Greenhouse Gas Emissions Assessment
Vallejo Ferry Terminal Reconfiguration Project
City of Vallejo, California

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LIST OF ABBREVIATED TERMS

AB	Assembly Bill
BAAQMD	Bay Area Air Quality Management District
CARB	California Air Resource Board
CCR	California Code of Regulations
CalEEMod	California Emissions Estimator Model
CEQA	California Environmental Quality Act
CALGreen	California Green Building Standards
CPUC	California Public Utilities Commission
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CFC	Chlorofluorocarbon
EPA	Environmental Protection Agency
FCAA	Federal Clean Air Act
FR	Federal Register
GHG	greenhouse gas
HCFC	Hydrochlorofluorocarbon
HFC	Hydrofluorocarbon
LCFS	Low Carbon Fuel Standard
CH_4	Methane
$MMTCO_2e$	million metric tons of carbon dioxide equivalent
$MTCO_2e$	million tons of carbon dioxide equivalent
NHTSA	National Highway Traffic Safety Administration
NF_3	nitrogen trifluoride
N_2O	nitrous oxide
PFC	Perfluorocarbon
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SB	Senate Bill
SF_6	sulfur hexafluoride
TAC	toxic air contaminants

1 INTRODUCTION

This section describes effects on climate change and greenhouse gas (GHG) emissions that would be caused by implementation of the Vallejo Ferry Terminal Reconfiguration Project (Project). The study area for climate change and the analysis of GHG emissions is broad because climate change is influenced by world-wide emissions and their global effects. However, the study area is also limited by the CEQA Guidelines [Section 15064(d)], which directs lead agencies to consider an "indirect physical change" only if that change is a reasonably foreseeable impact that may be caused by the Project. This analysis limits discussion to those physical changes to the environment that are not speculative and are reasonably foreseeable.

1.1 PROJECT LOCATION

The Project site is located at 289 Mare Island Way in the City of Vallejo (City), Solano County, California. The Project includes the existing Vallejo Ferry Terminal, which consists of a steel float structure, aluminum gangway, and covering. The Project site is accessible by vehicle via Mare Island Way, and by ferry. See Figure 1: Regional Location and Figure 2: Vicinity Map.

Additional uses in this area along the Mare Island Strait include the Vallejo Tourism Information Center and commercial retail uses to the east and northeast, Independence Park to the southeast, Barbara Kondylis Waterfront Green to the northwest, a currently vacant office building to the south, and parking areas surrounding the site. Parking is currently provided to the east within waterfront parking lots on the eastern side of Mare Island Way, across the street from terminal site. The existing parking lots and garage areas adjacent to the proposed Project site accommodate Vallejo Ferry Terminal and Transit Center passengers and employees, guests and employees of the Tourism Information Center building and surrounding restaurants, and public users.

1.2 PROJECT DESCRIPTION

The proposed Project would be located on the eastern shore of the Mare Strait, within the footprint of the existing ferry terminal and basin area. The proposed terminal would remove and replace 5,322 square feet (sf) of existing gangway, passenger float, and piles with a new reconfigured gangway, passenger float, and piles. The new Water Emergency Transportation Authority (WETA) Standard float would be approximately 134.5 feet by 42 feet and would accommodate both sides of the float for passenger loading and unloading. No new structures are proposed. Passenger waiting areas would be located along a portion of the San Francisco Bay Trail in a designated outdoor queuing area adjacent to the proposed gangway entry gate. Figure 3: Project Site Plan -- Preferred Project, Figure 4: Project Site Plan -- Configuration Option 1, and Figure 5: Project Site Plan -- Configuration Option 2 depict the overall site plan of each alternative for the proposed Project.

The Project site is zoned as Waterfront Mixed-Use and is located in an urban area with a mix of uses including recreational, commercial, office, and medium to high density residential uses. The surrounding project site is designated under the Parks, Recreation, and Open Space land use, and is zoned Waterfront Mixed-Use.

Construction is anticipated to begin in Summer 2025 with an anticipated completion date of late Winter 2025. Construction methods would include demolition of the existing piles, gangway, and float, site

preparation, ground improvements, utility installation or reconfiguration, Bay fill removal (existing piles), and placement for installation of pilings for the new float and donut fenders, and fixed pier support.

The proposed Project would not result in any changes to the existing operational uses of the Project site. The proposed Project would result in the reconfiguration of the existing ferry terminal. Therefore, the proposed facilities would have the same uses that are currently used for standard WETA ferry operations that transport passengers to San Francisco Bay ferry terminals.

Source: ESRI, 2023

Figure 1: Regional Map

WETA Vallejo Ferry Terminal Reconfiguration Project

Not to scale

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Source: Nearmap, 2023

Figure 2: Vicinity Map

WETA Vallejo Ferry Terminal Reconfiguration Project

Not to scale

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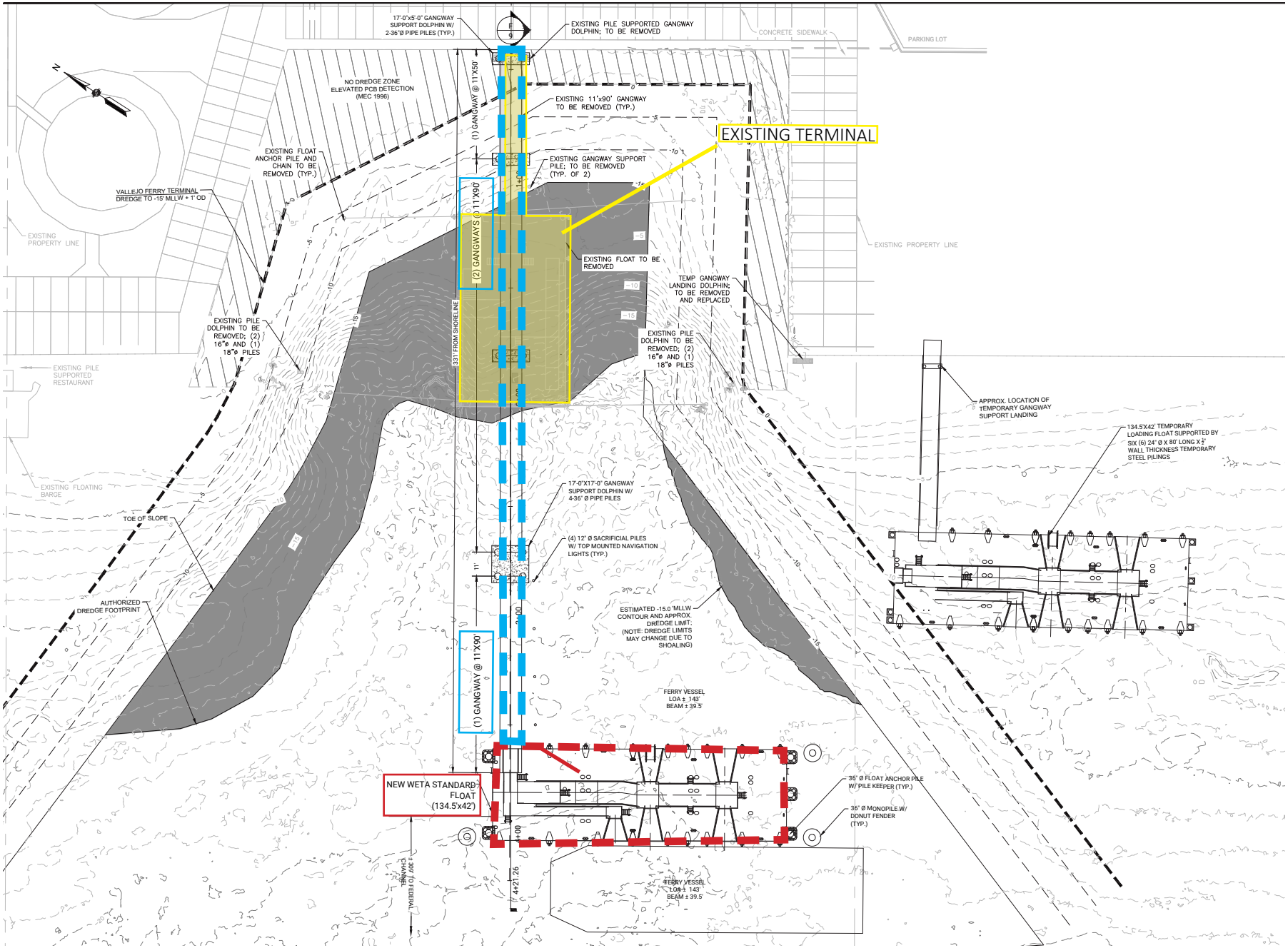

