November 2022
McDonald Island Dredged Material Placement Site Project

Joint Draft Initial Study/Mitigated Negative Declaration and Supplemental Environmental Assessment to the 1980 San Francisco Bay to Stockton Environmental Impact Statement – Supplement III

Prepared for the Port of Stockton and U.S. Army Corps of Engineers

November 2022
McDonald Island Dredged Material Placement Site Project

Joint Draft Initial Study/Mitigated Negative Declaration and Supplemental Environmental Assessment to the 1980 San Francisco Bay to Stockton Environmental Impact Statement – Supplement III

Prepared for
Port of Stockton
2201 West Washington Street
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U.S. Army Corps of Engineers
1325 J Street
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Project Number: 200377-01.01

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

Environmental Resources Branch

TO ALL INTERESTED PARTIES:

Following the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA), a supplemental draft Environmental Assessment/Initial Study (EA/IS) for the proposed McDonald Island Dredged Material Placement Site for the San Francisco Bay to Stockton (John F. Baldwin and Stockton Ship Channel) Avon, Stockton, California; in San Joaquin County has been prepared and is now available for public review and comment at:

Port of Stockton 2201 West Washington Street Stockton, CA 95203	Margaret K. Troke Branch Library 502 West Benjamin Holt Drive Stockton, CA 95207
Cesar Chavez Central Library 605 North El Dorado Street Stockton, CA 95202	

or online at:
https://www.spk.usace.army.mil/Media/USACE-Project-Public-Notices/
or
https://www.portofstockton.com/ceqa-documents/.

Operations and maintenance actions for the Stockton DWSC are authorized by the Rivers and Harbors Act of October 27, 1965 (Public Law 89-298, 89th Congress, 1st Session). The draft EA/IS evaluates the environmental effects associated with constructing berms at the McDonald Island DMPS, placing dredge slurry as part of the O&M program, discharging decant water back to surface waters, and maintaining the site as needed.

The public review period for the draft EA/IS opens November 4, 2022 and will end on December 5, 2022. All comments received on the draft document will be considered and incorporated into the final EA/IS, as appropriate. Please submit any comments to: U.S. Army Corps of Engineers, Sacramento District, Attn: Stockton DWSC, 1325 J Street, Sacramento, CA 95814, or via email to SPK-PAO@usace.army.mil.

Sincerely,

Marshall K. Harper
Chief, Environmental Resources Branch

To: **All Agencies, Interested Parties, and Individuals**

Subject: **Distribution of a Joint Draft Initial Study/Mitigated Negative Declaration and Supplemental Environmental Assessment to the 1980 San Francisco Bay to Stockton Environmental Impact Statement – Supplement III for the McDonald Island Dredged Material Placement Site Project**

Notice is being given that the Port of Stockton (Port) as state lead agency and the U.S. Army Corps of Engineers (USACE) as federal lead agency have prepared a Joint Draft Initial Study/Mitigated Negative Declaration and Supplemental Environmental Assessment (IS/MND-EA) to the 1980 San Francisco Bay to Stockton, California (John F. Baldwin and Stockton Ship Channel) Avon to Stockton Interim General Design Memorandum and Environmental Impact Statement (EIS) – Supplement III for the following project:

McDonald Island Dredged Material Placement Site Project

The attached Draft IS/MND-EA evaluates the impacts of constructing a new, expanded dredged material placement site (DMPS) on McDonald Island and operating the site as part of the USACE's ongoing Stockton Deep Water Ship Channel (DWSC) operation and maintenance (O&M) program (proposed action). The Environmental Assessment (EA) is a supplement to the September 1980 (revised February 1981) San Francisco Bay to Stockton EIS, which evaluated impacts of deepening five channels and one strait channel, including the Stockton DWSC, and maintenance dredging of the Stockton DWSC with placement of dredged sediment at 21 upland placement sites. A "No Action" alternative is also assessed.

Based on the evaluation in the Draft IS/MND-EA, the Port finds that the proposed action would not have a significant effect on the environment with implementation of avoidance and minimization measures proposed in the document, and USACE finds the impacts of the proposed action would be consistent with the type and scope of impacts described in the 1980 EIS. This finding is in accordance with the 1969 National Environmental Policy Act (NEPA; 42 United States Code 4321, as amended); the Council on Environmental Quality's Regulations for Implementing NEPA (40 Code of Federal Regulations [CFR]1500-1508, 2020); Sections 15064 "Determining Significant Effect" and 15065 "Mandatory Findings of Significance" of the California Code of Regulations; and the reasons documented in the attached Draft IS/MND-EA.

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

FINDING OF NO SIGNIFICANT IMPACT

San Francisco Bay to Stockton, California McDonald Island Dredged Material Placement Site, San Joaquin County, California

The U.S. Army Corps of Engineers, Sacramento District (Corps) has conducted an environmental analysis in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended. The Draft Environmental Assessment (EA) dated July 2022, for the San Francisco Bay to Stockton, California, McDonald Island Dredged Material Placement Site (DMPS), San Joaquin, California addresses environmental effects of adding an additional upland DMPS for use during maintenance dredging operations. Operations and maintenance actions for the Stockton DWSC are authorized by the Rivers and Harbors Act of July 24, 1946 (Public Law 525, 79th Congress, 2nd Session) and of October 27, 1965 (Public Law 89-298, 89th Congress, 1st Session). In addition, authorization is given by "An Act Making Supplemental Appropriations for the Fiscal Year Ending September 30, 1985, and for Other Purposes," as described in Public Law 99-88 dated August 15, 1985.

A Final Environmental Impact Statement (FEIS) was completed for San Francisco to Stockton California (Stockton DWSC) in September 1980 (revised February 1981). Several supplemental EA's adding additional DMPS's have been issued. The enclosed Draft EA/initial study (EA/IS) supplements the 1981 Stockton DWSC FEIS. The 2022 Draft EA/IS is an updated environmental document that incorporates a McDonald Island as a new upland dredged material placement site for use in maintenance dredging activities on the Stockton DWSC.

Two alternatives were evaluated for the Stockton DWSC: The No Action alternative and inclusion of the McDonald Island DMPS (proposed action alternative).

Under the No Action alternative, actions on the Stockton DWSC would continue as described in the 1981 FEIS and the following supplements using only the currently approved DMPS.

The proposed action alternative includes:

- constructing containment berms at the McDonald Island DMPS;
- placing dredged slurry in the site as part of the USACE O&M program;
- discharging decant water back to the surface waters of Columbia Cut next to the DMPS (as needed); and
- maintaining the site between dredging episodes in the future.

For both alternatives, the potential effects were evaluated, as appropriate. The proposed action would not have any additional significant effects beyond those already evaluated in the 1981 FEIS. A summary assessment of the potential effects of the proposed action is listed in Table 1.

Table 1. Summary of Potential Effects of the Proposed Action

	Insignificant effects	Insignificant effects as a result of mitigation	Resource unaffected by action
Aesthetics	☒	☐	☐
Agriculture and Forestry	☐	☒	☐
Air quality	☒	☐	☐
Biological Resources	☐	☒	☐
Cultural Resources	☒	☐	☐
Energy	☒	☐	☐
Geology and Soils	☒	☐	☐
Greenhouse Gas Emissions	☒	☐	☐
Hydrology and Water Quality	☒	☐	☐
Noise levels	☒	☐	☐
Hazards and Hazardous Materials	☐	☐	☒
Land Use and Planning	☐	☐	☒
Mineral Resources	☐	☐	☒
Population and Housing	☐	☐	☒
Public Services	☐	☐	☒
Recreation	☐	☐	☒
Socioeconomics and Environmental Justice	☐	☐	☒
Transportation and Traffic	☐	☐	☒
Utilities	☐	☐	☒
Wildfire	☐	☐	☒

All practicable and appropriate means to avoid or minimize adverse environmental effects were analyzed and incorporated into the recommended plan. Best management practices (BMPs) as detailed in the EA/IS will be implemented, if appropriate, to minimize effects. No compensatory mitigation is required.

Effects to Agricultural resources are described in Chapter 3.4.2 of the EA/IS. The proposed placement site is prime and unique farmland and is currently under a Williamson Act Contract. To reduce impacts to agricultural resources, when dredged material placement is not occurring, the area will be available for agricultural use.

Effects to biological resources including threatened and endangered species would be minimized to the extent practicable. Mitigation measures included as part of the proposed project to reduce effects to biological resources include restricting work to an environmental work window from May 1 to October 1 to avoid impacts to giant garter snake; pre-construction surveys to avoid impacts to sensitive plant species; pre-work surveys to avoid impacts to nesting birds; and biological monitoring. Full mitigation measures are described in Chapter 3.4 of the EA/IS.

Pursuant to section 7 of the Endangered Species Act of 1973, as amended, the U.S. Army Corps of Engineers determined that the proposed action may affect but is not likely to adversely affect the federally threatened giant garter snake or its critical habitat. The Corps has requested a letter of concurrence from the USFWS.

Pursuant to section 106 of the National Historic Preservation Act of 1966, as amended, the U.S. Army Corps of Engineers determined that historic properties would not be adversely affected by the proposed project. The Corps has requested a letter of concurrence from the SHPO.

The U.S. Army Corps of Engineers has a Memorandum of Understanding (MOU) with the Central Valley Regional Water Quality Control Board for all actions conducted under the O&M dredging program (CVRWQCB Resolution R5-2019-0041). The proposed action would be conducted pursuant to the requirements of the MOU. The Corps has requested an amendment to the MOU to include the proposed project as a DMPS for use in the program.

Public review of the draft EA/IS and FONSI will commence on 4 November 2022 and will conclude on 5 December 2022. All comments submitted during the public review period will be responded to in the Final EA/IS and FONSI.

All applicable environmental laws have been considered and coordination with appropriate agencies and officials has been completed or is underway.

Based on the evaluation of the effects of the Proposed Action as described in the Draft Supplemental EA/IS; the reviews by other Federal, State, and local agencies; Tribes; input of the public; and the review by my staff, I find that the Proposed Action will cause no significant effects not already disclosed in the 1981 Stockton DWSC FEIS; therefore, preparation of an Environmental Impact Statement is not required at this time.

_____ _____

Date

Chad W. Caldwell
Colonel, U.S. Army
Commander and District Engineer

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ABBREVIATIONS

µg/m^3	micrograms per cubic meter
1980 EIS	*San Francisco Bay to Stockton, California (John F. Baldwin and Stockton Ship Channels) Avon to Stockton: Interim General Design Memorandum and EIS*
AB	Assembly Bill
APE	Area of Potential Effect
BAU	business-as-usual
BMP	best management practice
BPS	Best Performance Standards
CAA	Clean Air Act of 1970
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CAP	Climate Action Plan
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCAP	Climate Change Action Plan
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CFCs	chlorofluorocarbons
CFR	Code of Federal Regulations
CH_4	methane
City	City of Stockton
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	CO_2 equivalents
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel (relative scale adjusted to the human range for hearing)
Delta	Sacramento-San Joaquin River Delta
DMPS	dredged material placement site
DPM	diesel particulate matter
DWSC	Deep Water Ship Channel
EA	Environmental Assessment
EIR	Environmental Impact Report

EIS	Environmental Impact Statement
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
FTA	Federal Transit Administration
GGS	giant garter snake
GHG	greenhouse gas
GWP	global warming potential
HCFCs	hydrochlorofluorocarbons
HFCs	hydrofluorocarbons
HI	health index
HRA	health risk assessment
IS/MND-EA	Initial Study/Mitigated Negative Declaration and Supplemental Environmental Assessment
L_{eq}	equivalent sound level
L_{max}	maximum sound level during a measurement period or a noise event
m^3	cubic meter
MBTA	Migratory Bird Treaty Act
mg	milligram
MLLW	mean lower low water
MT	metric ton
mty	metric tons per year
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NO_2	nitrogen dioxide
NOA	Notice of Availability
NOC	Notice of Completion
O&M	Operations and Maintenance
O_3	ozone
PG&E	Pacific Gas and Electric
PL 84-99	Public Law 84-99
PM	particulate matter
PM_{10}	particulate matter 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns diameter
Port	Port of Stockton
ppm	parts per million
PPV	peak particle velocity

proposed action	constructing a new, expanded dredged material placement site on McDonald Island and operating this site as part of the U.S. Army Corps of Engineers' ongoing Stockton Deep Water Ship Channel operations and maintenance program
RD2030	Reclamation District 2030-McDonald Island
ROG	reactive organic gases
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SJMSCP	*San Joaquin County Multi-species Habitat Conservation and Open Space Plan*
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SO_2	sulfur dioxide
SP	service population
SWRCB	California State Water Resources Control Board
TCP	Traditional Cultural Property
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UTMx	universal transverse mercator x coordinate
UTMy	universal transverse mercator y coordinate

1 Project Information

1.1 Background

The U.S. Army Corps of Engineers (USACE) Operations and Maintenance (O&M) program conducts annual maintenance dredging of the Stockton Deep Water Ship Channel (DWSC), the federal navigation channel that spans from the Carquinez Strait to the City of Stockton (City), California. Operations and maintenance actions for the Stockton DWSC are authorized by the Rivers and Harbors Act of October 27, 1965 (Public Law 89-298, 89th Congress, 1st Session). The USACE O&M program for the Stockton DWSC was previously evaluated in the 1980 *San Francisco Bay to Stockton, California (John F. Baldwin and Stockton Ship Channel) Avon to Stockton: Interim General Design Memorandum and EIS* (1980 EIS; USACE 1980). The 1980 EIS evaluated impacts of deepening five channels and one strait channel, including the Stockton DWSC, and maintenance dredging of the Stockton DWSC with placement of dredged sediment at 21 dredged material placement sites (DMPSs). As the non-federal sponsor for USACE's O&M program, the Port of Stockton (Port) is required to identify, permit, prepare, and maintain new DMPSs for use as part of the O&M program.

