), which is Contra Costa County (County) Health Services in the Martinez area, for use by state and local emergency response agencies.

3.9.3.1.4 United States Department of Transportation Hazardous Materials Regulations (49 CFR Parts 100-185)

The United States Department of Transportation (USDOT) Hazardous Materials Regulations cover all aspects of hazardous materials packaging, handling and transportation. Parts 172 (Emergency Response), 173 (Packaging Requirements), 174 (Rail Transportation), 177 (Highway Transportation), 178 (Packaging Specifications) and 180 (Packaging Maintenance) would all apply to the proposed project activities.

3.9.3.1.5 The Hazardous Materials Transportation Act, (49 CFR 171 Subchapter C)

The Hazardous Materials Transportation Act (HMTA) is federal legislation that regulates transportation of hazardous materials. The primary objective of the HMTA is to provide adequate protection against the risks to life and property inherent in the transportation of hazardous material in commerce by improving the regulatory and enforcement authority of the Secretary of Transportation. A hazardous material, as defined by the Secretary of Transportation, is any “particular quantity or form” of a material that “may pose an unreasonable risk to health and safety or property.” The primary regulatory authorities are the USDOT, the Federal Highway Administration and the Federal Railroad Administration. The HMTA requires that carriers report accidental releases of hazardous materials to the USDOT at the earliest practical moment (49 CFR Subchapter C). Incidents that must be reported include deaths, injuries requiring hospitalization and property damage exceeding \$50,000. The California Department of Transportation (Caltrans) sets similar standards for trucks in California. The Caltrans and federal regulations are enforced by the California Highway Patrol (CHP).

3.9.3.1.6 Accidental Release – Risk Management Plans (40 CFR Part 68)

The Risk Management Plan (RMP) rule requires facilities that use extremely hazardous substances to develop an RMP that identifies the potential effects of a chemical accident, identifies steps the facility is taking to prevent an accident and spells out emergency response procedures should an accident occur. These plans provide information to local fire, police and emergency response personnel to prepare for and respond to chemical emergencies in their community. The RMP rule was built upon existing industry codes and standards. It requires facilities that use listed regulated Toxic or Flammable Substances for Accidental Release Prevention to develop an RMP and submit that plan to EPA.

3.9.3.1.7 Chemical Facility Anti-Terrorism Standards

The Chemical Facility Anti-Terrorism Standards are a set of federal security regulations for high-risk chemical facilities such as chemical plants, electrical generating facilities, refineries and universities. The Federal Department of Homeland Security promulgated the final rule containing

the Chemical Facility Anti-Terrorism Standards in 2007. This rule established risk-based performance standards for the security of chemical facilities. It requires covered chemical facilities to prepare Security Vulnerability Assessments, which identify facility security vulnerabilities, and to develop and implement Site Security Plans.

3.9.3.1.8 Spill Prevention, Control, and Countermeasure Rule (40 CFR Part 112)

The Spill Prevention, Control, and Countermeasure (SPCC) rule includes requirements for oil spill prevention, preparedness and response to prevent oil discharges to navigable waters and adjoining shorelines. The rule requires specific facilities to prepare, amend and implement SPCC Plans. SPCC Plans require applicable facilities to take steps to prevent oil spills including: (1) using suitable storage containers/tanks; (2) providing overfill prevention, e.g., high-level alarms; (3) providing secondary containment for bulk storage tanks; (4) providing secondary containment to catch oil spills during transfer activities and (5) periodically inspecting and testing pipes and containers. The SPCC rule is part of the Oil Pollution Prevention regulations.

3.9.3.2 State

3.9.3.2.1 Department of Toxic Substances Control

The California Department of Toxic Substances and Control (DTSC) is a sub-department under the CalEPA and manages the federal hazardous waste program within the state. The department regulates the lifecycle of hazardous waste and sets goals for reducing hazardous waste production. The program follows federal and state law to ensure hazardous waste managers correctly handle, store, transport, dispose, reduce, and clean waste, and are equipped in the event of an emergency.

3.9.3.2.2 CalRecycle

California's Department of Resources Recycling and Recovery (CalRecycle) brings together the state's recycling and waste management programs to move the state towards a circular economy that reduces waste and reuses all materials. Through landmark initiatives like the Integrated Waste Management Act and Beverage Container Recycling and Litter Reduction Act, California works toward a society that uses less, recycles more, and takes resource conservation to higher and higher levels. CalRecycle's Mission is to protect California's environment and climate for the health and prosperity of future generations through the reduction, reuse and recycling of California resources, environmental education, disaster recovery and the transition from a disposable to a fully circular economy.

3.9.3.2.3 California Health and Safety Code

The California Health and Safety Code defines hazardous materials in section 25501(m) and contains requirements regarding the preparation of Hazardous Materials Business Plans in Section 25505. Health and Safety Code Division 20, Chapter 6.95 requires any business that handles more than a specified amount of hazardous or extremely hazardous materials, termed a "reportable quantity," to submit a Hazardous Materials Business Plan to its CUPA. Business plans must include an inventory of the types, quantities and locations of hazardous materials at the facility. Businesses are required to update their business plans at least once every 3 years and the chemical portion of

their plans every year. Also, business plans must include emergency response plans and procedures to be used in the event of a significant or threatened significant release of a hazardous material. These plans must identify the procedures to follow for immediate notification to all appropriate agencies and personnel of a release, identification of local emergency medical assistance appropriate for potential accident scenarios, contact information for all company emergency coordinators, a listing and location of emergency equipment at the business, an evacuation plan and a training program for business personnel. Emergency notification of a hazardous chemical releases are covered under Health and Safety Code Sections 25270.7, 25270.8 and 25507.

3.9.3.2.4 California Occupational Health and Safety

California Division of Occupational Health and Safety (Cal/OSHA) works to protect and improve the health and safety of workers in California by setting and enforcing safety standards; providing outreach, education and assistance; and issuing permits, licenses, certifications, registrations and approvals. Cal/OSHA is also the primary agency responsible for worker safety in the handling and use of chemicals in the workplace and requires the employer to monitor worker exposure to listed hazardous substances and notify workers of exposure (8 California Code of Regulations [CCR] Sections 337-340). The Cal/OSHA standards are generally more stringent than federal regulations.

3.9.3.2.5 California Hazardous Waste Control Law

The California Hazardous Waste Control Law is administered by the California Environmental Protection Agency (CalEPA) to regulate hazardous wastes within the State of California. While the California Hazardous Waste Control Law is generally more stringent than RCRA, both the state and federal laws apply in California. The DTSC, one of six departments that comprises the CalEPA, is the primary agency in charge of enforcing both the federal and state hazardous materials laws in California. The DTSC manages the federal hazardous waste program within the state and regulates the lifecycle of hazardous waste and sets goals for reducing hazardous waste production. The program follows federal and state law to ensure hazardous waste managers correctly handle, store, transport, dispose, reduce and clean waste, and are equipped in the event of an emergency.

3.9.3.2.6 California Accident Release Prevention Program

The California Accident Release Prevention (CalARP) Program (19 CCR Division 2, Chapter 4.5) requires the preparation of RMPs. RMPs are documents prepared by the owner or operator of a stationary source and contain detailed information including: (1) regulated substances held on site at the stationary source; (2) off-site consequences of an accidental release of a regulated substance; (3) the accident history at the stationary source; (4) the emergency response program for the stationary source; (5) coordination with local emergency responders; (6) hazard review or process hazard analysis; (7) operating procedures at the stationary source; (8) training of the stationary source's personnel; (9) maintenance and mechanical integrity of the stationary source's physical plant and (10) incident investigation.

3.9.3.2.7 Government Code Section 65962.5 (Cortese List)

Section 65962.5 of the Government Code requires CalEPA to develop and update a list of hazardous waste and substances sites, known as the Cortese List. The Cortese List is used by the

state, local agencies and developers to comply with CEQA requirements. The Cortese List includes hazardous substance release sites identified by DTSC, State Water Resources Control Board (SWRCB) and CalRecycle.

3.9.3.2.8 Hazardous Materials Disclosure Program

The Unified Program administered by the State of California consolidates, coordinates and makes consistent the administrative requirements, permits, inspections and enforcement activities for the state's environmental and emergency management programs, which include Hazardous Materials Release Response Plans and Inventories (business plans), the CalARP Program, the Underground Storage Tank Program, the Aboveground Petroleum Storage Tank Program, the Hazardous Waste Generator and On-site Hazardous Waste Treatment (tiered permitting) Programs, and the California Uniform Fire Code, Hazardous Material Management Plans and Hazardous Material Inventory Statements. The Unified Program is implemented at the local government level by CUPAs. Contra Costa County, Department of Environmental Health, Hazardous Materials Program (the County) is the CUPA for the County.

3.9.3.2.9 Hazardous Materials Transportation in California

California regulates the transportation of hazardous waste originating or passing through the state in 13 CCR. The CHP and Caltrans have primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies. The CHP enforces materials and hazardous waste labeling and packing regulations that prevent leakage and spills of material in transit and provide detailed information to cleanup crews in the event of an incident. Vehicle and equipment inspection, shipment preparation, container identification and shipping documentation are part of the responsibility of the CHP. Caltrans has emergency chemical spill identification teams located throughout the state.

3.9.3.2.10 Process Safety Management of Acutely Hazardous Chemicals (CCR Section 5189)

These regulations contain requirements for preventing or minimizing the consequences of catastrophic releases of toxic, reactive, flammable or explosive chemicals. The establishment of process safety management regulations are intended to eliminate, to a substantial degree, the risks to which employees are exposed in petroleum refineries, chemical plants and other facilities. California is a "State Plan" jurisdiction for federal OSHA regulations, and this rule is the state version of federal Process Safety Management rules.

3.9.3.3 Local

3.9.3.3.1 San Francisco Bay Regional Water Quality Control Board

The San Francisco Bay Regional Water Quality Control Board (Board) regulates discharges and releases to surface and groundwater in the project area, has direct regulatory oversight of the project site and generally oversees cases involving groundwater contamination.

As discussed above the project site was incorporated into the corrective action under the Hazardous Waste Management Program oversight at the DOW Chemical Company property that is now under

the direction of the Board. The project site was considered part of the Dow 900/1000 Block SWMU which is now considered closed. Groundwater monitoring was previously performed in accordance with the cleanup order.

3.9.3.3.2 Contra Costa County Health Services, Hazardous Materials Department

The County is the CUPA through contract with the state. The County administers the CalARP Program and Industrial Safety Ordinances (ISO) by the County as well as the Hazardous Materials Business Plan, aboveground and underground storage tank programs.

3.9.3.3.3 Contra Costa County Ordinance Code 450-8

The County has adopted an ISO that addresses the human factors that lead to accidents. The ordinance requires stationary sources to develop a written human factors program that considers human factors as part of process hazards analyses, incident investigations, training and operating procedures, among others.

3.9.4 Impacts and Mitigation Measures

The following describes the methodologies and assumptions that were utilized to determine potential hazards and hazardous materials impacts associated with the proposed Project:

- Identifying present hazards and foreseeable scenarios that could result in exposure of persons or the environment to a project hazard.
- Assessing the probability of foreseeable upset and worst-case upset scenarios, considering project design and operational controls, existing regulatory requirements applicable to the proposed Project and other relevant factors.
- Identifying potential consequences of foreseeable and worst-case scenarios considering existing environmental conditions and regulatory requirements for response planning and preparedness.
- Identifying significant hazardous materials risks based on probability and potential consequences of foreseeable upset and worst-case upset conditions.
- Evaluating the proposed Project for possible effects on adopted emergency response plans.

Several sources of information were reviewed for this analysis to determine whether construction and/or operation of the proposed Project could have the potential to create significant adverse impacts relating to hazards and hazardous materials. These sources included SWRCB GeoTracker database records for the project site and local emergency response plans and local municipal codes.

Hazards at a facility can occur due to natural events, such as an earthquake, and non-natural events, such as mechanical failure or human error. A hazard analysis generally considers compounds or physical forces that can migrate off site and result in acute health effects to individuals outside the proposed project site. The hazards can be defined in terms of the distance that a release would travel,

or the number of individuals of the public affected by a maximum single event defined as a “worst-case” scenario.

The major types of public safety risks at the plant would consist of risk from accidental releases of regulated substances and from major fires and explosions. Shipping, handling, storing and disposing hazardous materials inherently poses a certain risk of a release to the environment. The anticipated regulated substances that would be handled by the facility include: sulfuric acid; hydrogen; ammonia (anhydrous).

The principal modes of product transportation will be trucks. It is anticipated that there would be waste feedstock delivery to the proposed facility as well as return of rejected feedstock. The proposed facility would produce renewable hydrogen and non-hazardous vitrified slag byproduct. Hydrogen produced by the proposed facility would be transported in tube trailers.

Non-hazardous, vitrified slag byproduct could potentially be repurposed for beneficial use as a roadbed or concrete aggregate or alternatively, the slag byproduct could be disposed in a landfill. This would require supplemental supply and disposal truck traffic to transport slag byproduct.

3.9.4.1 Significance Criteria

The proposed Project would have a significant hazards and hazardous materials impact requiring mitigation if it would:

- a. Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials;
- b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely 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 that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment;
- e. For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, result in a safety hazard or excessive noise for people residing or working in the project area;
- f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

3.9.5 Impacts and Mitigation Measures

Construction-Related Impacts

- a. **Would the proposed Project create a hazard to workers, the public and/or the environment through the routine transport, use, and/or disposal of hazardous materials? (HAZ-C1)**

No. As discussed in the Project Description the proposed Project would convert a variety of organic and biomass wastes into low-carbon hydrogen for use in commercial markets including the transportation sector. These wastes (otherwise described as “feedstock”) include municipal wastes (specifically organic portions), agricultural wastes, and forest thinnings.

Construction activities associated with the proposed Project would utilize hazardous and flammable substances such as fuels, lubricating oils, solvents, hydraulic fluid and compressed gases during existing infrastructure demolition and site grading and construction. Once the project site has been cleared, concrete foundations would be installed to support the buildings and equipment. Building materials and equipment modules would be delivered by truck, rail or barge and installed using cranes. Plant modules and systems would be connected, tested and commissioned. The potential exists for an accidental release of these hazardous materials during routine hazardous materials transport related to construction.

Construction activities also have the potential to result in exposure to these hazardous materials by workers or by the public if access to the construction site is not adequately controlled or if the materials are not properly handled and contained. Potential hazards to workers, the public and the environment from routine use, transport or disposal of hazardous materials handled for routine construction would be limited by existing pollution prevention, waste management, worker health and safety and transportation safety regulations such as OSHA and Cal/OSHA, CCR Title 8 and USDOT, RCRA and federal and state regulations and would reduce the potential for releases of hazardous materials that would be routinely transported, used and disposed during the proposed project construction.

The amount of hazardous chemicals that would be present during construction is limited and would be in compliance with government regulations. The potential for the release of hazardous materials during project construction is low, and even if a release were to occur, it would not result in a significant hazard to the public, surrounding land uses, or environment, due to the small quantities of these materials associated with construction vehicles. Therefore, potential impacts from the routine transport, use or disposal of hazardous materials during construction of the proposed Project would be less than significant, and no mitigation would be required.

Significance Level: Less than Significant. No mitigation required.

- b. **Would the proposed Project create a hazard to workers, the public, and/or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment? (HAZ-C2)**

No. As discussed above, there is known elevated concentrations of lead in the subsurface of the project site (near-surface soils) as well as potential VOCs in groundwater and there is a potential to encounter hazardous materials during project construction. No known remediation activities have

taken place on site. Based on the current project plan, grading and excavation for the proposed Project is expected to be limited to trenching to provide utilities to new infrastructure and grading to develop stable foundations for new facilities. Where project construction involves soil excavation, exposure to hazardous materials could occur if such materials are present in excavation locations. Regulations such as 8 CCR 1511 would require that, prior to construction, Site conditions be thoroughly surveyed to determine, to the extent practicable, the likelihood of encountering hazardous materials and its impact on workers. In addition to regulatory requirements, for construction activities where impacted soils and/or groundwater may be encountered, implementation of a Soil Management Plan (SMP) would be necessary to identify procedures for addressing impacted soils and/or groundwater in excavations/trenches and for handling of such soils in accordance with applicable laws and regulations, to ensure that releases to the environment or unacceptable levels of exposure by the public and workers do not occur.

In addition to subsurface impacts, there is the potential to encounter hazardous materials such as metals (lead) and asbestos in equipment and buildings that would be demolished as part of construction activities. To address potential material encounters, a survey of equipment and safeguards necessary to conduct the work safely for these or any other hazardous materials that may be encountered would be implemented in accordance with 29 CFR 1926.1101 and 8 CCR 1511, 1529 and 1532 and existing facility programs. In situations where employees are subject to known job-site hazards, they would be instructed in the recognition of the hazard, procedures to protect themselves from injury, and first aid procedures in the event of an injury. Protective measures required by these regulations include but are not limited to training, oversight by competent individuals, personal protective equipment such as respirators and special clothing for workers and required engineering controls and work practices to limit exposure to a safe level and to prevent releases to the environment.

In summary, construction activities could result in accidental releases of hazardous materials. There is also the potential to encounter impacted soil and/or groundwater that could result in the disturbance and reuse of soil potentially impacted with hazardous materials that could result in impacts to construction workers, the public and/or the environment. Compliance with federal and state regulations discussed above as well as implementation of an SMP would reduce potential impacts from an accidental release of hazardous materials, encounters with impacted soil and groundwater and/or disturbance/reuse of soil impacted with hazardous materials during construction. With these measures, unhealthful levels of exposure by workers or the public, or releases to the environment, would not be expected; and therefore, potential for exposure to existing hazardous materials would be less than significant.

Significance Level: Less than Significant. No mitigation required.

c. Would the proposed Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? (HAZ-C3).

No. The closest school to the project site is Turner Elementary School, which is located over 1.0 mile south of the facility's proposed southern property line. The proposed Project would not result in physical changes or modifications that would generate hazardous emissions or result in the handling of hazardous or acutely hazardous materials, substances or waste within 0.25 mile of an

existing or proposed school. Therefore, no increase in hazardous emissions that impact a school site is expected due to the proposed Project.

Significance Level: Less than Significant. No mitigation required.

d. Would the proposed Project 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, create a significant hazard to the public or the environment? (HAZ-C4).

No. As discussed above, the site was subject to Water Board Order No. R2-2002-0007. Under Government Code, Section 65962.5, a list of facilities that are subject to RCRA permits or site cleanup activities was developed, which the project site falls under. However, the SWMU which was covered in the Order and is now considered closed. As a result, the currently proposed Project changes are not expected to have an impact on these cleanup actions nor create any additional hazards to the public or the environment associated with cleanup activities. Development of a SMP would be necessary to handle potentially impacted soil and groundwater during construction activities.

Significance Level: Less than Significant. No mitigation required.

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area? (HAZ-C5) .

No. The nearest airport is the Buchanan Field Airport, which is located approximately 5.5 miles southwest of the project site. Airport Influence Areas are used in land use planning to identify areas commonly overflown by aircraft as they approach and depart an airport, or as they fly within established airport traffic patterns. The Buchanan Field Airport Influence Area is defined as the area within 14,000 feet of the ends of the primary surfaces for runways. The Contra Costa County Airport Land Use Compatibility Plan (County 2000) Countywide Policy 4.3.5 requires a Federal Aviation Administration (FAA) review and approval of structures over 200 feet in height. The proposed Project includes construction of equipment for processing feedstocks, with the tallest structure not exceeding 100 feet in height. Therefore, the proposed Project is not expected to result in a safety risk associated with operations at the Buchanan Field Airport.

Significance Level: Less than Significant. No mitigation required.

f. Would the proposed Project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? (HAZ-C6).

No. The Contra Costa County Emergency Operations Plan (County 2015) and Hazard Mitigation Plan (Tetrattech 2018) established policies and procedures for coordination of various emergency staff and elements utilizing the California Standardized Emergency Management System (EMSs). No potential project construction or operational conflicts were identified through the review of these plans. Construction activities would occur within the boundaries of the project site, therefore, no emergency response plans at other facilities would be impacted. It will be necessary for the proposed facility to prepare, adopt, and implement an emergency response plan at its facility following the

completion of construction activities. The proposed Project would not be expected to result in significant impacts to other facility emergency response plans in the project vicinity.

Significance Level: Less than Significant. No mitigation required.

g. Would the proposed Project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fire. (HAZ-C7)

No. The California Department of Forestry and Fire Protection (CalFIRE) maps areas of significant fire hazard based on fuels, terrain, weather and other relevant factors. These zones, referred to as Fire Hazard Severity Zones, determine the requirements for special building codes designed to reduce the potential impacts of wildland fires on urban structures. The project site and surrounding areas are not located within a Very High Fire Hazard Severity Zone, as the area is urbanized, is located adjacent to the Bay and marshlands, and is not located adjacent to wildland areas. The land in the northwestern, southern and eastern areas of the County are classified as Very High Fire Hazard Zones (VHFHZ) by CalFIRE; however there are no VHFHZ areas within the city of Pittsburg (City). The project site is well outside the VHFHZ, which indicates that it is not subject to significant wildfire hazard. Construction during the proposed Project would not be expected to have an impact related to wildland fires.

Significance Level: Less than Significant. No mitigation required.

Operational Impacts

a. Would the proposed Project create a hazard to workers, the public and/or the environment through the routine transport, use, and/or disposal of hazardous materials? (HAZ-O1)

No. As discussed above in Construction Impacts (HAZ-C1), the proposed Project as discussed in the Project Description would convert a variety of organic and biomass wastes into low-carbon hydrogen for use in commercial markets including the transportation sector. These wastes (otherwise described as “feedstock”) include municipal wastes (specifically organic portions), agricultural wastes, and forest thinning’s.

The feedstock will be composed of pre-sorted municipal solid waste] and will be delivered to the site on the enclosed tipping floor via truck and inspected upon arrival. Any materials that may damage the shredder and processing equipment or that are not suitable for conversion, such as large pieces of concrete, will also be removed. The feedstock will then undergo shredding to reduce the material to a uniform size followed by a series of processing steps, where inert heavies (glass, rocks), inert fines (sand), ferrous and non-ferrous metals and plastics are partially recovered, leaving an organic-rich feedstock.

During the conversion step, metallic components in the waste are removed as molten slag, a non-hazardous material. The slag will be granulated, stored and transported off site for use as a recycled product, such as construction aggregate, or for disposal. The facility anticipates generating up to 20,000 tons per year of slag.

As discussed above, the proposed Project would convert a variety of organic and biomass wastes into low-carbon hydrogen for use in commercial markets and no hazardous waste would be accepted.

The resulting process would produce renewable hydrogen and non-hazardous vitrified slag byproduct. The proposed facility would be designed and constructed to comply with all National Fire Protection Association codes and regulations.

Because no hazardous waste will be accepted, the process will not utilize hazardous materials, and hazardous materials will not be generated, the magnitude of hazard due to the proposed Project should be considered less than significant under County Code, and the magnitude of hazard from the proposed Project is expected to be less than significant.

Significance Level: Less than Significant. No mitigation required.

b. Would the proposed Project create a hazard to workers, the public, and/or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment? (HAZ-O2)

No. As discussed above in Construction-related impacts (HAZ-C2) no hazardous waste will be accepted, the process will not utilize hazardous materials, and hazardous materials will not be generated. The proposed Project would utilize natural gas to operate processing equipment; however, hazardous materials such as fuels used to operate equipment used to move feedstock and materials that may damage processing equipment may be stored on site. Additionally, lubricants would be necessary to maintain equipment and would need to be stored on site.

A number of existing regulations apply to the use, handling, storage and disposal of hazardous materials; specifically, Health and Safety Code Section 25506 requires all businesses handling hazardous materials to submit a business emergency response plan to assist local administering agencies in the emergency release or threatened release of a hazardous material. The proposed facility would develop a plan associated with the proposed Project.

The use of hazardous materials is also regulated by Cal/OSHA, and requirements include providing adequate ventilation, using recommended personal protective equipment and clothing, posting appropriate signs and warnings and providing adequate worker health and safety training. The exposure of employees is also regulated by Cal/OSHA in Title 8 of the CCR, and specifically 8 CCR 5155, which establishes permissible exposure levels and short-term exposure levels for various chemicals. Under Contra Costa County Municipal Code 450-8, the facility is required to have a Safety Plan in place and conduct audits of these plans. These requirements protect the health and safety of the workers, as well as the nearby population including sensitive receptors and for the continued operation of the facilities.

Compliance with these and other federal, state and local regulations and proper operation and maintenance of equipment would minimize the potential impacts of hazardous materials, and therefore, potential for exposure to existing hazardous materials would be less than significant.

Significance Level: Less than Significant. No mitigation required.

c. Would the proposed Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? (HAZ-O3).

No. As discussed above in Construction-related impacts (HAZ-C3), the closest school is Turner Elementary School, which is located over 1.0 mile south of the project site. The proposed Project would not result in physical changes or modifications that would generate hazardous emissions or result in the handling of hazardous or acutely hazardous materials, substances or waste within 0.25 mile of an existing or proposed school. Therefore, no increase in hazardous emissions that impact a school site is expected due to the proposed Project.

Significance Level: Less than Significant. No mitigation required.

d. Would the proposed Project 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, create a significant hazard to the public or the environment? (HAZ-O4)

No. As discussed above in Construction-related impacts (HAZ-C4), the site was subject to Water Board Order No. R2-2002-0007, which addresses soil and groundwater impacts. However, the SWMU which was covered in the Order is now considered closed. The proposed Project would have no effect on cleanup actions nor otherwise impede implementation of the existing Order. As the SWMU is considered closed, the currently proposed Project operations are not expected to impact cleanup actions nor create additional hazards to the public or the environment associated with cleanup activities.

Significance Level: Less than Significant. No mitigation required.

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 or excessive noise for people residing or working in the project area? (HAZ-O5)

No. As discussed above in Construction-related impacts (HAZ-C5), the closest airport is the Buchanan Field Airport which is located approximately 5.5 miles southwest of the project site, well outside of the Buchanan Field Airport Influence Area, which is defined as the area within 14,000 feet of the ends of the primary surfaces for runways. Further discussed in HAZ-5, the County Airport Land Use Compatibility Plan requires FAA review and approval of any structure over 200 feet in height. Because the proposed Project would not result in new structures that would exceed 200 feet in height, implementation of the proposed Project is not expected to result in additional safety risks associated with operations at the Buchanan Field Airport.

Significance Level: Less than Significant. No mitigation required.

f. Would the proposed Project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? (HAZ-O6)

No. As discussed in Construction-related impacts (HAZ-C6) above, the County Emergency Operations and Hazard Mitigation Plans (County 2015 and Tetrattech 2018, respectively) establish policies and procedures for coordination of various emergency staff and elements utilizing EMSs. Prior to commencing operations of the proposed Project, an emergency response plan will be prepared, adopted and implemented.

Significance Level: Less than Significant. No mitigation required.

g. Would the proposed Project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fire? (HAZ-7)

No. As discussed in Construction-related impacts (HAZ-C7) above, the project site is not located within a Very High Fire Hazard Severity Zone (CalFIRE). The proposed Project is situated significantly outside the Very High Fire Hazard Zone and is thereby not subject to significant wildfire hazard. Implementation of the proposed Project would not be expected to have an impact related to wildland fires.

Significance Level: Less than Significant. No mitigation required.

3.9.6 References

Contra Costa County (County). 2000. Contra Costa County Airport Land Use Compatibility Plan, Contra Costa County, California. Adopted December 13.

County. 2015. Contra Costa County Emergency Operations Plan.

Regional Water Quality Control Board. 2018. Tentative Order—Updated Waste Discharge Requirements And Rescission of Order No. R2-2002-0007 for the Dow Chemical Company, Pittsburg Facility, Contra Costa County. January.

Tetratech. 2018. Contra Costa County Hazard Mitigation Plan, Draft Final, Volume 1 Planning Area Wide Elements, Volume 2, Planning Partner Annexes. January.

TRC. 2023. Phase I Environmental Site Assessment.

3.10 HYDROLOGY AND WATER QUALITY

3.10.1 Introduction

The 24-acre project Study Area is located in the city of Pittsburg (City) along New York Slough, southeast of the Pittsburg Marina. The proposed Project will be 12 acres in size located at the corner of Arcy Lane where it turns west, approximately 0.4 mile north of Pittsburg-Antioch Highway. The Burlington Northern & Santa Fe (BNSF) Railroad runs west to east just south of the site. Union Pacific Railroad (UPRR) is located south of the project site. State Route (SR) 4 is south of the project site.

The Study Area surrounding the proposed project area is mostly vacant with some residual pieces of industrial equipment, a few railroad spurs, five buildings that account for less than one acre, and includes exterior and interior access roads that would be improved and maintained for the proposed Project. There is an existing industrial tenant using one building in the Study Area that could require relocation elsewhere within the Corteva industrial park. Permanent usage of the proposed renewable hydrogen facility would be approximately 12 acres of the 24-acre Study Area.

The project site is zoned as General Industrial (IG) and has a land use designation of Industrial in the City's 2020 General Plan (City of Pittsburg 2001). Guidelines and key sources of data used in the preparation of this section include the following:

- Regional plans
- Site plans
- Hazard maps
- Hydrology and Water Quality Technical Study, dated June 2023 (Appendix H)

3.10.2 Existing Environmental Setting

The project site and industrial facilities are all located within the 993-acre Corteva Industrial Park. Surrounding properties generally include industrial entities to the north and east, commercial use to the south, and mixed commercial and industrial use to the west. Adjoining properties to the northeast and southwest of the property are currently occupied by infrastructure associated with the former Dow Chemical manufacturing facility and tenant spaces occupied by Corteva Agriscience, Generon, and Delta Energy.

The proposed project area is currently graded and covered with an array of graveled ground, disturbed dirt, and concrete slabs that are primarily used for parking and storage. The proposed project site is mostly vacant with some residual pieces of industrial equipment, a few railroad spurs, and five buildings that account for less than one acre. Four buildings are used for material storage, a laboratory, and an empty shed which is currently unused. Unpaved and paved parking as well as equipment storage and vegetation, occur throughout the project site. There is also an inactive water tower in the northeast corner of the project site and railroad spurs along the southern and southwestern property boundaries. A City water line supplies potable water to the project site. Stormwater collection and infiltration structures are visible throughout the project site.

The landscape surrounding the Study Area is flat with elevations in and adjacent to the Study Area of approximately 10 to 25 feet above mean sea level. Surrounding land use includes developed industrial lands to the south and west of the project site. The New York Slough, Corteva Wetlands Preserve, and Kirker Creek/Dowest Slough are estuarine wetlands immediately adjacent to the north, east, and west of the project site.

The project site is located on the boundary between the Pittsburg Plain and San Joaquin Valley groundwater basins. No beneficial uses for groundwater in the Pittsburg Plain or San Joaquin Valley groundwater basins have been established.; however, potential beneficial uses of the Pittsburg Plain basin include municipal and domestic water supply; industrial process water supply; industrial service water supply; and agricultural water supply (San Francisco Bay Regional Water Quality Board [SFB-RWQCB] 2019).

3.10.2.1 San Francisco Bay

The San Francisco Bay encompasses approximately 1,600 square miles, and its estuary system is the terminus for approximately 40 percent of California watersheds. The San Francisco Bay itself can be divided into several geographical sections. South San Francisco Bay is the large body south of the Bay Bridge, and the Central Bay is a smaller body located between the Bay Bridge and the Richmond-San Rafael Bridge. San Pablo Bay is the large body north of the Richmond-San Rafael Bridge. From San Pablo Bay, the San Francisco Bay extends eastward to the delta of the Sacramento and San Joaquin Rivers (Delta). The South Bay is a semi-enclosed embayment with numerous small, local freshwater inflows.

Water from the Sacramento and San Joaquin Rivers of the Central Valley flows into the Delta, then into Suisun and San Pablo Bays, and finally into the Central Bay and out the Golden Gate strait. Some freshwater flows through the Delta and into the Bay, but much is diverted from the Bay for agricultural, residential and industrial purposes, as well as delivery to other cities in southern California as part of state and federal water projects (ABAG 2017).

Interactions between Delta outflow and Pacific Ocean tides determine how far saltwater intrudes into the Delta. Therefore, the salinity of the water can vary widely, and salinity levels in the Central Bay can vary from near oceanic levels to one-quarter as much, depending on the volume of freshwater runoff, which depends on factors such as precipitation, reservoir releases and upstream diversions (ABAG 2017).

The San Francisco Bay is located in a highly industrialized area and has a history of human impacts from both regulated point sources and nonpoint-source runoff, which can carry pollutants, including heavy metals, motor oil, paints, chemicals, debris, grease and/or detergents to local waters. The SFB-RWQCB has classified the San Francisco Bay and many of its tributaries as impaired for various water quality constituents, as required under Section 303(d) of the federal Clean Water Act (ABAG 2017). The San Francisco Bay is identified as impaired for multiple contaminants, including mercury, polychlorinated biphenyls (PCBs) and selenium (SFB-RWQCB 2019).

Water quality in the San Francisco Bay may be affected by many factors, including:

- geographic configuration of the San Francisco Bay,

- tidal exchange with the ocean,
- freshwater inflows,
- industrial and municipal wastewater discharges,
- dredging and dredge material disposal,
- urban and agricultural runoff,
- marine vessel discharges,
- historical mining activities,
- leaks and spills, and
- atmospheric deposition.

3.10.2.1.1 Regulatory Objectives and Criteria

To protect beneficial uses, SFB-RWQCB has established WQOs for waters covered by the San Francisco Bay Water Quality Control Plan (Basin Plan). The 2019 version of the Basin Plan and associated amendments were approved by the SWRCB, Office of Administrative Law and EPA as of November 5, 2019. Water quality criteria for priority toxic pollutants for California inland surface waters, enclosed bays and estuaries were established by the California Toxics Rule (EPA 2001). The following Table 3.10-1 shows the California Toxics Rule criteria for saltwater, which are also applicable to Suisun Bay.

Table 3.10-1: California Toxics Rule Criteria for Saltwater

Constituent	Criterion Maximum Concentration (µg/L)	Criterion Continuous Concentration (µg/L)
Arsenic	69	36
Cadmium	42	9.3
Hexavalent Chromium	1,100	50
Copper	4.8	3.1
Lead	210	8.1
Mercury	[Reserved]	[Reserved]
Nickel	74	8.2
Selenium	290	71
Silver	1.9	--
Zinc	90	81
Cyanide	1.0	1.0
Pentachlorophenol	13	7.9
Aldrin	1.3	--
gamma-BHC	0.16	--
Chlordane	0.09	0.004
4,4-DDT	0.13	0.001
Dieldrin	0.71	0.0019

Table 3.10-1: California Toxics Rule Criteria for Saltwater

Constituent	Criterion Maximum Concentration (µg/L)	Criterion Continuous Concentration (µg/L)
alpha-Endosulfan	0.034	0.0087
beta-Endosulfan	0.034	0.0087
Endrin	0.037	0.0023
Heptachlor	0.053	0.0036
Heptachlor Epoxide	0.053	0.0036
PCB-1242	--	0.03
PCB-1254	--	0.03
PCB-1221	--	0.03
PCB-1232	--	0.03
PCB-1248	--	0.03
PCB-1260	--	0.03
PCB-1016	--	0.03
Toxaphene	0.21	0.0002

Source: EPA, 2000

Physical Processes of San Francisco Bay

Water quality in the San Francisco Bay is greatly affected by tidal exchange with the Pacific Ocean. The difference between low and high tide for the San Francisco Bay Area is approximately 5 feet. Given the large surface area of the Bay, this difference results in large volumes of water flowing into and out of the San Francisco Bay with the change of tides. Waters from the Pacific Ocean are generally colder and more saline than waters in San Francisco Bay; therefore, the higher relative density of ocean water directs the tidal exchange to the deeper waters of the San Francisco Bay.

San Francisco Bay, especially the northern reach of San Pablo Bay, Carquinez Strait, Suisun Bay and the Delta, is also strongly influenced by freshwater flows with the Sacramento and San Joaquin Rivers acting as the largest sources. These freshwater flows are highly seasonal, and more than 90 percent of annual runoff occurs during the rainy winter season from October to April (SFB-RWQCB 2019). Because of the variable freshwater flows as well as the geometry of the Bay, circulation within the Bay can be relatively complicated and is driven primarily by tides. Freshwater flows into the Bay from the Delta also result in estuarine circulation, which is driven by the density difference between freshwater and saltwater.