Source: Foth, 2023

Figure 3: Project Site Plan -- Preferred Project

WETA Vallejo Ferry Terminal Reconfiguration Project

Not to scale

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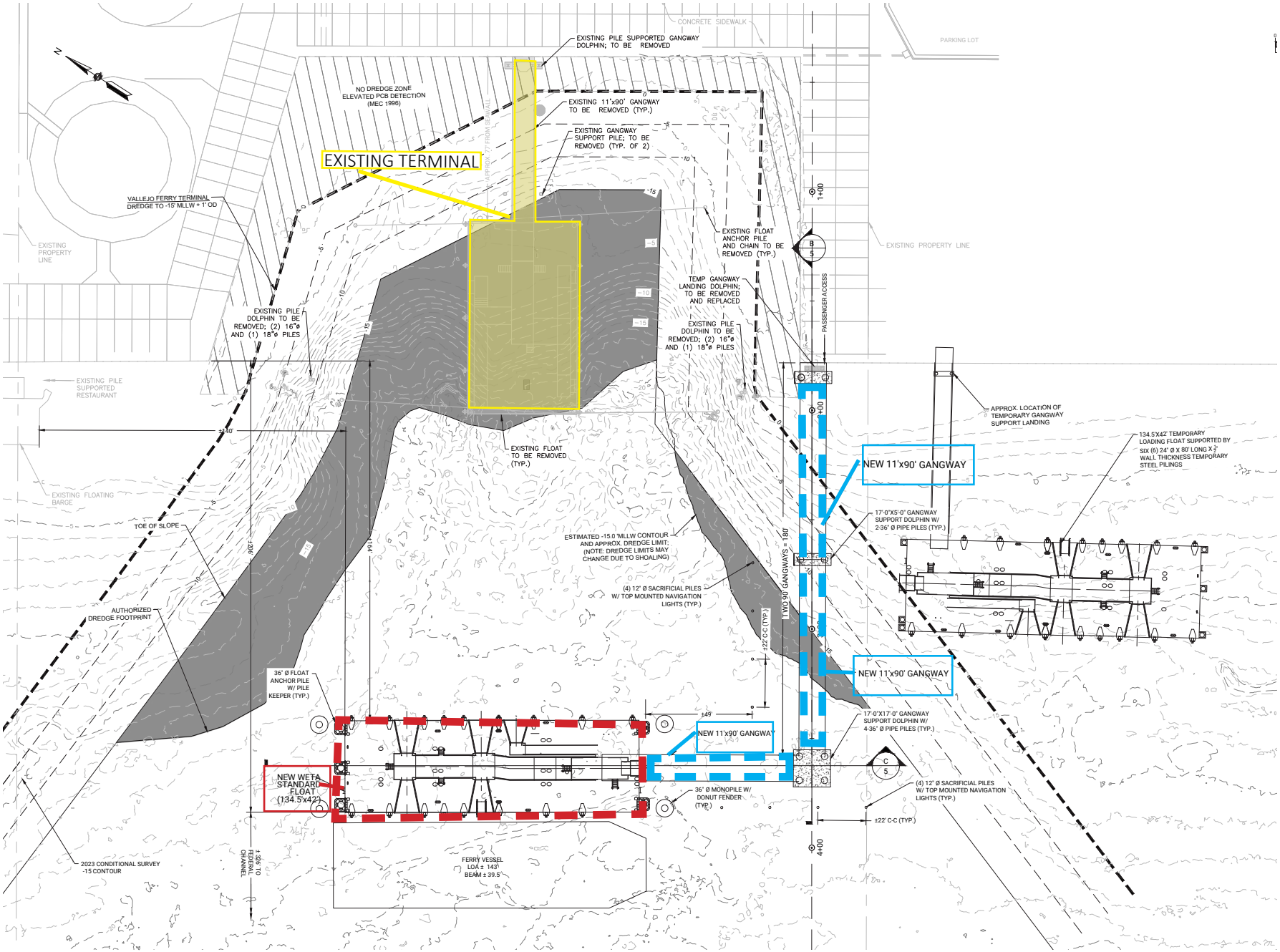

Source: Foth, 2023

Figure 4: Project Site Plan -- Configuration Option 1

WETA Vallejo Ferry Terminal Reconfiguration Project

Not to scale

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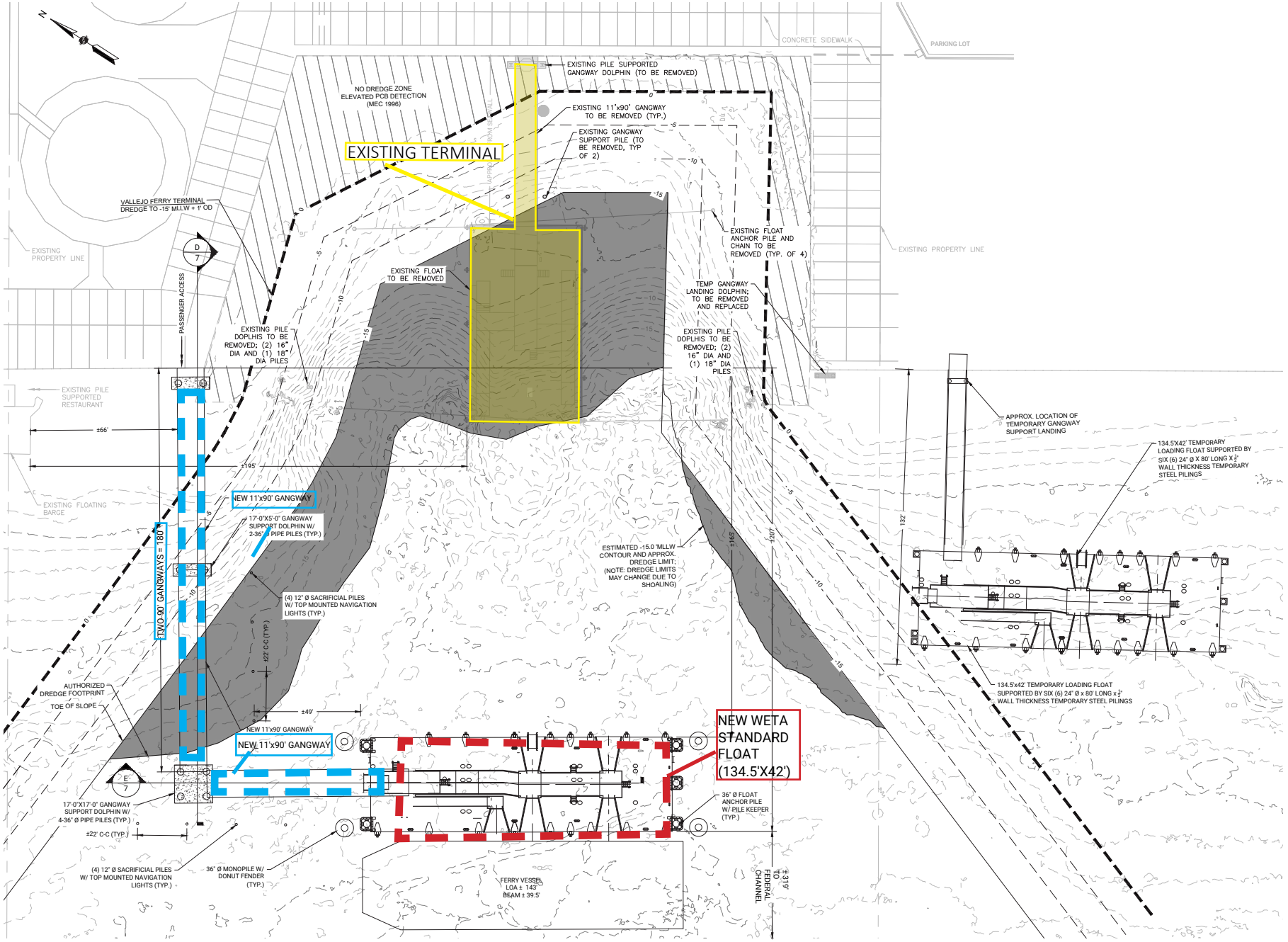

Source: Foth, 2023

Figure 5: Project Site Plan -- Configuration Option 2

WETA Vallejo Ferry Terminal Reconfiguration Project

Not to scale

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2 ENVIRONMENTAL SETTING

2.1 GREENHOUSE GASES AND CLIMATE CHANGE

Certain gases in the earth's atmosphere classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface and a smaller portion of this radiation is reflected toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. Because the earth has a much lower temperature than the sun, it emits lower-frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth.