There are currently several placement sites along the Stockton DWSC that USACE uses for O&M operations. Each late summer and fall, USACE hydraulically dredges the Stockton DWSC and pumps the dredged slurry via dredge pipeline to a DMPS typically within 15,000 feet of the dredging location. While cost effective, this methodology limits USACE's ability to fully maintain the Stockton DWSC to its authorized depth of -35 feet mean lower low water (MLLW) in areas that lack a DMPS within 15,000 feet. As a result, certain areas within the DWSC—specifically in the curved portions of the DWSC between Sherman Island and the Port—have been difficult to maintain. McDonald Island is located between Sherman Island and the Port. Heritage Land Co., Inc., owns estate parcels on McDonald Island that has historically been, and is currently being, used for agricultural purposes and requires diversified soil sources to maintain soil quality and support crop growth. Dredged sediment from the O&M program would be beneficially reused on the island by Heritage Land Co., Inc.

The Port and USACE have prepared this joint Draft Initial Study/Mitigated Negative Declaration and Supplemental Environmental Assessment (IS/MND-EA) to the 1980 EIS to evaluate the impacts of constructing a new, expanded DMPS on McDonald Island and operating this DMPS as part of USACE's ongoing Stockton DWSC O&M program (proposed action). The scope of analysis for this IS/MND-EA is limited to construction and operation of the DMPS. Impacts from hydraulic dredging in the Stockton DWSC would be unchanged from impacts evaluated in the 1980 EIS and therefore are not considered as part of the proposed action nor are they discussed in this IS/MND-EA.

1.2 Project Location and Existing Site Conditions

The proposed action is on McDonald Island, which is situated along the Stockton DWSC in the Sacramento-San Joaquin River Delta (Delta) in San Joaquin County, California (Figure 1). McDonald Island is approximately 12 miles northwest of Stockton and is surrounded by a levee system that is maintained by the Reclamation District 2030-McDonald Island (RD2030). The project area is in Sections 11, 12, 13, and 14, T2N, R4E. The proposed DMPS would be approximately 18 acres in size and located in the northern portion

of McDonald Island (Figure 2). It is bordered to the north by the waterway and Columbia Cut; the Stockton DWSC is east of McDonald Island.

The majority of McDonald Island is used for agricultural purposes, with corn, asparagus, tomatoes, alfalfa, wheat, grapes, potatoes, safflower, and soybeans being the major crops (California Outdoor Properties 2015). Sod is also cultivated for commercial and residential lawns. There are recreational facilities on the island, including a ranch on the northwest corner (California Outdoor Properties 2015). The estate parcels containing the proposed DMPS area are currently zoned for agricultural use under a Williamson Act contract. The Williamson Act restricts land use to agricultural and compatible uses under a 10-year contract. Because the site is used for agriculture, heavy equipment is currently used at the site on a regular basis.

As further described in Section 3.4.4, a field survey of the McDonald Island estate parcels was conducted on August 26, 2021, by an Anchor QEA botanist/wetland scientist. The estate parcels were evaluated for vegetation, hydrology, and soils to determine existing habitat types and identify upland habitat.

1.3 Purpose and Need

The purpose of the proposed action is to maintain the Stockton DWSC more effectively by securing an additional upland DMPS on McDonald Island. The proposed action is needed because without proper and regular maintenance, the operating depths of the Stockton DWSC are reduced, which directly affects Port operations. The Port and USACE identified the following project objectives:

- The site must be located between Sherman Island and the Port to service portions of the authorized Stockton DWSC that are away from existing DMPSs with available placement capacity.
- The site must be located adjacent to the Stockton DWSC to maximize its utility for operations and maintenance dredging activities where pumping cannot exceed 15,000 feet.
- To minimize environmental impacts, mitigation requirements, and overall entitlement process timelines, the site must not result in the fill of waters of the United States or state.
- The site must be constructed and usable for the 2022 dredging season (August 1 to November 30, 2022).

1.4 Scope of Analysis

The CEQA lead agency is the California state or local agency with primary approval authority over the proposed action. Per CEQA Guidelines Section 15051(b)(1), "the lead agency will normally be an agency with general governmental powers, such as a city or county, rather than an agency with a single or limited purpose." The NEPA lead agency is the federal agency with primary responsibility for NEPA compliance and is generally the federal agency with greatest responsibility for approving or denying approval of the proposed action. Operations and maintenance actions for the Stockton DWSC are authorized by the Rivers and Harbors Act of July 24, 1946 (Public Law 525, 79th Congress, 2nd Session) and of October 27, 1965 (Public Law 89-298, 89th Congress, 1st Session). In addition, authorization is given by "An Act Making Supplemental Appropriations for the Fiscal Year Ending September 30, 1985, and for Other Purposes," as described in Public Law 99-88 dated August 15, 1985. As presented below and in

Section 1.4.2, for the proposed action, the Port is the CEQA lead agency and USACE is the NEPA lead agency. A full list of document preparers is included as Appendix A.

This Draft IS/MND-EA has been prepared in compliance with the following regulations:

- National Environmental Policy Act (NEPA)
- Council on Environmental Quality regulations implementing the procedural provisions of NEPA (40 Code of Federal Regulations [CFR] 1500–1508)
- California Environmental Quality Act (CEQA; specifically, Public Resources Code Section 21000 et seq.)
- CEQA Guidelines (California Code of Regulations [CCR] Section 1500 et seq.)

1.4.1 Port of Stockton

The CEQA action is based on the Port's construction of the proposed McDonald Island DMPS for use by USACE's O&M program. Therefore, the Port is the CEQA lead agency and is responsible for review and approval of the Initial Study/Mitigated Negative Declaration.

1.4.1.1 Decision to Be Made

CEQA requires that the potential environmental effects of a project be evaluated and disclosed to the public and decision-makers prior to implementation. Under CEQA, the lead agency conducts an Initial Study to determine whether the project would result in a significant effect on the environment (CEQA Guidelines Section 15063[a]). If there is substantial evidence that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) must be prepared in accordance with CEQA Guidelines Section 15064(a). However, if the lead agency determines that there is no substantial evidence that the project plans or any of its aspects may cause a significant effect on the environment, a Mitigated Negative Declaration may be prepared. In this case, the lead agency prepares a written statement describing the reasons a proposed project would not have a significant effect on the environment and, therefore, why an EIR need not be prepared. A Mitigation Monitoring and Reporting Program is prepared and proposed for adoption when the project environmental document is considered for approval in connection with other project approvals.

1.4.2 U.S. Army Corps of Engineers

The NEPA action is based on USACE's use of the proposed McDonald Island DMPS as part of its O&M program. Therefore, USACE is the NEPA lead agency and is responsible for review and approval of the Draft Supplemental Environmental Assessment (EA).

As previously noted previously, the USACE O&M program for the Stockton DWSC was previously evaluated in the 1980 EIS (USACE 1980). No changes in dredging activities from those fully evaluated in the 1980 EIS are proposed as part of the proposed action. Because the proposed McDonald Island DMPS would be used as part of the previously authorized USACE O&M program evaluated in the 1980 EIS, a Supplemental EA to the 1980 EIS has been prepared to address the potential incremental impacts associated with constructing and operating the proposed McDonald Island DMPS and to evaluate whether those impacts would be consistent with or greater than the type and scope of impacts described in the 1980 EIS. Impacts associated

with maintenance dredging of the Stockton DWSC would remain consistent with those described in the 1980 EIS; accordingly, they are not evaluated in this Draft IS/MND-EA.

1.4.2.1 Decision to Be Made

NEPA requires that the potential environmental effects of a project be evaluated and disclosed to the public and decision-makers prior to implementation. An EA is prepared to determine whether a federal action has the potential to cause significant environmental effects. NEPA regulations specify that an EA should address only those resource areas potentially subject to environmental impacts. NEPA defines effects or impacts as follows:

> Changes to the human environment from the proposed action or alternatives that are reasonably foreseeable include the following: (1) Direct effects, which are caused by the action and occur at the same time and place. (2) Indirect effects which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems. (3) Cumulative effects, which are effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time. (4) Effects including ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions which may have both beneficial and detrimental effects, even if on the balance the agency believes that the effects will be beneficial. (40 CFR 1508.1[g])

Effects include ecological, aesthetic, historic, cultural, economic, social, or health effects, and can be direct, indirect, or cumulative, as stated in 40 CFR 1508.1(g)(4). In other words, compliance with NEPA requires the federal agency to utilize a systematic and interdisciplinary approach to inform decision making. Further, the level of analysis should be commensurate with the anticipated level of environmental impact. If the lead agency determines that the action would not have significant environmental impacts, the agency issues a Finding of No Significant Impact (FONSI).

The District Engineer, Commander of the USACE, Sacramento District, must decide whether the federal action of operating the McDonald Island DMPS qualifies for a FONSI under NEPA, or whether a Supplemental Environmental Impact Statement must be prepared.

1.4.3 Intergovernmental Coordination

USACE and the Port have coordinated on preparing this document as a joint Draft IS/MND-EA. USACE and the Port will also coordinate and consult with the parties listed in Table 1 as required by local, state, and federal regulations. Table 1 summarizes the expected relevant regulatory agencies and their statutory authority as related to the proposed action. The jurisdiction of these agencies will be confirmed through subsequent coordination.

Table 1
Regulatory Agencies and Authority

Regulatory Agency	Statutory Authority/Implementing Regulations
Office of Historic Preservation	Consults with federal lead agencies under Section 106 of the National Historic Preservation Act and with state and federal lead agencies regarding impacts on historic properties that are either listed, or eligible for listing, on the National Register of Historic Places. USACE initiated Section 106 consultation with the State Historic Preservation Officer for the proposed action on December 27, 2021.
U.S. Fish and Wildlife Service	Consults with federal lead agencies under Section 7 of the Endangered Species Act (ESA) regarding potential effects on federally endangered and threatened species. USACE expects to initiate Section 7 ESA consultation with USFWS for the proposed action in July 2022.
Central Valley Regional Water Quality Control Board	Reviews projects for authorization under Clean Water Act Section 401. The proposed action would be required to comply with the water quality standards outlined in the USACE O&M program's Memorandum of Understanding with the Central Valley Regional Water Quality Control Board (CVRWQCB; Resolution R5-2019-0041) (USACE and CVRWQCB 2019).

1.4.4 Related Documents

The Proposed Action is a component of a larger effort in the Stockton area. USACE published the *San Francisco Bay to Stockton California (John F. Baldwin and Stockton Ship Channels) Interim General Design Memorandum and EIS* in June 1976, in accordance with the requirements of NEPA. Initial design and construction work to establish the channel occurred prior to NEPA becoming law. The draft EIS and design memorandum analyzed the impacts of proposed modifications to the established navigation channel between Avon and Stockton, considering economic feasibility and environmental effects. The study area for the memorandum extends from Avon in Suisun Bay to the Port, a distance of approximately 51 miles. The draft document was circulated for public review in January 1980. Comments were received between January 22 and February 22, 1980. A revised final EIS was issued in February 1981. The NEPA guidelines of 1971 did not require signed records of decision. The modification of the John F. Baldwin and Stockton Ship Channels was authorized under House Document No. 208, 89th Congress, 1st Session.