Source of Pollutants to San Francisco Bay

The quality of regional surface water resources in the Bay Area varies considerably and is locally affected by point-source and nonpoint-source discharges throughout individual watersheds. The largest sources of pollutants to San Francisco Bay are nonpoint discharges, which include urban runoff, agricultural lands, and additional non-urban runoff. Nonpoint-source pollutants are transported into surface waters through rainfall, air and other pathways, and can include copper from

brake linings and lead from counterweights that can contribute heavy metals to local waters as well as other pollutants such as mercury, PCBs and pesticides (ABAG 2017).

In addition to nonpoint discharges, the Bay also receives discharge from regulated point sources. Discharges from point sources are those that are associated with pollutant discharges from a single location to a specific receiving water body. Major types of point sources include:

- Treated municipal sewage discharged from Publicly Owned Treatment Works, which often consist of a combination of domestic, industrial and commercial waste streams;
- Treated industrial wastewater resulting from industrial operations, processing, cleaning and cooling;
- Treated groundwater from cleanup of groundwater pollution sites; and
- Other miscellaneous types of discharges, including certain non-point sources with a physically identifiable point of discharge.

Point source discharges are generally controlled through waste discharge requirements issued under federal National Pollution Discharge Elimination System (NPDES) permits. The NPDES program was established by the CAA, although the permits are prepared and enforced in California by the respective regional water boards.

Atmospheric fallout can also deposit pollutants on land and surface waters. Deposits to water are a direct source, while deposits to the land can result in discharges to the San Francisco Bay via stormwater runoff. Major sources of atmospheric contamination include fuels and particulates from vehicles and other sources; building materials and products; windblown dust; and construction, manufacturing and industrial facilities (BCDC 2003).

Water and Sediment Quality in San Francisco Bay

The San Francisco Estuary Institute (SFEI) established a Regional Monitoring Program (RMP) for Trace Substances in 1993 and is a collaborative effort between the San Francisco Estuary Institute, the SFB-RWQCB, and the regulated discharger community (SFEI 2015). The primary goal of the RMP is to collect data and communicate information about water quality in San Francisco Bay in support of management decisions.

Water quality is monitored biennially at 22 sites, covering each of the bay segments. Key analytes for water comprise the California Toxics Rule list. Sediment samples are collected quadrennially at 27 sites during the dry season. Key analytes for sediment include mercury, PCBs, Polycyclic Aromatic Hydrocarbons (PAHs) and metals (SFEI 2020). Typically, a number of sampled locations will have water and/or sediments that exceed regulatory objectives or criteria for one or more analytes. The primary pollutants for the Bay and its major tributaries on the 303(d) List from the Clean Water Act include (SFEI 2019):

- **Trace elements:** Mercury and selenium
- **Pesticides:** Dieldrin, chlordane and DDT

- **Other chlorinated compounds:** PCBs, dioxin and furan compounds
- **Others:** Exotic species, trash, PAHs and indicator bacteria

Sea Level Rise

Sea level rise and the droughts and floods that are anticipated due to climate change will impact pollutant pathways to the Bay (SFEI 2019). Sea level rise is of particular concern to facilities with operational infrastructure located on or near the shoreline of San Francisco Bay. These facilities include municipal wastewater treatment plants, railroads, industrial facilities, and petroleum refineries. Sea level rise may also jeopardize low-lying storm drain infrastructure and/or expose contaminated shoreline areas to the forces of tides and waves.

A tide gauge at the Golden Gate Bridge has been in operation since 1854, and based on a 20-year rolling average, sea level at the Golden Gate rose 7.1 inches (0.18 meters) from 1916 to 2018 (SFEI 2019). Additionally, the San Francisco Bay Conservation and Development Commission's (BCDC) estimates that long-term global sea-level rise could be up to 16 inches over 50 years (BCDC 2011).

3.10.2.1.2 Suisun Bay and Carquinez Strait

Physical Characteristics

Of the water segments that make up the San Francisco Bay, Suisun Bay is the first water body that receives flows from the Sacramento and San Joaquin River watersheds. Fresh water from the rivers usually mixes with saltwater from the ocean in the vicinity of Suisun Bay. Suisun Bay is a shallow embayment located between Chipps Island to the east and the Benicia-Martinez Bridge to the west. Suisun Bay has a surface area of approximately 36 square miles, a mean depth of 14 feet and highly variable salinity levels depending on the time of year and amount of freshwater flow (USACE et al. 1998).

Previous models suggest that suspended-sediment transport within Suisun Bay follows a seasonal cycle with the majority of suspended sediment delivered during winter freshwater flows, creating a large pool of erodible sediment within the channels and shallows (Ganju and Schoellhamer 2006). During summer months, onshore winds generate waves that resuspend sediments in the shallows for transport by tidal currents from high energy areas (such as mudflats or shallow off-channel areas) to lower-energy areas (such as marinas or deep channels). Therefore, it has been assumed that Suisun Bay is predominantly depositional in the winter, and erosional in the summer (Ganju and Schoellhamer 2006).

The project site is also located east of Suisun Bay and the Carquinez Strait at the junction of the Sacramento River and San Joaquin River. The Carquinez Strait has a surface area of approximately 12 square miles, a mean depth of 29 feet (USACE et al. 1998), and variable salinity due to annual fluctuations in freshwater flow from the Sacramento-San Joaquin River system (USACE et al. 1998). Studies have identified gravitational circulation within the Carquinez Strait, with lighter freshwater moving seaward in the top layer and heavier saltwater moving upstream on the bottom (Ganju and Schoellhamer 2006). Deposition in Carquinez Strait is greatest during neap tides when vertical mixing is minimized, stratifying the water column; the following spring tides then resuspend this erodible bed sediment and mix the water column.

Water Quality

The amount of freshwater flow from the Delta significantly affects water column characteristics in waters near the project site and can result in variable annual water quality conditions. Pollutants reach Suisun Bay through discharge from sources including wastewater treatment plants, stormwater runoff and agricultural drain water. According to the SFB-RWQCB, Suisun Bay and Carquinez Strait are listed as impaired on the Clean Water Act Section 303(d) due to chlordane, DDT, dieldrin, dioxins, furan compounds, mercury, PCBs and selenium (SFB-RWQCB 2019).

The following Table 3.10-2, Regional Monitoring Program Water Quality, Sampling Station Contra Costa 56, shows RMP water quality sampling results available for sampling station Contra Costa 56, which is located in Kirker Creek at Dow Wetland Preserve and is the closest sampling point with recent data.

Table 3.10-2: Regional Monitoring Program Water Quality, Kirker Creek at Dow Wetland Preserve Sampling Station (Contra Costa 56)

Constituent	March 2014 RMP Data ¹
	Total
Cyhalothrin, Total lambda-, Total	Not Detected
Esfenvalerate	Not Detected
Imidacloprid	Not Detected
Deltamethrin	Not Detected
Fenpropathrin	Not Detected
Carbaryl	Not Detected
Dichlorophenoxyacetic Acid, 2,4-	Not Detected
Fipronil Desulfinyl Amide	Not Detected
Fipronil Desulfinyl	0.0071
Fipronil Sulfide	0.004
Cypermethrin, Total	Not Detected
Permethrin, Total	Not Detected
Fipronil Amide	Not Detected
Pendimethalin	Not Detected
Triclopyr	0.0896
Bifenthrin	Not Detected
Cyfluthrin, Total	Not Detected
Diuron	0.1433
Fipronil Sulfone	0.0092
Fipronil	0.0024

All concentrations in micrograms per liter (µg/L).

The Basin Plan also lists beneficial uses for waterbodies covered by the plan (SFB-RWQCB 2019). Designated beneficial uses for waters in the project site (Suisun Bay) include:

- Industrial service supply
- Industrial process supply
- Commercial and sport fishing
- Estuarine habitat
- Fish migration
- Preservation of rare and endangered species
- Fish spawning
- Wildlife habitat
- Water contact recreation
- Noncontact water recreation
- Navigation

3.10.3 Regulatory Context

3.10.3.1 Federal

3.10.3.1.1 National Flood Insurance Program

The National Flood Insurance Program is managed by the Federal Emergency Management Agency (FEMA) and provides flood insurance to property owners, renters and businesses. The Program works with communities required to adopt and enforce floodplain management regulations that help mitigate flooding effects.

3.10.3.1.2 Clean Water Act

The Clean Water Act of 1972 (33 USC §1251 et seq.) regulates discharges of pollutants into the waters of the United States as well as quality standards for surface waters. Under the Clean Water Act, the United States Environmental Protection Agency (EPA) has implemented pollution control programs, such as setting wastewater standards for industry. EPA has also developed national water quality criteria recommendations for pollutants in surface waters.

Section 303(d) of the Clean Water Act authorizes the EPA to assist states in listing impaired waters and developing Total Maximum Daily Loads (TMDLs) for these waterbodies. A TMDL establishes the maximum amount of a pollutant allowed in a waterbody and serves as the starting point or planning tool for restoring water quality. SFB-RWQCB has classified the San Francisco Bay and many of its tributaries as impaired for various water quality constituents, as required by the Clean Water Act.

3.10.3.1.3 National Pollutant Discharge Elimination System

Created in 1972 by the Clean Water Act, the NPDES stormwater program specifies minimum standards for the quality of discharged waters. It requires states to establish standards specific to waterbodies and designate the types of pollutants to be regulated, including total suspended solids

and oil. Under NPDES, all point sources that discharge directly into waterways are required to obtain a permit regulating their discharge. NPDES permits fall under the jurisdiction of the State Water Resources Control Board (SWRCB) or Regional Water Quality Control Boards when the discharge occurs within the 3-nautical-mile territorial limit.

NPDES also requires permits for discharges from construction activities that disturb one or more acres, and discharges from smaller sites that are part of a larger common plan of development or sale. To obtain coverage under the Construction General Permit, a project-specific Stormwater Pollution Prevention Plan (SWPPP) must be prepared to discuss best practices to minimize impacts from discharges.

3.10.3.1.4 Rivers and Harbors Act

The Rivers and Harbors Act (33 USC §400 et seq.) governs specified activities in “navigable waters,” which are defined in 33 Code of Federal Regulations (CFR) §329.4 as waters subject to the ebb and flow of the tide or that are presently used, have been used, or may be susceptible to use to transport interstate or foreign commerce. This Act also limits the construction of structures and the discharge of fill into navigable waters of the United States.

3.10.3.2 State

3.10.3.2.1 California Sustainable Groundwater Management Act

Encompassing multiple state Senate and House bills, the Sustainable Groundwater Management Act (SGMA) was passed in 2014 and set forth a statewide framework to help protect groundwater resources over the long-term. SGMA requires local agencies to form groundwater sustainability agencies (GSAs) for the high and medium priority basins. GSAs are responsible for developing and implementing groundwater sustainability plans.

3.10.3.2.2 California Water Code

The Porter-Cologne Act (California Water Code, Division 7, §13000-16104) is the principal law governing water quality regulation in California. It establishes a comprehensive program to protect water quality and the beneficial uses of water. The Porter-Cologne Act applies to surface waters, wetlands, and groundwater and to both point and nonpoint sources of pollution.

California Water Code section 13142.5 provides marine water quality policies stating that wastewater discharges shall be treated to protect present and future beneficial uses, and, where feasible, to restore past beneficial uses of the receiving waters. The highest priority is given to improving or eliminating discharges that adversely affect wetlands, estuaries, and other biologically sensitive sites; areas important for water contact sports; areas that produce shellfish for human consumption; and ocean areas subject to massive waste discharge.

California Water Code section 13170.2 directs the SWRCB to formulate and adopt a water quality control plan for the ocean waters of California. The SWRCB first adopted this plan, known as the California Ocean Plan, in 1972, and the most recent update of the California Ocean Plan was completed in 2019. The California Ocean Plan establishes water quality objectives for California’s ocean waters, provides the basis for regulation of wastes discharged into coastal waters, and identifies

applicable beneficial uses of marine waters and sets narrative and numerical water quality objectives to protect beneficial uses.

3.10.3.2.3 California Clean Coast Act of 2005

The California Clean Coast Act (Public Resources Code, Division 38, §72400-72442) includes several requirements to reduce pollution of California waters from large vessels. The Act prohibits the operation of shipboard incinerators within 3 miles of the California coast; prohibits the discharge of hazardous wastes, other wastes, or oily bilge water into California waters or a marine sanctuary; prohibits the discharge of grey water and sewage into California waters from vessels with sufficient holding-tank capacity or vessels capable of discharging grey water and/or sewage to available shore-side reception facilities; and requires reports of prohibited discharges to the SWRCB.

3.10.3.2.4 Bay Protection and Toxic Cleanup Program Legislation

In 1989, the SWRCB was required to develop sediment quality objectives (SQOs) as part of a comprehensive program to protect beneficial uses in enclosed bays and estuaries. The objectives are required for “toxic pollutants” that were identified in toxic hot spots or that were identified as pollutants of concern by the SWRCB. In 2009, the SWRCB adopted SQOs and an implementation policy for bays and estuaries in the State (Part 1). Part 1 includes narrative SQOs for the protection of aquatic life and human health, identification of the beneficial uses that these objectives are intended to protect, and requirements for program of implementation.

3.10.3.3 Local

3.10.3.3.1 San Francisco Bay Basin Water Quality Control Plan 2019

The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan; SFB-RWQCB, 2019) is the Board's master water quality control planning document. It designates beneficial uses and water quality objectives (WQOs) for waters of the State, including surface waters and groundwater. It also includes programs of implementation to achieve WQOs. The Porter-Cologne Water Quality Act requires the development and periodic review of Basin Plans that designate beneficial uses of California's major rivers and groundwater basins and establish numerical WQOs for those waters. The Basin Plan has been updated to reflect the Basin Plan amendments adopted up through May 4, 2017. The 2019 version of the Basin Plan incorporating all amendments approved by the Office of Administrative Law was approved as of November 5, 2019.

3.10.3.3.2 Municipal Regional Stormwater NPDES Permit

In November 2015, the SFB-RWQCB re-issued previous county-wide municipal stormwater permits as one Municipal Regional Stormwater NPDES Permit (Order No. R2-2015-0049; NPDES Permit No. CAS612008) to regulate stormwater discharges from municipalities and local agencies in Alameda, Contra Costa, San Mateo and Santa Clara counties, and the cities of Fairfield, Suisun City and Vallejo.

3.10.3.3.3 San Francisco Bay Plan

The San Francisco Bay Plan (Bay Plan) was prepared by the San Francisco Bay Conservation and Development Commission (BCDC 2019). The two objectives of the Bay Plan are to protect the Bay as a great natural resource for the benefit of present and future generations, as well as to develop the Bay and its shoreline to their highest potential with a minimum of Bay filling. Findings and policies related to these objectives are outlined and discussed in the most recent update of the Bay Plan.

3.10.4 Impacts and Mitigation Measures

Impacts of the proposed Project on hydrology and water quality were assessed by comparing existing conditions to potential changes from project construction and operation. The following subsections describe the proposed Project's potential impacts on water quality. Where impacts are determined to be significant, mitigation measures are described that would reduce or avoid the impact.

3.10.4.1 Significance Criteria

The proposed Project would have a significant impact to water quality and hydrology if it would:

- a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.
- b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.
- c. Substantially alter the existing drainage pattern of area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would:
 - i. result in substantial erosion or siltation on- or off-site.
 - ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.
 - iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
 - iv. impede or redirect flood flows.
- d. Risk release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones
- e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

3.10.4.2 Impact Determination

3.10.4.2.1 Construction-Related Impacts

- a. **Would the proposed Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality? (HWQ-C1)**

No. The proposed project construction would commence with site preparation activities, including demolition and removal of existing structures and site clearing. Demolition material would be recycled or disposed of at approved facilities. Once the project site has been cleared, concrete foundations would be installed to support the buildings and equipment. Building materials and equipment modules would be delivered by truck, rail or barge and installed using cranes. Plant modules and systems would be connected, tested and commissioned.

The project site is approximately 200 feet east of the historical channel of Kirker Creek, which flows intermittently during significant precipitation events and discharges to the New York Slough via Dowest Slough. Both Kirker Creek and Suisun Bay are considered Section 303(d) impaired waterbodies, but have existing beneficial uses, including Wildlife Habitat, Preservation of Rare and Endangered Species, and Contact and Non-Contact Recreations.

The proposed Project has the potential to impact surface water quality during construction and during operation. Construction activities may result in increased erosion and sedimentation, which can negatively impact surface water quality by increasing turbidity and reducing water clarity. This potential impact would be reduced by implementing effective erosion and sediment control measures, such as silt fences, sediment basins, and vegetative buffers, pursuant to requirements in Chapter 15.88 (Grading, Erosion and Sediment Control) of Pittsburg Municipal Code (PMC). The project Stormwater Pollution Prevention Plan will outline the required measures to be implemented to prevent pollutants from discharging into the stormwater stream. Wastewater from the proposed Project would be treated at the proposed wastewater treatment plant to meet appropriate discharge limits, then sent to the Delta Diablo Sanitary District (DDSD) wastewater treatment facility for disposal. A condition of approval requiring an interconnection for wastewater sewer to the DDSD system would mitigate potential impacts from wastewater discharges if needed with on-site industrial pretreatment. The need for this would depend on the chemical nature of the discharge.

Accidental spills or leaks of hazardous materials during construction could impact surface water quality. Although construction of the proposed Project involves the handling of hazardous materials, like fuels, oils, and lubricants, release risk in significant quantities is limited. This risk would be minimized through proper handling and storage of materials as well as having appropriate spill prevention and management plans in place.

Significance Level: Less than Significant. No mitigation required.

- b. **Would the proposed Project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the proposed Project may impede sustainable groundwater management of the basin? (HWQ-C2)**

No. Shallow groundwater underlying the project site is not currently used as a source of drinking water, and no additional groundwater use would be required for the proposed project construction;

potable or reclaimed water will be used during construction for dust suppression. Proposed Project construction activities are not expected to change recharge to groundwater. Therefore, the proposed project construction would have no impact on groundwater supplies or interfere with groundwater recharge.

Significance Level: No Impact. No mitigation would be required.

c. Would the proposed Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would (HWQ-C3):

i. result in substantial erosion or siltation on- or off-site? (HWQ-C3i)

No. Proposed project construction activities would be located within the existing project site, and the proposed project activities are not expected to result in the construction of additional impervious surfaces that would substantially alter existing drainage patterns. Access to the site would be obtained using existing roads, including East 3rd Street and Pittsburg Waterfront Road and as such would not contribute to additional erosion or siltation off site. The construction of the proposed Project could slightly alter the existing drainage pattern in the eastern portion of the site, but it is not anticipated that the construction or operation of the proposed Project would result in substantial erosion or siltation on- or off site. The installation of BMPs would prevent the track out and run-off of sediment from the site.

Project construction would be required to comply with existing permit regulations and waste discharge requirements, including the Construction Storm Water General Permit (NPDES). Following completion, ground surface would be stabilized and restored to the existing conditions. Therefore, project impacts are anticipated to be less than significant.

Significance Level: Less than Significant. No mitigation would be required.

ii. substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site? (HWQ-C3ii)

No. Proposed project construction activities would be located within the existing project site, and the proposed project activities are not expected to result in the construction of additional impervious surfaces that would substantially alter existing drainage patterns. Construction activities are not expected to result in an increase in surface water runoff that would result in flooding on- or off-site. Installation of BMPs will prevent sedimentation to the Bay Delta via existing on-site stormwater drains. Therefore, the proposed project impacts are anticipated to be less than significant.

Significance Level: Less than Significant. No mitigation would be required.

iii. substantially create or contribute to runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? (HWQ-C3iii)

No. Proposed project construction activities would be located within the existing project site, and the proposed project activities are not expected to result in the construction of additional impervious

surfaces that would substantially alter existing drainage patterns. Construction activities are not expected to create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems. Therefore, the proposed project impacts are anticipated to be less than significant.

Significance Level: Less than Significant. No mitigation would be required.

iv. Impede or redirect floor flows? (HWQ-C3iv)

No. Proposed project construction activities would be located within the existing project site, and the proposed project activities are not expected to result in the construction of additional impervious surfaces that would substantially alter existing drainage patterns. Construction activities are not expected to substantially alter drainage patterns to impede or redirect flood flows, and therefore, the proposed project impacts are anticipated to be less than significant.

Significance Level: Less than Significant. No mitigation would be required.

d. Would the proposed Project, in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation? (HWQ-C4)

No. The northernmost operating portion of the project site, where modifications and/or construction is proposed, is designated by FEMA as an area determined to have a 0.2 percent annual chance, or 500-year probability, flood hazard (FEMA 2015).

The central portion of the project site is designated as Zone X (area of minimal flood hazard). Proposed construction activities would not result in physical changes in these designated areas. Therefore, the proposed Project would not create or substantially increase risks from flooding or expose people or structures to significant risk of loss, injury or death involving flooding.

Due to sea level rise, only the northernmost portion of the project site that is low-lying could be vulnerable to future coastal storm flooding. The operational area of the project site is designated as an Area of Minimal Flood Hazard (Zone X). Therefore, the risk release of pollutants due to inundation from sea level rise is less than significant.

A tsunami possibly affecting the Bay Area would originate in the Pacific Ocean before entering San Francisco Bay and likely dissipating through the wider and shallower water body. The Association of Bay Area Governments (ABAG) Hazard Viewer Map indicates that the project site is not located in a tsunami evacuation hazard zone (ABAG 2023). A seiche is the oscillation of a body of water and occurs most frequently in enclosed basins (i.e., lakes, bays, etc.). The portion of the project site where construction activities are proposed is not located in an inundation area.

Therefore, impacts of project construction are not expected to result in increased risk of pollutants due to inundation and would be less than significant.

Significance Level: Less than Significant. No mitigation would be required.

e. Would the proposed Project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? (HWQ-C5)

No. The review of the SWRCB's GeoTracker database indicated no active groundwater cleanup and abatement orders within the project site.

The proposed project construction would not require groundwater extraction from an aquifer or groundwater table. Additionally, the proposed Project would not substantially decrease groundwater resources nor interfere with groundwater recharge. Overall, the proposed project construction activities would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan, and the proposed Project would have no impact on groundwater supplies or interference with groundwater management.

Significance Level: No Impact. No mitigation would be required.

3.10.4.2.2 Operational Impacts

a. Would the proposed Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality? (HWQ-O1)

No. The proposed Project would involve operation of a facility to convert sorted municipal solid waste (MSW) materials that are organic-rich from waste suppliers to low-carbon, renewable hydrogen. The renewable hydrogen produced by the facility is expected to be used in the production of conventional and renewable fuels and for direct use in hydrogen-fuel cell vehicles, particularly heavy-duty trucks and buses.

A warehouse-style control building houses the feedstock preparation unit. The indoor space encloses waste preparation activities to prevent waste dispersion by wind and provide barrier from vectors, birds, and other animal species in the area.

The feedstock will be composed of organic waste which will be delivered to the site. No hazardous waste will be accepted. The handling and storage of engineered municipal solid waste as feedstock has the potential to impact surface water quality, if managed poorly. However, proper management of these materials and implementation of best management practices) BMPs would mitigate potential impacts to surface water quality.

Waste generated by the proposed Project is expected to be contained in indoor facilities and other containment. Therefore, the impacts from the proposed Project's operation are not expected to substantially degrade surface or groundwater quality and would be less than significant.

Significance Level: Less than Significant. No mitigation would be required.

b. Would the proposed Project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? (HWQ-O2)

No. As described in Chapter 2 Project Description, under normal operations the proposed Project could require up to 350 gallons per minute (gpm) that would be supplied from recycled or reclaimed water sources. Proposed Project operations would require an interconnection for water supply managed by CCWD. The proposed Project would not include the installation of any groundwater extraction wells for water supply purposes.

The proposed use of recycled or reclaimed water for project operations would not increase the burden on either surface water supplies and groundwater supplies within the Bay-Delta system and the Pittsburg Plain aquifer system, respectively. DDS currently operates a recycled water system that provides up to 8,600 acre-feet per year (AF/yr), or approximately 5,332 gpm, of treated wastewater for irrigation and other non-potable uses (DDS 2023b); an additional 350 gpm equates to about a 6.5 percent increase in water supply. In addition to the 350 gpm of reclaimed water anticipated to be supplied by CCWD for project operations, a nominal volume of potable water would be used for the proposed Project. In 2020, the City provided 9,232 AF/yr or approximately 5,720 gpm, of potable water to its customers. Potable water for the proposed Project would need to be provided by the City for domestic use, but the amount would be negligible and is not expected to impact potable water supplies in the area. Further analysis of operation water supplies is ongoing to ensure minimal impacts to groundwater supplies.

The proposed Project would alter surface conditions in the project area, which is currently composed of vacant land with some residual pieces of industrial equipment, a few railroad spurs, five buildings that account for less than one acre, and exterior and interior access roads that would be improved and maintained for the proposed Project. New structures would lead to less permeable surface conditions that may affect groundwater recharge. However, as previously noted, groundwater recharge in this area is primarily derived from streambed percolation and the New York Slough. Therefore, the proposed Project is not anticipated to have a significant effect on overall groundwater levels in the Pittsburg Plain basin.

Significance Level: No impact. No mitigation would be required.

c. Would the proposed Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would (HWQ-O3):

i. result in substantial erosion or siltation on- or off-site? (HWQ-O3i)

No. Following completion of construction activities, the ground surface at the project site would be restored to existing conditions. Stormwater and surface runoff within the project site will be treated by the proposed wastewater treatment plant and managed under a state multi-sector general NPDES permit for industrial operations. Proposed Project operations would not substantially alter the existing drainage pattern or result in substantial erosion or siltation on- or off-site. Therefore, operational impacts are anticipated to be less than significant.

Significance Level: Less than significant. No mitigation would be required.

ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? (HWQ-O3ii)

No. Following completion of construction activities, the project site would be restored to existing conditions. Stormwater and surface runoff within the project site will be treated by the proposed wastewater treatment plant and managed under a NPDES permit with a discharge to the Bay Delta. Proposed project operations are not expected to result in an increase in surface water runoff that

would result in flooding on- or off-site. Therefore, operational impacts are anticipated to be less than significant.

Significance Level: Less than significant. No mitigation would be required.

- iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? (HWQ-O3iii)

No. Following completion of construction activities, the ground surface at the project site would be restored to existing conditions. Stormwater and surface runoff within the project site will be treated by the proposed wastewater treatment plant and managed under a NPDES permit and sent to Delta Diablo for further treatment with a final discharge to the Bay Delta. Proposed project operations are not expected to create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems. Therefore, operational impacts are anticipated to be less than significant.

Significance Level: Less than significant. No mitigation would be required.

- iv. impede or redirect flood flows? (HWQ-O3iv)

No. Following completion of construction activities, the project site would be restored to existing conditions. Stormwater and surface runoff within the project site will be treated by the proposed wastewater treatment plant and managed under a NPDES permit. Proposed project operations are not expected to alter existing drainage patterns that would impede or redirect flood flows. Therefore, operational impacts are anticipated to be less than significant.

Significance Level: Less than significant. No mitigation would be required.

d. Would the proposed Project, in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation? (HWQ-O4)

No. The operating portions of the project site are located within designated Zone X by the FEMA, which means that it is an area determined to be an area of minimal flood hazard (FEMA 2017). Project operations would not result in physical changes in these designated areas. Therefore, the proposed Project would not create or substantially increase risks from flooding or expose people or structures to significant risk of loss, injury or death involving flooding.

The northernmost operating portion of the project site, where modifications and/or construction is proposed, is designated by FEMA (Panel 124-P) as an area determined to have a 0.2 percent annual chance, or 500-year probability, flood hazard (FEMA 2015).

The central portion of the project site is designated as Zone X (area of minimal flood hazard). Proposed construction activities would not result in physical changes in these designated areas. Therefore, the proposed Project would not create or substantially increase risks from flooding or expose people or structures to significant risk of loss, injury or death involving flooding. Therefore, the risk release of pollutants due to inundation from sea level rise is less than significant.

A tsunami possibly affecting the Bay Area would originate in the Pacific Ocean before entering San Francisco Bay and likely dissipating through the wider and shallower water body. The ABAG Hazard Viewer Map indicates that the project site is not located in a tsunami evacuation hazard zone (ABAG 2020). A seiche is the oscillation of a body of water and occurs most frequently in enclosed basins (i.e., lakes, bays, etc.). The operational portion of the project site is not located in an inundation area.

Therefore, impacts of project operations are not expected to result in increased risk of pollutants due to inundation and would be less than significant.

Significance Level: Less than Significant. No mitigation would be required.

e. Would the proposed project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. (HWQ-O5)

No. The Study Area within Contra Costa County (County) is within the limits of San Francisco Bay Basin managed by the SFB-RWQCB's Basin Plan (SFB-RWQCB, 2019). The Basin Plan is the master policy document that contains descriptions of the legal, technical, and programmatic bases of water quality regulation in the region. State policy for water quality control in California is directed toward achieving the highest water quality consistent with maximum benefit to the people of the state, and the beneficial uses identified in the Basin Plan for surface waters, groundwaters, marshes, and wetlands serve as a basis for establishing water quality objectives and discharge prohibitions to attain these goals.

The beneficial uses identified for Kirker Creek and the New York Slough include Warm Water Habitat, Wildlife Habitat, Commercial and Sport Fishing, Estuarine Habitat, Fish Migration, Preservation of Rare and Endangered Species, Contact and Non-Contact Recreation, and Navigation. Chapter 3 of the Basin Plan identifies the water quality objectives for surface waters and groundwater, including numerical water quality objectives for select toxic pollutants.

Based on the project description provided in Section 2.2 above, process wastewater would be treated on site within the proposed wastewater treatment plant and mixed with the blowdown stream to meet appropriate discharge limits before being sent to DDS's wastewater treatment plant (WWTP) via the Corteva main discharge line for disposal and would not be discharged to surface waters under a NPDES permit.

The review of the SWRCB's GeoTracker database indicated no active groundwater cleanup and abatement orders within the project site.

The proposed Project would not rely on groundwater wells requiring significant groundwater extraction from an aquifer or groundwater table. Additionally, the proposed Project would not substantially decrease groundwater resources nor interfere with groundwater recharge. Overall, proposed project operations activities would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan, and the proposed Project would have less than significant impact on groundwater supplies or interference with groundwater recharge. The proposed Project would not rely on groundwater wells requiring significant groundwater extraction from an aquifer or groundwater table. Additionally, the proposed Project would not

substantially decrease groundwater resources nor interfere with groundwater recharge. Overall, the proposed project operations would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan, and the proposed Project would have less than significant impact on groundwater supplies or interference with groundwater recharge.

Significance Level: Less than Significant; no mitigation required.

3.10.5 References

Association of Bay Area Governments (ABAG). 2017. *Plan Bay Area 2040 – Final Environmental Impact Report*. July. SCH No. 2016052041. Online: <http://2040.planbayarea.org/reports>. Accessed online: November 8, 2023.

Association of Bay Area Governments (ABAG). 2023. *Hazard Viewer Map, last updated March 2020*. Online: <https://abag.ca.gov/our-work/resilience/data-research/hazard-viewer>. Accessed online: November 8, 2023.

Bay Conservation and Development Commission (BCDC). 2003. *Water Quality Protection and Nonpoint Source Pollution Control in San Francisco Bay*. October. Online: https://www.mywaterquality.ca.gov/monitoring_council/meetings/2010aug/wq_nps_sfbay.pdf. Accessed online: November 8, 2023.

Bay Conservation and Development Commission (BCDC). 2011. *Living with a Rising Bay: Vulnerability and Adaptation in San Francisco Bay and on the Shoreline*. October 6. Online: <https://www.bcdc.ca.gov/BPA/LivingWithRisingBay.pdf>. Accessed online: November 8, 2023.

Bay Conservation and Development Commission (BCDC). 2019. *San Francisco Bay Plan*. Online: https://www.bcdc.ca.gov/plans/sfbay_plan.html. Accessed online: November 8, 2023.

City of Pittsburg. 2001. *City of Pittsburg General Plan 2020: A Vision for the 21st Century*. January.

Federal Emergency Management Agency (FEMA). 2017. *Flood Insurance Rate Map Number 06013C0139G*. Online: <https://www.fema.gov/flood-maps>. Accessed online: November 9, 2023.

Ganju, Neil K. and David H. Schoellhamer. 2006. *Annual sediment flux estimates in a tidal strait using surrogate measurements*. *Estuarine, Coastal and Shelf Science* 69, p. 165-178. April 9. Online: https://ca.water.usgs.gov/user_projects/sfbay/publications_group/ganju_schoellhamer_benicia.pdf. Accessed online: November 8, 2023.

San Francisco Bay Regional Water Quality Control Board (S.F. Bay Regional Board), 2019. *San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan)*. Online: https://www.waterboards.ca.gov/sanfranciscobay/basin_planning.html. Accessed online: November 8, 2023.

- San Francisco Estuary Institute (SFEI). 2015. *Charter: Regional Monitoring Program for Water Quality in San Francisco Bay*. Online: <https://www.sfei.org/programs/sf-bay-regional-monitoring-program>. Accessed online: November 8, 2023.
- San Francisco Estuary Institute (SFEI). 2019. *The Pulse of the Bay: Pollutant Pathways. SFEI Contribution #954*. Online: <https://www.sfei.org/rmp/pulse>. Accessed online: November 8, 2023.
- San Francisco Estuary Institute (SFEI). 2020. *Regional Monitoring Program Update 2020*. Online: <https://www.sfei.org/projects/rmp-update#sthash.m7JWugmP.dpbs>. Accessed online: November 8, 2023.
- San Francisco Estuary Institute (SFEI). 2021. *Contaminant Data Download and Display (CD3)*. Online: <http://cd3.sfei.org/>. Accessed online: November 8, 2023.
- TRC. 2023. *Hydrology and Water Quality Study for the H-Cycle Pittsburg Renewable Hydrogen Project, City of Pittsburg, Contra Costa County, California*. Prepared for H-Cycle, Mountain View, California.
- United States Army Core of Engineers (USACE), United States EPA, BCDC, S.F. Regional Board, and SWRCB. 1998. *Environmental Impact Report/Statement for Long Term Management Strategy (LTMS) for the Placement of Dredged Material in the San Francisco Bay Region*.
- United States Environmental Protection Agency (EPA). 2001. *The California Toxics Rule*. Online: <https://www.epa.gov/wqs-tech/water-quality-standards-establishment-numeric-criteria-priority-toxic-pollutants-state>

3.11 LAND USE AND PLANNING

3.11.1 Introduction

This section of the EIR addresses the land use compatibility of the proposed H Cycle Pittsburg Renewable Hydrogen Project (Project) with existing and proposed plans for development surrounding the project site, and the potential impacts of the proposed Project on existing land use plans, policies, and regulations. The following subsections provide information on the regional setting and existing conditions of the proposed project site, regulatory context, including state laws and local land use policies, as well as impacts and mitigation measures followed by the reference section. For this evaluation, guidelines and key sources of data reviewed include the following:

- Aerial photography
- Project plans and renderings
- Surrounding land uses
- Pittsburg Municipal Code

Additionally, the San Francisco Bay Conservation and Development Commission (BCDC) establishes land use policies for the Bay as a resource and for development of the Bay and its shoreline in the Bay Plan, which provides the basis for the Commission's review and actions on proposed projects.

The land use analysis reviews the areas with the limits of the proposed project site and adjacent properties within approximately 1,000 feet. This area is also referred to as the land use study area.