The primary GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Fluorinated gases also make up a small fraction of the GHGs that contribute to climate change. Examples of fluorinated gases include chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3); however, it is noted that these gases are not associated with typical land use development. Human-caused emissions of GHGs exceeding natural ambient concentrations are believed to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the Earth's climate, known as global climate change or global warming.

GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants (TACs), which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (approximately one day), GHGs have long atmospheric lifetimes (one to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of a GHG molecule is dependent on multiple variables and cannot be pinpointed, more CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, or other forms of carbon sequestration. Of the total annual human-caused CO_2 emissions, approximately 55 percent is sequestered through ocean and land uptakes every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO_2 emissions remains stored in the atmosphere (Intergovernmental Panel on Climate Change, 2013). Table 1: Description of Greenhouse Gases, describes the primary GHGs attributed to global climate change, including their physical properties.

Table 1: Description of Greenhouse Gases

Greenhouse Gas	Description
Carbon Dioxide (CO_2)	CO_2 is a colorless, odorless gas that is emitted naturally and through human activities. Natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources are from burning coal, oil, natural gas, and wood. The largest source of CO_2 emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, and industrial facilities. The atmospheric lifetime of CO_2 is variable because it is readily exchanged in the atmosphere. CO_2 is the most widely emitted GHG and is the reference gas (Global Warming Potential of 1) for determining Global Warming Potentials for other GHGs.
Nitrous Oxide (N_2O)	N_2O is largely attributable to agricultural practices and soil management. Primary human-related sources of N_2O include agricultural soil management, sewage treatment, combustion of fossil fuels, and adipic and nitric acid production. N_2O is produced from biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N_2O is approximately 120 years. The Global Warming Potential of N_2O is 298.
Methane (CH_4)	CH_4, a highly potent GHG, primarily results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. Methane is the major component of natural gas, approximately 87 percent by volume. Human-related sources include fossil fuel production, animal husbandry, rice cultivation, biomass burning, and waste management. Natural sources of CH_4 include wetlands, gas hydrates, termites, oceans, freshwater bodies, non-wetland soils, and wildfires. The atmospheric lifetime of CH_4 is approximately 12 years and the Global Warming Potential is 25.
Hydrofluorocarbons (HFCs)	HFCs are typically used as refrigerants for both stationary refrigeration and mobile air conditioning. The use of HFCs for cooling and foam blowing is increasing, as the continued phase out of CFCs and HCFCs gains momentum. The 100-year Global Warming Potential of HFCs range from 124 for HFC-152 to 14,800 for HFC-23.
Perfluorocarbons (PFCs)	PFCs have stable molecular structures and only break down by ultraviolet rays approximately 60 kilometers above Earth's surface. Because of this, they have long lifetimes, between 10,000 and 50,000 years. Two main sources of PFCs are primary aluminum production and semiconductor manufacturing. Global Warming Potentials range from 6,500 to 9,200.
Chlorofluorocarbons (CFCs)	CFCs are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. They are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). CFCs were synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. The Montreal Protocol on Substances that Deplete the Ozone Layer prohibited their production in 1987. Global Warming Potentials for CFCs range from 3,800 to 14,400.
Sulfur Hexafluoride (SF_6)	SF_6 is an inorganic, odorless, colorless, and nontoxic, nonflammable gas. It has a lifetime of 3,200 years. This gas is manmade and used for insulation in electric power transmission equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas. The Global Warming Potential of SF_6 is 23,900.
Hydrochlorofluoro-carbons (HCFCs)	HCFCs are solvents, similar in use and chemical composition to CFCs. The main uses of HCFCs are for refrigerant products and air conditioning systems. As part of the Montreal Protocol, HCFCs are subject to a consumption cap and gradual phase out. The United States is scheduled to achieve a 100 percent reduction to the cap by 2030. The 100-year Global Warming Potentials of HCFCs range from 90 for HCFC-123 to 1,800 for HCFC-142b.
Nitrogen Trifluoride (NF_3)	NF_3 was added to Health and Safety Code section 38505(g)(7) as a GHG of concern. This gas is used in electronics manufacture for semiconductors and liquid crystal displays. It has a high global warming potential of 17,200.

Source: Compiled from U.S. EPA, *Overview of Greenhouse Gases*, April 11, 2018 (https://www.epa.gov/ghgemissions/overview-greenhouse-gases); U.S. EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016*, 2018; Intergovernmental Panel on Climate Change, *Climate Change 2007: The Physical Science Basis*, 2007; National Research Council, Advancing the Science of Climate Change, 2010; U.S. EPA, *Methane and Nitrous Oxide Emission from Natural Sources*, April 2010.

3 REGULATORY SETTING

3.1 FEDERAL

To date, national standards have not been established for nationwide GHG reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and GHG emissions reduction at the project level. Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects.

Energy Independence and Security Act of 2007. The Energy Independence and Security Act of 2007 (December 2007), among other key measures, requires the following, which would aid in the reduction of national GHG emissions:

- Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.
- Set a target of 35 miles per gallon for the combined fleet of cars and light trucks by model year 2020 and direct the National Highway Traffic Safety Administration (NHTSA) to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.
- Prescribe or revise standards affecting regional efficiency for heating and cooling products and procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

U.S. Environmental Protection Agency Endangerment Finding. The U.S. Environmental Protection Agency's (EPA) authority to regulate GHG emissions stems from the U.S. Supreme Court decision in Massachusetts v. EPA (2007). The Supreme Court ruled that GHGs meet the definition of air pollutants under the existing Federal Clean Air Act (FCAA) and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the Court's ruling, the EPA finalized an endangerment finding in December 2009. Based on scientific evidence, it found that six GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the existing FCAA and the EPA's assessment of the scientific evidence that form the basis for the EPA's regulatory actions.

Federal Vehicle Standards. In response to the U.S. Supreme Court ruling discussed above, Executive Order 13432 was issued in 2007 directing the EPA, the Department of Transportation, and the Department of Energy to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. In 2009, the NHTSA issued a final rule regulating fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011, and in 2010, the EPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012 to 2016.

In 2010, an Executive Memorandum was issued directing the Department of Transportation, Department of Energy, U.S. EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, the U.S. EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles. The proposed standards projected to achieve 163 grams per mile of CO_2 in model year 2025, on an average industry fleet-wide basis, which is equivalent to 54.5 miles per gallon (mpg) if

this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021. On January 12, 2017, the U.S. EPA finalized its decision to maintain the current GHG emissions standards for model years 2022–2025 cars and light trucks.

On April 2, 2018, the Administrator signed the Mid-term Evaluation Final Determination which finds that the model year 2022-2025 GHG standards are not appropriate in light of the record before U.S. EPA and, therefore, should be revised. [1]

On March 31, 2022, the NHTSA finalized their Corporate Average Fuel Economy (CAFE) standards for model years 2024 to 2026. The final rule requires an industry-wide fuel average of approximately 49 miles per gallon (mpg) for passenger cars and light trucks in model year 2026 by increasing fuel efficiency by 8 percent annually for model years 2024 and 2025 and 10 percent for model year 2026.[2] The NHTSA estimates that final standards will reduce GHG emissions by approximately 605 million MT of CO_2, 730 thousand MT of CH_4, and 17 thousand MT of N_2O.[3] On September 19, 2019, under the Safer, Affordable, Fuel-Efficient (SAFE) Vehicles Rule, the U.S. Department of Transportation's National Highway Traffic Safety Administration (NHSTA) and the U.S. EPA issued the final "One National Program Rule." The rule states that federal law preempts state and local laws regarding tailpipe GHG emissions standards, zero emissions vehicle mandates, and fuel economy for automobiles and light duty trucks. The rule revokes California's Clean Air Act waiver and preempts California's Advanced Clean Car Regulations.[4,5]

On September 20, 2019, a lawsuit was filed by California and a coalition of 22 other states, and the cities of Los Angeles, New York and Washington, D.C., in the United States District Court for the District of Columbia (Case 1:19-cv-02826) challenging the SAFE Rule and arguing that U.S. EPA lacks the legal authority to withdraw the California waiver. In April 2021, the U.S. EPA announced it would reconsider its previous withdrawal and grant California permission to set more stringent climate requirements for cars and SUVs. On March 9, 2022, the U.S. EPA restored California's 2013 waiver to full force, including both its GHG standards and zero-emissions vehicles sales requirements.