1.4.4.1 Related Documents Pre-Authorization

- House Committee Document No. 4, 70th Congress, 1st Session
- Senate Committee Print, 73rd Congress, 1st Session
- House Committee Document No. 15, 75th Congress, 1st Session
- House Document No. 752, 80th Congress, 2nd Session

1.4.4.2 Related Documents Post-Authorization

- November 1968, Design Memorandum No. 2, San Joaquin and Stockton Channel Project, Bank Protection
- June 1969, Design Memorandum No. 3, San Francisco Bay to Stockton, San Joaquin River, Levee Setbacks
- March 1971, Design Memorandum No. 4 and Final Environmental Statement, San Francisco Harbor Project, Main Ship Channel (San Francisco Bar)
- September 1971, Office Report, Route Selection – False River Reach
- October 1971, Final Environmental Statement, Bank Protection – Venice Island to Stockton, CA
- December 1971, Office Report, Feasibility of 35-Foot Channel – Point Edith to Stockton
- January 1973, Office Study, Determination of Optimum Economic Depth, Point Edith to Pittsburg-Antioch Area
- July 1973, Office Study, An Analysis of Single User Concept and Maneuvering Areas – Richmond Long Wharf
- September 1973, Office Study, Alternative, San Francisco Bay to Point Edith
- June 1976, Summary of Alternative Systems for Delivery of Crude Petroleum to the San Francisco Bay Area
- May 1978, Assessment of the Effects of Proposed Submerged Sill on the Water Quality of Western Delta-Suisun Bay, Hydroscience Inc.
- August 1978, San Francisco Bay to Stockton, California Project, San Francisco Bay to Point Edith (Region) Environmental and Economic Status Report
- September 1980, Final Interim General Design Memorandum and EIS, Department of the Army, Sacramento District, Corps of Engineers, Sacramento, California
- February 1981, Revised Interim General Design Memorandum and EIS, Department of the Army, Sacramento District, Corps of Engineers, Sacramento, California
- October 1997, Environmental Assessment, Stockton Ship Channel, Maintenance Dredging, Department of the Army, Sacramento District, Corps of Engineers, Sacramento, California
- April 2004, Order R5-2004-0061-001, Waste Discharge Requirements for Dredging Activities and Dredge Material Disposal Conducted by the Corps, the Port of Stockton and the Department of Water Resources in the Stockton Deep Water Ship Channel, Central Valley Regional Water Quality Control Board, Sacramento, California
- July 2015, Initial Study/Mitigated Negative Declaration Twitchell and Mandeville Island Dredged Material Placement Sites, prepared by Anchor QEA, prepared for Port of Stockton, Stockton, California
- August 2016, Sacramento and Stockton Deep Water Shipping Channels Dredging and Bank Stabilization Project (Service File No. 08FBDT00-2016-F-0098), U.S. Fish and Wildlife Service, Sacramento, California
- October 2016, Endangered Species Act Section 7(a)(2) Biological Opinion, and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Sacramento

and Stockton Deep Water Ship Channels Maintenance Dredging and Bank Protection Project, National Marine Fisheries Service, West Coast Region, Sacramento, California

- May 2018, Interim Memorandum of Understanding for Maintenance Dredging Activities in the Sacramento and Stockton Deep Water Ship Channels, Central Valley Regional Water Quality Control Board, Sacramento, California
- April 2019, Environmental Assessment/Initial Study for the Tule Island Dredged Material Placement Site, prepared by Anchor QEA, prepared for the U.S. Army Corps of Engineers and the Port of Stockton, Sacramento, California
- June 2019, Memorandum of Understanding Between the United States Army Corps of Engineers, San Francisco District and the California Regional Water Quality Control Board, Central Valley Region Concerning Operations and Maintenance Dredging of Stockton and Sacramento Deep Water Ship Channels, Central Valley Regional Water Quality Control Board, Sacramento, California

1.5 Public and Agency Involvement

Public participation is an integral part of the CEQA and NEPA processes. Public participation facilitates two-way communication between the public and the lead agency decision-makers, ensuring that public concerns and input are considered in the final decision. Interested members of the public and agencies will have an opportunity to review and comment on the Draft IS/MND-EA before it is finalized by the Port and USACE. A Notice of Availability (NOA) under NEPA and a Notice of Completion (NOC) under CEQA announcing the Draft IS/MND-EA and its associated 30-day comment period was published on the Port's website at: https://www.portofstockton.com/ceqa-documents/. As part of the public review process, the Port will circulate the NOA and NOC to a list of agencies and individuals who have requested to be added to a list of interested parties. Appendix B includes the complete list of agencies and individuals. The Draft IS/MND-EA is available for review at http://www.spk.usace.army.mil/Media/USACE-Project-Public-Notices/ and https://www.portofstockton.com/ceqa-documents/.

Written comments can be mailed in hard copy or transmitted via email to the following:

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All comments received during the comment period will be considered during development of the Final IS/MND-EA.

2 Alternatives

2.1 Alternatives Considered but Eliminated

USACE and the Port considered alternatives to establishing a DMPS on McDonald Island, including establishing a DMPS in another location. This alternative was eliminated due to logistic constraints associated with securing a site.

2.1.1 Alternative DMPS Locations

The USACE and Port considered establishing a DMPS on other properties along the poorly maintained portions of the Stockton DWSC. The Port owns property on Fern and Headreach islands, northeast of McDonald Island; however, the upland portions of those islands are very narrow and not conducive to establishing an upland DMPS. While an in-water DMPS could be feasible, the associated regulatory permitting process and site preparation requirements would preclude an in-water DMPS from being usable for a minimum of several years. No other properties are known to the Port or USACE as available for purchase in the poorly maintained portions of the Stockton DWSC. For these reasons, alternative locations for establishing a new DMPS were not further evaluated.

2.2 Alternatives Evaluated in this Document

The following two alternatives are evaluated in this document: the No Action Alternative and the Proposed Action: Construction and Operation of McDonald Island DMPS.

2.2.1 No Action Alternative

The No Action Alternative involves no construction activities occurring on McDonald Island. Under the No Action Alternative, only the currently authorized DMPSs that are a part of the USACE's O&M program could be used for the dredging, stockpiling, and disposal activities. There would be no additional DMPS available for use as part of the O&M program in the poorly maintained portions of the Stockton DWSC. Deferred channel maintenance would pose an increasingly larger problem for ships calling on the Port as time goes on.

2.2.2 Proposed Action: Construction and Operation of McDonald Island DMPS

The proposed action involves the following activities: constructing containment berms at the new DMPS; placing dredged slurry in the site as part of the USACE O&M program; discharging decant water back to the surface waters of Columbia Cut next to the DMPS (as needed); and maintaining the site between dredging episodes in the future. Maintenance dredging activities within the Stockton DWSC associated with the USACE O&M program would be unchanged from the description provided in the 1980 EIS; accordingly, these activities are not described in this IS/MND-EA.

2.2.2.1 Construction Activities

To prepare the DMPS for dredged material placement, containment berms would be constructed around the perimeter of the proposed placement area using on-site soils. The containment berms would be 8 feet in crest height and 12 feet in crest width and have a horizontal to vertical ratio (H:V) of 2.5H:1V slope. Due to existing site topography, the berm heights (from the bottom to top) would vary, but the elevation of the top of the berm would remain consistent in all areas. The approximate alignment of the proposed containment berms is shown in Figure 2.

Construction contractors would access the site by driving onto McDonald Island via Zuckerman Bridge located on the southeast corner of the island (Figure 2). From there, heavy equipment would be driven along the Zuckerman Road until reaching the project site. There are access ramps on the inward sides of the levee. Construction equipment would include scrapers, a backhoe, a bulldozer, a water truck, a compactor, and dump trucks.

Berm construction activities would span approximately 10 to 12 weeks and are expected to occur between August and October 2023, pending issuance of the required approvals. Construction activities to prepare the site for use would occur up to 7 days per week between 6:00 a.m. and 9:00 p.m.

2.2.2.2 Site Operations and Maintenance Activities

The operations and maintenance of the proposed McDonald Island DMPS would be consistent with those of the other USACE O&M program DMPSs. USACE conducts maintenance dredging in the Stockton DWSC annually. However, the entire channel does not require maintenance dredging each year; as such, the dredging areas differ annually according to need. Annual hydrographic surveys assess the deposition that has occurred throughout the DWSC. In the future, the McDonald Island DMPS may be used annually or less frequently, depending on whether maintenance dredging in the site's proximity is required. If the DMPS is used, dredging and dredged material placement activities would be conducted up to 24 hours per day, 7 days per week.

Dredged slurry (with a solids content of 10% to 20%) would be transported to the DMPS from a discharge pipeline, which would run from the dredge to Columbia Cut, across the levee separating the island from the Stockton DWSC, over the site's berm, and into the site. The pipeline would be made of durable plastic and would float or sink depending on the specific gravity of the material it contains. The pipeline would float approximately 2 inches above the water surface when filled with water or air and would rest on the channel bottom while containing dredged material and water. Figure 3 presents three dredged material pipeline route options for transport of dredged material to the DMPS from the Stockton DWSC. Pipeline Routes 1, 2, and 3 would be approximately 1.25, 1.15, and 1.75 miles in length, respectively.

The specific location of both the discharge pipeline and the decant pipe (if needed; based on the dredge volume to be placed) would be determined each year by the USACE contractor in conjunction with a qualified biologist to avoid special status species or habitat. The discharge pipeline would be marked in the water by buoys or high-visibility paint to warn boaters of its presence. Additional safety measures may include signs, flaggers, or other measures as required.

Between maintenance dredging episodes, stockpiled soils within the site may be excavated from the interior of the DMPS and reused by the property owner, Heritage Land Co., Inc., within McDonald Island; the containment berms would be maintained and repaired as needed prior to each dredging season. Depending on the property owner's preferences, the site may be used for agricultural uses or sit dormant at other times of the year or during years when it is not used as part of the USACE O&M program.

3 Environmental Factors Potentially Affected

The format for this joint Draft IS/MND-EA is largely based on the CEQA environmental checklist included as Appendix G of the CEQA Guidelines. Under CEQA, thresholds are used to determine if project-related changes to the environment are significant (CEQA Guidelines Section 15064.7). The CEQA environmental checklist table is included as Appendix C. Sections 3.1 and 3.2 provide required information relevant to the Port's CEQA determination.

Twenty-one natural and built environmental resources typically evaluated under CEQA or NEPA were considered during development of the scope of this IS/MND-EA. Potential impacts to nine environmental resources would be minimal or nonexistent as a result of the proposed action and are therefore not analyzed in detail (Section 3.3). The remaining 12 were analyzed in detail (Section 3.4). Table 2 summarizes the level of analysis included in this document for each natural and built environmental resource.

Table 2
Environmental Resource Considerations

Environmental Resource	Detailed Analysis	Environmental Resource	Detailed Analysis
Aesthetics	Yes	Mineral Resources	No
Agriculture and Forestry Resources	Yes	Noise	Yes
Air Quality	Yes	Population and Housing	No
Biological Resources	Yes	Public Services	No
Cultural Resources	Yes	Recreation	No
Energy	Yes	Socioeconomics and Environmental Justice	No
Geology and Soils	Yes	Transportation/Traffic	No
Greenhouse Gas Emissions	Yes	Tribal Cultural Resources	Yes
Hazards and Hazardous Materials	No	Utilities	No
Hydrology and Water Quality	Yes	Wildfire	No
Land Use and Planning	Yes		

3.1 CEQA Determination

On the basis of this initial evaluation:

- ☐ I find that the proposed subsequent activity COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions to the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect: 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards; and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects: a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards; and b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature	Date
Printed Name	For

3.2 Evaluation of Environmental Impacts

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including off site as well as on site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required under CEQA.

4. "Negative Declaration: Less Than Significant with Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less-than-significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).
5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
    a. Earlier Analysis Used. Identify and state where they are available for review.
    b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
    c. Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources: A source list should be attached, and other sources used, or individuals contacted should be cited in the discussion.
8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
9. The explanation of each issue should identify:
    a. The significance criteria or threshold, if any, used to evaluate each question; and
    b. The mitigation measure identified, if any, to reduce the impact to less than significance.

This approach, and the analysis presented in Section 3.4, also satisfy NEPA standards for the evaluation of environmental impacts, consistent with 40 CFR 1501.3, 40 CFR 1501.6, and 40 CFR 1508.1(s).

3.3 Resources Eliminated from Detailed Analysis

Based on the environmental analysis of the proposed action, the following environmental resources were considered but are not analyzed in detail in this document because no adverse impacts were identified. No further discussion of these resources is presented in this document.

3.3.1 Hazards and Hazardous Materials

The proposed DMPS is not included on a list of hazardous materials sites or within fire hazard severity zones. There are no schools or airstrips within over 6 miles of the project site. The closest school is Holt

Union Elementary School, which is approximately 6.2 miles southeast of the project site. The closest airport (or airstrip) is Kingdon Airpark, located approximately 8.5 miles northeast of the project site. Once operational, the DMPS would only accept dredged material that has been tested, determined non-hazardous, and meets stringent placement acceptability criteria established in the Memorandum of Understanding with the CVRWQCB (Resolution R5-2019-0041) (USACE and CVRWQCB 2019). Any dredged material determined hazardous would be disposed of at an appropriate landfill and not at the proposed DMPS. Therefore, there would be no impact related to the routine transport, use, or disposal of hazardous materials under any alternative.