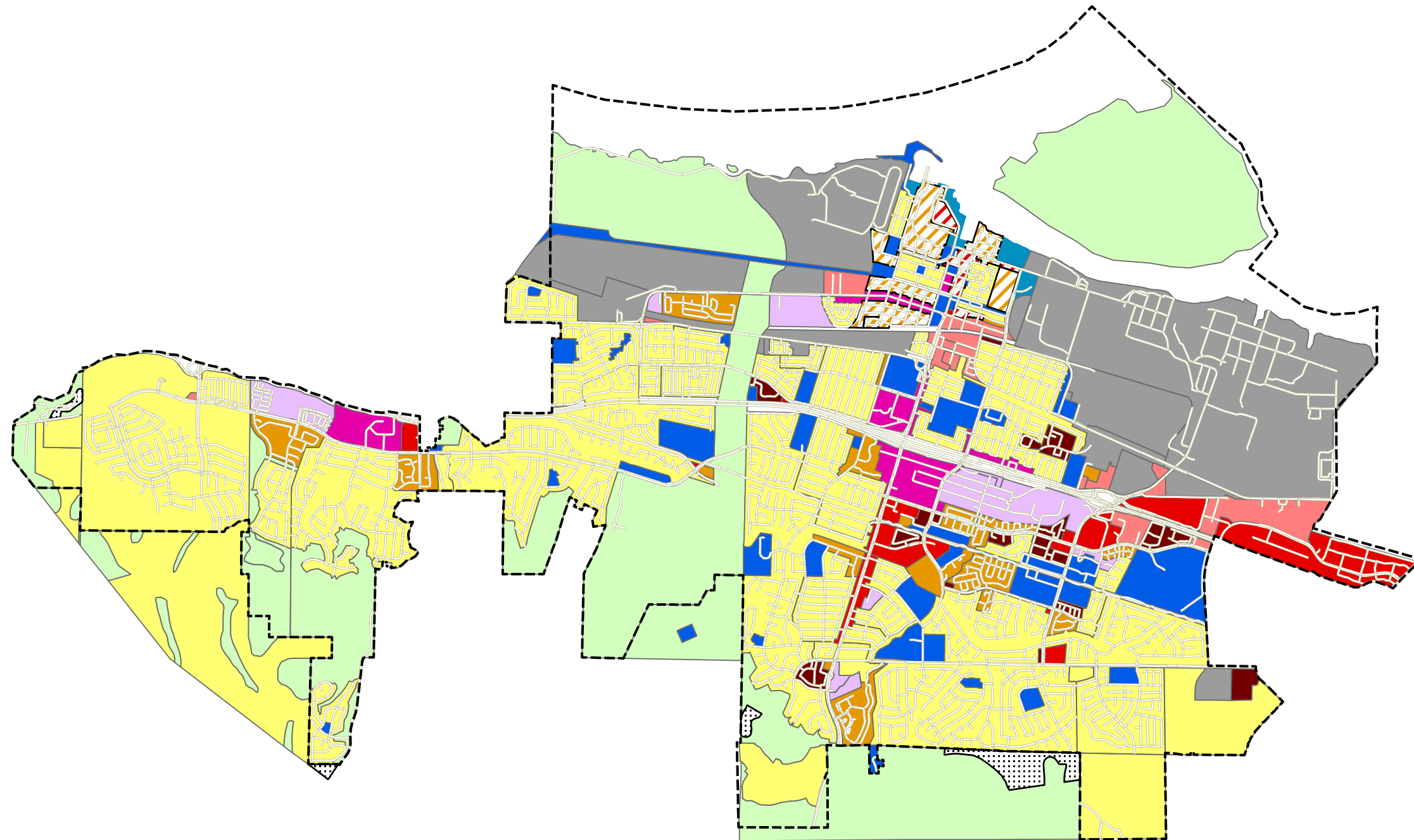
3.11.2 Environmental Setting














The proposed project site is on the eastern edge of the Northeast River Planning Subarea, as identified in the city of Pittsburg's (City's) General Plan. The Northeast River Planning Subarea is primarily characterized by large-scale heavy industrial operations, underutilized sites, and vacant land.

3.11.2.1 Existing Land Use

Land uses surrounding the proposed project site and surrounding area (Figure 3.11-1) include Corteva Agriscience's manufacturing facility as well as other industrial facilities (west), Calpine's Delta Energy Center and Delta Diablo wastewater treatment facility (south), and on the east side, adjacent to the proposed project site are Cameron process System and Generon. Immediately east of the project site is the Corteva Wetlands Preserve, a 471-acre of undeveloped land, featuring miles of trails, observation decks, benches, and habitat for plants, wildlife, and fish. Across New York Slough to the northwest of the project site is Browns Island, a regional shoreline preserve and refuge for aquatic birds.

Coordinate System: NAD 1983 StatePlane California III FIPS 0403 Feet, Map Rotation: 0
 - Saved By: SRAY on 7/16/2024, 10:42:48 AM, File Path: V:\H-Cycle\506412_Pittsburg_Hydrogen\Project\A-APPX\Renewable Hydrogen Project EIR.aprx, Layout Name: Land Use Designations




-  ROADS
-  CITY LIMITS
-  BUSINESS COMMERCIAL
-  COMMUNITY COMMERCIAL
-  DOWNTOWN HIGH-DENSITY RESIDENTIAL
-  DOWNTOWN MEDIUM DENSITY RESIDENTIAL
-  INDUSTRIAL
-  GOVERNMENTAL AND QUASIPUBLIC
-  HIGH-DENSITY RESIDENTIAL
-  HILLSIDE PLANNED DISTRICT
-  LOW DENSITY RESIDENTIAL
-  MEDIUM-DENSITY RESIDENTIAL
-  MIXED USE
-  OPEN SPACE
-  SERVICE COMMERCIAL
-  WATERFRONT COMMERCIAL

DATA SOURCES: TRC, CITY OF PITTSBURG OPEN DATA PORTAL.



1:45,600
 1" = 3,800'



PROJECT:		H CYCLE PITTSBURG RENEWABLE HYDROGEN PROJECT CONTRA COSTA COUNTY, CALIFORNIA	
TITLE: CITY OF PITTSBURG LAND USE DESIGNATIONS			
DRAWN BY:	S. RAY	PROJ. NO.:	506412.0000.0000
CHECKED BY:	R. SPRING	FIGURE 3.11-1	
APPROVED BY:	P. DEMICHELE		
DATE:	JANUARY 2024		
		1850 GATEWAY BLVD, SUITE 1075 CONCORD, CA 94520 PHONE: 925.688.1200	
FILE:		Renewable Hydrogen Project EIR.aprx	

The closest residence is an apartment complex located at 2727 Pittsburg-Antioch Highway, approximately 0.6 air mile south of the proposed project site. The nearest residences to the west are located at the intersection of Carpino Way and Carpino Avenue, approximately 0.8 air mile southwest of the proposed project site, and the nearest residence to the east is located at intersection of Aster Drive and Tulip Drive, approximately 1.2 air miles of the proposed project site.

3.11.2.2 Zoning

As shown on Figure 3.11-2 Pittsburg Zoning Map, the proposed project site is located within the City's General Industrial (IG) District. The purpose of the IG District is to provide sites for intense industrial uses, as well as on small parcels in the vicinity of heavy industrial uses. Areas are established for heavy industrial uses in order to protect them, to the extent feasible, from disruption and competition for space from unrelated retail and commercial uses that are more appropriately located elsewhere in the City. The proposed project site and surrounding area are proposed to remain zoned and designated for industrial land uses, consistent with the existing uses, as identified in *the Draft 2040 Pittsburg General Plan (2023)*.

Adjacent districts are zoned for Commercial Service (CS) to the south and Limited Industrial - Limited Overlay (IL-O) to the west. The IL-O zone to the west complies with the same land use regulations present in the base industrial zoning district where the proposed Project is located. The CS District to the south serves as a transitional site between commercial and industrial areas and allows for heavy maintenance activities.

3.11.3 Regulatory Context

3.11.3.1 Federal

No federal regulations governing land use would apply to the proposed project.



















































3.11.3.2 State

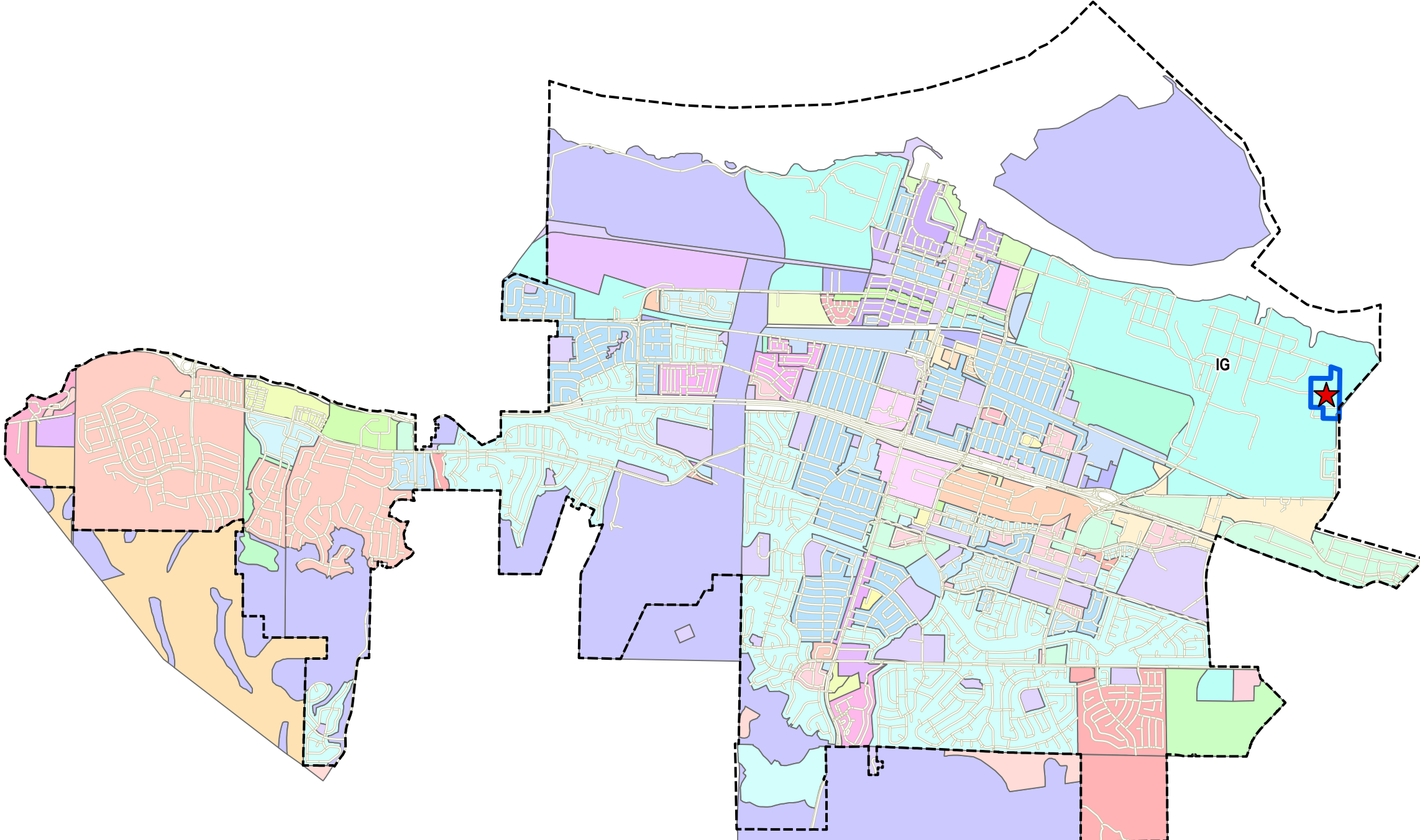
3.11.3.2.1 The California Government Code

Section 65300 of the California Government Code (CGC) requires that each city and county in the state prepare a comprehensive, long-term General Plan for the physical development of the county or city, and of any land outside its boundaries which in the planning agency's judgment bears relation to its planning. In accordance with Government Code Section 65302, the General Plan is a combination of development policies that set forth objectives, principles, and standards for how a community can achieve its long-term vision for itself. Each jurisdiction's General Plan must include a land use element that designates the proposed general distribution and general location and extent of the uses of the land for various uses including housing, business, industry, open space, agriculture, natural resources, recreation, public buildings, waste facilities and other public and private uses of land (Government Code Section 65302). Cities and counties are authorized under Government Code Section 65800 et seq. to implement their general plans through adoption of ordinances that

establish zoning districts, allowable land uses and standards for development of land within their boundaries.¹⁸

18 California Legislative Information website accessed November 20, 2023. <https://leginfo.legislature.ca.gov/>

-  PROJECT LOCATION
-  ROADS
-  CITY LIMITS
-  CC, COMMUNITY COMMERCIAL
-  CN, COMMUNITY COMMERCIAL
-  CO, BUSINESS COMMERCIAL
-  CO, MIXED USE
-  CO-O, BUSINESS COMMERCIAL
-  CP, COMMUNITY COMMERCIAL
-  CP, DOWNTOWN HIGH-DENSITY RESIDENTIAL
-  CS, SERVICE COMMERCIAL
-  CS-D, SERVICE COMMERCIAL-DOWNTOWN OVERLAY
-  CS-O, SERVICE COMMERCIAL-LIMITED OVERLAY
-  CW, WATERFRONT COMMERCIAL
-  GQ, GOVERNMENTAL AND QUASIPUBLIC
-  HPD, HILLSIDE PLANNED DISTRICT
-  HPD, MEDIUM-DENSITY RESIDENTIAL
-  HPD, SINGLE FAMILY RESIDENTIAL (5,000 SF MIN. LOT SIZE)
-  IG, GENERAL INDUSTRIAL
-  IG-O, GENERAL INDUSTRIAL-LIMITED OVERLAY
-  IL, LIMITED INDUSTRIAL
-  IL-O, LIMITED INDUSTRIAL-LIMITED OVERLAY
-  IP, BUSINESS COMMERCIAL
-  IP-O, BUSINESS COMMERCIAL
-  IP-O, SINGLE FAMILY RESIDENTIAL (5,000 SF MIN. LOT SIZE)
-  M, MIXED USE
-  OS, OPEN SPACE
-  OS, OPEN SPACE DISTRICT
-  OS-O, OPEN SPACE DISTRICT-LIMITED OVERLAY
-  PD, BUSINESS COMMERCIAL
-  PD, DOWNTOWN MEDIUM-RESIDENTIAL - LIMITED OVERLAY
-  PD, GOVERNMENTAL AND QUASIPUBLIC
-  PD, HIGH-DENSITY RESIDENTIAL
-  PD, MEDIUM-DENSITY RESIDENTIAL
-  PD, MIXED USE
-  PD, SERVICE COMMERCIAL
-  PD, SINGLE FAMILY RESIDENTIAL (5,000 SF MIN. LOT SIZE)
-  PD, SINGLE FAMILY RESIDENTIAL (6,000 SF MIN. LOT SIZE)
-  RH, HIGH-DENSITY RESIDENTIAL
-  RH-D, DOWNTOWN HIGH-DENSITY RESIDENTIAL
-  RM, MEDIUM-DENSITY RESIDENTIAL
-  RM-D, MEDIUM-DENSITY RESIDENTIAL - DOWNTOWN OVERLAY
-  RM-O, MEDIUM-DENSITY RESIDENTIAL - LIMITED OVERLAY
-  RMD-O, DOWNTOWN MEDIUM-RESIDENTIAL - LIMITED OVERLAY
-  RS-10, SINGLE FAMILY RESIDENTIAL (10,000 SF MIN. LOT SIZE)
-  RS-4, SINGLE FAMILY RESIDENTIAL (4,000 SF MIN. LOT SIZE)
-  RS-5, SINGLE FAMILY RESIDENTIAL (5,000 SF MIN. LOT SIZE)
-  RS-6, SINGLE FAMILY RESIDENTIAL (6,000 SF MIN. LOT SIZE)
-  RS6-O, SINGLE FAMILY RESIDENTIAL (6,000 SF MIN. LOT SIZE) LIMITED OVERLAY
-  PROJECT SITE BOUNDARY



DATA SOURCES: TRC, CITY OF PITTSBURG OPEN DATA PORTAL.



1:44,400
 1" = 3,700'
 0 1,850 3,700 FEET

PROJECT: H CYCLE PITTSBURG RENEWABLE HYDROGEN PROJECT CONTRA COSTA COUNTY, CALIFORNIA	
TITLE: CITY OF PITTSBURG ZONING CLASSIFICATIONS	
DRAWN BY: S. RAY	PROJ. NO.: 506412.0000.0000
CHECKED BY: R. SPRING	FIGURE 3.11-2
APPROVED BY: P. DEMICHELE	
DATE: JANUARY 2024	



1850 GATEWAY BLVD, SUITE 1075
 CONCORD, CA 94520
 PHONE: 925.688.1200

Coordinate System: NAD 1983 StatePlane California III FIPS 0403 Feet, Map Rotation: 0
 - Saved By: SRAY on 7/16/2024, 10:42:48 AM, File Path: V:\H-Cycle\506412_Pittsburg_Hydrogen\Project\5-APPX\Renewable Hydrogen Project EIR.aprx, Layout Name: Zoning Map

In addition to the general plan land use element required by the CGC, the Pittsburg General Plan also contains elements regarding: Growth Management, Urban Design, Downtown, Economic Development, and Public Facilities (City of Pittsburg 2001). The City’s current General Plan was adopted in 2001 and has since been amended.¹⁹ There are no state regulations applicable to land use and planning for the proposed Project.

3.11.3.3 Regional

Land Use policies for development within 100 feet of the shoreline are regulated by the San Francisco Bay Area Conservation District.

3.11.3.3.1 Delta Reform Act

The Delta Reform Act of 2009 established two coequal goals: securing a reliable water supply for California and protecting, restoring, and enhancing the Sacramento-San Joaquin Delta ecosystem and the fish, wildlife, and recreation it supports. The Delta Reform Act recognized the Delta as an “evolving” environment and outlined a state policy of reduced reliance on Delta water exports, opting for a strategy of improved conservation, the development and enhancement of regional supplies, and water use efficiency. The Delta Reform Act established an independent state agency – the Delta Stewardship Council – to develop and implement a plan that facilitates the declared coequal goals. The act also established the Delta Independent Science Board and authorized it to research, monitor, and assess programs pursued under the Delta Plan, advising the Council of its findings.

3.11.3.4 Local

3.11.3.4.1 City of Pittsburg General Plan

The City’s General Plan *Pittsburg 2020: Vision for the 21 Century*, adopted in 2001, established the following goals and policies for the Northeast River subarea.

Goals: Northeast River

- | | |
|--------|--|
| 2-G-12 | Maintain the industrial use and character of the area. |
| 2-G-13 | Protect sensitive marshland habitats along the New York Slough waterfront. |

Policies: Northeast River

- | | |
|--------|--|
| 2-P-37 | Ensure that development in Northeast River is limited to industrial activities and supporting business and service uses. |
| 2-P-38 | During project review, ensure that all industrial development along public streets and in areas adjacent to Downtown maintain at least a 25-foot-wide landscaped buffer (using trees and shrubs for screening) along the street. |
| 2-P-39 | Encourage the development of “clean” industries along the New York Slough waterfront. Support the modernization of all industrial uses in the area to reduce both air and water pollutant levels. |

¹⁹ City of Pittsburg General Plan 2020: *A Vision for the 21st Century*. January 2001. Website accessed December 7, 2023. <https://www.pittsburgca.gov/services/community-development/planning/general-plan-current>

2-P-41	Support the reclamation and reuse of contaminated industrial sites within the Northeast River subarea.
2-P-43	Ensure that all proposed projects in the Northeast River area complete an assessment of biological resources, including wetlands, before site layout and design is completed.
2-P-44	Ensure—through a combination of on- and off-site mitigation—that new development results in no net loss of wetlands. Dowest Slough is an excellent example of wetlands restoration adjacent to industrial properties.
2-P-45	Pursue opportunities for a multi-use trail along the waterfront as industrial properties are redeveloped and remediated.
2-P-46	Support the permanent preservation of the wetlands and salt marsh habitats along New York and Dowest Sloughs, including Browns Island Regional Shoreline.

The proposed Project is consistent with the goals and policies presented above and is compatible with present zoning regulations. The proposed scope of work would not introduce a unique use not covered by pre-existing land use regulations. Per the zoning requirements outlined in the City's Municipal Plan, major utility uses in IG Districts such as those included in this project would require the approval of a use permit (City of Pittsburg 2020b).

3.11.3.4.2 City of Pittsburg Municipal Code

Title 18 of the Pittsburg Municipal Code is the City's Zoning Ordinance. The Zoning Ordinance carries out the policies of the General Plan by classifying and regulating the uses of land and structures within the City, consistent with the General Plan. The purpose of the Zoning Ordinance is to protect and promote public health, safety, and general welfare, and to implement the policies of the City's General Plan. More specifically, the Zoning Ordinance is intended to:

- a. Provide a precise guide for the physical development of the City in order to:
 - i. Preserve the character and quality of residential neighborhoods,
 - ii. Foster convenient, harmonious and workable relationships among land uses, and
 - iii. Achieve the arrangement of land uses described in the general plan;
- b. Promote economic stability of existing land uses that are consistent with the General Plan and protect them from intrusions by inharmonious or harmful land uses;
- c. Prevent excessive population densities and overcrowding of land or buildings;
- d. Ensure the provision of adequate open space for light, air and fire safety;
- e. Permit the development of office, commercial, industrial, and related land uses that are consistent with the General Plan, in order to strengthen the City's economic base;
- f. Conserve and enhance the City's architectural and cultural resources;
- g. Conserve and enhance key visual features of Pittsburg's setting, including the riverfront and major ridgelines, consistent with the general plan;

- h. Require adequate off-street parking and loading facilities, and promote a safe, effective traffic circulation system;
- i. Ensure that service demands of new development will not exceed the capacities of streets, water and utilities, and other public services;
- j. Encourage a built environment of the highest design and architectural quality.

Division III of the Zoning Ordinance outlines the base district regulations, Division IV outlines the overlay district regulations, and Division V outlines the general land use regulations.

The proposed Project is located on land zoned IG (General Industrial) District; the proposed uses are permitted within the IG District, subject to an approved use permit. In accordance with the Pittsburgh Municipal Code (PMC) Section 18.16.040, a use permit may be granted only if the City Planning Commission can make findings that the proposed Project:

- is in accord with the objective of PMC Title 18 (Zoning), the purposes of the land use district in which it is located and is appropriate to the specific location.
- is not detrimental to the health, safety, and general welfare of the City.
- will not adversely affect the orderly development of property within the City.
- will not adversely affect the preservation of property values and the protection of the tax base and other substantial revenue sources within the City.
- is consistent with the objectives, policies, general land uses and programs identified in the General Plan and any applicable specific plan.
- will not create a nuisance or enforcement problem within the neighborhood.
- will not encourage marginal development within the neighborhood.
- will not create a demand for public services within the City beyond that of the ability of the City to meet in the light of taxation and spending constraints imposed by law; and
- is consistent with the City's approved funding priorities.

Additionally, the proposed Project requires a design review by the City under Section 18.36.200 of the PMC, "Design Review in Land Use Districts Other than Single-Family Residential." The Planning Commission may grant design review approval for a project only after the Commission makes a determination that the proposed project is consistent with PMC section 18.36.220 (B), summarized below:

- the structure conforms with good taste, good design and in general contributes to the character and image of the City as a place of beauty, spaciousness, balance, taste, fitness, broad vistas, and high quality.

- the structure would be protected against exterior and interior noise, vibrations and other factors that may tend to make the environment less desirable.
- the exterior design and appearance of the structure is not of inferior quality as to cause the nature of the neighborhood to materially depreciate in appearance and value.
- the structure is in harmony with proposed developments on land in the general area.
- the application conforms with the criteria set forth in any applicable City-adopted design guidelines.

The IG District development standards establish a maximum building height of 50 feet²⁰ An increase over the maximum height allowance is permitted in the IG District equal to the number of additional feet the proposed structure is set back from each property line beyond the minimum yard requirements up to a maximum of 75 feet.²¹ In addition, a tower, spire, cupola, chimney, elevator penthouse, water tank, flagpole, monument, theater scenery, radio and television antenna²², transmission tower, light standard, fire tower, and similar structure and necessary mechanical appurtenances covering not more than ten percent of the ground area covered by the structure to which it is accessory may exceed the maximum permitted height in an Industrial District in which the site is located by a maximum of 20 feet.²³ This would allow for structures within the project site not exceeding ten percent of the of the total ground area a maximum height of 95 feet.

3.11.3.4.3 Conditional Use Permit

The proposed Project most closely aligns with the industrial use type classification of “Manufacturing, Heavy” as defined in PMC Section 18.08.100(C)(1). Pursuant to the land use regulations for industrial districts in PMC Section 18.54.010, this use type classification requires approval of a use permit.

The PMC also ensures that the use, handling, storage and transport of hazardous materials and substances comply with the requirements of the California Health and Safety Code and that the City is notified of emergency response plans, unauthorized releases of hazardous materials and hazardous substances, and any substantial changes in facilities or operations that could affect the public health, safety or welfare.²⁴

A use permit is required for a new industrial use that will have an engineered design capacity to manage more than 12,500 tons per year of hazardous material. A new industrial use may require a use permit under other provisions of this title regardless of capacity.²⁵

²⁰ PMC § 18.54.115

²¹ PMC § 18.54.120

²² Except as provided in PMC § 18.84.030

²³ PMC § 18.80.020

²⁴ PMC Section 18.84.270

²⁵ PMC Section 18.84.280(B)

3.11.4 Impact Analysis

Information presented in this section is based on field reconnaissance, review of aerial photographs, and review of relevant planning documents. The assessment of potential impacts was made based on Chapter 2.0, Project Description and Appendix G of the CEQA Guidelines.

3.11.4.1 Significance Criteria

Criteria for determining the significance of impacts related to land use and planning are based on the environmental checklist form in Appendix G of the State CEQA Guidelines, § 15000 et seq. An impact would be considered significant if the proposed Project would:

- a. Physically divide an established community; or
- b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

3.11.5 Impacts and Mitigation Measures

Impact Determination

- a. **Would the proposed Project physically divide an established community? (LU-1)**

No. As described in Section 3.12.2 Existing Conditions, the proposed project site is currently developed with five buildings. Permanent usage of the proposed renewable hydrogen facility would be approximately 12 acres of the 24-acre Study Area. The Study Area is currently graded and covered with an array of graveled ground, disturbed dirt, and concrete slabs that are primarily used for parking and storage.

The land use surrounding the project site is primarily industrial. The project site and industrial facilities are all zoned for General Industrial (IG) use in the City. Several transportation facilities are also in the surrounding area, as well as the New York Slough which is located north of the project site. The nearest residences are south of State Route 4 approximately 0.9 mile southwest of the project site; therefore, none of the existing residential neighborhoods, which are 0.9 mile or further away from the boundaries of the proposed project site, would be divided as a result of project construction.

The potential for the proposed Project to divide an established community would not change following completion of construction. Because no changes outside the footprint of the existing Study Site would occur. The site is surrounded by industrial uses to the east, industrial uses and vacant land to the south and west, and vacant land and the New York Slough to the north. The nearest residences are approximately 0.6 mile south of the project site. The proposed Project would not reduce any distances to existing established communities nor result in the presence of new barriers within those communities; therefore, none of the existing residential neighborhoods, which are 0.6 mile or further away from the boundaries of the proposed project site, would be divided as a result

of project construction and operations. As a result, development of the proposed project site would not physically divide an established community.

Significance Level: Less than significant. No mitigation is required.

- b. Would the proposed Project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect? (LU-2)**

No. The proposed project site is located in an area zoned for General Industrial (IG) use. The requirements of the zone, including a Conditional Use Permit for the proposed Project, are intended to provide safeguards and to establish adequate buffer distances between uses that pose potentially adverse public health, safety, and welfare impacts and land uses in adjacent more restrictive zone districts. The proposed renewable hydrogen facility has been determined to require a Conditional Use Permit approved by the City Planning Commission. With the Conditional Use Permit, the proposed use would not conflict with any land use plan, policy, or regulation.²⁶ The Applicant would comply with the conditions outlined in the use permit.

Pittsburg's land use polices for this area encourages the continued presence of all types of industry throughout the planning area. The proposed use of the sites would increase their productive use and would generate increased property taxes, employment, and general business activity consistent with goals of the City's Capital Improvements Program (CIP) and the Contra Costa Northern Waterfront Development Initiative. The proposed Project is consistent with the goals presented above and is compatible with present zoning and General Plan regulations. The proposed scope of work would not introduce a unique use not covered by pre-existing land use regulations. Per the zoning requirements outlined in the City's Municipal Plan, major utility uses in IG Districts such as those included in this project would require the approval of a use permit described above. Considering these factors, the proposed use would be consistent with the City's land use plans and policies. The proposed Project would be considered a beneficial reuse of an underutilized site that supports the City's Climate Action Plan and Sustainability Plan goals to reduce transportation emissions and divert regional waste away from landfills. In addition, new property tax revenue, employment opportunities and alignment with local and regional environmental policies and plans would result in a beneficial impact on the environment under this significance criterion,

Significance Level: Beneficial Impact. No mitigation is required.

3.11.6 References

City of Pittsburg. 2001. "Land Use." General Plan Pittsburg 2020: A Vision for the 21st Century, City of Pittsburg, 2020. Available at:
<https://www.pittsburgca.gov/home/showpublisheddocument/4674/637479142624630000>
Accessed online: November 10, 2023.

²⁶ PMC Section 18.84.280

City of Pittsburg, 2023a. Geographic Information System. Available at:
<https://www.pittsburgca.gov/services/public-works/gis>. Accessed online: November 10, 2023.

City of Pittsburg, 2023b Five Year Capital Improvement Program. City of Pittsburg, 2023.
Available at:
<https://www.pittsburgca.gov/home/showpublisheddocument/15375/638283103570170000>.
Accessed Online: November 20, 2023.

3.12 NOISE AND VIBRATION

This section describes the existing noise environment of the project site and identifies potential noise receptors that could be potentially impacted by the development of the proposed Project. Applicable regulations of the local community are also discussed, along with a brief description of the generation and characteristics of sound and how sound is measured.

Key sources of data used in the analysis in this chapter include the Noise Study Report (TRC 2023; Appendix I of this EIR) and figures presented in the Project Description (Section 2), including:

- Figure 2-2: Proposed project site Map

3.12.1 Noise Concepts and Terminology

3.12.1.1 Terminology

This noise analysis relies on the following standard noise-related terms and principles.

- **Environmental noise:** Environmental noise is defined as unwanted sound resulting from vibrations in the air. Excessive noise can cause annoyance and adverse health effects. Annoyance can include sleep disturbance and speech interference. It can also distract attention and make activities more difficult to perform (EPA 1978).
- The range of pressures that create noise is broad. Noise is, therefore, measured on a logarithmic scale, expressed in **decibels (dB)**. Noise is typically measured on the **A-weighted scale (dBA)**, which has been shown to provide a good correlation with human response to sound and is the most widely used descriptor for community noise assessments (Harris 1998).
- To describe the time-varying character of environmental noise, various statistical noise descriptors are typically used.
 - **L_{max} :** L_{max} is the maximum noise level generated by a source at a specified distance.
 - **L_{eq} :** L_{eq} is the equivalent noise level over a specified period of time (i.e., 1 hour). It is a single value of sound that includes all of the varying sound energy in a given duration.
 - **L_{90} , L_{50} and L_{10} :** These are the A-weighted sound levels that are exceeded at the specified percentage of time. For example, L_{90} is the sound level exceeded 90 percent of the time and is often considered the background, or residual, noise level. Similarly, L_{10} is the sound level exceeded 10 percent of the time and is commonly used as a measurement of intrusive sounds such as aircraft overflight.
 - **L_{dn} :** L_{dn} , or day-night noise level, is the A-weighted sound level over a 24-hour period with an additional 10 dB penalty imposed on sounds that occur between 10:00 p.m. and 7:00 a.m.

- **CNEL:** Community Noise Equivalent Level (CNEL) is similar to L_{dn} and is the A-weighted sound level over a 24-hour period with an additional 10-dB penalty imposed on sounds that occur between 10:00 p.m. and 7:00 a.m., and a 5-dB penalty imposed on sounds that occur in the evening between 7:00 p.m. and 10:00 p.m. CNEL was developed in California for evaluating noise levels in residential communities. CNEL will always be higher than L_{dn} for the same location; therefore, it is appropriate and conservative to use CNEL when L_{dn} is not available or when comparing calculated noise to an L_{dn} threshold.

3.12.1.2 General Noise Concepts

Sound travels through the air as pressure waves caused by some type of vibration. In general, sound waves travel away from a noise source at ground level in a hemispherical pattern. The energy contained in a sound wave is spread over an increasing area as it travels away from the noise source. Typical A-weighted noise levels for various sound sources are summarized in Table 3.12-1, below.

The nature of dB scales is such that individual dB ratings for different noise sources cannot be added directly to give the sound level for the combined noise from all sources. Instead, the combined noise level produced by multiple noise sources is calculated using logarithmic summation. For example, if one source produces a noise level of 80 dBA, then two of the identical sources side by side would generate a combined noise level of 83 dBA, or an increase of only 3 dBA.

People generally perceive a 10-dBA increase in a noise source as a doubling of loudness. Also, most people cannot detect differences of less than 2 dBA between noise levels of a similar nature, while most could probably perceive a change of approximately 5 dBA. When a new intruding sound is of a different nature than the background sound, such as a horn sounding in heavy vehicle traffic, most people can detect changes as low as 1 dBA. When distance is the only factor considered, sound levels from isolated point sources of noise are reduced by approximately 6 dBA for every doubling of distance. The following formula can also be used to determine noise reduction at any distance from an isolated point source:

$$L_2 = L_1 - (20 \times \log_{10}(r_2/r_1))$$

Where: L_1 is the noise level at reference distance (r_1)

L_2 is the noise level at receptor distance (r_2)

When the noise source is on a continuous line, such as vehicle traffic on a highway, sound levels decrease by approximately 3 dBA for every doubling of distance.

Noise levels can also be affected by several factors other than distance. Topographic features and structural barriers absorb, reflect and scatter sound waves and affect the reduction of noise levels. Atmospheric conditions (wind speed and direction, humidity and temperature) and the presence of dense vegetation can also affect the degree to which sound waves attenuate over distance.

Table 3.12-1: Typical A-Weighted Sound Levels

Sound Source	Sound Level (dBA)	Typical Human Response
Carrier deck jet operation	140	Painfully loud
Limit of amplified speech	130	
Jet takeoff (200 feet) Auto horn (3 feet)	120	Threshold of feeling and pain
Jet takeoff (2,000 feet) Riveting machine	110	Very annoying
Shout (0.5 foot) New York subway station	100	
Heavy truck (50 feet) Pneumatic drill (50 feet)	90	Hearing damage (8-hour exposure)
Passenger train (100 feet) Helicopter (in flight, 500 feet) Freight train (50 feet)	80	Annoying
Freeway traffic (50 feet)	70	Intrusive
Air conditioning unit (20 feet) Light auto traffic (50 feet)	60	
Normal speech (15 feet)	50	Quiet
Living room Bedroom Library	40	
Soft whisper	30	Very quiet
Broadcasting studio	20	
	10	Just audible
	0	Threshold of hearing

Source: Compiled by TRC

3.12.2 Environmental Setting

3.12.2.1 Regulatory and Policy Context

3.12.2.1.1 Federal

There are no federal laws, ordinances or regulations that directly affect the proposed Project with respect to noise or vibration. However, there are some federal standards that can be utilized for consideration of a broad range of noise and vibration issues, as listed below.

The United States Department of Housing and Urban Development Noise Regulations (Title 24, Code of Federal Regulations, Part 51, Subpart B) identify sound levels that are compatible with residential land use. Sound levels not exceeding a 65-dBA L_{dn} are considered acceptable. Sound levels between 65-dBA L_{dn} and 75-dBA L_{dn} are normally unacceptable, unless noise-reduction measures are included to limit noise levels within residences to a 45-dBA L_{dn} or below. Sound levels exceeding a 75-dBA L_{dn} are unacceptable.

The United States Environmental Protection Agency (EPA) has not promulgated standards or regulations for environmental noise. However, it has published a guideline that specifically addresses issues of community noise. This guideline, commonly referred to as the “EPA Levels Document” (EPA 1974), contains goals for noise levels affecting residential land use including an L_{dn} equal to or less than 55 dBA for outdoors and an L_{dn} equal to or less than 45 dBA for indoors. The agency is careful to stress that the recommendations contain a factor of safety and do not consider technical or economic feasibility issues and, therefore, should not be construed as standards or regulations.

The Federal Transit Administration (FTA) has not promulgated standards or regulations for environmental noise by construction. However, it has published a guideline that specifically addresses issues of community noise. This guideline recommends that hourly sound levels of 90 dBA at residential uses from construction noise, including pile driving, would be considered a significant impact (FTA 2006). The FTA guidelines also address vibration impacts.