3.2 STATE OF CALIFORNIA

California Air Resources Board

The California Air Resources Board (CARB) is responsible for the coordination and oversight of State and local air pollution control programs in California. Various statewide and local initiatives to reduce California's contribution to GHG emissions have raised awareness about climate change and its potential for severe long-term adverse environmental, social, and economic effects. California is a significant

[1] U.S. Environmental Protection Agency, *Midterm Evaluation of Light-Duty Vehicle Greenhouse Gas Emissions Standards for Model Years 2022-2025,* https://www.epa.gov/regulations-emissions-vehicles-and-engines/midterm-evaluation-light-duty-vehicle-greenhouse-gas, accessed December 2023.

[2] NHTSA, *Corporate Average Fuel Economy*, https://www.nhtsa.gov/laws-regulations/corporate-average-fuel-economy#40466, accessed December 2023.

[3] NHTSA, *Technical Support Document: Final Rulemaking for Model Years 2024-2026 Light-Duty Vehicle Corporate Average Fuel Economy Standards*, March 2022. https://www.nhtsa.gov/sites/nhtsa.gov/files/2022-04/Final-TSD_CAFE-MY-2024-2026.pdf, accessed December 2023.

[4] U.S. Department of Transportation and U.S. EPA, *One National Program Rule on Federal Preemption of State Fuel Economy Standards,* 2019, https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100XI4W.pdf, accessed December 2023.

[5] Southern California Association of Governments. *Final Federal Safer, Affordable, Fuel-Efficient Vehicles Rule Part I (Supplemental Report),* 2019, accessed December 2023.

emitter of CO_2e in the world and produced 381 million gross metric tons (MMT) of CO_2e in 2021.[6] The transportation sector is the State's largest emitter of GHGs, followed by industrial operations such as manufacturing and oil and gas extraction.

The State of California legislature has enacted a series of bills that constitute the most aggressive program to reduce GHGs of any state in the nation. Some legislation, such as the landmark AB 32 California Global Warming Solutions Act of 2006, was specifically enacted to address GHG emissions. Other legislation, such as Title 24 building efficiency standards and Title 20 appliance energy standards, were originally adopted for other purposes such as energy and water conservation, but also provide GHG reductions. This section describes the major legislation related to GHG emissions reduction.

Assembly Bill 32 (California Global Warming Solutions Act of 2006). AB 32 instructs the CARB to develop and enforce regulations for the reporting and verifying statewide GHG emissions. AB 32 also directed CARB to set a GHG emissions limit based on 1990 levels, to be achieved by 2020. It set a timeline for adopting a scoping plan for achieving GHG reductions in a technologically and economically feasible manner.

CARB Scoping Plan. Adopted December 15, 2022, CARB's 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan) sets a path to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels by 2045 in accordance with AB 1279. To achieve the targets of AB 1279, the 2022 Scoping Plan relies on existing and emerging fossil fuel alternatives and clean technologies, as well as carbon capture and storage. Specifically, the 2022 Scoping Plan focuses on zero-emission transportation; phasing out use of fossil gas use for heating homes and buildings; reducing chemical and refrigerants with high GWP; providing communities with sustainable options for walking, biking, and public transit; displacement of fossil-fuel fired electrical generation through use of renewable energy alternatives (e.g., solar arrays and wind turbines); and scaling up new options such as green hydrogen.

The key elements of the 2022 CARB Scoping Plan focus on transportation. Specifically, the 2022 Scoping Plan aims to rapidly move towards zero-emission transportation (i.e., electrifying cars, buses, trains, and trucks), which constitutes California's single largest source of GHGs. The regulations that impact the transportation sector are adopted and enforced by CARB on vehicle manufacturers and are outside the jurisdiction and control of local governments. The 2022 Scoping Plan accelerates development of new regulations as well as amendments to strengthen regulations and programs already in place.

Included in the 2022 Scoping Plan is a set of Local Actions (2022 Scoping Plan Appendix D) aimed at providing local jurisdictions with recommendations to reduce GHGs and assist the state in meeting the ambitious targets set forth in the 2022 Scoping Plan. Appendix D to the 2022 Scoping Plan is not regulatory, is not exhaustive, and does not include everything local governments can implement to support the State's climate goals. It focuses primarily on climate action plans (CAPs) and local authority over new residential development. It includes a section on evaluating plan-level and project-level alignment with the State's Climate Goals in CEQA GHG analyses. In this section, CARB identifies several recommendations and strategies that should be considered for new development in order to determine consistency with the 2022 Scoping Plan. CARB specifically states that Section 3 of Appendix D, which discusses land use plans and development projects, does not address land uses other than residential and

[6] California Air Resources Board, *Current California GHG Emissions Inventory Data, 2000-2020 GHG inventory (2022 Edition)*, https://ww2.arb.ca.gov/ghg-inventory-data, accessed December 2023.

mixed-use residential such as industrial. However, CARB plans to explore new approaches for other land use types in the future.

Senate Bill 32 (California Global Warming Solutions Act of 2006: Emissions Limit). Signed into law in September 2016, SB 32 codifies the 2030 GHG reduction target in Executive Order B-30-15 (40 percent below 1990 levels by 2030). The bill authorizes CARB to adopt an interim GHG emissions level target to be achieved by 2030. CARB also must adopt rules and regulations in an open public process to achieve the maximum, technologically feasible, and cost-effective GHG reductions.

With SB 32, the Legislature passed companion legislation, AB 197, which provides additional direction for developing the Scoping Plan. On December 14, 2017, CARB adopted a second update to the Scoping Plan (CARB, 2017b). The 2017 Scoping Plan details how the State will reduce GHG emissions to meet the 2030 target set by Executive Order B-30-15 and codified by SB 32. Other objectives listed in the 2017 Scoping Plan are to provide direct GHG emissions reductions; support climate investment in disadvantaged communities; and support the Clean Power Plan and other Federal actions. In 2022, CARB published the 2022 Scoping Plan, which is discussed above.

SB 375 (The Sustainable Communities and Climate Protection Act of 2008). Signed into law on September 30, 2008, SB 375 provides a process to coordinate land use planning, regional transportation plans (RTP), and funding priorities to help California meet AB 32's GHG reduction goals. SB 375 requires metropolitan planning organizations to include sustainable community strategies in their RTPs reducing GHG emissions, aligns planning for transportation and housing, and creates specified incentives for the implementation of the strategies. The Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG) serve as the metropolitan planning organization for the nine counties in the Bay Area region. The applicable sustainable community strategy in the Bay Area is Plan Bay Area 2050, which sets out a path toward achieving a 20 percent per capita reduction in GHG emissions from passenger cars and light-duty trucks by 2035.

AB 1493 (Pavley Regulations and Fuel Efficiency Standards). AB 1493, enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. Implementation of the regulation was delayed by lawsuits filed by automakers and by the EPA's denial of an implementation waiver. The EPA subsequently granted the requested waiver in 2009, which was upheld by the by the U.S. District Court for the District of Columbia in 2011. The regulations establish one set of emission standards passenger vehicle and light duty truck model years 2009–2016 and a second set of emissions standards for model years 2017 to 2025. By 2025, when all rules will be fully implemented, new automobiles will emit 34 percent fewer CO_2e emissions and 75 percent fewer smog-forming emissions.

SB 1368 (Emission Performance Standards). SB 1368 is the companion bill of AB 32, which directs the California Public Utilities Commission (CPUC) to adopt a performance standard for GHG emissions for the future power purchases of California utilities. SB 1368 limits carbon emissions associated with electrical energy consumed in California by forbidding procurement arrangements for energy longer than 5 years from resources that exceed the emissions of a relatively clean, combined cycle natural gas power plant. The new law effectively prevents California's utilities from investing in, otherwise financially supporting, or purchasing power from new coal plants located in or out of the state. The CPUC adopted the regulations required by SB 1368 on August 29, 2007. The regulations implementing SB 1368 establish a standard for

baseload generation owned by, or under long-term contract to publicly owned utilities, for 1,100 pounds of CO_2 per megawatt-hour.

SB 1078, SB 107, and SBX1-2 (Renewable Electricity Standards). SB 1078 (2002) required California to generate 20 percent of its electricity from renewable energy by 2017. SB 107 (2006) changed the due date to 2010 instead of 2017. On November 17, 2008, Executive Order S-14-08 established a Renewable Portfolio Standard target for California requiring that all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020. Executive Order S-21-09 also directed CARB to adopt a regulation by July 31, 2010, requiring the state's load serving entities to meet a 33 percent renewable energy target by 2020. CARB approved the Renewable Electricity Standard on September 23, 2010 by Resolution 10-23. SB X1-2 codified the 33 percent by 2020 goal.