3.3.2 Land Use and Planning

McDonald Island is a sparsely populated agricultural area with no established communities. RD2030, which includes McDonald Island, has a population of less than 20 residents (San Joaquin County Office of Emergency Services 2015). The primary land use on the island is agriculture and the parcels containing the proposed DMPS are zoned for agriculture use and under Williamson Act contracts as described in Section 3.4.2. The proposed action would not impact agricultural production; therefore, there would be no impacts related to land use and planning under any alternative.

3.3.3 Mineral Resources

No known mineral resources are located on or near the project site. Therefore, there would be no impacts to mineral resources under any alternative.

3.3.4 Population and Housing

The only housing facilities on the island are limited employee residences and vacation rentals (California Outdoor Properties 2015). The proposed action would not include any housing components, induce population growth in the area, or displace any existing housing. Therefore, no impacts to population and housing would occur under any alternative.

3.3.5 Public Services

The proposed action would not result in increased demand on any existing facilities or services, including fire protection, police, schools, or parks. Therefore, there would be no impact on fire or police protection, schools, parks, or other public facilities under any alternative.

3.3.6 Recreation

The proposed action would not directly affect or cause an increase in the use of existing recreational facilities, nor would it require the construction of new recreational facilities that could adversely affect the environment. Therefore, there would be no impact on recreation under any alternative.

3.3.7 Socioeconomics and Environmental Justice

No property acquisition would be required under the proposed action. The proposed action would not displace existing tenants or affect property values, housing, employment, or income. McDonald Island is sparsely populated, and surrounding communities would not be impacted by the proposed action. Therefore, there would be no impacts on socioeconomics. Because the proposed action would not substantially affect human health or the environment, it would not have a disproportionate impact on any population, including minority or low-income populations. Therefore, no impacts to populations protected under Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority or Low-Income Populations) or Executive Order 14008 (Tackling the Climate Crisis at Home and Abroad) would result under any alternative.

3.3.8 Transportation/Traffic

The proposed action would generate a negligible number of new trips on the roadway system associated solely with transporting construction equipment and workers to the project site during the 10 to 12 weeks of construction. Construction access to the project site would be via a one-lane bridge located on the southeast portion of the island. There would be no new operational (permanent) trips. The proposed action would not affect air traffic patterns or affect emergency access to the project site. Therefore, there would be no impact on transportation or traffic under any alternative.

3.3.9 Utilities

The proposed action would not require the construction or use of any utilities, nor would it affect any existing utilities on the island. Therefore, there would be no impact on utilities under any alternative.

3.3.10 Wildfire

The proposed action site is not located on or near lands classified as very high fire hazard severity zones. Proposed action activities would not exacerbate fire risks or impede an emergency response plan. There would be no impact from the risk of wildfire hazards under any alternative.

3.4 Evaluation of Environmental Impacts

3.4.1 Aesthetics

3.4.1.1 Affected Environment

As described in Section 1.2, the 5,900-acre McDonald Island is bounded on the north by the San Joaquin River, Columbia Cut, and Medford, Orpheus, and Fern islands; on the west by Middle River and Latham Slough; on the south by Empire Cut and Roberts Island; and on the east by the San Joaquin River and Rindge Tract. Local regional land uses that affect the visual character of the project area include residences (the closest residence is located at 14344 Tinsley Island, approximately 3,500 feet from the proposed DMPS, across Whiskey Slough), agricultural lands, and the San Joaquin River, Whiskey Slough, and Columbia Cut, which serve industrial, recreational, and natural uses.

The island is surrounded by a levee system that is maintained by RD2030. The majority of McDonald Island is currently used for agricultural purposes, with corn, asparagus, tomatoes, alfalfa, wheat, grapes, potatoes, safflower, and soybeans being the major crops (California Outdoor Properties 2015). Sod is also cultivated for commercial and residential lawns. The parcels containing the proposed DMPS are owned by Heritage Land Co., Inc., and are currently zoned for agricultural use under a Williamson Act contract. The proposed DMPS site is currently farmed for crops such as corn.

California's Scenic Highway Program was created by the State Legislature in 1963 to protect and enhance the natural scenic beauty of California highways and adjacent corridors through special conservation treatment. The state laws governing the Scenic Highway Program are found in the Sections 260 through 284 of the Streets and Highways Code. The closest scenic highway to the project site is the portion of State Route 580 from Interstate 5 to State Route 205. This roadway is 20 miles south of McDonald Island.

The project area's topography is mostly flat terrain with agricultural fields and limited vegetation aside from crops. The surrounding project area is also composed of areas of water, including Whiskey Slough and Columbia Cut. Views of the project site are mostly opened on all sides and are generally consistent with the surrounding agricultural views. The project site is not visible from the nearest residential area (located on Tinsley Island across Whiskey Slough), but is potentially visible from Whiskey Slough, Columbia Cut, and Medford Island.

3.4.1.2 Proposed Action Impact Evaluation

Would the project have a substantial adverse effect on a scenic vista?

No Impact. The existing visual character in the study area is not considered scenic, nor are there any identified scenic vistas within the proposed action vicinity. Therefore, there would be no impact to scenic vistas.

Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. The proposed action would not affect any rock outcroppings or historic buildings. No vegetation would be removed as part of the proposed action. There are no designated state scenic highways within the study area. The placement of dredged material and reuse of dredged sediment for levee maintenance is generally consistent with the existing visual character of the study area, which is largely associated with agricultural uses involving heavy equipment. Specifically, case studies on the beneficial reuses of dredged sediment have shown that it can be used as a soil addition for agriculture to improve the physical and chemical characteristics of marginal soils (USACE 2015, 2018). The dredged material would also be used to maintain the levee surrounding McDonald Island, which is necessary for the long-term viability of agricultural production on the site. Therefore, there would be no impact to scenic resources.

Would the project, in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Less than Significant Impact. The proposed action is located within an agricultural area and would not conflict with applicable zoning. There are no applicable regulations governing scenic quality at the project site.

The DMPS containment berms could be up to 8 feet in height and could potentially be visible to boaters in Whiskey Slough or Columbia Cut; however, these berms would be generally consistent with the appearance of existing berms and levees throughout McDonald Island and other islands of the Delta, including Tule, Twitchell, and Mandeville islands. The berms would not be visible from any residences. Accordingly, this would represent a less than significant impact to the visual character of the project site.

Trucks and other construction equipment traveling on Zuckerman Road would be temporarily visible to boaters in Whiskey Slough or Columbia Cut; however, tractors and trucks used for agricultural activities already use this route regularly. Another temporary element of the proposed action that may be visible during dredging activities from Whiskey Slough or Columbia Cut would be the dredge pipeline stretching from the dredge to the DMPS. The dredge pipeline would float when not in use, but majority of the time it would be in use and underwater where it would not be visible. Additionally, the impact would span just during active dredging operations and would not be visible from any residences. These temporary impacts to visual character of the project site would constitute a less than significant impact.

Based on the preceding analysis, the proposed action would result in less than significant impacts pertaining to visual character and quality of public views of the site and its surroundings.

Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

No Impact. Any lighting required for pipeline deployment, berm construction, and dredged material placement would be directed only onto the project site, would be the minimum necessary for safety purposes, and would not be visible from any residential areas or other sensitive visual receptors. No new permanent sources of light or glare would be constructed. Therefore, the proposed action would result in no impacts to daytime or nighttime views in the study area from new sources of light or glare.

3.4.1.3 No Action Alternative Impact Evaluation

No Impact. Under the No Action Alternative, existing agricultural lands and the associated aesthetics at McDonald Island would remain unchanged. The currently authorized DMPSs that are already a part of the USACE's O&M program would be used for dredged material placement. Therefore, under the No Action Alternative, there would be no impacts to aesthetics beyond those previously analyzed for the USACE's O&M program.

3.4.2 Agriculture and Forestry

3.4.2.1 Affected Environment

Regionally, agriculture is the largest industry in San Joaquin County, and the majority of McDonald Island is currently used for agricultural purposes. The DMPS is zoned for agricultural use. As presented in Figure 4, the site contains land categorized by the Farmland Mapping and Monitoring Program of the California Resources Agency as Prime Farmland. The overall project site, including the proposed construction access route, is entirely designated as Prime Farmland.

The proposed DMPS is also located within parcels currently under a 10-year Williamson Act contract. The Williamson Act, also known as the California Land Conservation Act of 1965, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. A reconnaissance survey conducted on August 26, 2021, confirmed that portions of the project site are farmed annually and used to cultivate crops such as corn. There are no forest lands located within or near the proposed action site.

3.4.2.2 Proposed Action Impact Evaluation

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

Less than Significant Impact After Mitigation. As previously noted, portions of the project site are characterized as Prime Farmland by the Farmland Mapping and Monitoring Program of the California Resources Agency. No permanent conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance would occur as part of the proposed action. While the project site would be temporarily unavailable for agricultural uses during construction of the berms (10 to 12 weeks) and dredged material placement activities (approximately 2 months during the dredging season in years where the DMPS is used as part of the O&M program), upon completion of placement activities, the site would be readily available to be used for agricultural purposes. The placement of dredged material would not conflict with agricultural production and may provide long-term benefits at the proposed placement site. Case studies on the beneficial reuses of dredged sediment have shown that it can be used as a soil addition for agriculture to improve the physical and chemical characteristics of marginal soils (USACE 2015, 2018). The dredged material would also be used to maintain the levee surrounding McDonald Island, which is necessary for the long-term viability of agricultural production on the island.

To ensure impacts to agricultural uses are less than significant, the following mitigation measure would be implemented:

- **MM-AG-1:** When not actively in use as a DMPS, USACE and the Port would leave the lands underlying the project site available for agricultural use by the property owner.

Based on the preceding analysis and the inclusion of mitigation measure MM-AG-1, the proposed action would result in less-than-significant impacts.

Would the project conflict with existing zoning for agricultural use or conflict with a Williamson Act contract?

Less than Significant Impact After Mitigation. As previously described, the proposed action would not conflict with agricultural use or zoning at the project site. The project site is currently under a Williamson Act contract. While proposed action would temporarily restrict agricultural uses at the project site, it would not involve permanent conversion of Williamson Act contracted lands to non-agricultural use. Implementation of MM-AG-1 would ensure that agricultural uses are permanently maintained in the project area. Therefore, the proposed action would not result in an incompatible land use after completion of project activities, and impacts would be considered less than significant.

Would the project 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])?

No Impact. There are no forest lands, timberland, or timberland zoned Timberland Production in or near the proposed action site. Therefore, there would be no impact.

Would the project result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. There are no forest lands in or near the proposed action site. Therefore, there would be no impact.

Would the project 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?

Less than Significant Impact After Mitigation. There are no forest lands in or near the proposed action. As previously described, while the proposed action would temporarily restrict agricultural uses at the project site, it would not involve permanent changes to the existing environment that could result in the conversion of Farmland to non-agricultural use. Implementation of MM-AG-1 would ensure that the project site would continue to be used for agricultural use after construction and throughout operation of the proposed action. For these reasons, the proposed action would result in less than significant impacts.

3.4.2.3 No Action Alternative Impact Evaluation

No Impact. Under the No Action Alternative, existing agricultural production at the project site and on McDonald Island would remain unchanged. The currently authorized DMPSs that are already a part of the USACE's O&M program would be used for dredged material placement. Therefore, under the No Action Alternative, there would be no impacts to agriculture or forestry beyond those previously analyzed under the USACE's O&M program.

3.4.3 Air Quality

3.4.3.1 Affected Environment

The proposed action would occur in the northern portion of the San Joaquin Valley Air Basin (SJVAB). The SJVAB is bounded by the Sierra Nevada Mountains to the east, the Coast Ranges to the west, and the Tehachapi Mountains to the south; it is made up of seven counties in California's Central Valley—San Joaquin; Stanislaus; Merced; Madera; Fresno; Kings; and Tulare—and includes a portion of Kern County. The climate within the SJVAB is typical of inland valleys in California with hot, dry summers and cool, mild winters. Daytime temperatures in the summer often exceed 100°F, with lows in the 60s. In winter, daytime temperatures are usually in the 50s, with lows around 35°F. Fog is common in the winter and may persist for days. Winds are predominantly up-valley (from the north) in all seasons, but more so in the summer and spring months. Winds in the fall and winter are generally lighter and more variable in direction, but generally blow toward the south and southeast. The SJVAB is managed by the San Joaquin Valley Air Pollution Control District (SJVAPCD).