3.12.2.1.2 State

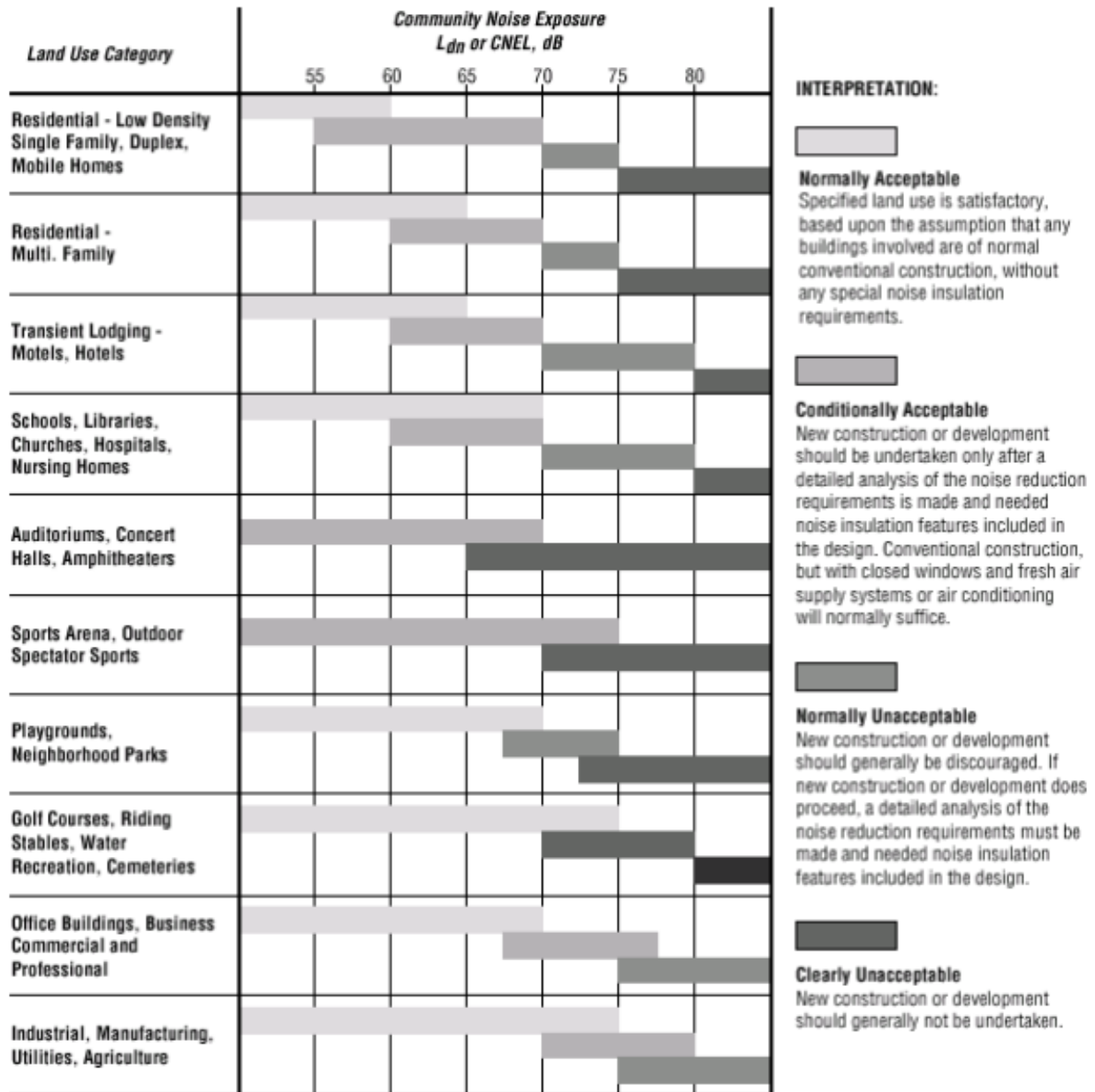
The following potentially relevant State noise regulations have been identified:

- California Department of Industrial Relations, California Occupational Safety and Health Administration (Title 8, California Code of Regulations, Sections 5095-5098) requires that all facility noise levels be limited to 85 dBA to protect worker safety. If workers frequent areas of the facility that exceed 85 dBA, then all aspects of a hearing conservation program must be implemented by the employer.
- California Government Code (Section 65302(f)) requires local jurisdictions to prepare general plans that include land use and noise elements.

3.12.2.1.3 Contra Costa County

Section 11 (Noise Element) of the Contra Costa County General Plan 2005-2020 establishes, in Policy 11-1, the acceptability of proposed new land uses within existing noise-impacted areas in accordance with the State of California General Plan Guidelines shown in Table 3.12-2, below. This table can also be used to determine if receptors within a current land use area would be significantly impacted by a proposed new land use in the vicinity. The maximum exterior noise level considered to be “normally acceptable” for single-family residential uses is 60-dBA L_{dn} , and noise levels of up to 70-dBA L_{dn} are considered to be “conditionally acceptable.” The maximum exterior noise level considered to be “normally acceptable,” without condition, for industrial uses is 70-dBA L_{dn} . This policy does not apply to temporary noise levels, such as from construction.

Table 3.12-2: Noise Level/Land Use Compatibility



Source: State of California Governor’s Office of Planning and Research 2017.

Contra Costa County General Plan Noise Element Policy 11-8 states that construction activities shall be concentrated during the hours of the day that are not noise-sensitive for adjacent land uses and should be commissioned to occur during normal work hours of the day to provide relative quiet during the more sensitive evening and early morning periods.

3.12.2.1.4 City of Pittsburg

The following are the Policies of the city of Pittsburg (City) General Plan (City of Pittsburg, 2001) are relevant to the proposed Project:

- Policy 12-P-9 establishes that generation of loud noises on construction sites adjacent to existing development should be limited to normal business hours between 8 a.m. and 5 p.m.
- Policy 12-P-10 establishes that the impact of truck traffic noise on residential areas should be reduced by limiting such traffic to appropriate truck routes, and that consideration is given to restrict truck travel times in sensitive areas.

The City's General Plan Noise Element also generally describes a range of changes in ambient (existing) noise levels and how these changes would be perceived by the community, such as a residential receptor, in terms of significance of impact:

- Except under special conditions, a change in sound level of 1 dB cannot be perceived;
- A 3 dB change is considered a "just noticeable" difference;
- A 5 dB change is required before any noticeable change in community response would be expected. A 5 dB change is often considered a "significant impact"; and
- A 10 dB change is subjectively heard as an approximate doubling in loudness and almost always causes an adverse community response.

The City's Municipal Code (City of Pittsburg, 2007) Noise Ordinance (Section 9.44.010) does not establish numerical noise-level limits related to construction noise but makes it unlawful for any person to make, continue or cause to be made, or continue any noise which either unreasonably annoys, disturbs, injures, or endangers the comfort, repose, health, peace, or safety of others, within the limits of the City. Unreasonable noise sources listed in the ordinance, and potentially relevant to the proposed Project, include unmuffled vehicle exhaust (9.44.010.H) and pile drivers, hammers, and similar equipment (9.44.010.J).

The City's Municipal Code (City of Pittsburg, 2007) Building and Construction Ordinance (Section 15.88.060.A.5) prohibits grading noise, including warming up equipment motors, within 1,000 feet of a residence between the hours of 5:30 p.m. and 7 a.m. weekdays, unless otherwise approved by the City Engineer.

3.12.3 Existing Conditions

The proposed Project area is in an existing industrial land use area far removed from any noise sensitive areas (NSAs) such as residences, schools, or hospitals. The nearest residences are located approximately 4,800 feet southwest and 5,000 feet southeast of the proposed project area. The nearest church and hotel are located 5,000 feet southeast and 7,500 feet southwest of the proposed project area, respectively. (TRC 2023)

The proposed project area is bounded by a railroad to the south, vacant land to the east, and existing industrial facilities to the north and west. Marshland and the San Joaquin River are located further to the north. The facility will include a variety of sound-producing equipment, including pumps, dryers, compressors, cooling fans, generators, and a ground flare system. During construction, an additional 12 acres will be used as construction laydown yards. (TRC 2023)

3.12.4 Impact Analysis

3.12.4.1 Methodology for Impact Analysis

Environmental impacts are discussed in this section relative to the receptors nearest to the project site.

3.12.4.2 Significance Criteria

For the purposes of this analysis, the proposed Project was considered to have a significant noise impact requiring mitigation if:

- a. The proposed Project would result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the proposed Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- b. it would result in generation of excessive groundborne vibration or groundborne noise levels; or
- c. the project site is located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, and it would expose people residing or working in the proposed project area to excessive noise levels.

3.12.5 Impacts and Mitigation Measures

Impact Determination

Construction-Related Impacts

- a. Would the proposed Project generate a substantial temporary increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? (NOI-C1)

No. Based on the Noise Study Report (TRC 2023; Appendix I), proposed construction activities for the proposed Project could result in a temporary noise level increase of 2.3 to 9.2 dBA at the nearest sensitive receptors.

Construction will generally occur during daylight hours, which will significantly reduce noise impacts to development in the proposed project vicinity and the nearest sensitive receptors. Additionally, all construction equipment will be required to utilize sound control devices no less effective than those provided by the manufacturer and maintain equipment in accordance with manufacturer's recommendations. No equipment will have unmuffled exhausts and equipment idling will be kept to a minimum.

Compliance with the Local General Plan Policies and Noise Ordinances for construction will result in temporary increases in ambient noise levels in the vicinity of the proposed project area would be less than significant.

Significance Level: Less than Significant. No mitigation would be required.

b. Would the proposed Project generate excessive temporary groundborne vibration or groundborne noise levels? (NOI-C2)

No. Construction activities, such as demolition, soil compaction, excavation, grading, drilling, and passing heavy trucks on uneven surfaces, could produce temporary groundborne vibration in the immediate vicinity of the proposed Project. Construction of the proposed Project will utilize the following construction equipment that could generate vibration: haul trucks, water trucks, graders, tracked equipment (e.g., bulldozers), loaders, excavators, and pile drivers. Below-grade activities, such as trenching, backfill and pile driving would be anticipated to generate more groundborne vibration. Above-grade construction would create less groundborne vibration for a shorter duration.

In general, manmade groundborne vibrations, such as those from construction equipment, attenuate rapidly with distance and impacts are therefore confined to short distances from the source (Caltrans 2020). There are no historic or fragile structures, nor vibration-sensitive activities and equipment (e.g., research or medical laboratories), in the proposed project vicinity and construction-related vibrations are not estimated to be noticeable at the nearest sensitive receptors, which are nearly 1 mile from the proposed Project.

Due to the temporary nature of the groundborne vibration generated by construction equipment proposed for the proposed Project, the lack of historic structures and vibration-sensitive equipment in the proposed project vicinity, and the relative distance from the areas of construction within the project site to sensitive receptors, the potential for construction of the proposed Project to generate temporary groundborne vibration and noise that could cause human annoyance or structural damage would be less than significant.

Significance Level: Less than Significant. No mitigation would be required.

Operational Impacts

a. Would the proposed project generate a substantial permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? (NOI-O1)

No. Based on the Noise Study Report (TRC 2023; Appendix I), any permanent increase in ambient noise levels resulting from operation of the proposed Project will be imperceptible (less than 0.1 dBA increase) to the nearest sensitive receptors.

Permanent ambient noise level increases in the vicinity of the proposed Project (i.e., at the property line) resulting from operation of the proposed Project will vary from 0.2 to 5.6 dBA when the gas flare is inactive, and from 1.4 to 17.1 dBA when the gas flare is active. However, the maximum resulting ambient noise level in the vicinity of the project will be 65.0 dBA, which is in the “Normally Acceptable” range for Industrial land use areas established in the Contra Costa County General Plan.

Since the proposed Project would not generate a substantial permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan, the impact would be less than significant.

Significance Level: Less than Significant. No mitigation would be required.

b. Would the proposed project generate excessive permanent groundborne vibration or groundborne noise levels? (NOI-O2)

No. Operation of the proposed Project would not be anticipated to generate substantial groundborne vibration or groundborne noise levels. Operation of compressors, transformers, and dryers at the proposed Project could produce minor groundborne vibration. Proposed Project components that would potentially generate higher levels of groundborne vibration, such as the shredder and tipping floor, are enclosed in buildings.

In general, manmade groundborne vibrations, such as those from proposed project operations, attenuate rapidly with distance and impacts are therefore confined to short distances from the source (Caltrans 2020). There are no historic or fragile structures, nor vibration-sensitive activities and equipment (e.g., research or medical laboratories), in the proposed project vicinity and operation-related vibrations are not estimated to be noticeable at the nearest sensitive receptors, which are nearly 1 mile from the proposed Project.

Due to the proposed project equipment and activities having the potential to create only minor groundborne vibration, the lack of historic structures and vibration-sensitive equipment in the proposed project vicinity, and the relative distance from the operating areas within the project site to sensitive receptors, the potential for project operations to generate permanent groundborne vibration and noise that could cause human annoyance or structural damage would be less than significant.

Significance Level: Less than Significant. No mitigation would be required.

Construction and Operational Impacts

c. Is the proposed project site located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, exposing people residing or working in the project area to excessive noise levels? (NOI-3)

No. Since there are no airports or private airstrips in the vicinity of the proposed project site, and the nearest airport is in Concord more than 11 miles to the west, there would be no exposure of people working within the proposed project area to excessive airplane noise and; therefore, no impact.

Significance Level: No Impact. No mitigation would be required.

3.12.6 References

- California Department of Transportation (Caltrans). 2020. Transportation and Construction Vibration Guidance Manual (CT-HWANP-RT-20-365.01.01). April.
- California Governor’s Office of Planning and Research. 2017. General Plan Guidelines, Appendix D: Noise Element Guidelines.
- City of Pittsburg. 2001. *City of Pittsburg General Plan 2020: A Vision for the 21st Century*. “Noise Element” (Section 12). January.
- City of Pittsburg. 2007. Municipal Code.
- Contra Costa County (CCC). 2010. Contra Costa County General Plan: 2005-2020 – Noise Element.
- Federal Transit Administration (FTA). 2006. Transit Noise and Vibration Impact Assessment. Report No. FTA-VA-90-1003-06.
- Harris, C. M. 1998. Handbook of Acoustical Measurements and Noise Control, 3rd Edition, Acoustical Society of America.
- TRC. 2023. Noise Study Report, H Cycle Pittsburg Renewable Hydrogen Project, Pittsburg, CA. November.
- United States Environmental Protection Agency (EPA). 1974. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. No. 550/9-74-004.
- United States Environmental Protection Agency (EPA). 1978. Protective Noise Levels, Condensed Version of EAP Levels Document. No. 550/9-79-100.

3.13 POPULATION AND HOUSING

3.13.1 Introduction

This section examines how different factors related to the construction and operations of the proposed H Cycle Pittsburg Renewable Hydrogen Project (Project) may potentially affect population and housing in the city of Pittsburg (City), Contra Costa County (County), and the San Francisco Bay Area. The environmental setting section was prepared using information developed from the US Census Bureau, Pittsburg Housing Authority, the Pittsburg General Plan 2020 (2015-2023 Housing Element), the 2023 Public Review Draft of the City of Pittsburg Housing Plan Background Report, the Bay Area Plan 2050, and employment data from state agencies.

3.13.2 Existing Environmental Setting

3.13.2.1 Population

The Bay Area consists of nine counties (Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma) and has an estimated population of 7.7 million people as of 2021.²⁷ Contra Costa is the third most populated Bay Area County, with about 1.15 million people according to the 2020 Census. The project site is located at 901 Loveridge Road, 0.9 mile northeast of the intersection of Pittsburg-Antioch Highway and Loveridge Road in the City, Contra Costa County. The population of the City is approximately 74,321 people (2020)²⁸ Table 3.13-1 shows growth trends and projections for the Bay Area, the County, and the City.

Table 3.13-1: Decadal Population Estimates for Bay Area, Contra Costa County, and City of Pittsburg from 2010 to 2020

	Bay Area			Contra Costa County			City of Pittsburg		
	20101	20151	20201	20102	20152	20202	20102	20152	20202
Total Population	7,150,739	7,594,437	7,748,930	1,049,025	1,113,341	1,153,561	63,264	68,612	74,321
Change from 2010 Population	0	+443,698	+598,191	0	+64,316	+104,536	0	+5,348	+11,057

¹ The estimate is based on the Metropolitan Transportation Commission: Bay Area Census Data
² The estimate is based on the City of Pittsburg 6th Cycle Housing Element (2023–2031 Housing Element)

²⁷ <https://vitalsigns.mtc.ca.gov/indicators/population>

²⁸ [638132607927330000 \(pittsburgca.gov\)](https://www.pittsburgca.gov)

3.13.2.2 Population Projection

According to the projection provided by the Association of Bay Area Governments (ABAG)²⁹ as cited in the City 2015 - 2023 Housing Element, Pittsburg is estimated to grow to approximately 91,600 residents and 27,510 households by 2040. The City's rate of population growth is projected to remain steady at an average 1.3 percent per year from 2010 to 2040. Despite a slowing rate of population growth, ABAG projects that the City's population and households will grow at a faster rate than the county in general.³⁰ Table 3.13-1 compares population growth over time for Pittsburg, the County, and the Bay Area.

3.13.2.3 Housing Stock Characteristics

According to the 2013 estimates provided by the California Department of Finance (DOF) as cited in the Draft City of Pittsburg 2023 - 2031 Housing Element, the distribution of housing units in Pittsburg was roughly similar to that of the County. In Pittsburg, single-family homes constitute approximately 77 percent of the City's total housing stock, while multi-family units and mobile homes comprised roughly 20 percent and four percent, respectively. The county has slightly higher proportion of multi-family units (23 percent) than Pittsburg, likely due to the higher prevalence of multi-family units and condominiums in western Contra Costa County.³

Pittsburg accounts for approximately six percent of total housing units in the County. According to data provided by the DOF, approximately 50,351 new housing units were built in the County from 2000 to 2013. In the same time period, Pittsburg added about 3,155 units. A higher proportion of single-family units were built in the City than in the county overall. Approximately 92 percent of new housing built in Pittsburg during this time was detached single-family housing, compared to 81 percent in the County. According to US Census data, approximately 60 percent of the housing stock in Pittsburg is owner-occupied and 40 percent is renter-occupied, compared to 67 and 33 percent for the County, respectively. Pittsburg contains a significant supply of smaller renter units with two or fewer bedrooms, while owner-occupied housing units are more likely to have three or more bedrooms. The limited supply of large rental units can lead to overcrowding among large low-income families who cannot afford to purchase a home.³

The project site is on the northeastern edge of Pittsburg. The nearest residential area is approximately 1.5 miles west of the project site and is designated as low-density residential in the City's General Plan. Downtown low density represents residential units built at a density of 4 to 12 units per gross acre. Residential units are attached or detached single-family or townhouses. The total number of housing units in the County is 17,860 in 2021.

3.13.2.4 Jobs/Housing Balance

According to ABAG, there were 27,800 employed residents in Pittsburg in 2010, accounting for approximately five percent of countywide employed residents. This is compared to a local employment base of 14,180 jobs in Pittsburg. The result is an estimated jobs-employed resident imbalance of approximately 0.51 jobs per employed resident, less ideal than the County's ratio of

²⁹ ABAG is a joint powers agency formed in 1961 pursuant to California Government Code §§ 6500, et seq., and the council of governments (COG) for the San Francisco Bay Area. ABAG conducts regional population and employment projections and the regional housing needs allocation (RHNA) processes (Government Code Section 65584 et seq.).

³⁰ https://www.hcd.ca.gov/housing-elements/docs/pittsburg_5th_draft123114.pdf

0.68 jobs per employed resident. Due to fewer employment opportunities in the City, the vast majority of Pittsburg workers are commuters, the most recent commute data available, only 17 percent of employed Pittsburg residents work inside the City.³¹

3.13.3 Regulatory Context

3.13.3.1 Federal

No federal regulations related to population or housing would apply to the proposed Project.

3.13.3.2 State

On January 12, 2022, the California Department of Housing and Community Development (HCD) approved the ABAG Regional Housing Needs Allocation (RHNA) Plan. HCD requires Bay Area jurisdictions plan to accommodate 441,776 additional housing units during the 2023 - 31 period. As part of the RHNA, the California Department of Housing and Community Development, or HCD, determines the total number of new homes the Bay Area needs to build and how affordable those homes need to be in order to meet the housing needs of people at all income levels.³¹

ABAG's RHNA Plan five statutory objectives are summarize below:

1. Increase housing supply and mix of housing types, with the goal of improving housing affordability and equity in all cities and counties within the region.
2. Promote infill development and socioeconomic equity; protect environmental and agricultural resources; encourage efficient development patterns; and achieve greenhouse gas reduction targets.
3. Improve intra-regional jobs-to-housing relationship, including the balance between low-wage jobs and affordable housing units for low-wage workers in each jurisdiction.
4. Balance disproportionate household income distributions (more high-income allocation to lower-income areas, and vice-versa)
5. Affirmatively further fair housing.

3.13.3.3 Local

The Housing Element focuses on providing an assessment of both current and future housing needs, existing and potential constraints and opportunities, and the effectiveness and relevancy of existing programs in meeting these needs, and it includes a strategy for implementing housing goals, policies and programs.

The City of Pittsburg 2015-2023 Housing Element contains the following policies and goals promoting equitable access to suitable living in accordance with California's Housing Element Law.

³¹ [RHNA - Regional Housing Needs Allocation | Association of Bay Area Governments](#)

Housing Supply. Foster development of a variety of housing types, densities, and prices to balance the City's housing stock and meet Pittsburg's regional fair share housing needs for people of all income levels.

Affordable Housing/Special Needs Housing. Promote the expansion of the City's affordable housing stock, including that which accommodates special needs households.

Eliminating Discrimination. Eliminate housing discrimination.

Housing Stock Preservation. Improve and preserve the existing housing stock including affordable housing units, where feasible and appropriate.

Neighborhood Design Quality. Enhance the visual quality of Pittsburg's residential neighborhoods.

3.13.4 Impact Analysis

3.13.4.1 Significance Criteria

For the purposes of this analysis, the proposed project is considered to have a significant impact to population and housing if it would:

- a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure); or
- b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere

Impact Determination

- a. **Would the proposed Project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure. (POP-1)**

No. The project site is on a developed and currently industrial site. The proposed Project would not include construction of new housing nor demolition of existing housing units, and therefore, would not directly cause an unplanned population growth to the region. Because the proposed Project does not include construction of any residential units, the allowances and obligations of the City and county's density bonus and inclusionary housing ordinances are not applicable.

Significance Level: No Impact. No mitigation is required.

- b. **Would the proposed Project Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. (POP-2)**

No. The proposed project construction would require between 150 to 225 temporary on-site skilled union workers and proposed project operations would require up to 30 permanent workers. Project construction would result in a temporary increase in workers preparing, staging, construction, hauling materials from demolition of existing structures, and transporting materials to the project site. Due

to the lack of permanency in the construction and demolition phases of the proposed Project, workers are anticipated to come from the existing labor pool in neighboring communities. Construction workers are also expected to commute to the project area throughout the duration of the temporary construction period from the surrounding area or from within the City and would not generate demand for new housing or contribute to substantial population growth within the City or within the region. Therefore, the number of jobs expected to be generated by the proposed Project would be consistent with projected job growth within the City.

Employment associated with the proposed Project represents 0.7 percent of the City's estimated current number of jobs (33,620 in 2019) according to the 2023 - 2031 Housing Element. New employees generated as a result of implementation of the proposed Project would likely commute from surrounding communities or from within the City itself. New employees would not substantially induce population growth beyond what is already planned for.

Proposed Project construction and implementation would not result in any change in the population, housing or employment projections that would exceed population projections or conflict with the City's or county's Housing Elements. Therefore, the proposed Project would have no impact on population and housing.

Significance Level: No Impact. No mitigation is required.

3.13.5 References

Association of Bay Area Governments. (2023). RHNA - Regional Housing Needs Allocation. Available at: [RHNA - Regional Housing Needs Allocation | Association of Bay Area Governments](#). Visited 11/3/2023.

City of Pittsburg. 2001. *City of Pittsburg General Plan 2020: A Vision for the 21st Century*. Pittsburgca.gov. Available at: <https://www.pittsburgca.gov/services/community-development/planning/general-plan-current>. Visited 11/03/2023.

De Novo Planning Group. (2023). Public Review Draft of City of Pittsburg 6th Cycle Housing Element Housing Plan Background Report. Pittsburg.gov. Available at: <https://www.pittsburgca.gov/home/showpublisheddocument/14796/638132607927330000>. Visited 11/3/2023.

Metropolitan Transportation Commission and Association of Bay Area Governments. (2023). Bay Area Census Data. Available at: https://www.planbayarea.org/sites/default/files/documents/2021-05/Draft_PBA2050_Forecasting_Modeling_Report_May2021.pdf

Pacific Municipal Consultants. (2014). City of Pittsburg Draft Housing Element. Available at: https://www.hcd.ca.gov/housing-elements/docs/pittsburg_5th_draft123114.pdf. Visited 11/3/2023.

United States Census Bureau. (n.d.). Contra Costa County, CA population by year, race, & more, USA Facts, Available at: <https://datausa.io/profile/geo/contra-costa-county-ca/>

3.14 PUBLIC SERVICES

This section describes potential impacts on public services from construction and operation activities associated with the proposed H Cycle Pittsburg Renewable Hydrogen Project (Project). For this EIR, public services are defined as police and fire protection and emergency services, schools, parks, and other public facilities.

3.14.1 Environmental Setting

3.14.1.1 Regulatory and Policy Context

3.14.1.1.1 Federal

National Fire Protection Association

The National Fire Protection Association (NFPA) develops fire safety codes and standards and conducts fire safety research, training, and public education. The NFPA codes and standards establish procedures to prevent and manage fires and to protect public safety. These codes are adopted on a voluntary basis by individual communities into their respective fire protection and emergency services operations. The NFPA guidelines call for career fire departments response times to within six minutes 90 percent of the time. The average response time (not including dispatch or reaction time) for the four stations serving the city of Pittsburg (City) is currently between 6 minutes 20 seconds, and six minutes 59 seconds.

Uniform Fire Code

The Uniform Fire Code (UFC) contains regulations pertaining to the construction and maintenance of buildings and uses of the premises. Topics addressed in the UFC include fire hydrants, fire department access, fire alarm systems, fire and explosion hazard safety, industrial processes, and many other generalized and fire-specific safety requirements for new and existing buildings. The UFC is a companion publication to the Uniform Building Code (UBC) and contains standards of the American Society for Testing and Materials (ASTM) and of the NFPA. The UBC is the primary guiding document that sets the standards for the built environment and is closely tied to the UFC to protect human life and safety. The UFC and UBC are widely accepted at the national level and adopted by individual states.

3.14.1.1.2 State

California Building Code and California Fire Code

The California Building Standards Code (CCR Title 24), most recently updated in 2022 and took effect January 2023, includes the California Building Standards Code (CBC; Part 2) and the California Fire Code (Part 9). The CBC is based both on a national model code (though modified in some areas to address California conditions) and on building standards authorized by the California legislature but not covered by the national model code. The CBC applies to all projects in California, except where more stringent standards have been adopted by state and local agencies. The California Fire Code typically includes requirements such as installation of fire sprinklers other

building materials such as fire doors in certain types of development and the clearance of debris and vegetation within a prescribed distance from occupied structures in wildfire hazard areas.

3.14.1.1.3 Regional

Goals and policies protecting law enforcement, parks and open space and schools are found in the Contra Costa County (County) General Plan 2020. Policy 7-58 for law enforcement requires that County sheriff patrol beats shall be configured to assure minimum response times and efficient use of resources. The County’s environmental review process shall be utilized to monitor the ability of area schools to serve development (Policy 7-136).

In additional to the policies described above, the County’s Growth Management Element of the General Plan includes standards for neighborhood parks, with a goal to acquire and maintain three acres of parkland per 1,000 County residents.

3.14.1.1.4 Local

City of Pittsburg

The City’s Goals and Policies for public services are found in the Public Services Element (Chapter 11) of the City of Pittsburg General Plan 2020. Project-relevant goals and policies specific to fire protection emergency response, police, schools, parks and other public facilities as discussed in this section are summarized below:

Fire Protection	
Goal 11-G-8	Require development in areas of high fire hazard to be designed and constructed to minimize potential losses and maximize the ability of fire personnel to suppress fire incidents
Policy 11-P-24	Amend the subdivision regulations to include a requirement for detailed fire prevention and control, including community firebreaks, for projects in high and extreme hazard areas.
Policy 11-P-25	Review and amend ordinances that regulate development in potentially hazardous locations to require adequate protection, such as fire-resistant roofing, building materials, and landscaping.
Policy 11-P-27	Cooperate with CCCFPD to ensure that new or relocated fire stations are constructed on appropriate sites within the 1.5-mile response radii from new or existing development.
Policy 11-P-29	Ensure adequate road widths in new development for fire response trucks, per the area regulations.
Major Park Lands	
Policy 9-32	Major park lands shall be reserved to ensure that the present and future needs of the county's residents will be met and to preserve areas of natural beauty or historical interest for future generations. Apply the parks and recreation performance standards in the Growth Management Element.
Policy 9-35	Regional-scale public access to scenic areas on the waterfront shall be protected and developed, and water-related recreation, such as fishing, boating, and picnicking, shall be provided.

City of Pittsburg Municipal Code

The Pittsburg Municipal Code (PMC) includes provisions for new construction projects within the City. It contains, by reference, the CBC and California Fire Code, and reflects General Plan protection requirements regarding emergency planning and preparedness, interior finishes, fire protection systems, means of egress, construction and demolition, hazardous materials, explosives and fireworks, flammable and combustible liquids, flammable gases and cryogenic fluids, and liquefied petroleum gases.

3.14.2 Existing Conditions

3.14.2.1 Schools

Educational facilities in the vicinity of the project site include elementary and secondary schools, a community college, and a public library (the County Library system's Pittsburg Library). The project site is within the Pittsburg Unified School District, which serves more than 9,800 students in Kindergarten through 12th grade. The school district is composed of eight elementary schools, two middle schools, one comprehensive high school, one continuation high school, adult education, and preschool services. Schools closest to the project site include Martin Luther King Junior High School and Pittsburg Preschool and Community Council (about 1 mile southwest of the project site), Pittsburg High School and Marina Vista Elementary School (1.65 miles east of the project site). In addition, two elementary and secondary schools, two continuation schools, two private parochial schools and Los Medanos Community College are located within 2.5 miles of the project site (City of Pittsburg 2020 General Plan).

3.14.2.2 Parks and Recreational Facilities

Pittsburg's Public Works Department manages City park maintenance, while park operation is managed by the City's Recreation Department. The planning, building, and engineering divisions are responsible for acquisition and development of park facilities. The City has approximately 312 acres of parkland within the City's local park system, ranging in size from 0.25-acre mini parks to the 190-acre Stoneman Park (City of Pittsburg 2020 General Plan).

Open space areas are present east and northwest of the proposed project site. The closest local park, Central Park, is located 0.5 mile southwest of the project site, along the Pittsburg-Antioch Highway, and contains a picnic area, play area, and sports facilities (City of Pittsburg 2020 General Plan).

3.14.2.3 Fire Protection

The Contra Costa County Fire Protection District (CCCFPD) provides fire protection and suppression services for the cities of Pittsburg and Antioch, and surrounding unincorporated areas such as Bay Point. There are a total of eight stations in the battalion. Four fire stations—Stations 84, 85, 86, and 87—currently serve Pittsburg and Bay Point. Table 3.14-1 lists fire station facilities operating in the project area. Station 84 on Railroad Avenue and Station 85 on Loveridge Road are approximately 1.6 miles from the project site.

Table 3.14-1: Fire Station Locations and Facilities in the Pittsburg Planning Area

Station#	Location	Facilities
Station 84	903 Railroad Ave, Pittsburg	Quint, Powerwagon
Station 85	2331 Loveridge Rd, Pittsburg	Engine, Powerwagon
Station 86	10 Goble Drive Bay Point, Bay Point	Engine, Powerwagon
Station 87	800 West Leland Road, Pittsburg	Engine, Powerwagon

Source: Contra Costa County Fire Protection District. <https://www.cccfpd.org/>. Website accessed December 8, 2023

CCCFPD facilities include 29 fire stations (City of Pittsburg 2020 General Plan, Chapter 11 Public Facilities) There are 12 battalion chiefs assigned to the district - which includes the cities of Pittsburg, Antioch, Martinez, Concord, Clayton, Pleasant Hill, Walnut Creek and Lafayette - including ten shift battalion chiefs who lead and manage four battalions. Two battalion chiefs lead and manage the training and emergency medical services divisions, which receive 42,000 urban fire calls per calendar year. About 10,500, or 25 percent, of these calls are from East County, which includes Pittsburg. The CCCFPD also maintains mutual-aid agreements with the East Diablo Fire Protection District, East Bay Regional Park District, California Department of Forestry, and private industrial companies located within its service area. These agreements provide the CCCFPD with emergency response assistance on an as-needed basis. Active industrial sites follow protocols found in the Pittsburg Consolidated Contingency Plan (CCP). This plan defines what constitutes potential on-site emergencies and describes the procedures and resources to be deployed during an emergency. The CCP currently includes the project site and would be updated with emergency response roles, contact information and team roles and response capabilities for the proposed Project.

The CCCFPD operates a countywide early warning system for industrial fires. Known as the Community Warning System (CWS), industrial facility sirens are activated when an incident occurs. The system notifies members of the public via television and radio announcements. (Pittsburg General Plan, Chapter 11 Public Facilities).

3.14.2.4 Police Protection

The Pittsburg Police Department (PPD) is headquartered at 65 Civic Avenue, approximately 2 miles southwest of the project site. For the 2017/2018 fiscal year, the Operations Bureau, which includes the Patrol Division and Traffic Division, consisted of 68.5 full-time equivalent (FTE) sworn officers. The City receives approximately 80,000 calls for service annually³². The PPD Patrol Division operates 24 hours a day, 365 days a year. Typically, a minimum of eight sworn PPD officers are on duty at all times of the day. While PPD maintains jurisdiction over the project site and neighboring parcels, both Pittsburg and Antioch police departments respond to facilities incidents that require police and law enforcement services.

³² City of Pittsburg, 2018. *Adopted Annual Budget* Fiscal Year 2018-19. June 18.

3.14.3 Impact Analysis

3.14.3.1 Significance Criteria

Criteria for determining the significance of impacts related to Public Services are based on the environmental checklist form in Appendix G of the State CEQA Guidelines § 15000 et seq. An impact related to public services would be considered significant if the proposed Project's construction and/or operation and maintenance activities would:

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

- Fire protection
- Police protection
- Schools
- Parks
- Other public facilities

3.14.4 Impacts and Mitigation Measures

3.14.4.1 Impact Determination

3.14.4.1.1 Construction and Operational Impacts

Because public services district boundaries and service needs would not be affected differently by construction or operation of the proposed Project, discussion of potential construction and operational impacts have been combined.

a. Would the proposed Project induce substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection and emergency services? (PUB-1)

No. The CCCFPD operations division provides “all risk” emergency services in the City, which includes emergency response to hazardous materials spills, leaks, and releases at fixed facilities, and special operations response to marine fires and emergencies.

As described in Section 3.14-2, Existing Setting, the Contra Costa County Health and Sheriff's Departments jointly operate a countywide community alert system which is activated when an industrial chemical release or fire occurs (Contra Costa County 2022). The Community Warning System (CWS) can also transmit alerts via text, social media, television, and radio announcements. A CWS siren is located at the Dow chemical facility located immediately adjacent to the project site.

It is anticipated that the proposed Project would utilize the CWS during project construction and would be connected to the alert system for duration of project operations on the project site.

It is expected that operators of the proposed Project would maintain internal fire response teams and systems for facilities on the project site. Operators of the proposed Project would also be required to develop and implement site-specific emergency and spill response plans with emergency procedures, contact numbers. These plans would list types of equipment needed in event of various types of emergencies.

In addition, the City has established a Community Facilities District (CFD) to fund ongoing fire protection services (CFD 2017-1). CFD 2017-1 provides funding for increased fire protection and emergency services within the City. Given that the project site is located within an existing urbanized/industrial area, it is not expected that the proposed Project would increase the demand for fire services such that the construction of a new or expanded fire station would be required. The proposed Project would not result in a significant impact on the physical environment due to the incremental increase in demand for fire protection and life safety services, and the potential increase in demand for services would not be expected to adversely affect existing response times within the project vicinity or City. Therefore, construction and operation of the proposed Project would have a less-than-significant impact on fire protection and safety services and facilities.