SB 350 (Clean Energy and Pollution Reduction Act of 2015). Signed into law on October 7, 2015, SB 350 implements Executive Order B-30-15's goals. The SB 350 objectives are to increase the procurement of electricity from renewable sources from 33 percent to 50 percent (with interim targets of 40 percent by 2024, and 45 percent by 2027) and to double the energy efficiency savings in electricity and natural gas end uses of retail customers through energy efficiency and conservation. SB 350 also reorganizes the Independent System Operator to develop more regional electricity transmission markets and improve accessibility in these markets, which will facilitate the growth of renewable energy markets in the western United States.

AB 398 (Market-Based Compliance Mechanisms). The Cap-and-Trade program covers approximately 80 percent of California's GHG emissions. The statewide cap for GHG emissions from the capped sectors (i.e., electricity generation, industrial sources, petroleum refining, and cement production) commenced in 2013 and would decline approximately three percent each year, achieving GHG emission reductions throughout the program's duration. Signed on July 25, 2017, AB 398 extended the duration of the Cap-and-Trade program from 2020 to 2030. AB 398 required CARB to update the Scoping Plan and for all GHG rules and regulations adopted by the State. It also designated CARB as the statewide regulatory body responsible for ensuring that California meets its statewide carbon pollution reduction targets, while retaining local air districts' responsibility and authority to curb toxic air TACs and criteria pollutants from local sources that severely impact public health. AB 398 also decreased free carbon allowances over 40 percent by 2030 and prioritized Cap-and-Trade spending to various programs including reducing diesel emissions in impacted communities.

SB 150 (Regional Transportation Plans). Signed on October 10, 2017, SB 150 aligns local and regional GHG reduction targets with State targets (i.e., 40 percent below their 1990 levels by 2030). SB 150 creates a process to include communities in discussions on how to monitor their regions' progress on meeting these goals. The bill also requires the CARB to regularly report on that progress, as well as on the successes and the challenges regions experience associated with achieving their targets. SB 150 provides for accounting of climate change efforts and GHG reductions and identify effective reduction strategies.

SB 100 (California Renewables Portfolio Standard Program: Emissions of Greenhouse Gases). Signed into law in September 2018, SB 100 increased California's renewable electricity portfolio from 50 to 60 percent by 2030. SB 100 also established a further goal to have an electric grid that is entirely powered by clean energy by 2045.

AB 1346 (Air Pollution: Small Off-Road Engines). Signed into Law in October 2021, AB 1346 requires CARB, to adopt cost-effective and technologically feasible regulations to prohibit engine exhaust and

evaporative emissions from new small off-road engines, consistent with federal law, by July 1, 2022. The bill requires CARB to identify and, to the extent feasible, make available funding for commercial rebates or similar incentive funding as part of any updates to existing applicable funding program guidelines to local air pollution control districts and air quality management districts to implement to support the transition to zero-emission small off-road equipment operations.

AB 1279 (The California Climate Crisis Act). AB 1279 establishes the policy of the State to achieve carbon neutrality as soon as possible, but no later than 2045; to maintain net negative GHG emissions thereafter; and to ensure that by 2045 statewide anthropogenic GHG emissions are reduced at least 85 percent below 1990 levels. The bill requires CARB to ensure that Scoping Plan updates identify and recommend measures to achieve carbon neutrality, and to identify and implement policies and strategies that enable CO^2 removal solutions and carbon capture, utilization, and storage technologies.

SB 1020 (100 Percent Clean Electric Grid). Signed on September 16, 2022, SB 1020 provides additional goals for the path to the 2045 goal of 100 percent clean electricity retail sales. It creates a target of 90 percent clean electricity retail sales by 2035 and 95 percent clean electricity retail sales by 2040.

SB 905 (Carbon Sequestration Program). Signed on September 16, 2022, SB 905 establishes regulatory framework and policies that involve carbon removal, carbon capture, utilization, and sequestration. It also prohibits the injecting of concentrated carbon dioxide fluid into a Class II injection well for the purpose of enhanced oil recovery.

AB 1757 (Nature-Based Solutions). Signed on September 16, 2022, AB 1757 requires State agencies to develop a range of targets for natural carbon sequestration and nature-based climate solutions that reduce GHG emissions to meet the 2030, 2038, and 2045 goals which would be integrated into a scoping plan addressing natural and working lands.

Executive Orders Related to GHG Emissions

California's Executive Branch has taken several actions to reduce GHGs using executive orders. Although not regulatory, they set the state's tone and guide the actions of state agencies.

Executive Order S-3-05. Executive Order S-3-05 was issued on June 1, 2005, which established the following GHG emissions reduction targets:

- By 2010, reduce greenhouse gas emissions to 2000 levels.
- By 2020, reduce greenhouse gas emissions to 1990 levels.
- By 2050, reduce greenhouse gas emissions to 80 percent below 1990 levels.

The 2050 reduction goal represents what some scientists believe is necessary to reach levels that will stabilize the climate. The 2020 goal was established to be a mid-term target. Because this is an executive order, the goals are not legally enforceable for local governments or the private sector.

Executive Order S-01-07. Issued on January 18, 2007, Executive Order S-01-07 mandates that a statewide goal shall be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. The executive order established a Low Carbon Fuel Standard (LCFS) and directed the Secretary for Environmental Protection to coordinate the actions of the California Energy Commission,

CARB, the University of California, and other agencies to develop and propose protocols for measuring the "life-cycle carbon intensity" of transportation fuels. CARB adopted the LCFS on April 23, 2009

Executive Order S-13-08. Issued on November 14, 2008, Executive Order S-13-08 facilitated the California Natural Resources Agency development of the 2009 California Climate Adaptation Strategy. Objectives include analyzing risks of climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

Executive Order S-14-08. Issued on November 17, 2008, Executive Order S-14-08 expands the state's Renewable Energy Standard to 33 percent renewable power by 2020. Additionally, Executive Order S-21-09 (signed on September 15, 2009) directs CARB to adopt regulations requiring 33 percent of electricity sold in the state come from renewable energy by 2020. CARB adopted the Renewable Electricity Standard on September 23, 2010, which requires 33 percent renewable energy by 2020 for most publicly owned electricity retailers.

Executive Order S-21-09. Issued on July 17, 2009, Executive Order S-21-09 directs CARB to adopt regulations to increase California's Renewable Portfolio Standard (RPS) to 33 percent by 2020. This builds upon SB 1078 (2002), which established the California RPS program, requiring 20 percent renewable energy by 2017, and SB 107 (2006), which advanced the 20 percent deadline to 2010, a goal which was expanded to 33 percent by 2020 in the 2005 Energy Action Plan II.

Executive Order B-30-15. Issued on April 29, 2015, Executive Order B-30-15 established a California GHG reduction target of 40 percent below 1990 levels by 2030 and directs CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of CO_2e ($MMTCO_2e$). The 2030 target acts as an interim goal on the way to achieving reductions of 80 percent below 1990 levels by 2050, a goal set by Executive Order S-3-05. The executive order also requires the state's climate adaptation plan to be updated every three years and for the state to continue its climate change research program, among other provisions. With the enactment of SB 32 in 2016, the Legislature codified the goal of reducing GHG emissions by 2030 to 40 percent below 1990 levels.

Executive Order B-55-18. Issued on September 10, 2018, Executive Order B-55-18 establishes a goal to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter. This goal is in addition to the existing statewide targets of reducing GHG emissions. The executive order requires CARB to work with relevant state agencies to develop a framework for implementing this goal. It also requires CARB to update the Scoping Plan to identify and recommend measures to achieve carbon neutrality. The executive order also requires state agencies to develop sequestration targets in the Natural and Working Lands Climate Change Implementation Plan.

Executive Order N-79-20. Issued on September 23, 2020, Executive Order N-79-20 established a goal to end the sales of new internal combustion engine vehicles in the state as soon as possible, and no later than 2035, and continue to phaseout fossil-fueled cars and trucks. By setting a course to end sales of internal combustion passenger vehicles by 2035, the Governor's Executive Order establishes a target for the transportation sector that helps put the state on a path to carbon neutrality by 2045. It is important to note that the Executive Order focuses on new vehicle sales for automakers, and therefore does not require Californians to give up the existing cars and trucks they already own.