Air quality in the SJVAB is affected by several sources, including motor vehicle emissions, oil production and refining, and agriculture. Because of the valley's unique physical characteristics, the potential for pollution is very high. Surrounding elevated terrain, in conjunction with temperature inversions, frequently restricts lateral and vertical dilution of pollutants. Ozone (O_3), the major component of the valley's summertime smog, is formed via chemical reactions between reactive organic gases (ROG) and nitrogen oxides (NO_X) in the presence of ultraviolet radiation or sunlight. Abundant sunshine and warm temperatures in summer are ideal conditions for the formation of photochemical oxidants, and the photochemical pollution (O_3) becomes common. Tiny particles of solids or liquids (excluding pure water) that are suspended in the atmosphere are known as particulate matter (PM) and are classified according to their diameter in microns as either particulate matter less than 2.5 microns in diameter ($PM_{2.5}$) or particulate matter less than 10 microns in diameter (PM_{10}). PM can be emitted directly (primary PM, such as dust or soot) and can form in the atmosphere through photochemical reactions or gaseous precursors (secondary PM). Much of the valley's ambient PM_{10} and $PM_{2.5}$ is secondary PM, formed in atmospheric reactions of NO_X. Due to the combined air pollution sources within the SJVAB and meteorological and geographical effects that limit dispersion of air pollution, the SJVAB can experience high air pollutant concentrations.

3.4.3.1.1 Regulatory Setting

The U.S. Environmental Protection Agency (USEPA) enforces federal air quality regulations. The federal Clean Air Act of 1970 (CAA), amended in 1990, authorized the establishment of national health-based air quality standards, set deadlines for their attainment, and established actions required of areas that exceed these standards. USEPA has established National Ambient Air Quality Standards (NAAQS) for seven major pollutants of concern, called "criteria pollutants." The criteria air pollutants are carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), O_3, PM_{10}, $PM_{2.5}$, and lead. Air agencies in areas that exceed the NAAQS are required to develop state implementation plans (SIPs) to show how they will achieve the NAAQS. USEPA's responsibility to control air pollution in individual states is primarily to review submittals of SIPs prepared by each state.

In California, the California Air Resources Board (CARB) has also established the more stringent California Ambient Air Quality Standards (CAAQS) for these seven pollutants and four additional pollutants: visibility-reducing particles, sulfates, hydrogen sulfide, and vinyl chloride. CARB prepares and enforces federally required SIPs in an effort to achieve and maintain NAAQS and CAAQS, which were developed as part of the California Clean Air Act (CCAA), adopted in 1988. In addition, CARB is responsible for assigning air basin attainment and nonattainment designations in California. Air basins are designated as being in attainment if the levels of a criteria air pollutant meet the CAAQS for the pollutant and are designated as being in nonattainment if the level of a criteria air pollutant is higher than the CAAQS.

Table 3 details both the federal and state ambient air quality standards. The standards represent the allowable atmospheric concentrations at which the public health and welfare are protected and include a reasonable margin of safety to protect the more sensitive receptors in the population. Sensitive receptors include day care centers, schools, retirement homes, hospitals, medical patients in residential homes, or other facilities that may house individuals with health conditions that would be adversely impacted by changes in air quality. Areas that violate a federal or state air quality standard are designated as non-attainment areas.

Table 3
National and California Ambient Air Quality Standards

Pollutant	Averaging Period	California Standards	National Standards	Health Effects
O_3	1-hour	0.09 ppm	--	Breathing difficulties, lung tissue damage
	8-hour[b]	0.070 ppm	0.070 ppm	
PM_{10}	24-hour	50 µg/m^3	150 µg/m^3	Increased respiratory disease, lung damage, cancer, premature death
	Annual	20 µg/m^3	--	
$PM_{2.5}$	24-hour[c]	--	35 µg/m^3	Increased respiratory disease, lung damage, cancer, premature death
	Annual	12 µg/m^3	12 µg/m^3	
CO	1-hour	20 ppm	35 ppm	Chest pain in heart patients, headaches, reduced mental alertness
	8-hour	9.0 ppm	9 ppm	
NO_2	1-hour	0.18 ppm	0.100 ppm[a]	Lung irritation and damage
	Annual	0.030 ppm	0.053 ppm	
SO_2	1-hour	0.25 ppm	0.075 ppm[a]	Increases lung disease and breathing problems for asthmatics
	24-hour	0.04 ppm	0.14 ppm	
	Annual	--	0.030 ppm	
Lead	30-day	1.5 µg/m^3	--	Increased body burden and impairment of blood formation and nerve conduction
	Quarter	--	1.5 µg/m^3	
	3-month	--	0.15 µg/m^3	
Sulfates	24-hour	25 µg/m^3	--	Decrease in ventilator function, aggravation of asthmatic symptoms, aggravation of cardiopulmonary disease

Pollutant	Averaging Period	California Standards	National Standards	Health Effects
Visibility-reducing particles	8-hour	In sufficient amount to give an extinction coefficient of >0.23 inverse kilometers (visual range to less than 10 miles with relative humidity less than 70%)	--	--
Hydrogen sulfide	1-hour	0.03 ppm	--	Odor
Vinyl chloride	24-hour	0.01 ppm	--	Short-term exposure: central nervous system effects – dizziness, drowsiness, and headaches; Long-term exposure: liver damage, cancer

Notes:
Source: CARB 2021a

a. The federal 1-hour NO_2 and SO_2 standards are based on the 3-year average of the ninety-eighth and ninety-ninth percentile of daily maximum values, respectively.
b. The federal 8-hour O_3 standard is based on the annual fourth highest daily maximum 8-hour concentration, averaged over 3 years.
c. The federal 24-hour $PM_{2.5}$ standard is based on the 3-year average of the ninety-eighth percentile of the daily values.

SJVAPCD is responsible for implementing federal and state regulations in the air basin, permitting stationary sources of air pollution, and developing the local elements of the SIP. Emissions from indirect sources, such as automobile traffic associated with development projects, are addressed through SJVAPCD's air quality plans, which are each air quality district's contribution to the SIP. The most recent 2018 $PM_{2.5}$ Plan was adopted by the District Governing Board on November 15, 2018, and by CARB on January 24, 2019, and has been forwarded to USEPA for final approval.

In addition to permitting and rule compliance, air quality management at the local level is also accomplished through development of regional CEQA significance thresholds and mitigation measures. SJVAPCD's thresholds of significance are based on the CAAQS and NAAQS and represent a regional approach to meeting the CAAQS and NAAQS recognizing the air districts attainment status, emission sources, and regional geography. SJVAPCD's CEQA significance thresholds are applicable to the proposed action. Table 4 shows the SJVAPCD criteria pollutants thresholds.

Table 4
San Joaquin Valley Air Pollution Control District Significance Thresholds

Pollutant/Precursor	Emission (tons per year)
NO_X	10
ROG	10
CO	100
PM_{10}	15
$PM_{2.5}$	15
SO_2	27

Note:
Source: SJVAPCD 2015a

TACs are airborne compounds that are known or suspected to cause adverse human health effects after long-term or short-term exposure. Cancer risk can result from long-term exposure, and non-cancer health effects can result from either chronic or acute exposure. Examples of TAC sources are diesel- and gasoline-powered internal combustion engines in mobile sources; industrial processes and stationary sources such as dry cleaners, gasoline stations, and paint and solvent operations; and stationary fossil fuel-burning combustion sources, such as power plants. Table 5 describes health effects of the possible TACs of concern monitored in California. Of the pollutants listed in Table 5, diesel particulate matter (DPM) from combustion engines would be the primary TAC of concern.

Table 5
Toxic Air Contaminant Health Effects

Pollutant	Health Effects
Benzene	Central nervous system depression, nausea, tremors, drowsiness, dizziness, headache, irritation of the eyes and respiratory tract; chronic exposure may reduce the production of both red and white blood cells resulting in aplastic anemia; exposure to benzene may result in an increased risk of contracting cancer
Chlorobenzene	Headaches, numbness, sleepiness, nausea, and vomiting
DPM	Respiratory damage and premature death, and may result in increased risk of contracting cancer
Ethyl benzene	Eye and throat irritation; exposure to high levels can result in vertigo and dizziness
Ethylene glycol monobutyl ether	Eye, respiratory tract, and skin irritation and burns; inhalation may cause headaches and hemolysis (red blood cell breakage)
Hexane	Short-term exposure affects the nervous system and can cause dizziness, nausea, headaches, and even unconsciousness; chronic exposure can cause more severe damage to the nervous system
Isopropyl alcohol	Skin rash, itching, dryness and redness, irritation of the nose and throat; repeated high exposure can cause headache, dizziness, confusion, loss of coordination, unconsciousness and even death
Methanol	Chronic exposure can cause visual problems and blindness, convulsions, coma, loss of consciousness, kidney failure, liver damage, low blood pressure, respiratory arrest, and damage to the central nervous system
Naphthalene	May cause nausea, vomiting, diarrhea, blood in the urine, and a yellow color to the skin

Pollutant	Health Effects
Propylene glycol monomethyl ether	Can irritate the noise, throat, and lungs causing coughing, wheezing, and/or shortness of breath, headaches, dizziness, lightheadedness, and passing out
Toluene	Irritation of the eyes and nose, weakness, exhaustion, confusion, euphoria, dizziness, headache, dilated pupils, lacrimation (discharge of tears), anxiety, muscle fatigue, insomnia, numbness or tingling of the skin, dermatitis, liver and kidney damage
Xylenes (mixed)	Depression of the central nervous system, with symptoms such as headache, dizziness, nausea, and vomiting

Note:
Source: USEPA Integrated Risk Information System (USEPA 2021)

3.4.3.1.1.1 General Conformity Rule

Section 176(c) of the CAA states that a federal agency cannot issue a permit for or support an activity unless the agency determines it will conform to the most recent USEPA-approved SIP. This means that projects using federal funds or requiring federal approval must not: 1) cause or contribute to any new violation of a NAAQS; 2) increase the frequency or severity of any existing violation; or 3) delay the timely attainment of any standard, interim emission reduction, or other milestone. General conformity requirements were adopted by Congress as part of the CAA and were implemented by USEPA regulations in the Federal Register on November 30, 1993 (40 CFR Sections 6, 51, and 93, "Determining Conformity of General Federal Actions to State or Federal Implementation Plans; Final Rule"). General conformity requires that all federal actions conform to the SIP as approved or promulgated by USEPA by determining that the action is either exempt from the General Conformity Rule requirements or is subject to a formal conformity determination.

The significance criteria used to evaluate NEPA air quality effects are based on the federal general conformity thresholds (Table 6). The SJVAB is currently designated nonattainment for $PM_{2.5}$ and severe nonattainment for 8-hour O_3 (volatile organic compounds and NO_X).

Table 6
General Conformity *De Minimis* Thresholds for Projects in the San Joaquin Valley Air Basin

Pollutant	SJVAB Threshold (tons per year)
NO_X	25
ROG	25
CO	100
PM_{10}	100
$PM_{2.5}$	100
SO_2	100

3.4.3.2 Proposed Action Impact Evaluation

The following assumptions were used in the analysis in this Draft IS/MND-EA:

- **Construction**: Berm construction activities would span a maximum of 12 weeks between May and October 2022. Construction would occur up to 7 days per week between 6:00 a.m. to 9:00 p.m. Construction equipment would include scrapers, a backhoe, a bulldozer, a water truck, and a compactor, and dump trucks. Construction equipment would access the site (once at the start of construction) by driving onto McDonald Island via Zuckerman Bridge located on the southeast corner of the island. Construction emissions would result from diesel-fueled construction equipment and on-road vehicles. Land-based construction emissions for the proposed action were calculated using California Emissions Estimator Model (CalEEMod) software (version 2020.4.0; CAPCOA 2020). A full description of construction assumptions, including equipment horsepower ratings, can be found in Appendix D.
- **Operations**: Maintenance dredging of the Stockton DWSC was previously assessed as part of the 1980 EIS (USACE 1980). Proposed action operations would not involve any new diesel equipment beyond the scope of analysis included in the 1980 EIS; therefore, a quantitative air quality analysis of operations is not required.

Would the project conflict with or obstruct implementation of the applicable air quality plan?

Less than Significant Impact. SJVAPCD has established thresholds of significance for criteria pollutant emissions, which are based on New Source Review offset requirements for stationary sources and the NAAQS and CAAQS. These thresholds represent a regional approach to meeting the NAAQS and CAAQS, recognizing SJVAPCD's attainment status, emission sources, and regional geography. Because the SJVAB is an extreme O_3 nonattainment area, stationary sources in SJVAPCD are subject to some of the toughest regulatory requirements in the nation. Emission reductions achieved through implementation of offset requirements are a major component of SJVAPCD's air quality plans. Therefore, projects with emissions below the thresholds of significance for criteria pollutants would be determined to not conflict or obstruct implementation of the air quality plans, while emissions exceeding those thresholds would conflict with and obstruct implementation. Table 7 presents the construction emissions resulting from the proposed action.