Significance Level: Less than Significant. No mitigation would be required.

b. Would the proposed Project induce substantial adverse physical impacts associated with the need or provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for police protection? (PUB-2).

No. Construction activities would not substantially increase the need for police services and would not require new or physically altered governmental facilities. While much of the project site is either abandoned or undeveloped, surrounding uses are occupied by industrial businesses that have been operating for several years. Adjacent businesses, such as the Dow and Corteva facilities, are difficult to access due to security fencing and other enhanced security measures. The Dow and Corteva access gates are either locked, equipped with secure ID badge access systems, or staffed by security personnel. Video cameras are stationed at various points around these industrial facilities.

Operation of the proposed Project would require 30 permanent on-site employees. It is not anticipated that additional law enforcement staff or facilities would be needed to accommodate daytime increases in population on the project site. The PPD would continue to provide services to the project site and surrounding area and would not require the construction of a new or expanded police station. Therefore, the proposed Project would have a less-than-significant impact on the provision of additional police facilities or services.

Significance Level: Less than Significant. No mitigation would be required.

c. Would the proposed Project induce substantial adverse physical impacts associated with the need or provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or

other performance objectives for educational facilities, public parks or other government facilities (PUB-3).

Schools

No. The proposed Project would not include housing or substantially contribute to population increases that would necessitate new construction of schools. The Pittsburg Unified School District (PUSD) is a Kindergarten through 12th grade district that serves the project area and the City as a whole. The proposed Project is not residential in nature and would not directly increase enrollment levels at city schools that would require construction or expansion of existing schools in the project vicinity.

Parks

No. As discussed in Chapter 2, Project Description, construction and operational activities of the proposed Project would require between 150 and 225 temporary employees and up to 30 permanent employees, all of whom would be drawn from the local or regional labor pool. The proposed Project would not create a substantial need for new housing or substantial new employment and would not significantly increase population, which would add to demand on parks. There would be no impact on parks and recreation resources from implementation of the proposed Project.

Other Public Facilities

No. Other public facilities, such as libraries, cultural centers, or civic centers would not be affected by directly or indirectly by project construction and operations. Therefore, there would be no impact on other public facilities in the project vicinity.

Significance Level: No impact. No mitigation would be required.

3.14.5 References

City of Pittsburg. 2020. City of Pittsburg General Plan 2020: A Vision for the 21st Century. January 2001.

Contra Costa County Fire Protection District. 2023a. Station Address List. Online: <https://www.cccfpd.org/station-address>. Accessed: November 2023.

Contra Costa County Fire Protection District. 2023b. Operations Division. Website accessed November 28, 2023. www.cccfpd.org/emergency-operation.php

Contra Costa County. 2010. General Plan 2005 - 2020, Reprint July 2010. Online: <https://www.contracosta.ca.gov/4732/General-Plan>. Accessed online: July 2, 2021.

Contra Costa County. 2022. *Emergency Response Plan*. <https://www.cocosheriff.org/home/showpublisheddocument/548/638151006252130000>. Website accessed December 7, 2023.

Dow Chemical Company. 2015. Dow Chemical Pittsburg, California Site Consolidated Contingency Plan.

3.15 RECREATION

3.15.1 Introduction

In the context of this environmental impact review, recreation refers to the use of lands or waterways for leisure and outdoor activities, such as hiking, biking, picnicking, boating, fishing and nature observation. The recreation section of this review examines the potential impacts associated with the proposed H Cycle Pittsburg Renewable Hydrogen Project (Project) on parks and recreational resources and considers measures that can be taken to mitigate these impacts. The analysis takes into account existing recreational facilities and resources in the project area, as well as the potential demand for additional recreational opportunities resulting from the proposed development and or increased demand for recreational areas due to new employees and their families moving to the area.

3.15.2 Environmental Setting

The City has a recreation and open space system that includes a variety of sizes and types, from neighborhood parks to regional open spaces. These park, recreation, and open space areas serve different purposes and usually offer facilities corresponding to their purposes. They can meet active and passive recreational needs or facilitate resource conservation (City of Pittsburg 2001). The City's park and open space system currently includes the following types of facilities:

- Regional trails provide opportunities for hiking, biking, and jogging along open space corridors throughout the region. The Delta De Anza Trail runs approximately 4.8 miles along the East Bay Municipal Utility District (EBMUD) right-of-way through Pittsburg.
- Community Parks. Community parks are developed primarily to meet the recreational needs of a large portion of the City. Community parks range in size from 2 to 300 acres according to purpose, and often feature one-of-a-kind community facilities or natural resources.
- Neighborhood Parks. Neighborhood parks primarily serve a small portion of the City, usually within one-half mile radius of the park. These parks are generally oriented toward the recreational needs of children and youth.
- Linear Parks. Often located along natural or manmade corridors such as rivers or rail lines, linear parks provide landscaped paths for walking and biking. Ideally, linear parks create linkages between other parks, community facilities, and neighborhoods.
- Mini-Parks. Mini-parks are usually small play areas or green spaces designed for small children or for visual purposes. When designed for special groups, miniparks should be located near those populations, such as family housing areas or senior centers.
- Regional Preserves. The primary purpose of Regional Preserve areas is the conservation of natural resources. Browns Island Regional Shoreline, which is accessible only by boat, is a refuge for migrating shorebirds. The Black Diamond Regional Preserve, located south of Pittsburg in Contra Costa County (County), offers tours of abandoned coal mining tunnels

and many miles of hiking trails. Both preserves under the jurisdiction of the East Bay Regional Park District (EBRPD) are within Pittsburg's Planning Area.

- **Open Space.** Open space, as designated by the General Plan, consists of privately owned, undeveloped land. Steep, unstable hillside areas in new residential developments are considered open space areas, as well as large tracts of open land beyond the proposed limits of urban growth. Most open space areas consist of natural grassy slopes, cattle grazing, and/or wildlife habitat.

The closest recreation resource is El Pueblo Park, located 2.3 miles southwest from the project site, and features basketball courts, a playground and greenspace. City Park is located 3.6 miles southwest from the project site and features various recreational facilities such as a playground, picnic area, baseball diamond, soccer field, basketball court, and green space. Pittsburg High School is located 3.2 miles southwest of the project site and features various recreational facilities, such as a baseball diamond. Los Medanos College is located 2.7 miles southwest of the project site and features various recreational facilities, such as a tennis court and baseball diamond.

3.15.3 Regulatory Context

3.15.3.1 Federal

No applicable federal regulations or policies are related to recreational resources in the Study Area.

3.15.3.2 State

No applicable federal regulations or policies are related to recreational resources in the Study Area.

3.15.3.3 Local

The 2020 General Plan's Open Space, Youth and Recreation element has the following goals and policies.

GOALS: PARKS

8-G-1 Develop a high-quality public park system for Pittsburg that provides varied recreational opportunities accessible to all City residents.

8-G-2 Provide parks that reflect the diversity of Pittsburg's natural setting, including creeks and waterways, tree stands, rock outcroppings, and topography.

POLICIES: PARKS

8-P-1 Maintain a neighborhood and community park standard of 5 acres of public parkland per 1,000 residents.

8-P-2 Pursue the development of park and recreation facilities within reasonable walking distance of all homes.

8-P-3 Develop public parks and recreational facilities that are equitably distributed throughout the urbanized area and provide neighborhood recreation facilities in existing neighborhoods where such facilities are presently lacking.

8-P-4 Consider park accessibility, use and character as more valuable than size in the acquisition and development of new parks.

8-P-5 Maintain park and recreation facility standards for new development to serve both residents and employees, attainable through dedication of parkland or payment of in-lieu fees

3.15.4 Impacts and Mitigation Measures

3.15.4.1 Significance Criteria

- a. Would the proposed Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? (REC-1)

No. The proposed project construction is anticipated to last 18 to 24 months and involve 150 to 225 on-site union workers and staff. The work force is expected to come from the surrounding cities and the County. Project operations would require about 30 full-time employees and would also be expected to come from surrounding cities and the County. Even in the event that all of the operational workforce and their families moved to the city of Pittsburg (City), this small number of potentially new residents would not affect the density or use of nearby parks and recreational facilities.

Significance Level: No impact. No mitigation is required.

- b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? (REC-2)

The proposed Project would not construct or expand existing recreation facilities. Therefore, it can be concluded that the proposed Project would have no impact on the availability or use of parks and recreational facilities in the surrounding area.

Significance Level: No impact. No mitigation is required.

3.15.5 References

City of Pittsburg. 2001. "Open Space, Youth and Recreation Element." *City of Pittsburg General Plan 2020: A Vision for the 21st Century*. January 2001.

3.16 TRANSPORTATION AND TRAFFIC

This section describes the existing transportation network in the vicinity of the proposed H Cycle Pittsburg Renewable Hydrogen Project (Project) and potential impacts to the roads, automobile and non-automobile transportation modes and vehicle miles traveled (VMT). Key sources of information for this section include local and regional transportation planning documents, aerial photography of the project site and surrounding street network and maps available online, and the *Transportation Impact Assessment* prepared by Fehr & Peers (October 2023; Appendix C of this EIR)

3.16.1 Environmental Setting

3.16.1.1 Regulatory and Policy Context

Interstate highways, state routes and bridges are governed by the Federal Highway Administration and California Department of Transportation. County roads are governed by Contra Costa County (County) and other local streets and highways are governed by local cities. In all cases, specific standards apply with respect to the planning, design and operation of roadways and intersections. Not all governing agencies impose the same criteria (e.g., cross sections and rights-of-way for the same street may differ from jurisdiction to jurisdiction). Rail facilities are regulated in the state by the California Public Utilities Commission (CPUC). Train operations are also subject to CPUC guidelines. The design and operation of railroad grade crossings are subject to Federal Railroad Administration guidelines. Numerous other federal agencies also have regulatory authority over rail transportation.

3.16.1.1.1 Federal

Title 23 United States Code – Highways

Section 103 of Title 23 USC establishes the federal and interstate highway system consisting of highway routes that serve to support commerce and connect major population centers, ports, points of entry and travel destinations. Section 116 of Title 23 USC assigns the duty to maintain federal highways and routes to state departments of transportation.

In accordance with Section 134 of Title 23 USC, a metropolitan planning organization (MPO) must be designated for each urbanized area with a population exceeding 50,000 people. MPOs are charged with developing long-range transportation plans and improvement programs for various modes of transportation, in coordination with state transportation agencies and public transportation operators, on 4- or 5-year cycles. Compliance with the federal statute makes MPOs eligible for receipt of federal transportation funds.

3.16.1.1.2 State

Senate Bill 375 (Steinberg)

California Government Code Section 65080, as amended in 2008 by Senate Bill 375 (Steinberg), requires regional transportation planning agencies in the state to “prepare and adopted a regional

transportation plan directed at achieving a coordinated and balanced regional transportation system.” The statute further directs that the Regional Transportation Plan (RTP) address multiple modes of transportation, including transportation of goods and people by automobile, railroad, water, bicycle, pedestrian, mass transit, water and air. The RTP must also address equity in transportation and include a sustainable community strategy (SCS) that outlines land uses, identifies areas for housing future regional population and specifies transportation network improvements that align with regional needs. The RTP describes a forecasted development pattern that would have the effect of achieving state-legislated goals for reductions in greenhouse gas emissions from light trucks and automobiles, including but not limited to the Governor’s EO S-3-05, which sets a greenhouse gas emission reduction target of 80 percent below 1990 levels by 2050.

Senate Bill 743 (Steinberg)

Approved by the Governor in 2013, Senate Bill 743 (Steinberg) directs a change in transportation impact analysis conducted under CEQA, wherein transportation impacts of a project are evaluated using the metric of VMT rather than level of service (LOS). LOS is a method of describing how much relative delay an automobile driver experiences on a street segment or at an intersection. LOS is described using a letter grade of LOS A through LOS F, where LOS A indicates free-flowing traffic with minimal delays, and LOS F indicates severe congestion. By contrast, VMT accounts for the number of trips generated by a project multiplied by the length in miles of each trip. The intent of the legislation is to reduce greenhouse gas emissions from automobile use by reducing the length or number of automobile trips.

California Department of Transportation

Pursuant to Article 3 of California Streets and Highways Code, the Department of Transportation (Caltrans) controls and is responsible for state highway right-of-way acquisition, construction and maintenance, including repair of highway facilities (e.g., pavement, bridges, signage), litter abatement, deicing, and installation and upkeep of lighting, landscaping and transit amenities within state highway rights-of-way. Caltrans also issues federal grant funds for transportation projects to regional and local agency projects and conducts long-range planning efforts aimed at reducing single-occupant vehicle trips and increasing use of alternative transportation modes.

Caltrans’ guidance for analysis of projects’ impacts on state facilities pursuant to CEQA and Senate Bill 743 is consistent with the technical guidance offered by the State Office of Planning and Research (OPR) in its “Technical Advisory on Evaluating Transportation Impacts in CEQA” (December 2018), which suggests that a development project would have a potentially significant VMT impact if it did not reduce VMT by 15 or more percent below the per capita average for the region in which the project is located. OPR’s technical advisory includes a screening criterion of 110 new vehicle trips, below which a project would not be anticipated to have a significant transportation impact and no further study would be needed. The technical advisory provides no direct guidance for short-term projects or transportation impacts resulting from construction. Under the technical guidance, lead agencies may decide whether or how to include trips from heavy duty trucks in their analyses.

3.16.1.1.3 Local

TRANSPAC (Transportation Partnership and Cooperation), Central County Action Plan for Routes of Regional Significance

Consistent with the state’s guidelines, the County’s Transportation Analysis Guidelines (June 2020) includes screening criteria for VMT (110 new daily vehicle trips, transit-proximate development and small residential or commercial projects), below which a project would not be considered to have a significant transportation impact. For office, industrial, and institutional projects that do not meet screening criteria, the project would have a potentially significant transportation impact if it could not be demonstrated that the project would not achieve VMT of 15 or more percent below the Bay Area average commute VMT per employee.

The Contra Costa Transportation Authority (CCTA) has long encouraged walking and bicycling to support adoption of a safe and connected and convenient system of bicycle and pedestrian facilities. The 2018 Countywide Bicycle and Pedestrian Plan (CBPP) identifies Pedestrian Priority Areas and redefines the Countywide Bikeway Network as a low-stress and connected system of facilities designed to serve all ages and abilities. This CBPP reflects local active transportation plans in creating guidelines for improving interchanges and intersections, integrate efforts to reduce VMT and meet SB 743 requirements, and include short- and long-term funding and bikeway network priorities.

City of Pittsburg

Bicycle and Pedestrian Facilities

Existing bicycle and pedestrian facilities in the vicinity of the Study Area include sidewalks, crosswalks, pedestrian signals, and multi-use trails. Eight-foot sidewalks are provided along the south side of Pittsburg-Antioch Highway heading east toward the Auto Center Drive/West Tenth Street intersection. No sidewalks are available west of the Arcy Lane/Pittsburg-Antioch Highway intersection. Crosswalks are provided at signalized and unsignalized intersections. Pedestrian push-button actuated signals are provided at signalized intersections in the Study Area.

The City’s “Pittsburg Moves” Active Transportation Plan was last updated in 2018 and indicates the project site is located in an area of the City characterized by large industrial parcels. The project site is not served by designated transit or bicycle routes. The closest bus stop is approximately 2 miles from the project site, west of the Loveridge/Pittsburg-Antioch intersection. However, Eastern Contra Costa County provides Dial-a-ride services on demand to local residents who are seniors or disabled.

A Class II buffered bicycle lane is located on Pittsburg-Antioch Highway that would serve the project site.. The project site is within 1,000 feet of the Pacific Ocean shoreline to the north, industrial waste ponds along the Dowest Slough to the west, the Burlington Northern Santa Fe Railroad corridor to the south. Arcy Lane, a privately-owned access road, connects the south side of the project site to the Pittsburg Antioch Highway. Designated truck routes to access this site are identified in the City’s GIS base map, showing routes along Loveridge Road and the Pittsburg Antioch Highway. The City’s Active Transportation Plan calls for the installation of sidewalks and a Class I bicycle facility along the Pittsburg-Antioch Highway in the vicinity of the project site.

Passenger Rail Service

Heavy rail transportation service is provided in the area and region by Amtrak. Bay Area Rapid Transit (BART) provides fixed rail transit to eastern Contra Costa County. The Antioch SFO/Millbrae line provides access to two stations located in Pittsburg. The Pittsburg/Bay Point station is approximately 5 miles west of the project site and the Pittsburg Center station is approximately 1.5 miles south of the project site. Weekday BART service is provided on approximately 15-minute headways and weekend BART service is provided on approximately 20-minute headways. The Antioch SFO/Millbrae Line connects to key regional employment centers including Concord, Pleasant Hill, Walnut Creek, Oakland, and San Francisco. Transfers to other lines can be made in Oakland for destinations in northern California, Oregon and Washington and as far east as Chicago. Capital Corridor trains provide commuter travel to stations between the cities of Sacramento and San Jose, and Amtrak bus service offers fixed route regional transportation from the station to Solano, Napa and Sonoma counties to the north.

Freight Railroad Lines

The BNSF Railway line runs in an east-west direction, running parallel to and adjacent to the southernmost border of the project site.

Roadway Network

Regional access to and from the project site is provided by state and interstate freeways in the area (Figure 3.16-1). A primary access road would be improved and extended at Arcy Lane to the south of the project site. A portion of the existing privately-owned road is maintained by Delta Diablo. The existing Corteva gate-controlled access point at the northern end of Arcy Lane would be the main entrance into the project site. Two existing roads would provide emergency access, one located on the western side of the project site, along Pittsburg Waterfront Road, and one on the northern side of the project site, along East 3rd Street. HC (Contra Costa), LLC (Applicant) would enter an agreement for access rights to existing roads and facilities that are currently controlled by Corteva and Delta Diablo. Local roadways that are significant to the proposed Project are described below.

- **The Pittsburg-Antioch Highway**, defined as a Route of Regional Significance in CCTA East County Action Plan for Routes of Regional Significance, located just north of SR 4 becomes W 10th Street as it enters Antioch to the east and terminates at Harbor Street in Pittsburg to the west. The posted speed limit is 45 to 50 mph.
- **Auto Center Drive** (formerly known as Somersville Road) is defined as a Route of Regional Significance in CCTA's East County Action Plan for Routes of Regional Significance. It is a north-south major arterial with two travel lanes in each direction and left turning median lanes. Auto Center Drive contains both sidewalks with no buffers and sidewalks with buffers. No bicycle facilities are present along Auto Center Drive. The posted speed limit is 35 mph.
- **Highway 4, also known as the California Delta Highway**, is designated as a Route of Regional Significance, is a state-managed, east-west freeway located approximately 1 mile south of the project site. Highway 4 currently has two travel lanes in each direction but is under construction to be widened to add one lane in each direction. On-ramps to and off-ramps from SR 4 to the Pittsburg Antioch Highway are located at Loveridge Road, approximately

1.3 miles southwest of the project site. SR 4 is an eight-lane freeway within the project vicinity, with interchanges at Auto Center Drive/Somersville Road, Loveridge Road and California Avenue. All intersections at the interchanges are signalized and at its on- and off-ramps are operated by Caltrans.

- **Interstate Highway 680** is a north-south freeway located approximately 10 miles west of the project site. Interstate Highway 680 has four lanes in each direction. On-ramps to and off-ramps from Interstate 680 are located at SR 4.

Methodology and Assumptions

This section discusses potential transportation and traffic impacts that could result from implementation of the proposed Project. The potential environmental impacts to transportation and traffic are analyzed at project-level detail. Direct, indirect, and cumulative impacts are addressed for each threshold criterion below.

A report summarizing the findings of the Traffic Impact Assessment (TIA) prepared for the proposed Project (Fehr & Peers 2023), is included as Appendix C of this EIR. The TIA evaluated the trip generation for the proposed Project. Analysis of the proposed Project uses a Vehicle Miles of Travel (VMT) approach to measure automobile use on a daily basis. The VMT approach for transportation impacts of the proposed Project evaluates the average 5-year baseline period transportation and operational conditions against the transportation and operational conditions of the proposed Project using the Regional Travel Behavior Model (CCTA Model). For this analysis, a 2-year construction period for the proposed Project is used. Operation of the proposed Project would continue concurrent during the construction period, but at a reduced level of throughput.

Physical impacts are evaluated based on changes to the transportation network that would result from the proposed Project compared to existing conditions as described above, though it is noted that no changes to the road network are part of the proposed Project.

Coordinate System: NAD 1983 StatePlane California III FIPS 0403 Feet, Map Rotation: 0
 - Saved By: S.RAY on 7/16/2024, 10:42:48 AM, File Path: V:\H-Cycle\056412_Pittsburg_Hydrogen\Project\A-APPX\Renewable Hydrogen Project EIR.aprx, Layout Name: Transportation Map



- 1 STUDY INTERSECTION
- ★ PROJECT LOCATION
- PROJECT SITE BOUNDARY
- CITY LIMITS

DATA SOURCES: TRC, STATE OF CALIFORNIA GEOPORTAL, IMPORTANT FARMLAND.



1:9,000
 1" = 750'
 0 375 750 FEET

PROJECT:		H CYCLE PITTSBURG RENEWABLE HYDROGEN PROJECT CONTRA COSTA COUNTY, CALIFORNIA	
TITLE:		TRANSPORTATION AND CIRCULATION MAP	
DRAWN BY:	S. RAY	PROJ. NO.:	506412.0000.0000
CHECKED BY:	R. SPRING	FIGURE 3.16-1	
APPROVED BY:	P. DEMICHELE		
DATE:	JANUARY 2024		

TRC 1850 GATEWAY BLVD, SUITE 1075
 CONCORD, CA 94520
 PHONE: 925.688.1200
 FILE: Renewable Hydrogen Project EIR.aprx

3.16.1.2 Significance Criteria

For the purposes of this analysis, the proposed Project is considered to have a significant transportation impact if it would:

- a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?
- b. Conflict or be inconsistent with CEQA Guidelines Section 15064.3(b)?
- c. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
- d. Result in inadequate emergency access?

3.16.2 Impacts and Mitigation Measures

3.16.2.1 Impact Determination

3.16.2.1.1 Construction-Related Impacts

- a. **Would the proposed Project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? (TRAN-C1)**

No. The project would generate new vehicle trips during construction and operational activities. Construction and operational activities would be occurring simultaneously while project construction is anticipated to last 18 to 24 months. All construction vehicle entry and exit to the site, both trucks and worker vehicles, would occur via the driveway along Arcy Lane, one-half mile north of the Arcy Lane/Pittsburg Antioch Highway intersection.

As described above, regulations, goals, policies and programs that apply to the proposed Project include the City of Pittsburg Municipal Code, the City of Pittsburg General Plan and the CBPP prepared by CCTA. These guidance and regulatory documents combined support safety, convenience and expanded opportunities for use of multiple transportation modes (walking, bicycle, bus and train transit) to reduce reliance on automobile transportation and its associated air emissions; separation to the greatest extent feasible of local neighborhood and heavy truck traffic or through traffic; adequate access for emergency response and preservation of existing facilities for transportation of goods by water and rail, where applicable.

No physical changes to the road network are included as part of the project proposal. Construction crews and equipment delivery trucks would use existing roadways, routes and access gates to travel to and from the project site. The proposed Project's primary point of access would be from the intersection of Arcy Lane/Pittsburg-Antioch Highway. This access point would operate at LOS A as a whole with LOS B and C on the minor street movement (left turn out of Arcy Lane). As such, at project buildout, the proposed Project is not expected to have significant impacts at any of the Study Area.

Significance Level: Less than Significant. No mitigation required.

b. Would the proposed Project have a conflict or be inconsistent with CEQA Guidelines Section 15064.3(b)? (TRAN-C2)

No. The transportation analysis guidelines of the state and County do not include criteria for analysis of VMT for construction-related trips. These trips are typically temporary, lasting only for the duration of project construction. Therefore, construction-related transportation impacts would not result in significant environmental impacts. As discussed in impact TRAN-C1 above, construction of the proposed Project is estimated to last for 18 to 24 months, after which ongoing maintenance could be performed by permanent maintenance staff. Due to their temporary nature, VMT impacts resulting from passenger and construction trips for the proposed Project would be less than significant.

Significance Level: Less than Significant. No mitigation required.

c. Would the proposed Project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? (TRAN-C3)

No. Construction of the proposed Project would involve large trucks, such as delivery trucks, cement trucks, dump trucks and water trucks, for delivery of new materials and equipment. As many as 60 large vehicles per day are projected to be necessary in the early months of project construction. The proposed Project would result in no change to the surrounding roadway network, and therefore, its environmental impact would be less than significant.

Significance Level: Less than Significant. No mitigation required.

d. Would the proposed Project result in inadequate emergency access? (TRAN-C4)

No. With no change to existing access routes on and off the property, and no need for expansion or modification of existing access routes, the project's impacts would be less than significant. Two existing roads would provide emergency access, one located on the western side of the project site, along Pittsburg Waterfront Road, and one on the northern side of the project site, along East 3rd Street. The Applicant would join a maintenance agreement for access rights to existing roads and facilities that are currently controlled by Corteva and Delta Diablo. Access will be coordinated with emergency services as part of design review approval with the City and the CCCFPD.

Significance Level: Less than Significant. No mitigation required.

3.16.2.2 **Operational Impacts**

a. Would the proposed Project have a substantial effect on a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? (TRAN-O1)

No. Regulations, goals, policies and programs that would apply to the proposed Project include the City of Pittsburg Municipal Code, the City of Pittsburg General Plan and the CBPP prepared by CCTA. The proposed Project site is not located within a Pedestrian Priority Area identified in the CBPP. The proposed Project would have a less than significant impact on non-automobile travel

modes and would not conflict with local and regional policies in support of alternative transportation modes and reduction of single-occupant vehicle trips.

Significance Level: Less than Significant. No mitigation required.

b. Would the proposed Project have a conflict or be inconsistent with CEQA Guidelines Section 15064.3(b)? (TRAN-O2)

No. The VMT analysis guidelines and their supporting statutes also do not specify methodologies for evaluation of impacts from heavy duty truck trips, as for goods and product movement. Truck trips associated with the proposed Project are included here for reference and information.

Once the proposed Project commences operation, the average number of employees is expected to be 30. These 30 employees would generate an average of 93 passenger vehicle trips per day. Truck trips associated with the proposed Project are anticipated to be 94 average per day for a total of 187 total daily vehicle trips. No significant impacts are expected from the total 187 vehicle trips.

Significance Level: Less than Significant. No mitigation required.

c. Would the proposed Project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). (TRAN-O3)

No. Similar to the construction period, operation of the proposed Project would not result in changes to existing circulation patterns in the project vicinity. The proposed Project would have no change to the surrounding roadway network, and its environmental impact would be less than significant.

Significance Level: Less than Significant. No mitigation required.

d. Would the proposed Project result in inadequate emergency access? (Tran-O4)

No. The proposed project access points on Arcy Lane and a second connection to the west of the project site would provide emergency vehicle access to the site. Contra Costa County Fire Protection District (CCCFPD) requirements and design standards will be required conditions of approval for the proposed Project (i.e., even surface pavement, appropriate signage, delineation, and other features at all emergency access points and internal roadways to accommodate emergency vehicles). As part of the proposed Project's final design and permitting process, the Developer would be required to obtain approval of the CCCFPD.

Significance Level: Less than Significant. No mitigation required.

3.16.3 References

California Government Code. Online: <https://leginfo.legislature.ca.gov/>. Accessed online: July 7, 2021.

City of Pittsburg, 2001. *City of Pittsburg General Plan 2020: A Vision for the 21st Century*. January.

City of Pittsburg's "Pittsburg Moves" Active Transportation Plan, last updated in 2018

Contra Costa County. 2010. Contra Costa County General Plan 2005-2020.

Contra Costa County. 2021. Ordinance Code of Contra Costa County. Online: https://library.municode.com/ca/contra_costa_county/codes/ordinance_code. Accessed online: July 7, 2021.

Contra Costa County. 2020. Transportation Analysis Guidelines. June 2020.

Contra Costa Transportation Authority (CCTA). 2018. Countywide Bicycle and Pedestrian Plan (CBPP).

Ferh & Peers. 2023. H Cycle Pittsburg Renewable Hydrogen Project -Transportation Impact Assessment.

Office of Planning and Research, California (OPR). 2018. "Technical Advisory on Evaluating Transportation Impacts in CEQA." December.

National Oceanic and Atmospheric Administration's Sea Level Rise Viewer Map

3.17 UTILITIES AND SERVICE SYSTEMS

This chapter describes the existing utilities and service systems proposed to serve the project site and evaluates the potential environmental consequences of the proposed H Cycle Pittsburg Renewable Hydrogen Project (Project). Water, wastewater, solid waste, and stormwater infrastructure are each addressed in separate sections of this chapter. In each section, a summary of the relevant regulatory setting and existing conditions is followed by a discussion of potential impacts and cumulative impacts from the proposed Project. Potential impacts associated with the need to expand existing electricity and natural gas facilities are addressed in the Environmental Impact Report (EIR) section 3.6 Energy.

Water use and supply information for the proposed Project is drawn from the City of Pittsburg 2020 Urban Water Management Report (2021), which quantifies the City's past, current, and future projected water use through the year 2045. Additional information is from the Contra Costa Water District Urban Water Management Plan (2021).

3.17.1 Environmental Setting and Regulatory Environment

3.17.1.1 Federal Regulations

The federal government regulates wastewater treatment and planning through the Federal Water Pollution Control Act of 1972, more commonly known as the Clean Water Act (CWA), as well as through the National Pollutant Discharge Elimination System (NPDES) permit program, both of which are discussed in further detail below.

3.17.1.1.1 Clean Water Act

The CWA (33 USC §1251 et seq.), regulates the discharge of pollutants into watersheds throughout the nation. It is the primary federal law governing water pollution. Under the CWA, the United States Environmental Protection Agency (EPA) implements pollution control programs and sets wastewater standards. The objective of the CWA is to restore and maintain the chemical, physical, and biological integrity of the nation's waters by preventing point and nonpoint pollution sources, providing assistance to publicly owned treatment works for the improvement of wastewater treatment and maintaining the integrity of wetlands.

3.17.1.1.2 National Pollutant Discharge Elimination System Permit Program

The National Pollutant Discharge Elimination System (NPDES) permit program was established in the CWA to regulate municipal and industrial discharges to surface waters of the United States. Federal NPDES permit regulations have been established for broad categories of discharges, including point source municipal waste discharges and nonpoint-source stormwater runoff. NPDES also requires permits for discharges from construction activities that disturb one or more acres, and discharges from smaller sites that are part of a larger common plan of development or sale. NPDES permits generally identify effluent and receiving water limits on allowable connections and/or mass emissions of pollutants contained in the discharge; prohibitions on discharges not specifically allowed under the permit; and provisions that describe required actions by the discharger, including

industrial pretreatment, pollution prevention, self-monitoring, and other activities. Wastewater discharge is regulated under the NPDES permit program for direct discharges into receiving waters for indirect discharges to a sewage treatment plant. In May 2022, the SF RWQCB issued the Municipal Regional Stormwater NPDES Permit (Order No. R2-2022-0018; NPDES Permit No. CAS612008) to regulate stormwater discharges from municipalities and local agencies in Alameda, Contra Costa, San Mateo and Santa Clara counties, and the cities of Fairfield, Suisun City, and Vallejo.

3.17.1.1.3 Resource Conservation and Recovery Act (RCRA)

The Resource Conservation and Recovery Act (RCRA, 42 USC §6901 et seq.) was enacted in 1976 to address potential health and environmental issues associated with solid hazardous and non-hazardous waste disposal. Under RCRA, EPA regulates the generation, transportation, treatment, storage, and disposal of hazardous waste. Under RCRA, individual states may implement their own hazardous waste management programs, as long as they are consistent with and at least as stringent as RCRA. EPA must approve state programs intended to implement RCRA requirements.

3.17.1.2 State Regulations

3.17.1.1.4 California Water Code

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act, California Water Code Division 7, §13000-16104) is the principal law governing water quality regulation in California. It establishes a comprehensive program to protect water quality and the beneficial uses of water. The Porter-Cologne Act applies to surface waters, wetlands, groundwater and to both point and nonpoint sources of pollution. The State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCBs) have the authority to regulate water quality in accordance with Section 401 of the CWA and the Porter -Cologne Act.

3.17.1.1.5 Water Conservation Act of 2009 (SB X7-7)

The Water Conservation Act of 2009 requires all water suppliers to increase water use efficiency. The legislation sets an overall goal of reducing per capita water use by 20 percent by 2020, with an interim goal of a 10 percent reduction in per capita water use by 2015 (DWR 2021). Effective 2016, urban retail water suppliers who do not meet the water conservation requirements established by this bill are not eligible for state water grants or loans. Senate Bill (SB) X7-7 requires that urban water retail suppliers determine baseline water use and set reduction targets according to specified standards. It also requires agricultural water suppliers to prepare plans and implement efficient water management practices.

3.17.1.1.6 California Urban Water Management Act

Through the Urban Water Management Planning Act of 1983, the California Water Code requires all urban water suppliers within California to prepare and adopt an Urban Water Management Plan (UWMP) and update it every 5 years. The California Department of Water Resources (DWR) oversees compliance with the statewide UWMPs. This requirement applies to all suppliers providing

water to more than 3,000 customers or supplying more than 3,000 acre-feet per year (AF/yr)³³ of water. The Act is intended to support conservation and efficient use of urban water supplies. The Act requires that total project water use be compared to water supply sources over the next 20 years in 5-year increments, that planning occur for single and multiple dry water years, and that plans include a water recycling analysis that incorporates a description of the wastewater collection and treatment system within the agency's service area along with current and potential recycled water uses. In September 2014, the Act was amended by SB 1420 to require urban water suppliers to provide descriptions of their water demand management measures and similar information (DWR 2021b).

3.17.1.1.7 California Integrated Waste Management Act (Assembly Bill [AB] 939 and AB 341)

The California Integrated Waste Management Act (California Public Resources Code Sections 40050-40063), enacted in 1989, established an integrated waste management planning hierarchy that would provide guidance to a governing board on solid waste source reduction, recycling and composting, and environmentally safe transformation and land disposal.

- **AB 939:** AB 939 requires cities and counties to prepare solid waste management plans and adopt source reduction and recycling elements (SRREs) to implement goals included in AB 939. These goals include diverting approximately 50 percent of solid waste from landfills and identifying programs to stimulate local recycling in manufacturing and the purchase of recycled products.
- **AB 341:** Enacted in 2011, AB 341 establishes a policy goal that California's solid waste generated be reduced, recycled, or composted be reduced by at least 75 percent by the year 2020. The bill also requires that a business, defined to include a commercial or public entity that generates more than 4 cubic yards (CY) of commercial solid waste per week arrange for recycling services, on and after July 1, 2012. On and after July 1, 2012, jurisdictions are required to implement a commercial solid waste recycling program or revise their SRRE to meet this requirement.

3.17.1.1.8 Groundwater Management Act (1992) and the Sustainable Groundwater Management Act of 2014

The Groundwater Management Act of the California Water Code (AB 3030), signed into law on September 26, 1992 and effective on January 1, 1993, provides guidance for applicable local agencies to develop voluntary Groundwater Management Plans (GMP) in state-designated groundwater basins. The GMPs can allow agencies to raise revenue to pay for measures influencing the management of the basin, including extraction, recharge, conveyance, facilities' maintenance, and water quality (DWR 2021).

The Sustainable Groundwater Management Act of 2014 (SGMA) consists of three legislative bills: SB 1168, AB 1739 and SB 1319. The legislation, which was updated in 2019, provides a framework

³³ An acre-foot is the amount of water required to cover 1 acre of ground (43,560 square feet) to a depth of 1 foot. One acre-foot is equivalent to 325,581 gallons.

groundwater management across the state by providing benchmarks sustaining long-term reliability and multiple benefits for current and future beneficial uses.

The DWR plays a key role in providing the framework for sustainable groundwater management in accordance with the statutory requirements of SGMA and other provisions within the California Water Code. Other state agencies, including the SWRCB and California Department of Fish and Wildlife (CDFW), play a role in SGMA implementation and are required to consider SGMA when adopting policies, regulations or criteria, or when issuing orders or determinations, where applicable.