3.3 REGIONAL

Bay Area Air Quality Management District Thresholds

The Bay Area Air Quality Management District (BAAQMD) is the primary agency responsible for addressing air quality concerns in the San Francisco Bay Area, including the City of Vallejo. BAAQMD also recommends methods for analyzing project-related GHGs in CEQA analyses as well as multiple GHG reduction measures for land use development projects. BAAQMD released its *Justification Report CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans* (BAAQMD Justification Report) in April 2022. BAAQMD Justification Report presents updates to the CEQA GHG thresholds from the 2017 CEQA Guidelines, which were not consistent with the statewide GHG target established by SB 32. The GHG thresholds of significance were updated to consider newer state reduction targets (e.g., SB 32) and plans for eventual carbon neutrality by 2045 (e.g., Executive Order B-55-18 and SB 1279), as well as evolving case law. The BAAQMD Justification Report (and thus the GHG thresholds) was adopted by the Board of Directors on April 20, 2022. In summary, the updated thresholds emphasize:

- Avoiding wasting electricity and developing fossil fuel infrastructure (i.e., natural gas plumbing or appliances) in new buildings that will be in place for decades and thus conflict with carbon neutrality by 2045.
- Compliance with California Green Building Standards Code (CALGreen) Tier 2 EV requirements and per capita VMT reductions consistent with SB 743.
- Consistency with a qualified GHG reduction strategy (also known as a Climate Action Plan).

Clean Air Plan

Air quality plans developed to meet federal requirements are referred to as State Implementation Plans. The federal and state Clean Air Acts require plans to be developed for areas designated as nonattainment (with the exception of areas designated as nonattainment for the state PM_{10} standard). The *2017 Clean Air Plan: Spare the Air, Cool the Climate* (2017 Clean Air Plan) was adopted on April 19, 2019, by BAAQMD.

The 2017 Clean Air Plan provides a regional strategy to protect public health and protect the climate. To protect public health, the plan describes how BAAQMD will continue progress toward attaining all state and federal air quality standards and eliminating health risk disparities from exposure to air pollution among Bay Area communities. To protect the climate, the 2017 Clean Air Plan defines a vision for transitioning the region to a post-carbon economy needed to achieve ambitious greenhouse gas (GHG) reduction targets for 2030 and 2050 and provides a regional climate protection strategy that will put the Bay Area on a pathway to achieve those GHG reduction targets.

The 2017 Clean Air 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 particulate matter, ozone, and toxic air contaminants; to reduce emissions of methane and other “super-GHGs” that are potent climate pollutants in the near-term; and to decrease emissions of carbon dioxide by reducing fossil fuel combustion.

3.4 LOCAL

City of Vallejo Municipal Code

The City's Municipal Code includes the following regulations that would reduce GHG emissions from future development:

- Green Building Code Adoption (Chapter 12.50.010)
- Water Efficient Landscape Requirements (Chapter 16.504.09)
- Construction and Demolition Debris Recycling Ordinance (Chapter 7.53)

City of Vallejo General Plan

The City of Vallejo General Plan includes resource conservation measures that promote water conservation, energy efficiency, and solid waste reduction. The General Plan includes the following GHG reduction policies, which are applicable to the Project.

Policy EET – 4.2: Responsible Development. Favor residential commercial, and industrial development that can mitigate or avoid environmental impacts.

Action EET - 4.2C: Access how the City's procurement policies and employee commute modes and patterns could contribute to greenhouse gas reductions and offer programs to mitigate potential impacts.

Policy MTC – 1.1: Regional Transit Connections. Enhance regional transit services for residents, employees, and visitors.

Action MTC - 1.1A: Work with regional transportation agencies to coordinate regional transit planning activities, including increased frequency of bus, ferry, and rail service, timed connections, and tourism support.

Policy MTC – 1.2: Transit Ridership. Increase regional transit and ferry ridership to and from Vallejo, particularly by commuters and visitors.

Action MTC - 1.2A: Participate in and contribute to regional programs to improve commute alternatives and efficiency.

City of Vallejo Climate Action Plan

The City of Vallejo's Climate Action Plan (CAP) was first published in August 2012. The CAP identifies policies that would achieve the state-recommended GHG reduction target of 15 percent below 2008 levels by 2020. The CAP provides goals and associated measures, also referred to as reduction measures, in the sectors of energy use, transportation, land use, water, solid waste, and off-road equipment. The CAP includes the following GHG reduction policies, which are applicable to the Project.

Transportation Demand Management (TDM): Reduce and consolidate the number of single-occupancy vehicle trips to and from Vallejo by providing attractive alternatives and by requiring co-beneficial land use decisions.

TDM-7: **Commute Behavior**. Reduce emissions from commute travel to and from schools and workplaces.

Off-road Equipment (OR): Reduce GHG emissions from off-road equipment in Vallejo.

Or-7: **Construction Equipment**. Reduce emissions from heavy-duty construction equipment by limiting idling and utilizing cleaner, fuels, equipment, and vehicles.

4 SIGNIFICANCE CRITERIA AND METHODOLOGY

4.1 THRESHOLDS AND SIGNIFICANT CRITERIA

Based upon the criteria derived from State CEQA Guidelines Appendix G, a project normally would have a significant effect on the environment if it would:

GHG-1 Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

GHG-2 Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

BAAQMD's approach to developing a threshold of significance for GHG emissions is to identify the emissions level for which a project would not be expected to substantially conflict with existing California legislation adopted to reduce statewide GHG emissions needed to move towards climate stabilization. If a project would generate GHG emissions above the threshold level, it would be considered to contribute considerably to a significant cumulative impact. Stationary-source projects include land uses that would accommodate processes and equipment that emit GHG emissions and would require an Air District permit to operate. If annual emissions of operational-related GHGs exceed these levels, the project would result in a cumulatively considerable contribution to a cumulatively significant impact to global climate change. In April 2022, new CEQA thresholds for evaluating climate impacts from land use projects and plans were approved. The BAAQMD Thresholds for Land Use Projects (Must Include A or B):

A. Projects must include, at a minimum, the following project design elements:
    1. Buildings
        a. The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).
        b. The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.
    2. Transportation
        a. Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA:
            i. Residential projects: 15 percent below the existing VMT per capita
            ii. Office projects: 15 percent below the existing VMT per employee
            iii. Retail projects: no net increase in existing VMT
        b. Achieve compliance with electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.

B. Be consistent with a local GHG Reduction Strategy that meets the criteria under the CEQA Guidelines section 15183.5(b)

A qualified GHG Reduction Strategy adopted by a local jurisdiction should include the following elements as described in the State CEQA Guidelines Section 15183.5(b)(1):

i. Quantify GHG emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area;

ii. Establish a level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable;

iii. Identify and analyze the GHG emissions resulting from specific actions or categories of actions anticipated within the geographic area;

iv. Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level;

v. Establish a mechanism to monitor the plan's progress toward achieving the level and to require amendment if the plan is not achieving specified levels; and

vi. Be adopted in a public process following environmental review

It should be noted that BAAQMD does not have an adopted threshold of significance for construction-related GHG emissions. However, BAAQMD recommends quantification and disclosure of construction GHG emissions. BAAQMD also recommends that the Lead Agency should make a determination on the significance of these construction generated GHG emission impacts in relation to meeting AB 32 GHG reduction goals, as required by the Public Resources Code, Section 21082.2. The Lead Agency is encouraged to incorporate best management practices to reduce GHG emissions during construction, as feasible and applicable.

For CEQA analyses, project-related GHG impacts can be categorized as either direct or indirect. Direct emissions refer to those emitted by stationary sources at the Project site or caused by Project activity on-site, and these emissions are normally within control of the Project sponsor or applicant. Indirect emissions include those emissions that are not within the direct control of the Project sponsor or applicant, but may occur as a result of the Project, such as the motor vehicle emissions induced by the Project. Indirect emissions include emissions from any off-site facilities used for Project support as a result of the construction or operation of a Project, and these emissions are likely to occur outside the control of the Project far off-site or even outside of California.

The City of Vallejo has established consistency with their Vallejo CAP. However, the CAP was prepared prior to the adoption of the 2030 GHG targets established by SB 32. Thus, the City's CAP would not be applicable for CEQA streamlining and the Project was evaluated using the BAAQMD project design elements. The City of Vallejo does not have construction-related GHG emission thresholds.

4.2 METHODOLOGY

Global climate change is, by definition, a cumulative impact of GHG emissions. Therefore, there is no project-level analysis. The baseline against which to compare potential impacts of the Project includes the natural and anthropogenic drivers of global climate change, including world-wide GHG emissions from

human activities which almost doubled between 1970 and 2010 from approximately 27 gigatonnes (Gt) of CO_2/year to nearly 49 $GtCO_2$/year.[7] As such, the geographic extent of climate change and GHG emissions' cumulative impact discussion is worldwide.