Table 7
Emissions from Construction (Tons per Year)

Year	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_2
2022	0.26	2.6	1.8	0.0045	0.80	0.38
SJVAPCD significance threshold	10	10	15	15	10	27
Exceed threshold?	No	No	No	No	No	No

As shown, the proposed action's construction would not exceed federal conformity limits or SJVAPCD's CEQA significance threshold. The proposed action would not result in any operational emissions. Consequently, construction and operation of the proposed action would not conflict with or obstruct implementation of any of SJVAPCD's applicable air quality plans. Therefore, impacts would be less than significant.

Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Less than Significant Impact. A CEQA lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable under CEQA standards if the project will comply with the requirements in a previously approved plan or mitigation program, including, but not limited to, an air quality attainment or maintenance plan that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located (CCR Section 15064[h][3]). As discussed previously, the proposed action would not exceed SJVAPCD significance thresholds. Therefore, impacts would be less than significant.

Would the project expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact. A significant impact would occur if a project would emit TACs that could cause a significant increase in health risks, including both carcinogenic and non-carcinogenic risks. A project is considered to have a significant TAC impact if it would:

- Result in ground-level concentrations of carcinogenic TACs that would increase the probability of contracting cancer for the maximally exposed individual by 20 in 1 million or more (SJVAPCD 2015b)
- Increase ground-level concentrations of non-carcinogenic TACs that would result in an acute or chronic hazard index exceeding 1 for the maximally exposed individual receptor (SJVAPCD 2015b)

Impacts to sensitive receptors are typically evaluated in terms of exposure to TACs. CARB classifies DPM as a TAC and uses PM_{10} emissions from diesel exhaust as a surrogate for DPM. Health effects from carcinogenic TACs are described in terms of individual cancer risk, which is based on a 30-year lifetime exposure to TACs. More than 90% of DPM is less than 1 micrometer in diameter and thus is a subset of $PM_{2.5}$. $PM_{2.5}$ comes from a variety of sources, but primarily from the burning of carbon-based fuels, such as gasoline, diesel, and wood. Numerous scientific studies have linked exposure to airborne $PM_{2.5}$ to increased severity of asthma attacks, development of chronic bronchitis, decreased lung function in children, respiratory and cardiovascular hospitalizations, and even premature death in people with existing heart or lung disease (CARB 2021b). Because DPM is a subset of $PM_{2.5}$, DPM also contributes to the same non-cancer health effects as $PM_{2.5}$ exposure. These effects include premature death, hospitalizations, and emergency department visits for exacerbated chronic heart and lung disease, including asthma, increased respiratory symptoms, and decreased lung function in children. Several studies suggest that exposure to DPM may also facilitate development of new allergies. Those most vulnerable to non-cancer health effects are children whose lungs are still developing and the elderly, who often have chronic health problems (CARB 2021b).

CEQA does not require comprehensive quantification of health risks for every project. Rather, projects are evaluated or screened for a need to quantify health risks, and a quantitative Health Risk Assessment (HRA) is conducted if it is determined that impacts could potentially exceed thresholds of significance. An HRA is dependent on several key variables: TAC emissions, TAC potency, exposure duration, and distance from sensitive receptors. If one of these variables (such as TAC emissions) is low, that, by itself, is not a basis for

determining whether an HRA is needed. However, taken together these variables make a compelling argument for determining the need for a quantitative HRA. For example, low TAC emissions emitted far from sensitive receptors and for a short duration would indicate that impacts are unlikely to exceed thresholds of significance.

Proposed action construction activities would result in temporary DPM emissions from the combustion of diesel fuel in off-road construction equipment engines and on-road trucks. Table 8 presents the results of the HRA analysis

Table 8
Maximum Health Impacts Associated with Construction (Unmitigated)

Source Category	Excess Lifetime Cancer Risk (in 1 million)	Chronic HI
Construction Sources		
Off-road construction equipment	0.80	0.22
Significance threshold[1]	20	1.0
Exceeds threshold?	No	No
Maximum Receptor (2022)		
UTMx	631,861	631,861
UTMy	4,209,498	4,209,498
Receptor Type[2]		
Classification	Worker	Worker

Notes:

1. Thresholds of significance are based on information from SJVAPCD, Air Quality Thresholds of Significance - Toxic Air Contaminants (see Appendix D for further information).
2. There are only worker receptors surrounding the project site.

As shown in Table 8, the proposed action would be under applicable thresholds and would not result in acute or chronic health risk. Therefore, impacts to sensitive receptors would be less than significant.

Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less than Significant Impact. SJVAPCD's CEQA guidance defines a significant odor impact as one that creates objectionable odors affecting a substantial number of people. SJVAPCD's guidance lists facility types that commonly produce odors and the separation distance from sensitive receptors (typically 1 mile) needed to prevent significant odor impacts (SJVAPCD 2015a). As noted in SJVAPCD's guidance, the list of facility types is not meant to be all-inclusive. Consequently, SJVAPCD recommends that all potential odor sources be evaluated in additional detail if they are located within 1 mile of sensitive receptors. As discussed previously, the nearest residential area is located 3,500 feet to the north of the proposed DMPS; the nearest sensitive receptors, including potential agricultural workers and recreational users of Whiskey Slough, are assumed to be located 1,000 feet from the project site.

During construction, diesel exhaust produced by off-road construction equipment could generate odors; however, several pieces of construction equipment would need to operate concurrently in a relatively small area to generate a constant plume of diesel exhaust that would cause objectionable odors for a substantial number of people. These circumstances would not occur as part of the proposed action because construction would occur over a broad area and construction equipment would not all operate at the same time. Once construction is completed, the potential source of odors would quickly dissipate. Therefore, potential impacts from odor would be considered less than significant.

3.4.3.3 No Action Alternative Impact Evaluation

No Impact. Under the No Action Alternative, conditions on McDonald Island would remain unchanged. The currently authorized DMPSs that are already a part of the USACE's O&M program would be used for dredged material placement. Therefore, under the No Action Alternative, there would be no impacts to air quality beyond those previously analyzed as part of the USACE's O&M program.

3.4.4 Biological Resources

3.4.4.1 Affected Environment

A field survey of the McDonald Island potential DMPS area was conducted on August 26, 2021, by Anchor QEA botanist and wetland scientist, Julia King. Ms. King evaluated vegetation, hydrology, and soils to determine existing habitat types and identify upland habitat. A search of the California Natural Diversity Database (CNDDB) was conducted to identify recorded special status species occurrences within the project area quadrangle or surrounding quadrangles (CDFW CNDDB 2021). Review of the U.S. Fish and Wildlife Service (USFWS) species report for San Joaquin County was also completed (USFWS ECOS 2021).

3.4.4.1.1 Habitat and Vegetation Communities

The proposed DMPS area is currently and has historically been farmland. The area is farmed regularly for crops such as corn, with two planting and two harvesting events occurring throughout the year. The first planting and harvesting cycle occurs between April and late summer, and the second cycle occurs from late summer to late December. Planting and harvesting require operation of heavy machinery in the project area and vicinity on a regular basis throughout the year. Aerial imagery from Google Earth (May 2002 through June 2021) shows that the proposed DMPS area has been cultivated for more than two decades. Several manufactured and regularly maintained irrigation ditches occur within the proposed DMPS.

Lands outside the proposed DMPS area to the east and the west are not suitable for farming. The area to the west of the proposed DMPS is seasonally wet with sources of water, including subsurface water infiltrating and saturating soils from the adjacent river, precipitation, and agricultural irrigation. This area may be seasonally inundated during the rainy season until drawn down in the summer when it becomes dry. It lacks permanent standing water and has a heavy cover of vegetation. The area to the east of the DMPS is disturbed by agriculture activities accessing the farmland in the proposed DMPS and contains a mix of upland and wet area. The proposed DMPS containment berms would be constructed entirely within the boundary of the existing farmed site.

3.4.4.1.2 Special Status Species

The project area contains potential habitat for certain special status plant, invertebrate, reptile, and bird species as well as critical habitat for certain species. The following subsections provide information on potentially present special status species and habitats.

3.4.4.1.2.1 Mason's Lilaeopsis

The project area contains potential habitat for one special status plant species, the Mason's lilaeopsis (*Lilaeopsis masonii*). This species, designated as rare by the state of California, occurs in freshwater and brackish marshes and riparian scrub habitats in the Delta, typically among emergent vegetation in the tidal zone, where it can establish in muddy or silty soils formed through soil deposition (USACE 2017).

Mason's lilaeopsis populations have been recorded at several locations throughout the San Joaquin River, including within Delta islands in proximity to the project area (CDFW CNDDB 2021). Potentially suitable habitat for Mason's lilaeopsis within the project area occurs along the northern perimeter of McDonald Island along the water side of the levee, outside of the proposed DMPS footprint, but where the dredge pipeline and decanted water pipeline may be positioned.

3.4.4.1.2.2 Valley Elderberry Longhorn Beetle

One federally listed special status invertebrate, the valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), was identified as potentially occurring within the project area. The valley elderberry longhorn beetle, listed as federally threatened, is exclusively associated with its host plant, the elderberry shrub (USACE 2017). Elderberry shrubs were not observed within the project area; thus, valley elderberry longhorn beetle is not anticipated to be present.

3.4.4.1.2.3 Giant Garter Snake

Giant garter snake (GGS; *Thamnophis gigas*) is listed under the federal Endangered Species Act (ESA) and the California ESA as threatened and has been identified as potentially occurring within the project area (USACE 2017).

GGS inhabit agricultural wetlands and other waterways such as rice fields, irrigation and drainage canals, sloughs, ponds, small lakes, low gradient streams, and adjacent uplands in the Central Valley. They inhabit small mammal burrows and other soil crevices above prevailing flood elevations throughout the winter dormancy period and require emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat during the active season (early April to mid-October; USFWS 1997). GGS generally inhabit marshy areas near permanent freshwater but will also inhabit marsh areas with temporary water (USFWS 2017).

GGS have the potential to be present in agricultural drainage ditches on McDonald Island and potential wetland areas west and east of the proposed DMPS. This conclusion is based on the suitability of the habitat for GGS survival and 2018 GGS sightings at Vulcan Island (Windmill Cove) and various sloughs near McDonald Island (CDFW CNDDB 2021; Anchor QEA 2021). In general, areas within 200 feet of an aquatic feature may be suitable aquatic habitat for GGS, and areas within 820 feet of aquatic features can

function as winter upland refugia habitat for GGS. Ongoing agricultural practices during multiple cycles throughout the year (i.e., two planting and two harvesting events per year) and use of large equipment within the footprint of the proposed DMPS likely deter GGS from actively inhabiting areas within the proposed DMPS and vicinity (USACE 2017).

The area to the west of the proposed DMPS lacks permanent standing water to provide a GGS prey base of fish and amphibians. During the dry season, which is when construction of the proposed action would occur, this area provides even less potentially suitable habitat for GGS because it is drier than other times of the year due to the draw down on water on the island. Additionally, the heavy cover of vegetation observed in this area does not provide suitable habitat for GGS due to excessive shade, lack of basking sites, and absence of prey populations. Because of the regular disturbance of the area to the east of the proposed DMPS, it is not expected to provide GGS habitat.

3.4.4.1.2.4 Western Pond Turtle

The western pond turtle (*Actinemys marmorata*) is listed as a California species of special concern and has been identified as potentially occurring within the project area. Western pond turtle can inhabit rivers, streams, and irrigation ditches, usually with aquatic vegetation (CDFW CNDDB 2021). They favor habitat with large numbers of emergent logs and boulders or habitat on top of aquatic vegetation. Sightings in altered habitats, such as irrigation ditches, often represent animals displaced by destruction of natural habitats, and they are unlikely to maintain viable populations in reservoirs or "artificial" watercourses. Nests are typically excavated in compact, dry soils with a high clay or silt fraction, with less than 2% of nests discovered in soil with any significant amount of sand. Most nesting areas are characterized by sparse vegetation, usually short grasses or forbs (Holland 1994).

Based on habitat identified during the 2021 field survey, western pond turtles are unlikely to be able to establish nests in the terrestrial habitat. However, there is some potential aquatic and refugia habitat that is viable for the species. Furthermore, western pond turtle sightings occurred in 2015 and 2016 at Sevenmile Slough, which is 10 miles northwest of the project area, and at Sycamore Slough, which is 8 miles northeast of the project area. Thus, western pond turtles are potentially present in the project area.