3.17.1.1.9 Department of Resources Recycling and Recovery (CalRecycle)

CalRecycle is a department within the California Environmental Protection Agency (CalEPA) that administers programs formerly managed by the California Integrated Waste Management Board and Division of Recycling. CalRecycle is the state department charged with the primary responsibility for permitting of solid waste facilities. CalRecycle operates through its designated Local Enforcement Agencies (LEAs), which typically are county health departments. Air pollution from solid waste facilities is regulated by local air pollution control districts or air quality management districts, while water pollution is regulated by regional water boards. CalRecycle is authorized to oversee the state's recycling and waste management programs under AB 939 and AB 341.

3.17.1.3 Local Regulations

3.17.1.1.10 City of Pittsburg Urban Water Management Plan 2020

The City's 2020 UWMP published in 2021 was prepared in coordination with the state DWR in accordance with California Water Code Requirements. The purpose of the UWMP is to review and maintain the reliability of urban water supplies, ensure that future beneficial use can be complemented by sufficient water supply, continue to promote policies and programs that benefit water conservation, and provide a means for response during water supply shortages and drought conditions.

3.17.1.1.11 City of Pittsburg General Plan (2020)

The Public Facilities Element of the updated Pittsburg General Plan contains the following goals and policies that are relevant to the proposed Project:

- | | |
|---------------|---|
| Goal 11-G-1 | Available water supply and distribution capacity should grow proportionally with development patterns and water usage trends. Update City's Water Master Plan to implement General Plan growth projections. |
| Goal 11-G-2 | Continue to implement water conservation policies to ensure adequate supplies of water in the future. |
| Policy 11-P-1 | Continue using the Urban Water Management Plan as the mechanism for detailed water supply planning, implementation, and conservation. |

- Policy 11-P-2 Implement, as needed, replacements and/or expansions to the existing system of water mains through the City’s Capital Improvement Program
- Policy 11-P-3 Continue water district and user conservation efforts to help reduce demand in light of recent Contra Costa Water District raw water reductions
- Policy 11-P-4 Work with Contra Costa Water District to develop a program ensuring adequate provision of raw water supplies during potential emergency water demands.
- Policy 11-P-5 Work with Contra Costa Water District in planning the development of new pressure zones as needed to ensure adequate fire flows in hillside areas.
- Policy 11-P-6 Continue water conservation efforts from industrial facilities.
- Policy 11-P-7 Ensure that new residential, commercial, and industrial development equitably shares costs associated with providing water services to areas of urban expansion within the Planning Area.
- Policy 11-P-10 Cooperate with federal agencies to ensure that new development requiring inclusion in the Contra Costa Water District Central Valley Project contract service area addresses all requirements of federal statutes and regulations, including the National Environmental Policy Act and Endangered Species Act. Encourage project developers to provide all required information for consultation purposes, if necessary, under Endangered Species Act Sections 7 or 10, or a Habitat Conservation Plan
- Goal 11-G-4 Maintain environmentally appropriate wastewater management practices
- Goal 11-G-5 Reduce rainfall-dependent infiltration and inflow, in order to maintain capacity of existing collection system, and prevent Sanitary Sewer Overflows.
- Policy 11-P-17 Require that all wastewater dischargers within the City conform to the ordinances of the Delta Diablo Sanitation District.
- Policy 11-P-18 Ensure that new residential, commercial, and industrial development equitably share costs associated with providing wastewater services to areas of urban expansion within the Planning Area.
- Goal 11-G-6 Continue reduction and recycling efforts within the City to divert increasingly larger portions of the waste stream from local landfills.
- Goal 11-G-7 Manage solid waste so that State diversion goals are met.

Policy 11-P-19	Support the implementation of program tasks within the Source Reduction and Recycling Element.
Policy 11-P-21	Promote the importance of recycling industrial and construction wastes.
Policy 11-P-23	Encourage builders to incorporate interior and exterior storage areas for recyclables into new or remodeled residential, commercial, and industrial structures
Policy 11-P-33	As a condition of approval, ensure that utility lines are undergrounded on all new and redevelopment projects both on and adjacent to the project development site.

3.17.2 Existing Conditions

3.17.2.1 Water System Overview

The City's water service area reflects a total area of approximately 15.6 square miles. The distribution system includes over 256 miles of water pipeline, 20,000 water meters and service lines, and serves 72,000 residential and commercial customers. A map of Pittsburg's water service system is shown on Figure 3.17-1.

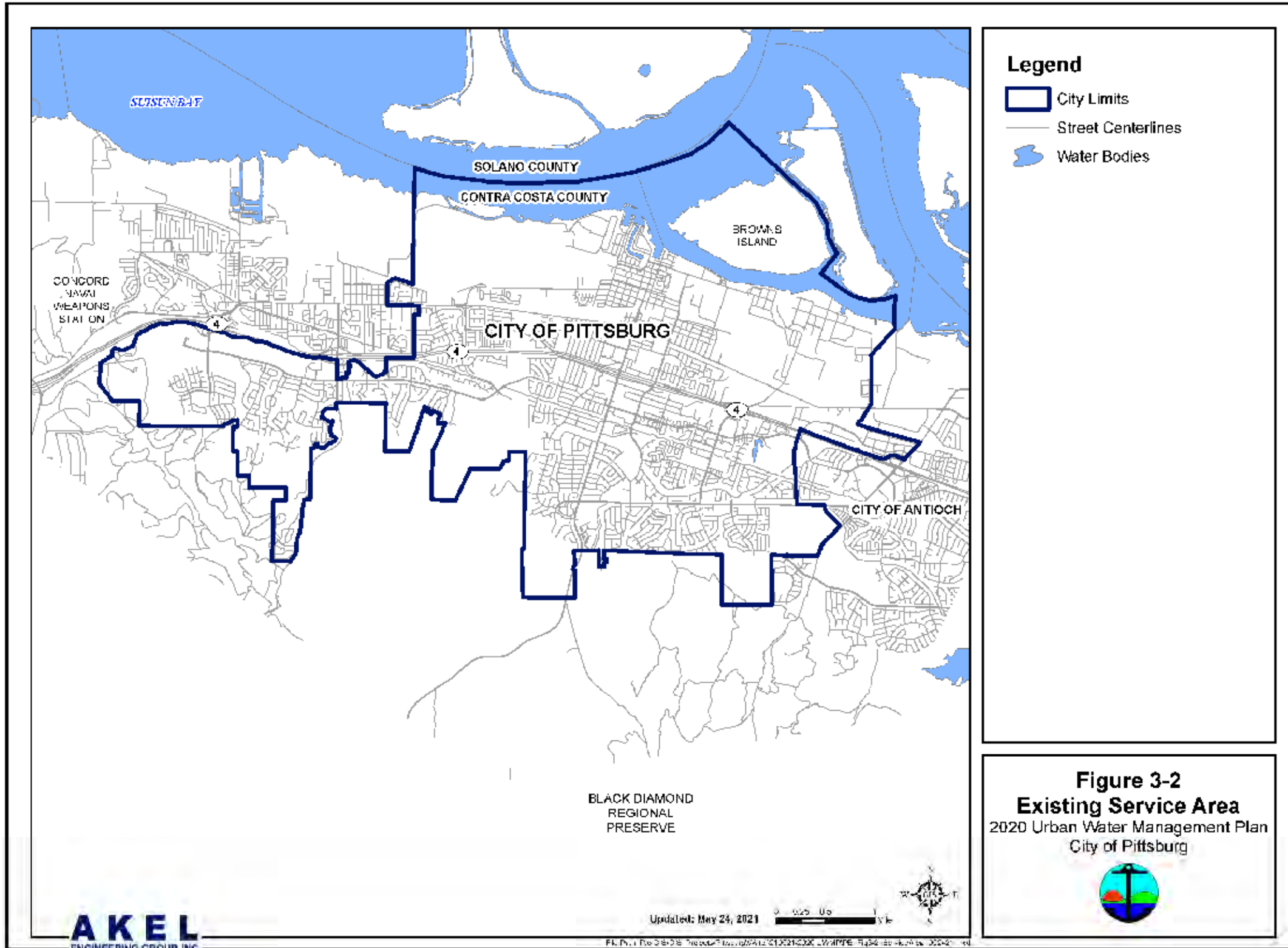
3.17.1.1.12 Water Supply

The City's potable water supply is composed of two sources, both of which are treated at the Water Treatment Plant (WTP). These sources include surface water deliveries supplied by the Contra Costa Water District (CCWD), which makes up the vast majority of the City's water supply. The City also operates two groundwater wells provided by the CCWD which act as an additional source of water supply. The two wells yield approximately 1,500 AF/yr of water, or approximately 10 percent of the City's water supply (City of Pittsburg 2023a).

The CCWD sells untreated water to the cities of Antioch, Martinez, and Pittsburg and to industrial and irrigation customers. CCWD pumps water from four intakes in the Sacramento-San Joaquin Delta. The intakes are located at Rock Slough, on Old River, on Victoria Canal and at Mallard Slough. The district's main water conveyance system is the 48-mile Contra Costa Canal, which starts at Rock Slough and ends at the Martinez Reservoir.

Pittsburg provides potable water to residential, commercial, industrial, and institutional customers within the City limits. CCWD maintains intakes in the Delta as a source of its surface water supply; however, the quality of freshwater in the Delta is dependent on the operation of existing Central Valley Project/State Water Project storage reservoirs. Groundwater and surface water from CCWD are blended at the City's water treatment plant and treated before being delivered to customers. In 2020, the City delivered approximately 9,232 AF/yr of potable water (City of Pittsburg 2021).

Coordinate System: NAD 1983 StatePlane California III FIPS 0403 Feet, Map Rotation: 0
 - Saved By: SRAY on 7/16/2024, 10:42:48 AM, File Path: V:\H-Cycle\506412_Pittsburg_Hydrogen\Project\5-APPX\Renewable Hydrogen Project EIR.aprx, Layout Name: Utilities Service Map



Legend






-  City Limits
-  Street Centerlines
-  Water Bodies

Figure 3-2
Existing Service Area
 2020 Urban Water Management Plan
 City of Pittsburg



PROJECT:		H CYCLE PITTSBURG RENEWABLE HYDROGEN PROJECT CONTRA COSTA COUNTY, CALIFORNIA	
TITLE:		EXISTING UTILITIES SERVICE AREA	
DRAWN BY:	S. RAY	PROJ. NO.:	506412.0000.0000
CHECKED BY:	R. SPRING	FIGURE 3.17-1	
APPROVED BY:	P. DEMICHELE		
DATE:	JANUARY 2024		
		1850 GATEWAY BLVD, SUITE 1075 CONCORD, CA 94520 PHONE: 925.688.1200	
FILE:	Renewable Hydrogen Project EIR.aprx		

3.17.1.1.13 Groundwater

The project area is underlain by the Pittsburg Plain Groundwater Subbasin (Basin), within the greater San Francisco Bay Basin. Groundwater recharge is derived primarily from streambed percolation and the New York Slough, and the direction of the groundwater gradient is generally north towards New York Slough. The existing and potential beneficial uses for the Basin include municipal and domestic water supply, industrial process water supply, industrial service water supply, and agricultural water supplies.

3.17.1.1.14 Wastewater Treatment

The CCWD coordinates wastewater collection, treatment and disposal with four wastewater agencies that operate within its service area. Water recycling is a component of CCWD's long term sustainable water supply strategy, and CCWD collaborates with local wastewater agencies proposing to provide recycled water for appropriate designated uses.

The City operates its own water treatment plant and associated infrastructure facilities, and operates and maintains a thirty-two million gallon per day water treatment plant, two wells, eight distribution reservoirs and five booster stations. The reservoirs serve four (4) pressure zones and have a total capacity of 17 million gallons. The plant has a hydraulic design capacity of 32 million gallons per day (MGD). This design capacity is sufficient to meet maximum day requirements of 30.5 MDG.

Pittsburg obtains raw water from CCWD, through the Central Valley Project (CVP). The CCWD's current contract for its entire service area is for 195,000 AF/yr or 174 MGD. In addition to its CVP contract, CCWD has negotiated water rights with a number of local districts and private entities, including the East Contra Costa Irrigation District. These agreements bring CCW's total annual supply to 242,700 AF/yr. The Pittsburg treatment plant currently operates at 16 to 18 MGD for water service. All wastewater flows collected within Pittsburg's service area are conveyed to the Delta Diablo WWTP for treatment. The WWTP has a Delta outfall that is used for the disposal of wastewater that is not recycled. The WWTP provides secondary treatment using a series of primary treatment, activated sludge trickling filters, and secondary clarification. The Recycled Water Facility (RWF) provides additional treatment to tertiary levels using a series of flocculating clarification, filtration, and disinfecting. According to the 2020 UWMP, maximum day requirements of 30.5 MGD.

3.17.1.1.15 Water Demand

The City averages 11 million gallons per day of water use with a peak of 17 million gallons in the summer. Actual 2020 demands and future demand projections, summarized in Table 3.17-1. For water supply planning purposes, future demand projections are based on maximum dry-year demands not impacted by drought-related water shortage or economic conditions. Additionally, projected demands consider anticipated water use efficiency and conservation measures which result in reduced demands.

Figure 3.17-2 displays water use compared to population, which shows decreases in water use following droughts in 2007-2010 and 2013-2016 despite a rising population during the time period.

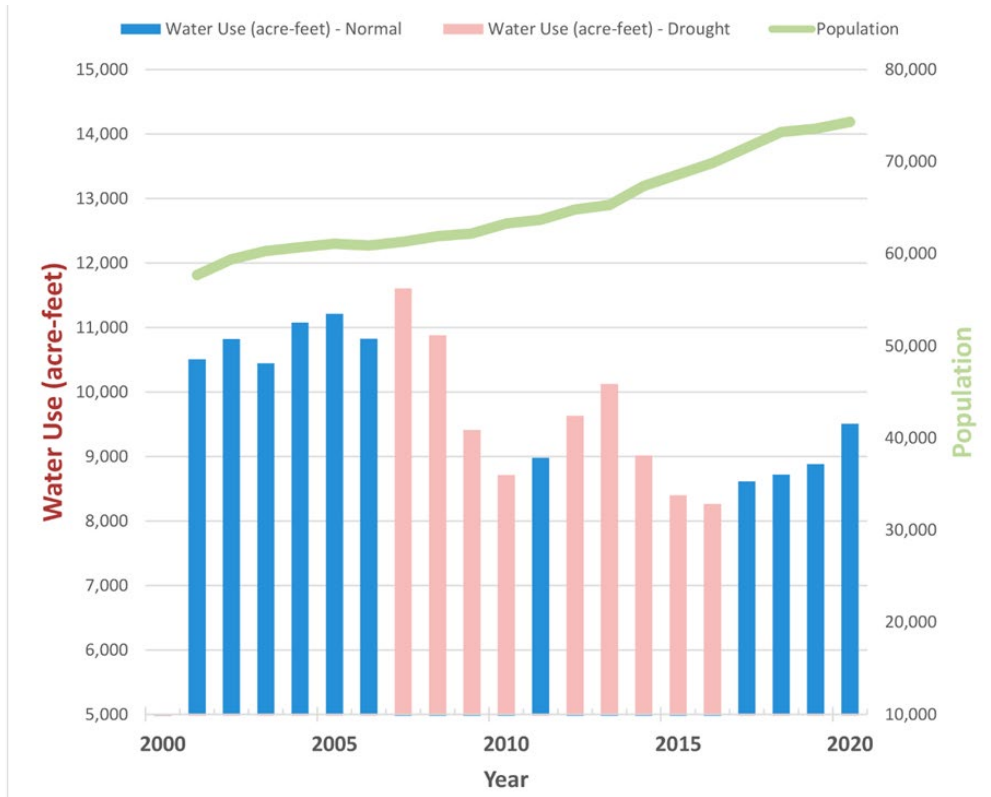


Figure 3.17-2: Historical Water Use and Population

Actual. 2020 Final Urban Water Management Plan

Note: Losses included apparent loss, real losses, unmetered and other miscellaneous non-revenue water.

Source: City of Pittsburg 2021. 2020 UWMP Final

3.17.1.1.16 Historical Water Use

The City currently provides domestic water to residential, commercial, industrial, and institutional customers within the City limits. At the time of preparation of the 2020 UWMP, based on the most recently available data, the City had recorded water delivery service to 18,744 single family residential users, 421 multi-family residential accounts, 745 commercial, institutional, and industrial accounts, and 366 landscape accounts. In 2020, domestic water use totaled approximately 9,232 AF, as summarized in Table 3.17-1.

Table 3.17-1: Demands for Potable and Non-Potable Water – Actual

Use Type	Additional Description	2020 Actual Level of Treatment When Delivered	Volume (AF)
Single Family		Drinking water	4,399
Multi-Family			1,184
Commercial			479
Industrial			889
Institutional/Governmental			152
Landscape			915
Other	Hydrant meter		23
Losses	Non-revenue water		1,192
Total			9,232

Source: City of Pittsburg 2021. Table 4-1: Demands for Potable and Non-Potable Water – 2020 UWMP Final

3.17.1.1.17 Projected Water Use

Table 3.17-2 summarizes the City’s potable water demand projection through the year 2045. To calculate the projected potable water demand through the UWMP planning horizon of 2045, a per capita water use of 120 gallons per day per capita (gpdc) was applied to the projected population. This per capita water use is less than the City’s 2020 water use target and accounts for the effect of ongoing water conservation as well as active and passive water savings.

Table 3.17-2: Use for Potable and Non-Potable Water-- Projected

Use Type	Additional Description	Projected Water Use				
		2025	2030	2035	2040	2045
		(AF)	(AF)	(AF)	(AF)	(AF)
Single Family		5,256	5,732	6,175	6,587	7,026
Multi-Family		1,415	1,543	1,662	1,773	1,891
Commercial		572	624	672	717	765
Industrial		1,062	1,158	1,248	1,331	1,420
Institutional/ Governmental		181	198	213	227	242
Landscape		1,093	1,192	1,284	1,370	1,461
Other	Hydrant meters	28	30	33	35	37
Losses	Non-revenue water	1,424	1,553	1,673	1,784	1,903
Total		11,031	12,030	12,960	13,824	14,745

Source: City of Pittsburg 2021. Table 4-2: Use for Potable and Non-Potable Water-- Projected. 2020 UWMP Final
Note: Losses included apparent loss, real losses, unmetered and other miscellaneous non-revenue water.

3.17.1.1.18 Maximum Day Demand

Maximum Day Demand is a significant demand condition on the water supply system. This condition is defined as the maximum 24-hour use period in the year. Peaking factors are commonly used as a way of simulating the maximum day demand for future demand scenarios. This multiplier is assessed to the average day demand, and is commonly in the order of 2 to 2.5 times greater than the average day demand.³⁴

3.17.1.1.19 Distribution System Water Losses

As part of the 2020 UWMP update, urban water suppliers are required to quantify the previous five years distribution system water losses in a manner consistent with the American Water Works Association (AWWA) water system balance methodology. The City has completed the required water loss audit worksheet in accordance with the DWR guidelines and the projected losses from 2017 to 2020 are summarized in Table 3.17-3. The City-wide distribution system losses identified using the AWWA water system balance methodology for the 2020 UWMP were determined to be 946 AF/yr.

Table 3.17-3: Last Five Years of Water Loss Audit Reporting

Reporting Period Start Date	Volume of Water Loss (1) ² (AF)
July 2015 ¹	671
July 2016	568
July 2017	616
July 2018	745
July 2019	946

*July 2015 reporting period water loss estimated based on recent water loss audits.
Note (1)² Water losses reported in Table 4-4 include apparent loss, real losses, unmetered and other miscellaneous non-revenue water.*

3.17.2.2 Regional Water Sources

3.17.1.1.20 Los Vaqueros Reservoir

CCWD obtained additional water rights for surplus Delta flows as part of the Los Vaqueros Project. Up to 95,980 acre-feet may be diverted for storage in Los Vaqueros Reservoir from November 1 of each year to June 30 of the succeeding year under Water Rights Permit No. 20749. The Los Vaqueros Water Rights supply can be used in lieu of the CVP supply. When Los Vaqueros Water Rights water is used, CVP supplies are reduced by an equivalent amount. Combined deliveries of Los Vaqueros Water Rights water and CVP water are limited to 195,000 A/FY. Little or no Los Vaqueros Water Rights water is available for diversion to storage in dry years.

³⁴ Water System Master Plan is currently being updated and the City does not anticipate maximum day peaking factor will change as a result of the update

3.17.1.1.21 East Contra Costa Irrigation District

CCWD entered into an agreement with the East Contra Costa Irrigation District (ECCID) in 2000 to purchase surplus irrigation water for M&I purposes in ECCID's service area. Only a portion of ECCID is within the existing CCWD service area (estimated current demand of 6,000 AF/yr). The current ECCID agreement allows CCWD to purchase up to 8,200 AF/yr for service in the areas common to both districts. The agreement also includes an option for up to 4,000 AF/yr of groundwater (by exchange) when the CVP is in a shortage situation. The groundwater exchange water was utilized during the 2007–2009 drought, and the 2013–2015 drought. This exchange water can be used anywhere within CCWD's service area. Water delivered by CCWD to the city of Brentwood is purchased by the City from ECCID under a separate contract.

3.17.1.1.22 Bay Area Regional Reliability

The CCWD together with seven other Bay Area water agencies, including Alameda County Water District (ACWD), Bay Area Water Supply and Conservation Agency (BAWSCA), East Bay Municipal Utility District (EBMUD), Marin Municipal Water District (MMWD), San Francisco Public Utility District (SFPUC), Valley Water, and Zone 7, are participating in the Bay Area Regional Reliability (BARR) partnership to improve water supply reliability in the Bay Area. Benefits of a regional approach include leveraging existing infrastructure investments, facilitating the transfer of water during shortages, bolstering emergency preparedness, and improving climate change resiliency. The BARR partners are currently working on the Shared Water Access Program to develop a guide for sharing resources among the BARR agencies to improve regional resilience and reliability. As part of the BARR Shared Water Access Program, CCWD and Valley Water, which are both CVP contractors, are seeking to implement an exchange wherein CCWD makes available to Valley Water up to 5,000 AF of CCWD's CVP allocation in 2021, in exchange for Valley Water returning the same amount of water to CCWD in a later year. This pilot project will both provide valuable water supply to Valley Water during a critically dry year as well as identify institutional and regulatory considerations relevant to future transfers or exchanges between

3.17.2.3 Supplemental Water Supply

3.17.1.1.23 Recycled Water Projects

The CCWD continues to evaluate an Industrial Recycled Water Project to serve up to 3,400 AF/yr to major industrial customers, either in coordination with an exchange with Valley Water or separately. This amount could increase depending on costs, water quality, and reliability considerations. Additionally, as previously noted, approximately half the water demand for the redevelopment at the Concord Naval Weapons Station is to be met with recycled water. The timing and scope of these recycled water projects would depend on the overall water use within CCWD's service area and timing of redevelopment. The UWMP estimates these projects, along with other minor increases in recycled water use, would provide an additional 23,610 AF/yr of supply.

3.17.1.1.24 Long-Term Water Use Efficiency Measures

CCWD would continue to implement enhanced conservation to maintain the per capita water use required by SB X7-7 as well as future water use efficiency targets into the future. Taking into consideration the most cost-effective implementation strategies, the CCWD would add an additional 8,800 AF/yr generated by long-term projects by the year 2060.

3.17.2.4 Solid Waste

The Central Contra Costa Solid Waste Authority is a joint powers authority that franchises solid waste and recycling collection services in Lafayette, Moraga, Orinda, Walnut Creek, and surrounding unincorporated communities. Operating landfills in Contra Costa County (County) include the Acme Landfill near Martinez, which is restricted to receiving construction and demolition wastes and yard debris; Keller Canyon Landfill near Pittsburg; and West Contra Costa Sanitary Landfill in Richmond.

Contra Costa County has one Class II landfill, the Keller Canyon Landfill, which has a maximum permitted daily disposal of 3,500 tons per day with a remaining capacity of 63,408,410 tons and an anticipated closure date of December 31, 2050. The West Contra Costa Sanitary Landfill is closed. The landfill was permitted to receive 51,000 tons of waste per day, with a remaining capacity of 1,300,000 tons, ceased operations in Other landfills in the Bay Area include the Altamont Landfill in Alameda County, Forward Landfill in San Joaquin County; Potrero Hills Landfill in Solano County, and the Vasco Road Landfill in Alameda County.

3.17.1.1.25 Nonhazardous and Recyclable Waste

Alco Iron and Metal Company is located in San Leandro, California, is a major purchaser and supplier of ferrous and non-ferrous scrap material. They provide demolition, removal, hauling and recycling services for water and power. They have five locations totaling 41 acres.

Table 3.17-4: Estimated Remaining Capacity and Site Life for Contra Costa County Landfills

Landfill	Maximum Permitted Capacity (cubic yards)	Remaining Capacity (cubic yards)	Maximum Permitted TPD	Estimated Year of Closure	Classification
Keller Canyon Landfill	75,018,280	63,408,410	3,500	2050	Industrial Landfill
Acme Landfill	6,195,000	506,590	1,500	July 2021	Solid Waste Class III Landfill
West Contra Costa Sanitary Landfill (WCCSL)	51,000 tons/day	--	196	Closed	Large Volume Transfer/Processing
Potrero Hills Landfill	83,100,000	13,872,000	4,330	2048	Solid Waste

Source: Cal Recycle Solid Waste Information System (SWIS) database. <https://www2.calrecycle.ca.gov/SolidWaste/Site/Search> Website accessed November 17, 2023

3.17.2.5 Other Utilities

Other utilities that are currently would be provided to existing facilities and customers surrounding the project area include but are not limited to: telephone service by AT&T, Verizon, or Comcast Infinity; and gas and electrical service by Pacific Gas and Electric (PG&E); and electrical service by Pittsburg Power Company (PPC) and Marin Clean Energy (MCE). Proposed buildings would be constructed to Cal Green Building Code standards.

3.17.2 Impact Analysis

3.17.2.6 Methodology

For this analysis, direct impacts are defined as primary effects that occur as a result of project construction and operation. This section also addresses the proposed Project's compliance with federal, state, and local laws. HC (Contra Costa), LLC's (Applicant's) new operating permit may require amendments and/or administrative modifications that may result in direct or indirect changes to existing water, sewer, gas, electric, and telecommunications services. Reasonably foreseeable changes to utility infrastructure that may occur that would also affect utility services.

3.17.3 Significance Criteria

For the purposes of this analysis, the proposed Project is could have a significant impact on utilities and service systems if it would:

- a. require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects;
- b. have insufficient water supplies available to serve the proposed Project and reasonably foreseeable future development during normal, dry, and multiple dry years;
- c. result in a determination by the wastewater treatment provider, which serves or may serve the proposed Project that it has adequate capacity to serve the proposed Project's projected demand in addition to the provider's existing commitments;
- d. generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals; or
- e. be out of compliance with federal, state, and local statutes and regulations related to solid waste.

3.17.4 Impacts and Mitigation Measures

3.17.2.1 Impact Determination

- a. **Would the proposed Project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? (UTIL-1)**

3.17.2.1.1 Water Service

No. It is assumed that water demand would be approximately 1.65 gallons per day (GPD) per employee 150 to 225 temporary on-site skilled union workers. Therefore, proposed project construction would result in a demand of approximately 371 GPD. This is a very small increase in water demand compared to the City's 11 MGD average daily consumption of domestic water.

Proposed Project operations would require an interconnection for water supply via Contra Costa Canal, as managed by the CCWD. The canal supplies non-potable water which would be used for waste conversion and feedstock preparation described above. Under normal operations the facility would require up to 350 gallons per minute (gpm) for operations and produce two different wastewater streams. Most of the facility's water needs may be supplied from recycled or reclaimed water sources, which are currently being evaluated, or directly from the CCWD or the City.

The City's planned water supply to residential and commercial customers would not be affected, because the proposed Project would rely mostly on non-potable water from the Contra Costa Canal. The proposed Project would be required to demonstrate that sufficient water supplies would be available and that no new entitlements would be required during the City's use permit process. Development at the project site was previously anticipated in the 2001 General Plan, which did not require any new or expanded water entitlements beyond those already planned. Additionally, the City is undertaking projects to ensure future water supplies. The City would have a sufficient water supply to support construction and ongoing operations of the proposed Project is not anticipated to require new or expanded entitlements for water supplies.

3.17.2.1.2 Wastewater Treatment

No. As described in Chapter 2, Project Description, additional units would interact with various stages of the process, including a lean gas boiler, an oxygen supply source (either via an on-site oxygen plant using Vacuum Pressure Swing Absorber [VPSA] technology or interconnection to an existing oxygen pipeline), a wastewater treatment unit, a flare, and a back-up generator. Excess heat would be recovered in the cooling and quenching step of the waste conversion unit and used to generate steam and dry the waste feedstock; the lean gas boiler would supplement this recovered heat.

The facility would produce two different wastewater streams: process wastewater and cooling tower blowdown. The process wastewater stream would be treated and mixed with the cooling tower blowdown stream to meet appropriate discharge limits, then the combined estimated volume of to 130 gpm would be collected and sent to the Delta Diablo Wastewater Treatment Plant (WWTP) for additional treatment and disposal.

Process wastewater would be treated on site and treated to meet appropriate discharge limits for transfer to the Delta Diablo WWTP. The proposed Project facility maximum discharge to sewer is approximately 130 gpm, or 187,000 GPD. The facility is producing a small amount of wastewater (0.58 percent) of Delta Diablo treatment facility, which has the capacity to process up to 32 MGD.

Wastewater from the proposed Project would be treated at the proposed wastewater treatment plant to meet appropriate discharge limits, then sent to the Delta Diablo WWTP for disposal. Interconnection of the proposed Project to the Delta Diablo system for wastewater sewer would further reduce impacts from wastewater discharges.

3.17.2.1.3 Stormwater Management

No. No new stormwater management infrastructure would be necessary for project operations. Stormwater and surface runoff generated on the project site would be contained and treated within the facility's wastewater treatment plant and managed under the existing Corteva NPDES permit. Project construction would be required to comply with existing permit regulations and waste discharge requirements, including the Construction Storm Water General Permit. Project construction activities are not expected to result in the addition of impervious surfaces that would substantially alter existing drainage patterns; as such, operations of the proposed Project would not be expected to increase the current volume of stormwater runoff. The potential impacts to stormwater management from the proposed project construction and operations are anticipated to be less than significant.

3.17.2.1.4 Electric and Gas Facilities

No. As detailed in the project description, the proposed Project will require electricity and natural gas for the conversion of waste to hydrogen gas, the project site is not energy self-sufficient and will require energy.

Power from Pacific Gas and Electric (PG&E) would likely be used to provide electricity and natural gas for plant needs, on-site lighting, and other small power needs. The proposed Project would likely access PG&E electrical service via a new interconnection to an existing transmission line nearby the project site. It is anticipated that up to 15 MW of power will be required, while average facility electrical usage will average 11 to 12 MW, which is lower than average use.

Natural gas from PG&E would be used to generate heat for various units in the process. Fuel gas would be used to generate heat, to the extent feasible, thereby reducing natural gas usage. PG&E would provide natural gas service via a new interconnection to an existing pipeline nearby the project site. It is estimated that proposed project operations would consume approximately 403,052 MMBTU of natural gas on an annual basis.

To operate the proposed Project, the Applicant would purchase electricity from PG&E or from other electricity providers with experience serving facilities and customers around the project area.

However, the proposed Project would require significantly less purchased electricity³⁵ than the alternative method of producing renewable hydrogen (which is water electrolysis).

Significance Level: Less than Significant. No mitigation is required.

b. Would the proposed Project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? (UTIL-2)

Yes. As discussed in Impact UTIL-1 above, the proposed Project could require up to 350 gpm for operations that would be supplied from recycled or reclaimed water sources, or directly from the CCWD or the City. The proposed Project does not include the installation of any groundwater extraction wells for water supply purposes.

While the City's current groundwater supply is generally considered reliable during various normal and dry water years, changes in local hydrology could affect the current natural recharge rates. This change could result in a reduction of the amount of groundwater that could be pumped sustainably. Recharge projects and participation in regional groundwater management planning efforts will help to reduce the effect of climate change on groundwater supplies.

The proposed Project would not rely on groundwater wells requiring significant groundwater extraction from an aquifer or groundwater table. Additionally, construction and operation of the proposed Project would not substantially decrease groundwater resources nor interfere with groundwater recharge. The proposed use of recycled or reclaimed water for project operations would not increase the burden on either surface water supplies and groundwater supplies within the Bay-Delta system and the Pittsburg Plain aquifer system, respectively. Overall, the proposed Project construction and operations activities would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan, and the proposed Project would have less than significant impact on groundwater supplies or interference with groundwater recharge.

Significance Level: Less than Significant. No mitigation is required.

c. Would the proposed Project result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? (UTIL-3)

Yes. Certain new units would be installed, including engineered municipal solid waste feedstock and wastewater treatment equipment. The pretreatment equipment would produce wastewater streams requiring partial pretreatment at the project site prior to treatment at Delta Diablo WWTP. Project construction activities would consist of specialized wastewater treatment equipment to reduce biological oxygen demand in the waste stream. All pretreated wastewater would be transferred to Delta Diablo WWTP.

As discussed under impact UTIL-1 above, the facility's combined wastewater streams would produce an estimated volume of up to 130 gpm. Process wastewater would be treated on site and treated to

³⁵ Water electrolysis facilities consume 50-55 kWh to produce 1 kg of hydrogen. The Project would consume 15-20 kWh to produce 1 kg of hydrogen, which represents at least a 60% reduction in electricity usage.

meet appropriate discharge limits for transfer to the Delta Diablo WWTP. The facility is producing a small amount of wastewater (0.58 percent) of Delta Diablo treatment facility, which has the capacity to process up to 32 MGD. Wastewater generated from the proposed project facility would be treated on site and would have no impact on any public wastewater treatment provider. Facility operations are not expected to generate additional untreated wastewater flow discharged to the environment. Since the City's wastewater infrastructure has adequate capacity to accommodate project construction and operation activities in addition to existing commitments, project-related impacts on water and wastewater facilities and services would be less than significant.

Significance Level: Less than Significant. No mitigation is required.

d. Would the proposed Project generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals? (UTIL-4)

No. Project construction would employ 150 to 225 temporary on-site skilled union workers. Assuming a solid waste generation of 0.6 pounds per person per day (CCC GP 2020), the construction phase of the proposed Project would result in approximately 73,980 pounds, or 85 CY, of solid waste over the course of 18 months. When practicable, recyclable construction material would be transported to an approved recycling facility; any types of proposed Project waste materials that are routinely recycled would be recycled in an appropriate fashion at an approved facility. Construction waste that cannot be recycled would ultimately be disposed of at an approved disposal facility. Construction waste would be disposed of properly and in accordance with all applicable federal, state, and local laws regarding solid and hazardous waste including, but not limited to, the California Integrated Waste Management Act of 1989 which set reduction rates for the amount of solid waste sent to landfills.

Facility operations would require approximately 30 full-time employees generating 6,570 pounds of solid waste per year. Feedstock processing would produce approximately 20,000 tons of waste per year in the form of non-hazardous vitrified slag byproduct. The solid slag could potentially be repurposed for beneficial use as a roadbed or concrete aggregate, or alternatively, the slag byproduct could be disposed in a landfill. Feedstock production has the capacity to accept up to 160,000 wet tons of waste per year. The proposed Project would not generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals. Any waste generated by proposed project activities would be disposed of at an approved facility with sufficient capacity. The Keller Canyon Landfill has a remaining capacity of approximately 63 million CY and is expected to remain in operation until at least December 2050 (CalRecycle SWIS, 2023).

The proposed Project would result in increases in throughput, production, and employment in the area, which in turn would be anticipated to result in generation of a higher volume of solid waste as compared to no project. However, area landfills have the capacity to accommodate solid waste generated by the proposed renewable hydrogen production facility. The facility's waste-to-hydrogen processing plant would further divert solid waste by using waste residuals as feedstock for conversion into a renewable fuel source. The proposed Project would be served by landfills with sufficient permitted capacity to accommodate anticipated solid waste disposal needs. Therefore, impacts related to solid waste would be less than significant.

Significance Level: Less than Significant. No mitigation is required.

e. Would the proposed Project comply with federal, state, and local management and reduction statutes and regulations related to solid waste? (UTIL-5)

Yes. Solid waste is expected to be generated during construction activities. Construction and demolition wastes would include materials such as asphalt, concrete, metals, and other site preparation materials. During operations of the renewable hydrogen production facility, metallic and other inert components in the waste are removed as a non-hazardous vitrified slag byproduct.