The Project's construction emissions were calculated using the California Emissions Estimator Model version 2022 (CalEEMod). Details of the modeling assumptions and emission factors are provided in Appendix A: Greenhouse Gas Emissions Data. For construction, CalEEMod calculates emissions from off-road equipment usage and on-road vehicle travel associated with haul, delivery, and construction worker trips. The Project's construction-related GHG emissions were forecasted based on the proposed construction schedule and applying the mobile-source emissions factors derived from CalEEMod. The Project's construction-related GHG emissions would be generated from off-road construction equipment, on-road hauling and vendor (material delivery) trucks, and worker vehicles.

As mentioned previously, the Project would construct an extended ferry terminal with a new reconfigured gangway, passenger float, and piles. The Project does not propose any new sources of GHG emissions and would provide improved terminal operations and reduced dredging impacts. Thus, operational GHG emissions would not change from existing conditions and the Project would have no impact on existing operational GHG emissions.

[7] Intergovernmental Panel on Climate Change, *Climate Change 2014 Mitigation of Climate Change Working Group III Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, 2014.

5 POTENTIAL IMPACTS AND MITIGATION

5.1 GREENHOUSE GAS EMISSIONS

Impact GHG-1 Would the Project generate greenhouse gas emissions, either directly or indirectly, that could have a significant impact on the environment?

Construction Greenhouse Gas Emissions

Project construction would result in minor increases in GHG emissions from construction equipment operating on-site and emissions from construction workers' personal vehicle travelling to and from the Project construction site. Construction-related GHG emissions vary depending on the level of activity, length of the construction period, specific construction operations, types of equipment, and number of construction workers. Neither the City of Vallejo nor BAAQMD have an adopted threshold of significance for construction-related GHG emissions; however, BAAQMD recommends quantifying emissions and disclosing that GHG emissions would occur during construction. Based on CalEEMod outputs prepared for the proposed Project (refer to Appendix A), Project construction would generate 308 $MTCO_2e$ for the total construction period (5 months). Because Project construction would be a temporary condition (a total of 5 months) and would not result in a permanent increase in emissions that would interfere with the implementation of the State's GHG reduction goals (established by AB 32, SB 32, AB 1279, etc.), the temporary increase in emissions would be less than significant.

Operational Greenhouse Gas Emissions

As mentioned previously, the Project would construct an extended ferry terminal with a new reconfigured gangway, passenger float, and piles. The Project does not propose any new sources of GHG emissions and would provide improved terminal operations and reduced dredging impacts. The Project would not generate any additional traffic and population growth. Therefore, the operation of the Project would not generate any new GHG emissions and impacts would be less than significant.

Mitigation Measures: None required.

Level of Significance: Less than significant impact.

5.2 GREENHOUSE GAS REDUCTION PLAN COMPLIANCE

Impact GHG-2: Would the Project conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing greenhouse gas emissions?

BAAQMD Project Design Elements

As mentioned previously, the Vallejo CAP would not be applicable as it does not analyze the 2030 GHG targets established by SB 32. Thus, the Project is evaluated against the BAAQMD Project Design Elements listed above in Section 4.1.

According to the BAAQMD a cumulatively considerable impact would occur if a project includes any natural gas appliances or plumbing, or a project results in any wasteful, inefficient, or unnecessary energy usage. The Project would replace the existing ferry terminal with an extended ferry terminal that consists of a new reconfigured gangway, passenger float, and piles. The Project would not include any natural gas appliances or plumbing. Further, as mentioned in Section 4.6 of the Project's Initial Study, the Project would not permanently increase energy usage requirements in the County and would not be wasteful, inefficient, or unnecessary with its energy demands. Thus, the Project would be consistent with both project design elements.

The BAAQMD also requires projects to achieve a VMT reduction and comply with electric vehicle requirements listed in the most recent version of CalGreen Tier 2 to show a less than cumulatively significant impact. The Project would replace an existing ferry terminal and would not result in additional trips to the Project vicinity or increase VMT. Further, the Project would not be subject to parking requirements as it is replacing an existing ferry terminal. Thus, the BAAQMD Project Design Elements would not be applicable to the Project.

As demonstrated above, the Project would be consistent with the applicable BAAQMD Project Design Elements and would, therefore, be consistent with the BAAQMD GHG thresholds. Thus, the Project would have a less than cumulatively considerable impact to global climate change.

City of Vallejo CAP

The Project would be consistent with all applicable measures in the Vallejo CAP. The Project would improve the efficiency of an alternative form of transportation which would promote the usage of an alternative form of commute. Further, as mentioned in the *Vallejo Ferry Terminal Reconfiguration Project Air Quality Assessment*, the Project would also implement the BAAQMD's basic control measures and would adhere to the BAAQMD idling requirements for heavy-duty construction equipment. The Project would not impede any of the other measures outlined in the Vallejo CAP. Thus, the Project would not conflict with CAP and impacts would be less than significant.

2022 CARB Scoping Plan

As previously noted, the 2022 Scoping Plan sets a path to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels by 2045 in accordance with AB 1279. The transportation, electricity, and industrial sectors are the largest GHG contributors in the State. The 2022 Scoping Plan plans to achieve the AB 1279 targets primarily through zero-emission transportation (e.g., electrifying cars, buses, trains, and trucks). Additional GHG reductions are achieved through decarbonizing the electricity and industrial sectors.

The Project would implement the Best Management Practices (BMPs) included in the *Air Quality Assessment* during construction. For example, a few of the construction measures include enforcing idling time restrictions on construction vehicles, use of added exhaust muffling and filtering devices, replant vegetation in disturbed areas as quickly as possible, and posting a publicly visible sign with the telephone number and person at the lead agency to contact regarding dust complaints.

The Project would not produce any new operational GHG emissions and would improve ferry terminal operations. Thus, the Project would not impede the State's progress towards carbon neutrality by 2045 under the 2022 Scoping Plan. The Project would be required to comply with applicable current and future regulatory requirements promulgated through the 2022 Scoping Plan.

Plan Bay Area

The Project would be consistent with the overall goals of Plan Bay Area 2050 to provide housing, healthy and safe communities, and climate protection with an overall goal to reduce VMT. As noted above, the Project would develop the Project site consistent with the General Plan Land Use Designation and the Vallejo Climate Action Plan. The Project would add some not add any additional employment, trips related to employees that work directly at the Project site. The Project would provide improved operations of an alternative form of transportation. Thus, implementation of the Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs, and this impact would be less than significant.

Summary

As discussed above, implementation of the Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. The Project would improve the efficiency of a ferry terminal and would not result in operational GHG emissions. Further, the Project would adhere to the applicable BAAQMD Project Design Element requirements and would not impede the implementation of any plans listed above. Thus, this impact would be less than significant.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

5.3 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

Cumulative Setting

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (approximately one day), GHGs have much longer atmospheric lifetimes of one year to several thousand years that allow them to be dispersed around the globe.

Cumulative Impacts and Mitigation Measures

It is generally the case that an individual project of the Project's size and nature is of insufficient magnitude by itself to influence climate change or result in a substantial contribution to the global GHG inventory. GHG impacts are recognized as exclusively cumulative impacts; there are no non-cumulative GHG

emission impacts from a climate change perspective. The additive effect of Project-related GHG emissions would not result in a reasonably foreseeable cumulatively considerable contribution to global climate change. In addition, the Project as well as other cumulative related projects, would be subject to all applicable regulatory requirements, which would further reduce GHG emissions. As discussed in the GHG-2 discussion above, the Project would be consistent with the Vallejo CAP and the State's goals of reducing GHG levels. Thus, the Project would not conflict with any GHG reduction plan. Therefore, the Project's cumulative contribution of GHG emissions would be less than significant and the Project's cumulative GHG impacts would also be less than cumulatively considerable.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

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Appendix A

Greenhouse Gas Emissions Data

WETA Vallejo Detailed Report

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8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	WETA Vallejo
Construction Start Date	8/4/2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	34.8
Location	38.100147099068124, -122.26264310763507
County	Solano-San Francisco
City	Vallejo
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	823
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.21

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Other Non-Asphalt Surfaces	9.10	1000sqft	0.21	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.92	1.61	14.2	15.5	0.03	0.54	0.28	0.82	0.50	0.06	0.56	—	3,608	3,608	0.14	0.05	1.02	3,627
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.91	1.60	14.3	15.4	0.03	0.54	0.28	0.82	0.50	0.06	0.56	—	3,593	3,593	0.14	0.05	0.03	3,611
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.44	0.37	3.43	3.79	0.01	0.13	0.04	0.18	0.12	0.01	0.13	—	878	878	0.04	0.01	0.06	882
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.08	0.07	0.63	0.69	< 0.005	0.02	0.01	0.03	0.02	< 0.005	0.02	—	145	145	0.01	< 0.005	0.01	146