3.4.4.1.2.5 Swainson's Hawk

The California ESA considers Swainson's hawk to be threatened. This hawk forages in many types of crop fields, and this species is more abundant in areas of moderate cultivation than in grassland or areas of extensive cultivation. According to nesting bird surveys, Swainson's hawks nest on the periphery of riparian habitats in lone oak trees or oak trees in small groves, in mature riparian forests, or mature trees along agricultural fields or roads (CDFG 2016). Additionally, nests occur at in higher densities in mixed agricultural landscapes (Gifford et al. 2012). In a study of movements and habitat use, it was found that single trees or riparian areas were used most often by Swainson's hawks for nesting (Estep 1989). Swainson's hawks are commonly observed in the Delta.

Non-native grassland within the project area may be suitable foraging area for Swainson's hawks. There is no suitable nesting habitat on McDonald Island.

3.4.4.1.2.6 White-Tailed Kite

The white-tailed kite is a California fully protected species by California Department of Fish and Wildlife (CDFW). It is a common-to-uncommon yearlong resident in coastal and valley lowlands and is rarely found away from agricultural areas. The white-tailed kite forages in undisturbed, open grasslands, meadows, farmlands, and emergent wetlands. Nests are made of loosely piled sticks and twigs and lined with grass, straw, or rootlets and placed near the top of a dense oak, willow, or other tree stand, usually 6 to 20 meters (20 to 65 feet) aboveground. Nests are located near open foraging areas in lowland grasslands, agricultural areas, wetlands, oak-woodland and savannah habitats, and riparian areas associated with open areas. White-tailed kites are commonly observed in the Delta (USACE 2017).

Non-native grassland within the project area may also be suitable for foraging for this species. There is no suitable nesting habitat for the white-tailed kite on McDonald Island.

3.4.4.1.2.7 Burrowing Owl

Burrowing owl, a California species of special concern, can be found in grasslands, deserts, and scrublands characterized by low-growing vegetation. They typically nest in burrows in the ground, often using burrows left by burrowing mammals. They may also establish nests in artificial structures such as open pipes, culverts, or piles of concrete blocks or wood. Burrowing owls typically nest between February and August; however, owls overwinter in existing burrows and may be present year-round. Burrowing owls often return to the same burrow year after year, and a site should be considered occupied if a burrowing owl has been observed in the area within the last 3 years (CBOC 1993). The nearest recorded occurrence of burrowing owl was observed 5.8 miles southeast of McDonald Island (CDFW CNDDB 2021).

Ground squirrel or other burrows were not observed at McDonald Island during the field survey. The proposed DMPS footprint has been used to cultivate corn for the last two decades and thus stable burrows are not established in the area where dredged material placement and earthmoving would occur. However, the adjacent levees along the northern perimeter of the island may contain habitat suitable for burrowing owls if ground squirrel burrows are present. If ground squirrel burrows are found, there is potential burrowing owl habitat. Throughout much of McDonald Island, vegetation is 6 to 8 feet tall. This vegetation height limits visibility and is therefore higher than optimal for burrowing owl foraging. Thus, there is no suitable foraging habitat for burrowing owl within the project area.

3.4.4.1.2.8 Bank Swallows

Bank swallow is a California threatened species that nests in small burrows dug into riverbanks, primarily along the Sacramento and Feather rivers (Garrison 1999). At nesting colonies, bank swallow forage mostly within 200 meters (650 feet) of their nesting burrows, but this range can vary with distances to suitable foraging areas. Bank swallow colonies may exist along the Stockton DWSC in eroded or cut banks.

The project area does not meet the requirement for nesting bank swallows due to the lack of vertical banks or cliffs with suitable substrates for colony formation. Bank swallow foraging over the proposed DMPS could potentially occur.

3.4.4.1.2.9 Tricolored Blackbird

The tricolored blackbird is a California threatened species that requires open water, protected nesting substrate, and nearby foraging habitat. The species has historically nested in freshwater marshes and wetlands with cattails, bulrushes, and willows, and has transitioned to agricultural fields as the land was converted. Their nests can be found in vegetation from ground level to 8 feet high. Foraging habitat for the species includes cultivated fields (Meese and Beedy 2015). Additionally, tricolored blackbirds are highly social birds that nest, roost and forage in large groups. (Sauer et al. 2017). There have been no sightings of the tricolored blackbird in the project area or adjacent quadrangles since 1936 (CDFW CNDDB 2021).

The project area contains suitable nesting and foraging habitat for this species, although the species is not expected to occur given the last sighting in the project area or vicinity was in 1936.

3.4.4.1.2.10 Great Blue Heron

The great blue heron is a California Department of Forestry & Fire Protection Sensitive species. The species can live in both freshwater and saltwater habitats. Most breeding colonies are located within 2 to 4 miles of feeding areas, often in isolated swamps or on islands, and near lakes and ponds bordered by forests (Cornell Lab of Ornithology 2022). Great blue herons nest mainly in trees, but will also nest on the ground, on bushes, in mangroves, and on structures such as duck blinds, channel markers, or artificial nest platforms. Males arrive at the colony and settle on nest sites; from there, they court passing females. Colonies can consist of 500 or more individual nests, with multiple nests per tree built 100 or more feet off the ground (Ehrlich et al. 1988). Groups of great blue heron have been observed in the quadrangles surrounding the project area on three separate occasions since 1989, the most recent being in 2000 when five nests and foraging behavior was observed on Woodward Island, 6 miles southwest of the project area.

There is no suitable nesting habitat for the great blue heron in the project area. There may be suitable foraging habitat in the project area.

3.4.4.1.2.11 California Black Rail

The California black rail is a California threatened species that nests in marshes and wet meadows across North America, including riparian marshes, coastal prairies, saltmarshes, and impounded wetlands. Its habitats feature stable shallow water, usually 1.2 inches deep at most. In California, American glasswort (*Salicornia depressa*), various bulrush species (*Scirpus* spp.), and the alkali seaheath (*Frankenia salina*) are key plants for California black rails (Cornell Lab of Ornithology 2015). These plants, especially taller patches of seaheath at the marsh margins, may provide cover for the California black rails during periods of high tides. Away from tidal habitats, California black rails nest in a variety of wet meadows, marsh edges (including along creeks and rivers), around farm ponds, and in hayfields with standing water. Migrating and wintering birds select habitats with the same characteristics as breeding habitats, but some occur in dry rice fields, among other rail species, as well (USFWS 2019).

There is no suitable habitat for the California black rail in the project area.

3.4.4.1.2.12 Modesto Population of the Song Sparrow

The Modesto population of the song sparrow is a California species of special concern that inhabits emergent freshwater marshes dominated by tules, cattails, and riparian willow thickets (Grinnell and Miller 1944). These song sparrows also nest in riparian forests of valley oak with a sufficient understory of blackberry along vegetated irrigation canals and levees and in recently planted valley oak restoration sites. The primary habitat requirements of several subspecies of song sparrow in California include moderately dense vegetation to supply cover for nest sites, a source of standing or running water, semi-open canopies to allow light, and exposed ground or leaf litter for foraging (Marshall 1948). Song sparrows forage primarily on the ground, but foraging behavior is highly opportunistic, perhaps reflecting changes in resource availability and distribution.

There is no suitable nesting habitat for the Modesto population of the song sparrow and there may be some suitable foraging habitat for the species in the project area.

3.4.4.1.2.13 Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act

The Migratory Bird Treaty Act (MBTA) makes it illegal for anyone to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid permit issued pursuant to federal regulations. Within the project area, there is potential suitable habitat for tricolored blackbird and burrowing owl nesting. However, neither species is historically present in the project area (CDFW CDNNB 2021). In addition to being federally protected under the MBTA, certain species are further protected by the CDFW (CDFW CNDDB 2021). Other species protected under the Bald and Golden Eagle Protection Act may occur transiently during the winter months, although suitable nesting habitat is not present.

3.4.4.2 Proposed Action Impact Evaluation

Would the 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 California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Less than Significant Impact After Mitigation. The northern perimeter on McDonald Island may provide suitable basking habitat for western pond turtle; nesting or foraging habitat for several special status bird species (Swainson's hawk, white-tailed kite, bank swallow, great blue heron, burrowing owl, California black rail, Modesto population of song sparrow, and Bald and Golden Eagle Protection Act-protected species); and may contain populations of Mason's lilaeopsis. Proposed action activities in this area would be limited to placement of the discharge pipeline and decanted water pipeline; there would be no earthmoving activities or large equipment operation north of Zuckerman Road on McDonald Island. The specific location of both the discharge pipeline and decant pipe would be determined in conjunction with a qualified biologist to avoid special status species or habitat. Due to the small footprint of the pipelines, the proposed action construction would have a negligible effect on foraging opportunities or

other habitat use. Therefore, placement of the discharge pipeline and the decant pipe would result in less than significant impacts to special status species.

GGS have the potential to be present in agricultural drainage ditches on McDonald Island and potential wetland areas west and east of the proposed DMPS. The ongoing agricultural practices during multiple cycles throughout the year (i.e., two planting and two harvesting events per year) and the use of large equipment within the footprint of the proposed DMPS likely deters GGS from actively inhabiting areas within the proposed DMPS and vicinity (USEPA 2017).

The area to the west of the proposed DMPS lacks permanent standing water to provide a GGS prey base of fish and amphibians. It contains potential degraded wetland habitat that is inundated during the wet season but dries out in the summer and fall. When this happens, the habitat is not suitable for GGS. The summer and fall coincide with the construction time frame for the proposed action. Additionally, the heavy cover of vegetation observed in this area does not provide suitable habitat for GGS because of excessive shade, lack of basking sites, and absence of prey populations. Grassland and other uplands adjacent to the project area may provide marginal winter upland refugia habitat; however, no construction would occur during the winter.

The proposed action is not expected to impact the hydrology of the potential wetlands to the west of the proposed DMPS. The adjacent lands are at a lower elevation than the DMPS, so the hydrologic connections to the area will not be changed by the proposed action. The source of water to this area is subsurface infiltration from the river, precipitation, and agricultural irrigation. Placement of material in the DMPS will not change these sources of water. Precipitation will still fall, subsurface infiltration will still occur, and agricultural irrigation will still occur.

Containment berms for the DMPS would be constructed entirely within the already extensively cultivated agricultural area in the proposed DMPS. Construction would occur between May 1 and October 1—the driest time of year for the potential wetland areas in the vicinity of the proposed DMPS. Accordingly, GGS are not expected to be present in areas adjacent to or within 200 feet of the proposed DMPS during the time of construction.

After the containment berms are constructed and until as late as November 30 when the in-water work window ends, dredged slurry would be deposited within the bermed-off containment area. This would include temporarily filling sections of the drainage ditches within the DMPS. Water from the dredged slurry would either evaporate, infiltrate, or be decanted back into Columbia Cut, leaving dried sediment in the DMPS within a few weeks to a couple of months after dredged material placement activities cease. The sediment would be available for reuse by the property owner as appropriate. During this time, the DMPS would remain available for agricultural purposes, and drainage ditches would be reestablished providing similar habitat for GGS to what is currently present. The habitats within the DMPS would be available to GGS and agricultural activities (i.e., crop cultivation) would resume within the DMPS footprint. Therefore, there would be no permanent loss of GGS habitat, and displacement of future GGS habitat would be avoided.

If GGS are present in the project area, impacts to GGS could potentially occur from berm construction. However, GGS are not expected to be present in the project area during construction for the following reasons: 1) the area is regularly disturbed by heavy equipment and agricultural activities occurring under existing conditions throughout the year, including in the summer and fall; and 2) construction would occur during the dry season when less GGS habitat and lower quality GGS habitat is available in the vicinity of the proposed DMPS.

Equipment noise, vibration, and increased human activity may interfere with normal behaviors. GGS avoidance of construction areas may force individuals from cover, thereby subjecting them to predation that otherwise would not occur. Given the heavy agricultural use of the DMPS, the baseline condition includes repeated regular use of heavy farm equipment and machinery in the project area. GGS may inhabit agricultural drainage ditches and upland habitat for basking, refugia, or moving between aquatic habitats, which makes GGS vulnerable to vehicle strikes. GGS may also be affected by placement of dredged material within the project area after October 1, the approximate end of the active period for the GGS. However, this coincides with the dry season, during which GGS habitat is not provided in the vicinity of the DMPS, and GGS are therefore not likely to be in the project area. Prior to the approximate October 1 brumation start date and outside of any aestivation periods (i.e., during days with typical temperature conditions), should GGS be present within the site, they would typically have sufficient opportunity to flee to adjacent areas during placement of dredged slurry.

To reduce potential impacts to GGS, the following mitigation measure would be implemented as part of the proposed action:

- **MM-BIO-1:** Project construction shall occur in adherence with GGS avoidance and minimization measures, including limiting berm construction to the dry season between May 1 and October 1; conducting surveys for GGS prior to berm construction, pipeline placement, and dredged material placement; the presence of a USFWS-approved biologist during initial berm construction and initial dredged material placement activities to monitor for GGS; confining heavy equipment movement to existing access roads and designated construction access corridors that avoid suitable GGS habitat (wetlands and irrigation ditches); and limiting speeds to 10 miles per hour on access roads or other areas near potential GGS habitat.