All waste would be disposed of in accordance with established procedures and applicable regulatory requirements. It is not expected that project implementation would affect the City's ability to maintain compliance with AB 939 requirements for solid waste diversion and recycling. The proposed Project would not violate any solid waste management and reduction statutes or regulations.

Additionally, the proposed Project would support the diversion of organic waste from landfills, advancing goals listed in City's current plans and policies, such as Goal SW-1.1 Strategy for Organic Waste Diversion in the City of Pittsburg Sustainability Plan (2023). Therefore, project impacts from solid waste generation and disposal would be less than significant.

Significance Level: Less than Significant. No mitigation is required.

3.17.5 References

City of Pittsburg. 2023a. Fact Sheet. Website Visited 11/10/23.

<https://www.pittsburgca.gov/home/showpublisheddocument/1124/637479142624630000>

City of Pittsburg. 2023b. Pittsburg Water's Local Treatment Plant. Website visited November 17, 2023. <https://www.pittsburgca.gov/services/pittsburg-water/treatment-plant>.

City of Pittsburg. 2023c. City of Pittsburg Sustainability Plan. Final Draft. October 2023. Website Visited January 7, 2023.

<https://www.pittsburgca.gov/home/showpublisheddocument/15464/638320967991530000>

City of Pittsburg. 2001. City of Pittsburg General Plan 2020: A Vision for the 21st Century. January 2001.

Contra Costa Water District (CCWD). 2021a. Draft Urban Water Management Plan. April 2021.

Online: <https://www.ccwater.com/DocumentCenter/View/9851/2020-Urban-Water-Management-Plan-Draft-PDF>. Accessed online July 7, 2021.

Contra Costa Water District (CCWD). 2021b. Los Vaqueros Reservoir Expansion Project.

Available at <https://www.ccwater.com/733/About-the-Project>. Website accessed April 21, 2021.

Department of Water Resources, California (DWR). 2021. Water Use Efficiency. Website Accessed July 9, 2021. <https://water.ca.gov/Programs/Water-Use-And-Efficiency/Urban-Water-Use-Efficiency/Urban-Water-Management-Plans>

Department of Water Resources, California (DWR). 2021b. Urban Water Management Plans. Website accessed July 9, 2021. <https://water.ca.gov/Programs/Water-Use-And-Efficiency/Urban-Water-Use-Efficiency/Urban-Water-Management-Plans>

San Francisco Regional Water Management Group (SF RWMP). 2019. 2019 Bay Area Integrated Regional Water Management Plan, October 2019,

State Water Resources Control Board (SWRCB). 2006. State Water Resources Control Board Order No. 2006-0003-DWQ Statewide General WDR For Wastewater Collection Agencies. May 2, 2006.

3.18 WILDFIRE

This chapter describes existing wildfire conditions and risks and analyzes the potential effects wildfire may have on the H Cycle Pittsburg Renewable Hydrogen Project (Project).

Guidelines and key sources of data used in the preparation of this chapter include the following:

- *City of Pittsburg General Plan 2020*
- Contra Costa County Fire Protection District
- California Department of Forestry and Fire Protection (CAL FIRE) – Fire and Resource Assessment Program
- Weather Atlas for City Pittsburg, CA
- Fire Weather Research Laboratory – San Jose State University
- National Water and Climate Center – Wind Rose data for San Francisco Bay Area

3.18.1 Environmental Setting

3.18.1.1 Regulatory Context

3.18.1.1.1 Federal Regulations

National Fire Plan 2020

The National Fire Plan (NFP) was developed in August 2000, following a landmark wildland fire season, with the intent of actively responding to severe wildland fires and their impacts to communities while ensuring sufficient firefighting capacity for the future. The NFP addresses five key points: Firefighting, Rehabilitation, Hazardous Fuels Reduction, Community Assistance, and Accountability.

3.18.1.1.2 State Regulations

California Fire Code

The purpose of California Code of Regulations Title 24, Part 9, also known as the California Fire Code, is to establish the minimum requirements consistent with nationally recognized good practices to safeguard the public health, safety, and general welfare from the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises, and to provide safety and assistance to fire fighters and emergency responders during emergency operations.

Bates Bill (AB337)

In 1993, as a result of the Oakland Hills Fire in which 3,403 homes were lost, 780 in the first hour of the fire, the Bates Bill No. 337 was enacted requiring local jurisdictions to identify and establish Very High Fire Hazard Severity Zones.

Regulations of the Fire Marshal

The purpose of the California Code of Regulations Title 19, also known as Regulations of the Fire Marshal, is to establish minimum standards for the prevention of fire and for the protection of life and property against fire, explosion, and panic. Title 19 also specifies that the National Fire Protection Association (NFPA) standards and the NFPA Fire Protection Handbook may be used as authoritative guides in determining recognized fire prevention engineering practices. The Contra Costa County Fire Protection District (CCCYPD) would also use the NFPA 550 Guide to the Fire Safety Concepts Tree as a reference for mitigating specific fire issues related to the proposed Project. The CCCYPD provides fire protection services within the city of Pittsburg (City).

2018 Strategic Fire Plan

The Board of Forestry and Fire Protection (CABFFP) adopts Strategic Fire Plans under regulatory guidance (California Public Resources Code [PRC] Sections 4114 and 4130). The plan is updated every eight to 10 years, starting with the first plan in the 1930s. The Strategic Fire Plan provides high-level (“...broad, strategic”) guidance to CAL FIRE for the implementation of fire protection services within State Responsibility Areas (SRAs). The 2018 iteration of the Strategic Fire Plan includes updated goals, with emphasis on fire prevention, fire suppression, and natural resource management (CABFFP, 2018).

3.18.1.1.3 Local Regulations

City of Pittsburg General Plan

The Public Facilities Element (Chapter 11) of the *City of Pittsburg General Plan 2020* includes goals and policies for fire protection. The fire protection goals and policies relevant to the proposed Project include:

Fire Protection	
Goal 11-G-8	Require development in areas of high fire hazard to be designed and constructed to minimize potential losses and maximize the ability of fire personnel to suppress fire incidents.
II-P-24	Amend the subdivision regulations to include a requirement for detailed fire prevention and control, including community fire breaks, for projects in high and extreme hazard areas. Areas of high and extreme fire hazard include the Planning Area’s southern hills. Preparation of detailed fire prevention plans will ensure that new development in extreme hazard areas accounts for potential fire hazards and control measures.
II-P-25	Review and amend ordinances that regulate development in potentially hazardous locations to require adequate protection such as fire-resistant roofing, building materials, and landscaping.
II-P-26	Cooperate with CCCYPD to ensure that new or relocated fire stations are constructed on appropriate sites within the 1.5-mile response radii from new or existing development. Further development in the Southern hills may necessitate the construction of a new fire station by 2020. Additional fire protection facilities may be necessary to ensure the safety of residents within urban-rural interface hazard areas.
II-P-27	Cooperate with CCCYPD in obtaining sites to either relocate or establish new fire stations within City limits to provide more efficient response times.

II-P-29	Ensure adequate road widths in new development for fire response trucks, per the subdivision regulations.
---------	---

Fire Hazard Areas

The *City of Pittsburg General Plan 2020*, Chapter 11, describes Fire Hazard Areas. While this section of the General Plan references state (CAL FIRE) designations for fire hazard severity zones, it also frames fire hazard areas from a local perspective. For the purposes of this analysis, the descriptions in the General Plan are considered locally designated Fire Hazard Areas. The General Plan designates the areas of highest fire risk as “the hills south of the City.” The City describes the fire threat areas as a combination of dry, open grassland abutting development within the City.

Contra Costa County Fire Code

The Contra Costa County Fire Code adopts the California Fire Code, with approximately 25 pages of amendments. The CCCFPD is governed by the Contra Costa County Fire Code. The Contra Costa County Fire Code includes provisions that apply to the proposed Project, including requirements for sprinkler systems, fire apparatus access, required permits and reviews, and exterior fire hazard control measures.

3.18.1.2 Existing Conditions

3.18.1.2.1 State Designated Fire Hazard Severity Zones

The unincorporated areas south of the project site are designated as High Fire Threat Severity Zones by CAL FIRE.

3.18.1.2.2 Local Fire Hazard Areas

As described above, the City has designated areas of open grassland on the hills south of the City as the highest fire hazard areas for the City (Fire Hazard Areas).

3.18.1.2.3 Fire Protection and Emergency Response

State & Federal Response Areas

As stated above, the project site is located within CCCFPD service areas, making the site a Local Response Area, or LRA. There are no SRAs or Federal Response Areas within 1.5 miles of the project site.

Local Response Areas

The CCCFPD provides fire suppression, paramedic emergency medical services, technical rescue, water rescue, and fire prevention/investigation services within the City. As the project site is wholly located within City limits, the CCCFPD would provide all primary fire and emergency response to the proposed Project.

CCCFPD Fire Station 83, located at 2717 Gentrytown Drive, Antioch, CA 94509, would provide primary response to the proposed Project. Station 83 is located approximately 1.5 miles (2.3 miles via surface roads) from the project site. The response time goal for the CCCFPD is to provide service

within 5 minutes of notification. Generally, service can be provided in this timeframe to areas within 1.5 miles of a fire station. The project site is within the acceptable response area for Station 83. The on-duty CCCFPD fire companies are trained and regularly cross-staff numerous specialty-response units, including wildland firefighting units, which would apply to potential wildfire threats to the proposed project from the Fire Hazard Areas to the south, southwest, and west of the project site.

The CCCFPD maintains a mutual-aid agreement with the East Contra Costa County Fire Protection District, which also responds on an automatic aid basis, and participates in the State of California Disaster and Civil Defense Master Mutual Aid Agreement. These agreements provide the CCCFPD with emergency response assistance on an as-needed basis.

3.18.1.2.4 Project Area Physical and Climate Setting

The following sections describe the key physical environmental factors at the project site and within the greater proposed Study Area, including topography, drainage patterns, wind conditions, rain probability and average precipitation, and fire hazard conditions.

Project Site Topography and Drainage Pattern

The general topography of the Study Area slopes to the north and east. As an idled industrial facility, surface drainage for the project site has been modified to be contained and managed. Further modification to drainage will be improved when the proposed Project is built out. The site elevation for the Study Area is only a few feet above sea level as the developed area is located approximately 1000 feet from New York Slough. The site is essentially flat with no risk of flooding or landslides.

Project Area Precipitation and Rain

The total average yearly rainfall in the Pittsburg area is 13.4 inches (Weather Atlas 2020). The heaviest rainfall occurs during the months of December through March, with January having the highest monthly average precipitation (2.7 inches). The driest months are June through September, with July and August average zero inches of precipitation.

Project Area Wind Patterns

Prevailing winds in the Pittsburg area are from the west, which is consistent with the general wind patterns of the greater San Francisco Bay area, which are from the west-northwest (National Water and Climate Center 2020). Severe wind events in the San Francisco Bay area, called Diablo winds, originate out of the east, and occur with the highest frequency in the October, November, and January months (Fire Weather Research Laboratory 2020).

Project Area and Regional Fire Threat

The most severe fire risk period in Pittsburg (based on general conditions within the greater San Francisco Bay area) is September through November, with October seeing the most severe conditions for any single month. This period represents the highest fire risk due to a combination of high wind events (i.e., Diablo winds) and low live fuel moisture (Fire Weather Research Laboratory 2020). The low fuel moisture results in easy ignition, and the high wind speeds spread wildfires once ignited.

Historic Fires

CAL FIRE maintains historic data for fires within the state, including the area and name. There are nine recorded fires in the vicinity of the project site. Six of these fires were located within the grasslands located south of the City, within CAL FIRE High Severity Fire Hazard zones and City of Pittsburg Fire Hazard Areas. The most recent fire was in 2018 and the oldest fires in the Study Area were from 1958.

3.18.2 Impact Analysis

3.18.2.1 Methodology for Impact Analysis

Potential effects from, or relating to, wildfire are determined by identifying State and/or locally designated fire hazard zones and areas; and the potential for wildfires to adversely affect the construction and/or operation of the proposed Project.

3.18.2.2 Significance Criteria

For the purposes of this analysis, a project impact was considered to be significant and require mitigation if located in or near state responsibility areas or lands classified as very high fire hazard severity zones, if it would:

- a. Substantially impair an adopted emergency response plan or emergency evacuation plan?
- b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?
- c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?
- d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

3.18.2.3 Impacts and Mitigation Measures

3.18.2.3.1 Proposed Project

- a. Would the proposed Project substantially impact an adopted emergency evacuation plan? (WF-1)

No. The proposed project would not have any impact or changes the operation of the City of Pittsburg *Emergency Operations Plan* (2018).

Significance Level: No impact. No mitigation required.

b. Would the proposed Project due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire? (WF-2)

No. Marshy grasslands and overgrown areas are located east of the project site. These areas would be susceptible to wildfire during dry conditions (i.e., low fuel moisture). These direct wildfire impacts would be less-than-significant for the following reasons:

- The proposed Project would have to comply with adopted local fire prevention ordinances and regulations that would reduce risk to the proposed Project;
- The project site is located 1.5 miles from the closest CCCFPD Fire Station (Station 83) which allows for a response time well below the acceptable limit;
- The project site is not located in or near a Very High Fire Hazard Severity Zone or within an SRA; and
- Construction activities would occur in relatively short, intermittent intervals and the probability of a wildfire occurring during construction activities is low.

Significance Level: Less than significant. No mitigation required.

c. Would the proposed Project require the installation of associated infrastructure (such as roads, fuel breaks, emergency water sources, power line or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment? (WF-3)

No. The proposed Project would not require the installation of any associated infrastructure beyond the boundaries of the project site, and therefore would not create any new environmental impacts – temporary or permanent – on the environment. As a previously developed site, all utilities are already present that will be adapted to the new facility, including fire suppression water sources.

Significance Level: No impact. No mitigation required.

d. Would the proposed Project expose people or structure to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes? (WF-4)

No. The proposed Project does not significantly alter the slope of the site nor is it located near a slope that could become unstable after a wildfire. The site has been developed in the past and will be redeveloped in such a manner as to remove any potential risk of wildfire or erosion.

Significance Level: No impact. No mitigation required.

3.18.3 References

California Board of Forestry and Fire Protection. 2018. *2018 Strategic Fire Plan for California*. August 22, 2018.

- California Department of Forestry and Fire Protection, Cal Fire 2011. State Responsibility Areas (SRA) Map, Cal Fire Emergency Response Areas. Updated July 2016. Online: <https://bof.fire.ca.gov/projects-and-programs/state-responsibility-area-viewer/>. Site Visited November 2023.
- California Department of Forestry and Fire Protection. Fire Hazard Severity Zones – Interactive Map. Dataset adapted in 2017. Online: <https://databasin.org/maps/new#datasets=fbb8a20def844e168aeb7beb1a7e74bc>. Site Visited November 2023.
- City of Pittsburg. 2001. *City of Pittsburg General Plan 2020: A Vision for the 21st Century*. January.
- City of Pittsburg. 2018. *Emergency Operations Plan, Volume 1*. January 4, 2017.
- Contra Costa County. 2016. Ordinance No. 2016-23 (Fire Code).
- Contra Costa County Fire Protection District. 2020. Website. Online: <https://www.cccfpd.org>. Site Visited November 2023.
- San Jose State University. 2020. Fire Weather Research Laboratory. Online: <https://www.fireweather.org/diablo-winds>. Site Visited November 2023.
- United States Department of Agriculture; National Resources Conservation Service – National Water and Climate Center. 2020. Wind Rose Dataset. Online: <https://www.wcc.nrcs.usda.gov/climate/windrose.html>. Site Visited November 2023.
- Weather Atlas. 2020. Monthly Weather Forecast and Climate for Pittsburg, CA. Online: <https://www.weather-us.com/en/california-usa/pittsburg-climate>. Site Visited November 2023.

In accordance with CEQA (CEQA Guidelines Section 15130 et seq.), an environmental impact report (EIR) is required to analyze the cumulative impacts of a proposed project in conjunction with other developments that affect or could affect the project area. This chapter identifies other related past, present, and future projects near the location of the proposed project site and summarizes potential cumulative impacts.

State CEQA Guidelines Section 15355 requires that an EIR consider the cumulative impacts of a project when the project's incremental effect is cumulatively considerable, as identified in CEQA Guidelines Section 15065, subdivision (c). Where a lead agency is examining a project with an incremental effect that is not "cumulatively considerable," a lead agency need not consider that effect significant but shall briefly describe its basis for concluding that the incremental effect is not cumulatively considerable. As defined in CEQA Guidelines Section 15355, a cumulative impact consists of an impact that is created as a result of the combination of the project evaluated in the EIR, together with other projects causing related impacts. An EIR should not discuss impacts that do not result in part from the project evaluated in the EIR.

CEQA Guidelines Section 15355 defines cumulative impacts as follows:

"Cumulative impacts" refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.

- a. The individual effects may be changes resulting from a single project or a number of separate projects.
- b. The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present and reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

4.1 Approach to the Cumulative Analysis

CEQA Guidelines section 15130 provides that cumulative impacts analysis may be undertaken in one of two ways:

Either: (A) A list of past, present and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or (B) A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or areawide conditions contributing to the cumulative impact. Any such planning document shall be referenced and made available to the public at a location specified by the lead agency.

This EIR uses the first approach, that is, using a list of past, present and probable future projects as the basis for the cumulative impact analysis. Probable future projects may include:

- Private projects requiring agency approval for an application that has been received at the time the Notice of Preparation is released, unless a project has been abandoned by the Applicant;
- Public projects for which money has been budgeted or included in an adopted capital improvement program, general plan, regional transportation plan or other similar plan;
- Projects included in a summary of projects in a general plan or similar plan; or
- Projects anticipated as later phases of a previously approved project.

The cumulative effects analysis is required to discuss not only approved projects under construction and approved related projects not yet under construction, but also unapproved projects currently under environmental review with related impacts or which would result in significant cumulative impacts. This analysis should include a discussion of projects under review by the Lead Agency and projects under review by other relevant public agencies.

4.1.1 Content of the Cumulative Effects Discussion

The cumulative impacts discussion herein will include or address the following:

- The nature of each environmental resource being examined (refer to Chapter 3).
- The location of the cumulative project and its type (refer to Chapter 2).
- The geographic scope of the area affected by the cumulative effect.
- A summary of the expected environmental effects to be produced by related projects, with specific reference to additional information stating where that information is available.
- Reasonable, feasible options for mitigating or avoiding the proposed Project's contribution to any significant cumulative effects.

4.1.2 Considerations in Cumulative Effects Analysis

An EIR may determine that a project's contribution to a significant cumulative impact will be mitigated to a less-than-significant level and thus, is not significant.

A project's contribution is less than cumulatively considerable and therefore, less than significant if the project is required to implement or fund its fair share of mitigation measures designed to alleviate the cumulative impact.

An EIR may determine that a project's contribution to a significant cumulative impact is *de minimis* and thus, not significant. A *de minimis* contribution means that the environmental conditions would essentially be the same whether or not the proposed project is implemented.

4.1.3 Significance Criteria

When considering cumulative impacts of the Project, the environmental consequences of project-related actions were evaluated, using the criteria checklist from the CEQA Guidelines, Appendix G, to determine whether implementing such actions would make a cumulatively considerable contribution to a significant cumulative impact.

The effects of project actions were evaluated in combination with the effects of other past, present and reasonably foreseeable future actions to determine whether: 1) the overall cumulative impact would be significant; and 2) the actions would considerably contribute to that overall cumulative impact. Both circumstances must exist to conclude that an environmental consequence would be cumulatively significant.

Cumulatively significant effects would do any of the following:

- Cause a significant adverse impact on a resource by exceeding a threshold of significance;
- Make a considerable contribution to the trend of an already degraded or declining resource that has experienced substantial adverse effects from other past, present or reasonably foreseeable future projects; or
- Cause an effect that was initially not significant by itself, but that would be part of a cumulatively degrading or declining future trend resulting from other reasonably foreseeable future actions.

The potential cumulative impacts that would be significant based on the criteria above may be reduced to a less-than-significant level if the proposed Project would comply with the requirements of an approved plan or mitigation program designed to reduce the proposed Project's potential incremental contribution to a cumulative effect to a level that is not cumulatively considerable. The approved plan or mitigation program must contain specific requirements that, if implemented, would avoid or substantially lessen the cumulative problem within the geographic area where the effect would occur.

4.2 RELATED PROJECTS CONSIDERED IN THE CUMULATIVE IMPACT ANALYSIS

Past, present, and probable future projects considered for the cumulative analysis in this EIR are those identified on lands generally within 2 miles of the project site. Each project considered is listed and briefly described in Table 4-1. Cumulative impacts are analyzed in Section 4.3 for each of the resource areas discussed in this EIR (Sections 3.1 through 3.18).

Table 4-1: Related Projects Considered in The Cumulative Impact Analysis

	Project Name	Location	Description
Past	K2 Pure - Chlorine Rail Transportation Curtailment Project (City of Pittsburg Project No. AP-18-1313)	950 Loveridge Road, Pittsburg	The project involved construction and operation of a new chlorine rail loading facility and associated vapor scrubber, 700-foot connecting pipeline, and dry air supply line. The 12.96-acre project site is within the Corteva facility at K2's existing Chlor-Alkali production facility. The project allowed K2 Pure Solutions (K2) to load liquid chlorine into railcars stored on site for Corteva's use when the K2 facility is offline. Railcars are loaded on site rather than delivered via railcar from Texas. The project did not result in other changes to K2's operations.
	HASA NorCal Project (City of Pittsburg Project No. AP-22-0107)	901 Loveridge Road, Pittsburg	The project involves construction and operation of a sodium hypochlorite (bleach) manufacturing and distribution facility and includes an office building with a laboratory, bleach production plant, tank farm, truck loading rack, and an eight-car parking area. The project site is within the Corteva facility.
Present	Oakstone Northern California Expansion Project (City of Pittsburg Project No. AP-23-0046)	2000 Loveridge Road, Pittsburg	The project involves expansion of an existing 31.55-acre facility to increase the existing production of liquid nitrogen, oxygen, and argon. No additional or new products would be produced. The liquid products are distributed via truck to the Bay Area, the Central Valley, and into nearby states. The products are stored in three large storage tanks, transferred into bulk trucks, and then delivered into smaller tanks at customer locations.
	Penco Ferric Chloride Manufacturing Facility (City of Pittsburg Project No. AP-23-0167)	901 Loveridge Road, Pittsburg	The proposed project would involve construction of an iron salt manufacturing facility on property leased from Corteva. The project site is within the Corteva facility. The iron salts made at the facility would ship to California's water treatment and wastewater treatment plants. Some locations are less than 20 miles from the facility
Future	San Francisco Bay Aggregates (SFBA)/Blue Planet Carbon Capture & Mineralization Facility Pilot Project (City of Pittsburg Project No. AP-19-1412)	895 E. 3rd Street, Pittsburg	The proposed project would temporarily operate a carbon capture and mineralization pilot facility. The facility would operate for up to 15 months and is intended to demonstrate the feasibility of a proprietary technology that combines carbon-dioxide (CO ₂) emissions with recycled concrete to manufacture upcycled rock products.

4.3 CUMULATIVE IMPACTS TO ENVIRONMENTAL RESOURCES

4.3.1 Aesthetics

Past and present development in the project vicinity has changed the once-pristine views of Suisun Bay, Sacramento River Delta, New York Slough, shoreline, and southern hills to an industrial landscape supported by a network of roads and railroads and some open lands. Cumulative development, including projects listed in Table 4-1, could result in impacts to aesthetic resources that could combine with the aesthetic impacts of the proposed Project. Cumulative impacts to aesthetic resources in the project area, however, would not be significant. As discussed in Section 3.1, the proposed Project would not obstruct scenic views, and the project components and changes would not be discernable from a distance. The project vicinity is mostly developed, and consists of industrial development, open lands, and a network of roadways and railroads. The proposed Project would not be discernable from a distance and would not obstruct views of Suisun Bay, Sacramento River Delta, New York Slough, shoreline, and southern hills. The proposed Project would not damage any scenic resources of the natural or built environment and would not result in substantial demonstrable impacts to visual character and quality. Lighting would be directed to the interior of the project site, would not create significant new sources of light and glare that could adversely affect day or nighttime views, and would be consistent with lighting installed on surrounding parcels. Therefore, the proposed Project would result in less-than-significant cumulative impacts to aesthetic resources.

4.3.2 Agriculture and Forestry

Implementation of the proposed Project, in combination with cumulative development projects, is not expected to result in significant impacts to agriculture and forestry resources because these resources are not present within the project area. As discussed in Section 3.2, no agriculture or forestry resources exist at the project site; therefore, the proposed Project would not contribute to any cumulative impact on agriculture or forestry resources.

4.3.3 Air Quality and Greenhouse Gas Emissions

Global climate change is, by nature, a cumulative impact. As defined in Section 15355 of the CEQA Guidelines, “cumulative impacts” refers to two or more individual effects which, when considered together, are considerable, compound, or increase other environmental impacts. The individual effects may be changes resulting from a single project or a number of separate projects. 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, and reasonably foreseeable probable future projects.

Emissions of GHG contribute, on a cumulative basis, to the significant adverse environmental impacts of global climate change (e.g., sea level rise, impacts to water supply and water quality, public health impacts, impacts to ecosystems, impacts to agriculture, and other environmental impacts). While GHG emissions from a project in combination with other past, present, and future projects contribute to the world-wide phenomenon of global climate change and the associated environmental impacts, a single project could not generate enough GHG emissions to contribute

noticeably to a change in the global average temperature. Due to the existing regulations within the State, for the purposes of this analysis, the geographic context for the analysis of GHG emissions presented in this EIR is the State of California.

According to the BAAQMD CEQA Air Quality Guidelines, the Air District’s developed thresholds of significance for climate impacts using a “fair share” approach for determining whether an individual project’s GHG emissions would be cumulatively considerable. If a project would contribute its “fair share” of what is needed to achieve the State’s long-term GHG reduction goals, then the lead agency can find that the project is adequately contributing to solving the problem of global climate change and that project’s impact is not significant. Using this approach, the BAAQMD has identified the necessary design elements (see Table 3.3-9 above) required of new land use projects and plans being built today to achieve California’s long-term climate goal of carbon neutrality by 2045. If these design elements are incorporated into the design and construction of a project, then the proposed Project would contribute its portion of what is necessary to achieve California’s long-term climate goals—its “fair share”—and a lead agency reviewing the proposed Project under CEQA can conclude that the proposed Project would not have a significant impact on the environment, or conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs, or make a cumulatively considerable contribution to global climate change.

4.3.4 Biological Resources

Many past and present projects in the project area may have contributed to the incremental loss of habitat for fish, wildlife, and plants, including special-status species and/or sensitive habitats (e.g., wetlands), thereby resulting in the potential for cumulatively significant impacts on biological resources in the project area.

Special-status plant and wildlife species have potential to occur within the project area. Noise and disruption associated with construction of the proposed Project would have the potential to impact these species. No open waters, wetlands or tidal/brackish marsh habitats occur within the project site; however, these habitats were identified in the project area. Special-status species could be present or migrating through these habitats. These habitats have the potential to be degraded from construction activities such as accidental minor spills, noise, disturbance, and/or introduction of weed species. These impacts would be mitigated through compliance with applicable federal, state, and local regulations, and the implementation of Mitigation Measures BIO-1a, BIO-1b, BIO-1c, BIO-1d, BIO-1e, BIO-1f, BIO-1g, BIO-1h, and BIO-1i. Hence, the proposed project’s contribution to biological resources impacts would not be cumulatively considerable, and these cumulative impacts would be less than significant with mitigation.

4.3.5 Cultural and Tribal Cultural Resources

The proposed Project, combined with past, present and other future projects, would potentially cause a substantial adverse change in the significance of cultural and tribal cultural resources. It is not known whether cumulative projects would also directly or indirectly destroy a unique paleontological resource or site and could disturb human remains, including those interred outside of formal cemeteries. For the purpose of this environmental analysis, this EIR conservatively

assumes that a significant cumulative impact to these resources could occur if proposed development described in Table 4-1 were to require the demolition or substantial adverse change in the significance of a built-environment historic resource, or through the inadvertent discovery of any of the above-described resources during construction of proposed future projects, all of which involve ground-disturbing activities. This would be a cumulatively significant impact.

No previously recorded historical resources have been identified within the project site. The project site is graded and much of the soil has been previously disturbed or is composed of sterile fill. Ground disturbing construction activities (e.g., grading or excavation) have the potential to result in inadvertent discovery of historic or other archeological resources or human remains. If buried historical resources are encountered during construction, disturbance could result in the loss of integrity of cultural deposits, loss of information, and the alteration of a historical site setting. Inadvertent exposure of historic-era archaeological resources in an accessible area could make the resources susceptible to vandalism. These impacts could result in a cumulatively considerable contribution to cumulatively significant impacts. These impacts would be mitigated through implementation of Mitigation Measures CR-1, CR-2, and CR-3. They would reduce the proposed Project's contribution to cumulative impacts related to cultural and tribal cultural resources to a less-than-cumulatively-considerable level, and these cumulative impacts would be less than significant with mitigation.

4.3.6 Energy

The proposed Project would require energy for the hydrogen generation and processing of waste as well as the transport of feedstocks and product. Other projects in the vicinity and in the region, particularly development projects that involve new construction of buildings and residences, would add to existing area and regional demands for energy use for lighting, space conditioning, and resident, customer and employee transportation. Combined with other development, increases in energy demand from the proposed Project could be cumulative. However, regulations applicable to projects in California have been adopted to promote and require energy efficiency. Developers of new construction projects must demonstrate in their building permit applications that the new structures would comply with Energy Efficiency Standards in Title 24 of California Building Code, to ensure that new buildings would not use energy inefficiently. Increasingly stringent emissions standards for vehicles, such as those required pursuant to California Health and Safety Code Sections 42823 and 43018.5, are intended to promote fuel efficiency in transportation. With application of these regulations and Mitigation Measures, cumulative impacts from energy usage of other projects is not anticipated to be significant.

4.3.7 Geology and Soils

Geology impacts are generally site-specific because impacts are dependent on such factors as the underlying soil and geological characteristics of a site. Cumulative development projects would be subject to applicable regulations for grading, drainage, and construction that are similar to those for the proposed Project. These measures would reduce the geologic impacts of cumulative development projects to less-than-significant levels. Construction of the proposed Project would comply with earthwork standards included in the California Building Code which addresses excavation, grading, compaction, drainage excavation, preparation of subgrade, and similar items

related to soil stability. Therefore, the proposed Project would have less-than-significant cumulative impacts on geology or soils.

4.3.8 Mineral Resources

Implementation of the proposed Project, in combination with cumulative development projects, is not expected to result in significant impacts to important mineral resources because these resources are not present within the project area. No known minerals exist at the project site; therefore, the proposed Project would not contribute to any cumulative impact on mineral resources. In addition, project construction materials that would be used are considered widely available in the region and would not result in a loss of locally important mineral resource. The proposed Project would therefore have less-than-significant cumulative impacts on mineral resources.

4.3.9 Hazards and Hazardous Materials

Impacts from hazards are generally site-specific and typically do not result in cumulative impacts. Any hazards present at surrounding development sites would be subject to the federal, state, and local regulations and requirements discussed for the proposed Project in Section 3.9. However, cumulative impacts could be significant because construction and industrial sites typically involve the use and storage of hazardous materials, which could result in upset or accident conditions creating a significant hazard to the public or the environment, or because unknown contamination could migrate downgradient to affect larger areas.

The project site was subject to Water Board Order No. R2-2002-0007; however, this is now considered closed. The proposed Project is not expected to impact cleanup actions or create any additional hazards to the public or the environment associated with cleanup activities. Construction activities have the potential to disturb or reuse soil potentially impacted with hazardous materials. Hazardous and flammable substances would be used during construction and operation such as fuels, lubricating oils, solvents, hydraulic fluid and compressed gases. Operation of the proposed Project involves conversion of a variety of organic and biomass wastes; however no hazardous waste would be accepted. The process produces renewable hydrogen and a non-hazardous vitrified slag byproduct. The possibility of encountering soil potentially impacted with hazardous materials during construction and the handling of hazardous materials associated with proposed project construction and operation has the potential to result in impacts to workers, the public and/or the environment. Compliance with federal and state regulations as well as implementation of a soil management plan would reduce potential impacts from an accidental release of hazardous materials, encounters with impacted soil and groundwater and/or disturbance/reuse of soil impacted with hazardous materials during construction. With these measures, unhealthful levels of exposure by workers or the public, or releases to the environment, would not be expected; and therefore, potential for exposure to existing hazardous materials would be less than significant. Hence, the proposed Project's contribution to cumulative hazardous materials impacts would not be cumulatively considerable, and these cumulative impacts would be less than significant with mitigation.

4.3.10 Hydrology and Water Quality

Developers of projects in the City must demonstrate, as part of their entitlement process, that their projects would comply with Provision C.3 of the Countywide Municipal Regional Permit (National Pollutant Discharge Elimination System [NPDES] Permit No. CAS612008) issued by the California Regional Water Quality Control Board. More specifically, projects must include measures to pre-treat stormwater runoff from impervious surfaces prior to discharge of the stormwater to the storm drain system, and post-construction runoff volumes cannot exceed pre-construction volumes. All cumulative projects discussed herein, including the proposed Project, that would disturb one or more acres of land during construction must also comply with regulations of the NPDES Construction Storm Water General Permit. The proposed Project would not rely on groundwater, nor would the new developments nearby.

Wastewater from the proposed Project would be treated at the proposed wastewater treatment plant to meet appropriate discharge limits, then sent to the Delta Diablo Sanitary District (DDSD) wastewater treatment facility for disposal. While the accidental release of materials during loading and unloading operations could occur, response and control plans are required by state to minimize the potential for a reduction in water quality from an accidental release. As a result, cumulative impacts of other projects on hydrology and water quality are anticipated to be less than significant due to mandatory compliance with NPDES regulations during and after construction. Although accidental spills could present an individual project impact, other hydrology and water quality impacts of the project would be reduced with compliance with water quality regulations to which cumulative projects would also be subject. Therefore, the cumulative impact on hydrology and water quality would be less than significant.

4.3.11 Land Use and Planning

Past and present development has changed the character and land uses in the project vicinity to a predominantly industrial area served by road and rail transportation networks. Because the proposed Project would be developed within an existing industrial site and would not physically divide an established community, there would be no cumulative projects that would be relevant to this potential cumulative impact. Development projects in the surrounding area would result in physical changes that would introduce new land uses in already developed areas or new land use features in areas not currently developed. Although developments would result in noticeable physical changes to the vicinity, such changes would not result in a significant cumulative land use impact because the uses would be consistent with the City of Pittsburg General Plan and Municipal Code and surrounding development. The proposed Project involves constructing and operation of an industrial facility within an area previously developed for industrial purposes. The proposed Project is consistent with existing uses and the character of the project site and vicinity. Therefore, the proposed Project would have less-than-significant cumulative land use impacts.

4.3.12 Noise and Vibration

Many past and present projects combined with future projects and ongoing uses and activities in the project area contribute to incremental increases in noise levels. Noise in the project vicinity is generated primarily from industrial activities and mobile sources associated with surrounding

roadways and railroad lines. Construction of the proposed Project and cumulative projects could increase noise in the vicinity of the project site. However, construction noise would be temporary and subject to conditions of approval requiring compliance with applicable local ordinances that limit construction noise generating activities to daylight hours. As described in Section 3.12, the nearest noise-sensitive receiver would be separated from noise and vibration generating construction activities by a distance of approximately 4,800 feet. Operation of the proposed Project would not result in a perceptible increase in ambient noise levels at the nearest noise-sensitive receiver (less than 0.1 dBA increase). Therefore, the proposed Project's noise impacts would not be cumulatively considerable, and the proposed Project would result in less-than-significant cumulative noise impacts.

4.3.13 Population and Housing

Cumulative development in the project area, including the proposed Project, would incrementally increase population and demand for housing, but not beyond levels already planned for. Development in the surrounding project area is also primarily industrial. The proposed Project involves reuse of an industrial site and does not include construction of new housing or the demolition of existing housing units. Construction workers and employees associated with operation of the proposed Project are expected to commute from surrounding communities or from within the City. Therefore, the proposed Project would result in less-than-significant cumulative impacts on population and housing.