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2025	1.92	1.61	14.2	15.5	0.03	0.54	0.28	0.82	0.50	0.06	0.56	—	3,608	3,608	0.14	0.05	1.02	3,627
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.91	1.60	14.3	15.4	0.03	0.54	0.28	0.82	0.50	0.06	0.56	—	3,593	3,593	0.14	0.05	0.03	3,611
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.44	0.37	3.43	3.79	0.01	0.13	0.04	0.18	0.12	0.01	0.13	—	878	878	0.04	0.01	0.06	882
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.08	0.07	0.63	0.69	< 0.005	0.02	0.01	0.03	0.02	< 0.005	0.02	—	145	145	0.01	< 0.005	0.01	146

3. Construction Emissions Details

3.1. Demolition (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.81	1.52	14.1	14.6	0.03	0.54	—	0.54	0.49	—	0.49	—	3,320	3,320	0.13	0.03	—	3,332
Demolition	—	—	—	—	—	—	0.07	0.07	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.81	1.52	14.1	14.6	0.03	0.54	—	0.54	0.49	—	0.49	—	3,320	3,320	0.13	0.03	—	3,332

Demolitio	—	—	—	—	—	—	0.07	0.07	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.27	0.22	2.08	2.16	< 0.005	0.08	—	0.08	0.07	—	0.07	—	491	491	0.02	< 0.005	—	493
Demolitio n	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.38	0.39	< 0.005	0.01	—	0.01	0.01	—	0.01	—	81.3	81.3	< 0.005	< 0.005	—	81.6
Demolitio n	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.06	0.91	0.00	0.00	0.19	0.19	0.00	0.04	0.04	—	201	201	< 0.005	0.01	0.83	205
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.11	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	86.1	86.1	< 0.005	0.01	0.19	90.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.08	0.81	0.00	0.00	0.19	0.19	0.00	0.04	0.04	—	186	186	0.01	0.01	0.02	189
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.11	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	86.1	86.1	< 0.005	0.01	< 0.005	90.3

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.12	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	27.9	27.9	< 0.005	< 0.005	0.05	28.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.7	12.7	< 0.005	< 0.005	0.01	13.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.62	4.62	< 0.005	< 0.005	0.01	4.68
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.11	2.11	< 0.005	< 0.005	< 0.005	2.21

3.3. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	0.90	8.80	10.1	0.02	0.37	—	0.37	0.34	—	0.34	—	2,295	2,295	0.09	0.02	—	2,303
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.14	1.33	1.52	< 0.005	0.06	—	0.06	0.05	—	0.05	—	346	346	0.01	< 0.005	—	347
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.03	0.02	0.24	0.28	< 0.005	0.01	—	0.01	0.01	—	0.01	—	57.3	57.3	< 0.005	< 0.005	—	57.5
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetatio	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	8/1/2025	10/15/2025	5.00	54.0	—
Building Construction	Building Construction	10/16/2025	12/31/2025	5.00	55.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	2.00	6.00	84.0	0.37
Demolition	Rubber Tired Dozers	Diesel	Average	1.00	1.00	367	0.40
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Demolition	Cranes	Diesel	Average	3.00	6.00	367	0.29
Demolition	Excavators	Diesel	Average	1.00	6.00	36.0	0.38
Demolition	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
Building Construction	Cranes	Diesel	Average	3.00	4.00	367	0.29
Building Construction	Forklifts	Diesel	Average	2.00	6.00	82.0	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	22.5	11.7	LDA,LDT1,LDT2
Demolition	Vendor	—	8.40	HHDT,MHDT
Demolition	Hauling	1.22	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	0.00	11.7	LDA,LDT1,LDT2
Building Construction	Vendor	0.00	8.40	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	263	—

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Other Non-Asphalt Surfaces	0.21	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	204	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	13.9	annual days of extreme heat
Extreme Precipitation	5.10	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	10.1	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	2	0	0	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	2	1	1	3
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	13.6
AQ-PM	39.2
AQ-DPM	75.4
Drinking Water	24.0
Lead Risk Housing	78.3
Pesticides	32.3
Toxic Releases	63.4
Traffic	10.0
Effect Indicators	—
CleanUp Sites	64.4
Groundwater	93.0
Haz Waste Facilities/Generators	81.0
Impaired Water Bodies	51.2
Solid Waste	43.9
Sensitive Population	—
Asthma	99.8
Cardio-vascular	91.6

Low Birth Weights	99.2
Socioeconomic Factor Indicators	—
Education	72.5
Housing	95.2
Linguistic	49.1
Poverty	97.4
Unemployment	99.1

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	1.090722443
Employed	2.284101116
Median HI	0.128320287
Education	—
Bachelor's or higher	26.30565892
High school enrollment	100
Preschool enrollment	16.65597331
Transportation	—
Auto Access	0.397792891
Active commuting	89.25959194
Social	—
2-parent households	0.641601437
Voting	31.59245477
Neighborhood	—
Alcohol availability	23.58526883

Park access	81.35506224
Retail density	74.04080585
Supermarket access	16.64314128
Tree canopy	51.99538047
Housing	—
Homeownership	3.849608623
Housing habitability	6.377518286
Low-inc homeowner severe housing cost burden	3.336327473
Low-inc renter severe housing cost burden	17.56704735
Uncrowded housing	51.79006801
Health Outcomes	—
Insured adults	49.23649429
Arthritis	1.4
Asthma ER Admissions	0.2
High Blood Pressure	1.5
Cancer (excluding skin)	22.7
Asthma	3.8
Coronary Heart Disease	1.7
Chronic Obstructive Pulmonary Disease	1.1
Diagnosed Diabetes	0.9
Life Expectancy at Birth	30.6
Cognitively Disabled	3.1
Physically Disabled	47.8
Heart Attack ER Admissions	2.0
Mental Health Not Good	14.3
Chronic Kidney Disease	2.1
Obesity	8.0

Pedestrian Injuries	88.6
Physical Health Not Good	5.8
Stroke	0.9
Health Risk Behaviors	—
Binge Drinking	98.2
Current Smoker	11.7
No Leisure Time for Physical Activity	6.8
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	44.7
Children	4.0
Elderly	20.2
English Speaking	38.4
Foreign-born	38.0
Outdoor Workers	8.0
Climate Change Adaptive Capacity	—
Impervious Surface Cover	9.4
Traffic Density	6.4
Traffic Access	87.4
Other Indices	—
Hardship	95.4
Other Decision Support	—
2016 Voting	11.1

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	94.0

Healthy Places Index Score for Project Location (b)	0.00
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Per Construction Questionnaire
Construction: Off-Road Equipment	Additional Equipment added for waterside demolition and construction

Model Output: OFFROAD2021 (v1.0.5) Emissions Inventory
Region Type: Sub-Area
Region: Contra Costa (SF)
Calendar Year: 2025
Scenario: All Adopted Rules - Exhaust
Vehicle Classification: OFFROAD2021 Equipment Types
Units: tons/day for Emissions, gallons/year for Fuel, hours/year for Activity, Horsepower-hours/year for Horsepower-hours

Region	Calendar Ye	Vehicle Category	Model Year	Horsepower Bin	Fuel	HC_tpd	ROG_tpd	TOG_tpd	CO_tpd	NOx_tpd	CO2_tpd	PM10_tpd	PM2.5_tpd	SOx_tpd	NH3_tpd	Fuel Consumptio	Total_Activ	Total_Population	Horsepower_Hours_hhpy
Contra Costa (SF)	2025	Commercial Harbor Craf	Aggregate	Aggregate	Diesel	0.005242344	0.006343236	0.007548975	0.023017957	0.095441893	13.39199	0.00232926	0.002227		0	450713.6823	27884.07	26.49999999	8700617.859

g/hph

	HC	ROG	TOG	CO	Nox	CO2	PM10	PM2_5	Sox	NH3	Fuel_gphr
2025	0.199513059	0.241410792	0.287298791	0.876017105	3.632326308	509.67232	0.088646984	0.0847465		0	17153255.39

Project Tugboats	2	
HP	731	
Hours per Day	2	
Days per Year	109	
1 pound =	453.5924	grams

Emissions Source	ROG	NOX	CO	SO2	PM10	PM2.5	CO2	metric tons/yr	PM10 tons/yr
Project Tug Boats	1.56	23.42	5.65	0.00	0.57	0.55	3,286	162	0.031
	0.08	1.28	0.31	0.00	0.03	0.03			

Based on emission rates obtained from CARB OFFROAD Version 1.0.3.
Number of forklifts per SCAQMD High Cube Warehouse Truck Trip Study White Paper Summary of Business Survey Results, June 2014.