4.3.14 Public Services

Cumulative development in the project area, including the proposed Project, would incrementally increase demand for public services, but not beyond levels anticipated and planned for by public service providers. Cumulative impacts related to public services would therefore be less than significant. The proposed Project is expected to use an existing countywide community alert system that is activated if an industrial chemical release or fire occurs. Operators of the proposed Project would maintain internal fire response teams and systems, and would be required to develop and implement site-specific emergency and spill response plans with emergency procedures. The proposed Project involves reuse of site within an area primarily developed for industrial purposes and is not expected to require additional law enforcement staff or facilities. Therefore, the proposed Project is not expected to substantially increase the need for emergency or police services. Schools, parks, and other public services would not be affected because the proposed Project would not include new housing or substantially contribute to population increases. Hence, the proposed Project would have less-than-significant cumulative impacts on public services.

4.3.15 Recreation

Cumulative development projects are expected to result in a relatively small, planned increase in population and recreational resource users, and cumulative impacts are expected to be less than significant. The use of parks within the vicinity is not likely to increase with the proposed Project, nor would the proposed Project result in physical degradation of recreational resources. The

proposed Project would not lead to increased park patronage. Therefore, the proposed Project would have less-than-significant cumulative impacts on recreational resources.

4.3.16 Transportation and Traffic

The traffic analysis accounted for growth in traffic volumes in the project vicinity based on the Contra Costa Transportation Authority (CCTA) model and the traffic growth trend described in the Pittsburg General Plan 2020. As a result, the traffic analysis included an assessment of cumulative traffic impacts. The “Cumulative with Project” considers both ambient and cumulative traffic volumes to which the proposed Project traffic volumes were added. Under this scenario, the proposed Project’s would result in less than significant impacts to all intersections and roadway segments in the project vicinity when compared to the applicable significance criteria. The Arcy Lane/Pittsburg-Antioch Highway intersection would operate at level of service (LOS) A for all movements; however, the worst minor street movement (left turns on Arcy Lane) would function at LOS E with 36.6 seconds of delay in the PM peak hour. Thresholds requiring signal warrants would not be met at this location in this scenario and thus would not violate City standards. Therefore, the proposed Project’s incremental contribution to all intersections and roadway segments in the project vicinity would not to be cumulatively considerable. No mitigation is required.

4.3.17 Utilities and Service Systems

The proposed project, along with other development in the project area, would incrementally increase demand on utilities and service systems, but not beyond levels anticipated and planned for by utility service providers. This increased demand would therefore result in less-than-significant cumulative impacts on existing utilities and service systems. The proposed Project would result in a minor increase in demand on utilities and service systems for water service, wastewater treatment, electricity, and natural gas. Stormwater and surface runoff generated on the project site would be contained and treated within the facility’s wastewater treatment plant. Solid waste would be generated by the proposed Project; however, area landfills have the capacity to accommodate the increase in solid waste, and the facility’s waste-to-hydrogen processing plant would divert solid waste by converting feedstock to a renewable fuel source. Therefore, the proposed Project would result in less-than-significant cumulative impacts on utilities and services for water service, wastewater treatment and/or capacity, stormwater management, electric and gas facilities, and/or waste disposal.

4.3.18 Wildfire

The proposed project, along with other development in the project area are not expected to substantially impact the City of Pittsburg Emergency Operations Plan (2018) and would not be located near slopes that could be unstable after wildfires. Open areas, including to the east of the Corteva industrial park may be more susceptible to wildfire during dry conditions and may expose cumulative development projects to increased fire risk. Cumulative development projects may also involve the installation of infrastructure such as power lines or other utilities that may increase fire risk. This may result in less-than-significant cumulative wildfire impacts.

Open areas that may be susceptible to wildfire during dry conditions are east of the project site and may expose the proposed Project to increased fire risk. However, the project site is not in or near a Very High Fire Hazard Severity Zone or within a State Responsibility Area. The proposed Project would be required to comply with applicable fire prevention regulations and the project site is 1.5 miles from the closest CCCFPD Fire Station (Station 83) which allows for a response time well below the acceptable limit. Therefore, the proposed Project would result in less-than-significant cumulative wildfire impacts.

4.3.19 References

- City of Pittsburg. Community Development Department. Notice of Intent to Consider Adoption of a Mitigated Negative Declaration. HASA Norcal Project. Online:
<https://www.pittsburgca.gov/home/showpublisheddocument/15534/638338184404470000>.
Site accessed November 3, 2023.
- City of Pittsburg. Planning Division. CEQA Initial Study. HASA NorCal Project. Prepared by York Engineering, LLC. October 2023. Online:
<https://www.pittsburgca.gov/home/showpublisheddocument/15536/638338184849030000>.
Site accessed November 3, 2023.

5.1 INTRODUCTION

Lead agencies are required to consider project alternatives that would lessen or avoid potential environmental impacts identified in the environmental impact report (EIR). The Alternatives Analysis chapter of the EIR is meant to consider and discuss a variety of feasible alternatives to the proposed Project that attain most of the project objectives, as required and further described in CEQA Guidelines Section 15126.6. The following chapter includes analysis of all required CEQA alternatives considerations including: the purpose of an alternatives analysis, alternatives considered but dismissed, a reasonable range of project alternatives and their associated impacts in comparison to the proposed project’s impacts, and the environmentally superior alternative.

5.2 SUMMARY OF ANALYSIS

Table 5-1: Comparing Key Environmental Impacts of Project Alternatives

Resource Area	Proposed Project	No Project Alternative	Electrolysis Alternative A	Electrolysis Alternative B	Downsize Alternative
Air Quality and GHGs	Less-Than-Significant	Similar	Similar	Similar	Similar
Agriculture & Forestry	No Impact	Similar	Similar	Greater	Similar
Biological	Less-Than-Significant with Mitigation	Fewer	Similar	Greater	Similar
Cultural	Less-Than-Significant with Mitigation	Fewer	Similar	Greater	Similar
Geo	Less-Than-Significant	Fewer	Similar	Greater	Similar
Transportation	Less-Than-Significant	Fewer	Similar	Similar	Fewer
Hazardous Substances	Less-Than-Significant	Fewer	Similar	Similar	Similar
Hydrology/Water Quality	Less-Than-Significant	Fewer	Similar	Greater	Similar
Energy	Less-Than-Significant with Mitigation	Fewer	Greater	Greater	Similar
<i>“Fewer” = Less impacts than the proposed Project</i> <i>“Similar” = Equivalent impacts to the proposed Project</i> <i>“Greater” = More impacts than the proposed Project</i>					

5.3 CONSIDERATIONS FOR ALTERNATIVES

Alternative analyses under CEQA aim to identify an alternative “...capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors...” (CEQA Guidelines Section 21061.1) that attains “most of the basic objectives of the project” (CEQA Guidelines Section 15126.6(f)).

The CEQA Guidelines provide the following guidance for discussing alternatives to a proposed project:

- 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 (CEQA Guidelines Section 15126.6(b)).
- The EIR shall briefly describe the rationale for selecting the alternatives to be discussed. The EIR shall also identify any alternatives that were considered by the Lead Agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the Lead Agency’s determination [...] Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts (CEQA Guidelines Section 15126.6(c)).
- The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison (CEQA Guidelines Section 15126.6(d)). If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed (CEQA Guidelines Section 15126.6(d)).
- The specific alternative of “no project” shall also be evaluated along with its impact. The purpose of describing and analyzing a no project alternative is to allow decision-makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. The no project alternative analysis is not the baseline for determining whether the proposed project’s environmental impacts may be significant, unless it is identical to the existing environmental setting analysis which does establish that baseline (CEQA Guidelines Section 15126.6(e)(1)).
- If the environmentally superior alternative is the “no project” alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives (CEQA Guidelines Section 15126.6(e)(2)).
- Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent)” (CEQA Guidelines 15126.6(f)(1)).

5.3.1 Project Objectives

- Develop and operate a renewable hydrogen production facility to convert waste organic feedstock to a useful product, thereby advancing California’s goal (Senate Bill (SB)1383, Assembly Bill (AB) 939) to divert organic materials from landfills and reduce landfill methane generation.

- Produce low-carbon, renewable hydrogen for use in fuel cell vehicles, particularly heavy-duty trucks and buses, as well as use in the production of renewable fuels or as a renewable heat source, thereby advancing the goals of California legislation, such as SB32, and regulatory programs, including the Low Carbon Fuel Standard (LCFS) and Advanced Clean Fleets programs.
 - Promote the local transition of heavy-duty trucks and buses to zero-emission fuel cells to reduce local emissions of harmful pollutants, including the intent to decrease local diesel PM pollution, without substantially increasing local fuel costs.
 - Reduce the carbon intensity of hydrogen feedstock supply for the Bay Area’s renewable fuels producers.
- Align with the United States Department of Transportation (USDOT) Justice40 Initiative by investing in a clean energy and energy efficient facility that would remediate and reduce legacy pollution for a community that has been historically underserved.
- Divert an average waste feedstock volume of 350 short ton per day (TPD) and a peak volume of up to 550 TPD from landfills; thereby providing an average dry feedstock volume of 220 TPD, with a peak volume of up to 250 TPD.³⁶
- Produce up to 25,000 kilograms per day of carbon-negative renewable hydrogen and up to 50 TPD of vitrified slag byproduct.
- Abate current and future greenhouse gas emissions by displacing fossil fuels and reducing landfill methane emissions.
- Generate renewable hydrogen while minimizing the use of electricity and land.

5.3.2 Impacts Identified In The EIR

5.3.2.1 Significant and Unavoidable

The EIR does not identify any resource areas with significant and unavoidable impacts from the proposed Project.

5.3.2.2 Less Than Significant with Mitigation

Potential significant environmental impacts that have been identified as requiring mitigation to reduce impacts of the proposed Project to less-than-significant levels include the following:

- Air Quality and Greenhouse Gas Emissions

³⁶ The balance of mass volume is evaporated as moisture or returned to the feedstock supplier for recycling or landfilling.

- AQ-1: Would the proposed Project conflict with or obstruct implementation of the applicable air quality plan.
- AQ-5: Would the proposed Project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, or conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.
- Biological Resources:
 - BIO-1: Cause substantial adverse impacts to special-status species identified by the USFWS, California Department of Fish and Wildlife (CDFW), or NMFS due to Project Development.
 - BIO-2: Disturbance or loss of sensitive natural communities or State and Federally protected wetlands.
 - BIO-3: Interfere with wildlife migratory corridors or nursery sites.
- Cultural and Tribal Cultural Resources:
 - CR-1: Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5e.
 - CR-2: Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5.
 - CR-3: Potentially disturb human remains, including those interred outside of formal cemeteries.
- Energy:
 - ENG-1: The proposed Project could result in increased energy consumption, but not in large amounts or in a wasteful manner.
 - ENG-2: The proposed Project could conflict with or obstruct a state or local plan for renewable energy or energy efficiency.
- Geology
 - GEO-1: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving a) rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? b) strong seismic ground shaking? c) seismic-related ground failure, including liquefaction? d) landslides?

5.3.2.3 **Less Than Significant or No Impact**

The proposed Project would result in no impact or a less-than-significant impact related to the following resource areas:

- Aesthetics
- Agriculture and Forestry
- Mineral Resources
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise and Vibration
- Population and Housing
- Public Services
- Recreation
- Transportation and Traffic
- Utilities and Service Systems
- Wildfire

This EIR identifies environmental effects as either “no impact,” “less-than-significant,” “less-than-significant with mitigation,” or “potentially significant.”

For the purposes of this alternatives analysis, the following resources areas are not considered in the discussion on project alternatives:

- Aesthetics
- Agriculture and Forestry
- Cultural and Tribal Cultural Resources
- Geology/Soils
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire

5.4 **SELECTION OF ALTERNATIVES**

In accordance with CEQA Guidelines Section 15126.6(c), this section identifies all reasonable alternatives considered by the lead agency during the scoping process, as well as the alternatives rejected based on feasibility and adherence to the “rule of reason.”

5.4.1 Alternatives Considered in the EIR

- No Project Alternative
- Electrolyzer Alternative A
- Electrolyzer Alternative B
- Downsize Alternative
- Off-Site Alternative
- Waste & Hydrogen by Rail Alternative

5.4.2 Alternatives Dismissed from Further Analysis

Per CEQA Guidelines, alternatives are only considered in depth if they are a feasible solution to reduce or eliminate potentially significant impacts, while still satisfying key project objectives. As stated in CEQA Guidelines Section 15126.6(c), among the criteria that may be used to eliminate alternatives from detailed consideration in an EIR are:

- failure to meet most of the basic project objectives,
- infeasibility, or
- inability to avoid significant environmental impacts.

5.4.2.1 Off-Site Alternative

It is common for CEQA to review an Off-Site Alternative at a separate location to the proposed Project. Finding an alternative site poses many issues that could result in significant unavoidable impacts or impacts that would require mitigation not currently present in the proposed Project scenario. Transitioning away from the previously disturbed, heavily industrial nature of the proposed project site would likely trigger more substantial impacts to key environmental resource areas such as biological resources, cultural resources, aesthetics, agriculture and forestry resources, and land use.

In addition, the Off-Site Alternative would not attain key goals of the proposed Project such as reducing local truck emissions in and around the city of Pittsburg (City) or adhering to the USDOT Justice40 Initiative meant to directly benefit historically underserved communities with jobs, environmental benefits and funding. Therefore, the alternatives analysis dismisses the Off-Site Alternative for failing to meet basic project objectives and introducing new potentially significant impacts and less-than-significant impacts.

5.4.2.2 Waste & Hydrogen by Rail Alternative

The proposed Project discusses all transportation of waste and hydrogen as carried via class 8 truck, which is standard in both industries. The potential for delivery and export via rail has the added benefit of significantly fewer truck trips to and from the project site. However due to the close proximity of waste feedstock (within 80 miles or less) it is impractical and inefficient to transfer such low volumes of waste via rail because of the additional need for intermodal loading and unloading facilities and infrastructure. The logistical challenges of facilitating waste transportation by rail can be demonstrated by the Los Angeles County Sanitation Districts \$500 million project to establish a

waste-by-rail system to dispose of waste in an Imperial County landfill, which began in 1988 and has yet to be finished. Thus, waste-by-rail is economically infeasible and not further considered as a viable alternative.

Hydrogen is currently not transported by rail anywhere in the United States, making hydrogen-by-rail technologically infeasible and impractical to consider as an alternative.

5.5 ALTERNATIVES CONSIDERED IN THIS EIR

CEQA requires the evaluation of the comparative impacts of the “No Project” alternative (CEQA Guidelines Section 15126.6[e]). Analysis of the no project alternative shall:

“... discuss [...] existing conditions [...] as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.” (Id., subd. [e][2]) “If the project is other than a land use or regulatory plan, for example a development project on identifiable property, the ‘no project’ alternative is the circumstance under which the project does not proceed. Here the discussion would compare the environmental effects of the property remaining in the property’s existing state versus environmental effects that would occur if the project were approved. If disapproval of the project under consideration would result in predictable actions by others, such as the proposal of some other project, this ‘no project’ consequence should be discussed. In certain instances, the no project alternative means ‘no build,’ wherein the existing environmental setting is maintained. However, where failure to proceed with the project would not result in preservation of existing environmental conditions, the analysis should identify the practical result of the project’s non-approval and not create and analyze a set of artificial assumptions that would be required to preserve the existing physical environment.” (Id., subd. [e][3][B]).

The following subsections include an overview providing background related to this alternative, a description of this alternative, an evaluation of the alternative’s consistency with project objectives, an impact comparison analysis and economic feasibility analysis.

5.5.1 No Project Alternative

5.5.1.1 Description

The No Project Alternative assumes the baseline condition of the project site would remain in its current condition largely underutilized and consisting of storage for industrial equipment, rail and idled infrastructure. Given the industrial zoning and potential for redevelopment, the current condition baseline is a conservative estimate for evaluating alternative project impacts.

5.5.1.2 Consistency with Project Objectives

The No Project Alternative would continue the limited industrial storage use indefinitely. Under this use, no municipal solid waste would be diverted from landfill to aid SB1383's goal of reducing methane emissions. Renewable hydrogen would not be produced for clean transportation or renewable fuels that supports the reduction of air pollution and GHG emissions, which is aligned with multiple goals and policies in the City's existing and updated General Plan and draft Sustainability Plan. In addition, without the proposed Project, there would be no funding or community benefits to support the USDOT Justice40 Initiative benefiting the City. Therefore, the No Project Alternative would fail to meet all the of the proposed project's objectives.

5.5.1.3 Impacts of Alternative

- *Air Quality and GHG Emissions:* Little to no air pollutants or GHG emissions would result from the No Project Alternative.
- *Biological:* No biological resources would be impacted in the No Project Alternative.
- *Transportation:* Only existing, sporadic traffic would impact transportation in the No Project Alternative.
- *Hazards and Hazardous Materials:* No additional hazardous resources would be introduced to the site in the No Project Alternative.
- *Hydrology/Water Quality:* No new water quality concerns would be present as the site would remain in its current condition in the No Project Alternative.
- *Energy:* No energy impacts would result from the No Project Alternative.

5.5.2 Electrolysis Alternative A

5.5.2.1 Description

Electrolysis is an alternative method to produce “green” hydrogen and can enable low-to-zero carbon emission hydrogen, depending on the source of the electricity input. Using an electricity-intensive process, electrolyzers separate highly purified water into hydrogen and oxygen gases. Large-scale hydrogen production using electrolysis is expected to become more widespread in the near/medium-term, but it is a nascent market with approximately 700 MW of global electrolyzer capacity³⁷, which is capable of producing approximately 300,000 kg/day of hydrogen³⁸. The proposed Project will be capable of producing up to 25,000 kg/day of hydrogen, which represents a meaningful contribution to existing global green hydrogen production capacity and helps meet the growing demand for low-carbon energy products.

³⁷ <https://www.iea.org/energy-system/low-emission-fuels/electrolysers>

³⁸ Assumes 50 kWh/kg electrolyzer efficiency.

Considering the importance of electricity supply to the electrolysis process, this alternatives analysis will breakdown two electrolysis scenarios:

- The electrolyzer is located at the proposed project site powered by either grid power or a power purchase agreement (PPA) utilizing remote renewable energy; and
- The electrolyzer is located in a rural location in central California and utilizes direct connection to a 300 MW solar generation project with energy storage.

Scenario A is outlined in 5.5.2 and scenario B is outlined below in 5.5.3.

In order to accurately assess the feasibility of Electrolysis Alternative A, which depends on utility grid power, a brief summary of electrical power inputs is warranted. According to the 2023 PG&E Industrial B-20 rate schedule, the lowest average “bundled total rate” is \$0.20 per kWh. Given that electrolysis projects consume³⁹ 50-55 kWh/kg H₂, this translates to an electricity cost of \$10-11/kg H₂. After factoring for CAPEX and other O&M expenses, Electrolysis Alternative A would need to sell hydrogen for \$10-15/kg or higher, which represents a premium over conventional natural-gas based hydrogen using steam methane reforming (SMR) currently produced for approximately \$2-3/kg in California.

Large energy loads often sign PPAs to attribute some or all of a renewable energy generators production to a single load source when the supply and demand are built in different locations. While this is potentially possible for Electrolysis Alternative A, the cost for transmission and delivery (T&D) charges across hundreds of miles of PG&E’s electrical infrastructure would add prohibitive costs to the overall delivered price of electricity. Even an aggressive T&D charge of \$0.08/kWh on top of \$0.05/kWh renewable energy would equate to \$6.50/kg H₂ electricity costs. In California, our conclusion is that electrolysis projects are not economically feasible in urban, semi-urban or suburban areas due to extremely high electricity costs and lack of sufficient land for renewable energy generation.

As a comparison, the proposed Project would only consume 15-20 kWh/kg which translates to a maximum electricity cost of \$3-4/kg, which is \$7-8/kg lower than the scenario in Electrolysis Alternative A. The proposed Project aims to primarily sell hydrogen into the heavy-duty truck and bus fuel market. In terms of “diesel gallon equivalents” (DGE), a cost reduction of \$7-8/kg hydrogen equates to a cost reduction of \$7-10/DGE⁴⁰, which is highly impactful given that 2022 California diesel retail prices averaged \$6.03/gal⁴¹.

5.5.2.2 Consistency with Project Objectives

Electrolysis Alternative A fails to attain several key project objectives. First, the alternative project does not divert organic waste away from landfills and reduce overall methane emissions from waste disposal. This is a fundamental goal of both the proposed Project and California state policy under SB 1383 that is in need of effective diversion methods. Without organic waste diversion, Electrolysis

³⁹ <https://www.energy.gov/eere/fuelcells/technical-targets-proton-exchange-membrane-electrolysis>

⁴⁰ Assume 6.0-6.5 miles/gallon of diesel and 6.0-7.5 miles/kg of hydrogen.

⁴¹ California No 2 Diesel Retail Prices (EIA 2022)

Alternative A significantly reduces the overall methane emissions reduction compared to the proposed Project.

Electrolysis Alternative A also fails to minimize the electricity usage of renewable hydrogen production. Modern electrolyzer technology utilizes approximately 51 kWh/kg of hydrogen production. Hydrogen only has an energy content of 33.3 kWh/kg⁴², hence an electrolyzer project is a net-destroyer of electricity and requires more energy to produce the hydrogen fuel than energy that is retained in the final fuel product. Compared to the proposed Project (which would consume 15-20 kWh/kg), Electrolysis Alternative A does not minimize electricity input. As a result, the Electrolysis Alternative greatly increases electricity usage by requiring 2.5-3.5x more electricity per kilogram of hydrogen produced than the proposed Project.

5.5.2.3 Impacts of Alternative

- Air Quality and GHG Emissions:
 - Truck Trip Emissions - Truck trips would no longer be needed to deliver waste feedstock. Consumables and other material deliveries are expected to be similar to the proposed Project. Hydrogen tube trailer truck trips would be similar to the proposed Project. The overall distance traveled attributable to truck trips is expected to be similar, assuming Electrolysis Alternative A is located at the proposed project site. As with the proposed Project, air quality and GHG emission impacts are anticipated to be less-than-significant with mitigation.
 - Process Air Emissions - The production process for Electrolysis Alternative A would result in lower process air emissions due to differences in technology; however indirect emissions from electricity generation would be 2.5-3.5x higher than the proposed Project due to the unavailability of substantial renewable energy to power the electrolyzer. Similar to the proposed Project, the Air Quality and GHG Emissions impacts from operations are anticipated to be less-than-significant.
- *Biological*: Assuming Electrolysis Alternative A would be located at the same site, there would be little to no change in potential impacts on biological resources, given the nature of the site and similar project footprint.
- *Transportation*: Electrolysis Alternative A would not be receiving waste, thus potentially reducing the impact from waste truck traffic near the project site. Since traffic would be reduced but not eliminated, the alternative is expected to result in a less-than-significant impact, similar to the proposed Project.
- *Hazards and Hazardous Materials*: Electrolysis Alternative A may have similar or fewer supplies of consumable chemicals and gaseous hydrogen on site as the proposed Project and therefore could potentially meet the less-than-significant impact designation.

⁴² Hydrogen's lower heating value.

- *Water Quality:* Electrolysis Alternative A is not expected to vary significantly in wetland impacts on site or adjacent to the proposed Project. Both projects are expected to cause a less-than-significant impact.
- *Energy:* Electrolysis Alternative A would consume 2.5-3.5x more electricity than the proposed Project, significantly increasing the impact on electricity demand during project operations.

5.5.3 Electrolysis Alternative B

5.5.3.1 Description

The Electrolysis Alternative B shares similarities and impacts to Electrolysis Alternative A above, however, Electrolysis Alternative B assumes a low-to-zero carbon emission profile powered entirely with co-located renewable energy, such as wind, solar or hydropower electricity, instead of a standard utility grid mix. An electrolyzer project with co-located solar power that produces the equivalent hydrogen output as the proposed Project would require more than 1,000 acres⁴³, which is only viable in rural California areas, and not a feasible project alternative in/near Pittsburg. Therefore, Electrolysis Alternative B is assumed to be located generally in central California, not the City. Apart from the project location and electricity source, Electrolysis Alternative B shares all other project features with Electrolysis Alternative A.

5.5.3.2 Consistency with Project Objectives

Electrolysis Alternative B fails to divert organic waste away from landfills, reduce overall methane emissions from waste disposal, minimize the electricity and land use intensity of renewable hydrogen production and support the Justice40 Initiative by making clean energy investments in the City. Refer to 5.5.b for more information on the electrolysis alternatives consistency with project objectives.

5.5.3.3 Impacts of Alternative

- Air Quality and GHG Emissions:
 - Truck Emissions - Truck trips would no longer be needed to deliver waste feedstock. Consumables and other material deliveries are expected to be similar to the proposed Project. Hydrogen tube trailer truck trips would be similar to the proposed Project; however, overall distance traveled is expected to increase significantly compared to the proposed Project due to the remote location of Electrolysis Alternative B in central California. Air quality and GHG emission impacts related to truck trips are anticipated to be less-than-significant, which is comparable to the proposed Project.
 - Process Air Emissions - The production process for Electrolysis Alternative B would result in lower process air emissions due to differences in technology. The Air Quality

⁴³ Assumes 80 MW of electrolysis capacity powered by 200 MW solar PV and batteries to produce 25,000 kg/day; assumes solar PV requires 5-6 acres per 1 MW capacity.

and GHG Emissions from the production process are anticipated to be less-than-significant reflecting a reduced impact relative to the proposed Project.

- *Biological:* Assuming Electrolysis Alternative B would be located on greenfield land in rural California, there could be a high likelihood for significant and unavoidable impacts to sensitive biological habitats or species due to needing 1,000+ acres of land for renewable energy to power the electrolyzer. This is a substantial increase in potential impacts relative to the proposed Project.
- *Transportation:* Electrolysis Alternative B would not be receiving waste, thus potentially reducing the impact from waste truck traffic near the alternative project site. In addition, electrolyzers powered by renewable energy typically operate intermittently when renewable energy is available, which would further reduce the truck traffic during periods of non-operation throughout the day. Electrolysis Alternative B would not reduce all traffic impacts and would therefore share the less-than-significant designation with the proposed Project.
- *Hazards and Hazardous Materials:* Electrolysis Alternative B may have similar or fewer supplies of consumable chemicals and gaseous hydrogen on site as the proposed Project and therefore could potentially meet the less-than-significant impact designation.
- *Hydrology/Water Quality:* Assuming Electrolysis Alternative B would be located on greenfield land in rural California, Electrolysis Alternative B has the increased potential to cause significant impacts to local, state or federal wetlands.
- *Energy:* The energy demands from Electrolysis Alternative B would be 2.5-3.5x more than the proposed Project and developing renewable energy projects specifically for electrolysis presents a potential concern that the energy generated is not going to a more efficient use, such as for grid power for homes and businesses.

5.5.4 Downsize Alternative

5.5.4.1 Description

CEQA Guidelines do not prescribe a downsize threshold for evaluating project alternatives, however, for the purposes of this analysis, it is assumed the Downsize Alternative processes 50 percent of the MSW feedstock and therefore produces 50 percent of the hydrogen output. While the throughput of material is reduced, the design of the OMNI waste conversion unit is not assumed to be reduced because there is no viable alternative size offered by OMNI CT.

System size reduction of 50 percent does reduce capital cost, however, it also decreases the capital efficiency (i.e., it increases the capital cost per kg/day of hydrogen production capacity) because the fixed costs of development, permitting and engineering would not decrease significantly, and the OMNI system cost would not decrease significantly, as described above. Diseconomies of scale would render the facility financially infeasible because the required sales price for the hydrogen produced would be too high to attract buyers.

5.5.4.2 Consistency with Project Objectives

The Downsize Alternative does meet all project objectives, however to a significantly lesser extent.

5.5.4.3 Impacts of Alternative

- **Air Quality and GHG Emissions:** It's anticipated the Downsize Alternative would reduce process air emissions due to emission sources such as the boiler operating at reduced capacity, however, because the majority of process emissions occur during startup of the OMNI waste conversion unit, the reduced project size would not have a proportional reduction in process emissions. The reduced throughput would decrease the truck trips and related emissions proportionally with the downsize. As a result of reduced waste throughput, the Downsize Alternative would reduce avoided landfill methane emissions, which would increase regional GHG emissions from landfills. Overall, the Downsize Alternative would not vary significantly from the impacts of the proposed Project.
- **Biological:** The Downsize Alternative would lead to less utilization of the project site, however, due to the pre-disturbed, industrial nature of the site, the reduction in project acreage would have a minimal effect on the potential environmental impacts and would not vary significantly from the impacts of the proposed Project.
- **Transportation:** The Downsize Alternative would reduce the overall truck traffic proportionally to the throughput reduction. The reduced capacity would not entirely eliminate all truck traffic and would therefore not vary significantly from the potential impacts of the proposed Project.
- **Hazards and Hazardous Materials:** The Downsize Alternative would reduce but not eliminate the amounts of consumables and hydrogen on site. Thus, the Downsize Alternative would likely still result in less-than-significant impact.
- **Hydrology/Water Quality:** The Downsize Alternative would not substantially alter impacts to wetlands or other hydrological resources. Therefore, the Downsize Alternative would not vary significantly from the impacts of the proposed Project.
- **Energy:** The Downsize Alternative would reduce but not eliminate the electrical load when compared to the proposed Project. The reduced capacity would not vary significantly from the impacts of the proposed Project.

5.6 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

An EIR is required to identify the environmentally superior alternative from among the range of reasonable alternatives that are evaluated. The environmentally superior alternative is generally the alternative that would be expected to generate the least amount of significant impacts. Identification of the environmentally superior alternative is an informational procedure and the alternative selected may not be the alternative that best meets the goals or needs of the City.

Section 15126(e)(2) of the CEQA Guidelines requires that an environmentally superior alternative be designated and states, “If the environmentally superior alternative is the ‘no project’ alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.” All of the potential impacts identified for the proposed project would not occur or would be fewer under the No Project Alternative. Thus, the No Project Alternative would be considered the environmentally superior alternative. However, given that a ‘no project’ alternative shall not be selected as the environmentally superior alternative, an environmentally superior alternative among the other alternatives should be chosen.

The Electrolysis Alternatives A and B would reduce some environmental impacts such as truck traffic, however, the electrolysis alternatives would create potentially significant impacts related to energy usage and land use (particularly Electrolysis Alternative B) and could impact biological, cultural and water quality resources much more than the proposed Project.

The Downsize Alternative would obtain reduced benefit from the proposed project objectives, while minimizing the environmental impacts of the proposed Project and avoiding additional impacts.

In accordance with CEQA Guidelines, the Downsize Alternative case is therefore the environmentally superior alternative, in lieu of the No Project Alternative, which would reduce all proposed project impacts completely, but is prohibited from being deemed the environmentally superior alternative.

This chapter includes an evaluation of other topics that are required to be considered in an environmental impact report (EIR) in accordance with CEQA Guidelines Section 15126.2, including:

- Growth-inducing impacts;
- Significant irreversible environmental changes; and
- Significant and unavoidable impacts

6.1 GROWTH-INDUCING IMPACTS

CEQA Guidelines Section 15126.2(d) requires that an EIR include an evaluation of the growth-inducing impacts of a proposed project. This should include an evaluation of the way 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. The evaluation should also consider whether a project would remove obstacles to population growth or encourage and facilitate other activities that could significantly affect the environment.

The proposed Project would involve construction and operation of a renewable hydrogen facility on vacant land previously used for industrial purposes. The proposed Project would not include any retail, commercial, or residential uses. Project construction is expected to last approximately 18 to 24 months and involve 150 to 225 on-site workers. This number of short-term employees would not be considered significant in terms of overall employment in the county. Project operation is expected to require approximately 30 full-time employees that would commute from surrounding communities or from within the City itself. For these reasons the proposed Project is not expected to add a substantial number of residents who would require additional housing. The proposed Project would not involve other growth-inducing effects, such as a significant road extensions or expansions of utility services. Therefore, the proposed Project is not expected to result in new regional population or employment growth or result in significant indirect or direct growth-inducing impacts.

6.2 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

CEQA Guidelines Section 15126.2(c) requires that an EIR include consideration of significant irreversible environmental changes that would result from implementation of a proposed project. A significant and irreversible environmental change may result from:

- A large commitment of nonrenewable resources during the initial and continued phases of the project that makes removal or nonuse of such resources thereafter unlikely;
- Primary impacts and secondary impacts (such as a highway improvement which provides access to a previously inaccessible area) that generally commit future generations to similar uses; and
- Irreversible damage from environmental accidents associated with the project.

CEQA Guidelines Section 15126.2(d) indicates that irretrievable commitments of resources should be evaluated to confirm that consumption of resources is justified.

The proposed Project would likely result in, or contribute to, the following significant irreversible environmental changes:

- Building materials derived from nonrenewable sources would be permanently consumed (e.g., steel, concrete); however, some materials may be partly recyclable in the future.
- Reuse of vacant land previously used for industrial purposes may preclude alternative land uses in the future; and
- Consumption of energy and natural resources, such as water, electricity, and natural gas, associated with construction and operation. However, the proposed Project would result in the reuse of municipal solid waste that might otherwise be directed to municipal landfills, and the production of hydrogen that might otherwise be produced using processes that consume more energy and natural resources.

6.3 SIGNIFICANT, UNAVOIDABLE ENVIRONMENTAL IMPACTS

CEQA Guidelines Section 15126.2(b) requires that an EIR include a discussion of impacts identified as significant and unavoidable should the proposed Project be implemented. An impact is considered unavoidable if mitigation or alternative designs would not reduce the impact to a level of insignificance.

Based on the analysis presented in this EIR all potential impacts of the proposed Project could be eliminated or reduced to a less-than-significant level through the implementation of mitigation measures imposed by the City. The final determination of the significance of impacts and the feasibility of mitigation measures would be made by the City as part of the City's certification action.

7.1 CITY OF PITTSBURG

John Funderburg
Assistant Director of Community and Economic Development

Alison Hodgkin
Associate Planner

7.2 HC (CONTRA COSTA), LLC

Peter Brydon
Development Manager

Taylor Huff
Project Director

Megan Good
Development Manager

7.3 TRC COMPANIES

Peter T. Masson
EIR Author; Project Manager

Paula DeMichele
Utilities and Services, Aesthetics, Agriculture, Public Services; Project Quality Control

Christopher Wolf
Cumulative Impacts; Senior CEQA Review

Stephen V. Huvane, PE
Technical Lead, Noise and Vibration

Gary Lieberman, CEM
Technical Lead, Hazards and Hazardous Materials

Michael Riley
Technical Lead, Air Quality and Greenhouse Gases

Richard Burke
Technical Lead, Energy

Taylor Higgins
Technical Lead, Biological Resources

Matthew J. Wetherbee, MSc., RPA
Technical Lead, Archeological, Historic, and Tribal Cultural Resources

Susan Talcott
Principal Investigator - Cultural Resources

Laura D. Tait, GIT
Geology and Soils; Hydrology and Water Quality Analysis

Matthew J. Wetherbee, MSc., RPA
Technical Lead, Archeological, Historic, and Tribal Cultural Resources

Mike Selwood
Technical Lead, Hydrology and Water Quality

Francine Conti
Technical Lead, Land Use and Planning, Population and Housing, Recreation

Julie Eldridge
Technical Lead, Transportation and Traffic

Lucy Lin
Senior Advisor, Transportation and Traffic

Sergio Ray
Mapping and GIS Services

7.4 GEOENGINEERS, INC.

Energy, Air Quality and Greenhouse Gas Analysis

7.5 AGENCIES AND ORGANIZATIONS CONSULTED

California Department of Fish and Wildlife (CDFW)

Bay Area Air Quality Management District (BAAQMD)

San Francisco Bay Conservation and Development Commission (BCDC)

California Department of Transportation (Caltrans)

California Department of Toxic Substances Control (DTSC)

East Contra Costa County Habitat Conservancy (ECCC HCP/NCCP)

Regional Water Quality Control Board (RWQCB)

United States Army Corps of Engineers (USACE)

United States Environmental Protection Agency (EPA)

United States Fish and Wildlife Service (USFWS)

Metropolitan Transportation Commission (MTC)

California Department of Resources, Recycling, and Recovery (Cal Recycle)

East Bay Regional Park District (EBRPD)

California Office of Historic Preservation (OHP)

California Department of Conservation (DOC)