Based on the preceding analysis and the inclusion of mitigation measure MM-BIO-1, the proposed action would result in a less than significant impact on GGS.

While the drainage ditches in the vicinity of the proposed DMPS have the potential to provide habitat to western pond turtle, because the species prefers to avoid altered habitats, they would likely not enter the drainage ditches. The aquatic habitat along the northern perimeter of McDonald Island within the project area may contain habitat that is marginally suitable for western pond turtle basking and transit. Proposed action activities within this area would be limited to placement of the dredged material pipeline or decant pipeline; earthwork (i.e., berm construction) and dredged material placement would not occur in areas potentially suitable for these species.

Potentially suitable habitat for Mason's lilaeopsis occurs along the northern perimeter of McDonald Island along the water side of the levee. Placement of the dredge pipeline on the waterside of the levees within the tidally influenced northern perimeter of McDonald Island could potentially crush or damage populations of Mason's lilaeopsis should this species occur in the work area.

To reduce potential impacts to western pond turtle and Mason's lilaeopsis, the following mitigation measure would be implemented as part of the proposed action:

- **MM-BIO-2:** The specific location of both the discharge pipeline and the decant pipe would be determined annually based on the anticipated volume of sediment to be placed at the site by USACE's contractor in conjunction with a qualified biologist to avoid special status species or habitat. Pre-construction surveys would be completed to identify any populations of western pond turtle as well as Mason's lilaeopsis in areas where the dredge pipeline may be placed. The surveys would be conducted by a qualified biologist using USFWS, CDFW, and California Native Plant Society protocols. If present, Mason's lilaeopsis would be flagged for avoidance, and the dredge pipeline and associated hardware would be positioned to avoid these populations. If avoidance is not possible, the Port would consult with CDFW to determine the appropriate approach for minimizing impacts to Mason's lilaeopsis. Western pond turtles would be completely avoided.

Based on the preceding analysis and the inclusion of mitigation measure MM-BIO-2, the proposed action would result in a less than significant impact on western pond turtle and Mason's lilaeopsis.

Potential burrowing owl nesting habitat is present within the levees along the northern perimeter of the project area. To reduce potential project impacts to nesting birds, the following mitigation measure would be implemented:

- **MM-BIO-3**: To avoid impacts to nesting bird species, preconstruction nesting bird surveys would be required if construction is planned to occur between March 1 and September 15. Work would not be permitted to occur until nesting birds have fledged from nests on their own.

Through implementation of this avoidance measure, significant impacts to nesting birds would be avoided. Based on the preceding analysis and the inclusion of mitigation measure MM-BIO-3, the proposed action would result in a less than significant impact on nesting special status bird species.

Non-native grassland and other habitats within the footprint of the proposed DMPS footprint may provide suitable foraging habitat for several special status bird species (Swainson's hawk, white-tailed kite, Western yellow-billed cuckoo, tricolored blackbird, burrowing owl, Modesto population of song sparrow, or MBTA-protected species). Grading and dredged material placement at the proposed DMPS could potentially disturb foraging and result in the temporary loss of foraging habitat for these species. However, the site would remain undeveloped after dredged material placement and be allowed to naturally revegetate, and any bird species present could continue to forage. In addition, there is foraging habitat near the project area. Therefore, the proposed action construction would have less than significant impacts on special status species foraging.

Overall, with implementation of MM-BIO-1 through MM-BIO-3, impacts to special status species would be reduced to a less than significant level.

Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

No Impact. Project impacts are only expected to occur within the DMPS. The proposed DMPS footprint includes agricultural land currently used for cultivating crops such as corn. There are no wetlands within the proposed DMPS footprint, and DMPS construction would avoid wetland areas. The dredge contractor would determine the most appropriate route for the pipeline and decant pipeline (if needed) in conjunction with a qualified biologist to avoid impacting sensitive habitats, including wetlands on the northern perimeter of McDonald Island. Therefore, the proposed action would not directly or indirectly impact any riparian habitat or other sensitive natural community, including wetlands or other waters of the United States, identified in local or regional plans, policies, or regulations, or by CDFW or USFWS.

Would the 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?

No Impact. The proposed action would avoid all wetland areas. The DMPS boundary was established to avoid impacting wetlands. All dredge material placement activities would occur solely within the DMPS, which contains no wetlands. Therefore, the proposed action would have no impact, directly or indirectly, on federally protected wetlands.

Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less than Significant Impact After Mitigation. The project area is along the Pacific Flyway, an established air route of waterfowl and other birds migrating between wintering grounds in Central America and South America and nesting grounds in Pacific Coast states and provinces of North America and may provide habitat to nesting bird species. As previously described, the proposed action includes implementation of mitigation measure MM-BIO-3 to avoid significant impacts to nesting birds. Therefore, after implementation of mitigation measure MM-BIO-3, the proposed action would have a less than significant impact on the movement of native wildlife.

Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact. There are no local policies or ordinances for protecting biological resources applicable to the project site. Therefore, the proposed action would result in no impact related to potential conflicts with local policies or ordinances protecting biological resources.

Would the 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?

No Impact. The proposed action occurs within the coverage area of the San Joaquin County Multi-species Habitat Conservation and Open Space Plan (SJMSCP; SJCOG 2000). The proposed action includes the mitigation measures described in this section to prevent significant impact to species and habitats covered under the SJMSCP. Accordingly, in light of the project-specific mitigation measures that will be undertaken by the Port and USACE to avoid significant environmental impacts, the Port has opted not to obtain coverage under the SJMSCP. The mitigation measures to be implemented as part of the proposed action are consistent with the SJMSCP. Accordingly, the proposed action would not conflict with applicable conservation plans, and there would be no impact.

3.4.4.3 No Action Alternative Impact Evaluation

No Impact. Under the No Action Alternative, McDonald Island would continue to be used for agricultural purposes. The currently authorized DMPSs that are already a part of the USACE's O&M program would be used for dredged material placement. Therefore, under the No Action Alternative, there would be no impacts to biological resources beyond those previously occurring through agricultural uses at the project site or analyzed as part of the USACE's O&M program.

3.4.5 Cultural Resources

3.4.5.1 Affected Environment

Under the National Historic Preservation Act of 1966 (NHPA) implementing regulations, historic properties are defined as prehistoric or historic districts, sites, buildings, structures, or objects that are included in or eligible for listing in the National Register of Historic Places. Additionally, Section 106 of the NHPA, as amended (54 U.S.C. 306108), requires a federal agency to consider the effects of federal undertakings on historic properties. Compliance with Section 106 includes identification and evaluation of potential historic properties within the Area of Potential Effects (APE) for the undertaking, determination of effects to historic properties, resolution of adverse effects to historic properties, as necessary, and consultation with the State Historic Preservation Officer (SHPO), Native American Tribes, and interested parties. USACE determined the APE and provided the information to the SHPO and Native American Tribes on December 27, 2021. SHPO concurred on January 22, 2022. One Tribal comment was received, from the United Auburn Indian Community, indicating that the project area is outside their area of interest.

Under CEQA, cultural resources are resources of architectural, historical, archaeological, and cultural significance that are: 1) eligible for listing in the California Register of Historical Resources; 2) included in a local preservation register; 3) identified as significant in a cultural resources survey; or 4) determined significant by the CEQA lead agency.

There are no structures or other built infrastructure in the project area, except for the existing levees. The levees are routinely maintained and would not be modified or affected in any way by the proposed action.

There are no recorded archaeological sites or isolates in the project area. The area was part of Roberts Island between the Middle River and the San Joaquin River prior to historic modifications. It would have been a low-lying, seasonally inundated area. Dredging and disposal of materials associated with construction of levees and the Stockton DWSC have affected the project area. A search of the California Historical Resources Information System did not identify any archaeological resources in the project area. An archaeological survey, including subsurface testing, was conducted in January 2022 and no archaeological resources were identified.

3.4.5.2 Proposed Action Impact Evaluation

Would the project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

No Impact. There would be no demolition or modification of any structures for the proposed action, and no changes to historical resources are expected.

Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Less Than Significant Impact. No archaeological resources have been identified in the project area. If archaeological materials are encountered during construction, the proposed action would comply with state and federal requirements regarding identification, evaluation, and mitigation of impacts to significant archaeological sites, as well as consultation with Tribes and agencies. This includes CEQA Guidelines 15064.5(f), which requires implementing "provisions for historical or unique archaeological resources accidentally discovered during construction." For these reasons, impacts would be considered less than significant.

Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

Less Than Significant Impact. No indication of human remains or other associated archaeological materials was identified during survey in the project area. If human remains are encountered during construction, the proposed action would comply with state and federal requirements regarding disposition of human remains and consultation with Tribes and agencies.

3.4.5.3 No Action Alternative Impact Evaluation

No Impact. Under the No Action Alternative, agricultural activities would continue in the project area. Given the history of agriculture and the findings of the cultural resources survey, it is unlikely that these activities would have any impacts on historic, archaeological, or cultural resources. The currently authorized DMPSs that are already a part of the USACE's O&M program would be used for dredged material placement. Therefore, under the No Action Alternative, there would be no impacts to cultural resources beyond those previously occurring through agricultural uses at the site or analyzed as part of the USACE's O&M program.

3.4.6 Tribal Cultural Resources

3.4.6.1 Affected Environment

Tribal cultural resources review is required under CEQA, but not specifically under NEPA (although the NEPA regulations include cultural effects as one of the categories of environmental effect federal agencies must consider). NRHP-eligible historic properties (evaluated as cultural resources under NEPA) could include resources that are also tribal cultural resources under CEQA. NRHP-eligible historic properties can include Traditional Cultural Properties (TCPs) or cultural landscapes, either of which could be NRHP-eligible in part for importance to a Native American tribe. A TCP or cultural landscape that is of importance to a tribe would likely also be a tribal cultural resource under CEQA. However, tribal cultural resources as defined by CEQA are not necessarily also NRHP-eligible TCPs or cultural landscapes. Under CEQA regulations, the Port must consult with California Native American Tribes that request consultation and are traditionally and culturally affiliated with the geographic area of the proposed action (California Public Resources Code Section 21080.3).

Two Tribes have notified the Port that the geographic area of the Port's projects is within their traditional territory: Wilton Rancheria, Buena Vista Rancheria of Me-Wuk Indians. The Native American Heritage Commission recommended 11 additional Tribes for the Port to consult with: California Valley Miwok Tribe, Chicken Ranch of Me-Wuk Indians, Confederated Villages of Lisjan, Guidiville Indian Rancheria, Ione Band of Miwok Indians, Muwekma Ohlone Indian Tribe of the San Francisco Bay Area, Nashville Enterprise Miwok-Maidu-Nishinam Tribe, Northern Valley Yokuts Tribe, Tule River Indian Tribe, United Auburn Indian Community of the Auburn Rancheria, and Wuksache Indian Tribe/Eshom Valley Band.

All 13 Tribes were notified of the proposed action by letter, as was the Native American Heritage Commission, in December 2021. To date, three responses have been received. The Northern Valley Yokuts Tribe, Wilton Rancheria, and Confederated Villages of Lisjan requested continuing consultation and noted that the project area has been used by Tribal members and is sensitive for archaeological resources and burials. A video-conference meeting was held between the Port and the Confederated Villages of Lisjan on January 26, 2022. No specific Tribal cultural resources have been described.

3.4.6.2 Proposed Action Impact Evaluation

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1?

No Impact. No Tribal cultural resources have been identified in the project area, and no impacts are expected as a result of the proposed action.

3.4.6.3 No Action Alternative Impact Evaluation

No Impact. Under the No Action Alternative, agricultural activities would continue in the project area. Given the history of agriculture and the findings of the cultural resources survey, it is unlikely that these activities would have any impacts on Tribal cultural resources. The currently authorized DMPSs that are already a part of USACE's O&M program would be used for dredged material placement. Therefore, under the No Action Alternative, there would be no impacts to Tribal cultural resources beyond those previously occurring through agricultural uses at the project site or analyzed as part of the USACE's O&M program.

3.4.7 Energy

3.4.7.1 Affected Environment

Due to the size of its population, California's energy consumption ranks as the second highest in the United States, with an estimated total consumption of 7,802 trillion British thermal units in 2019. The state's energy consumption per capita, however, ranks as the fourth lowest in the country because of its mild climate and policies related to energy efficiency (USEIA 2021). California is the fourth highest producer of energy, producing 2,449 trillion British thermal units in 2019. It is the country's top producer of solar, geothermal, and biomass energy and the second highest producer of hydroelectric power generation (USEIA 2021). Electricity demand, usage, and production in the state is projected to increase in the near future due to population growth and other factors, including climate change (CEC 2021).

Pacific Gas and Electric (PG&E) is the main energy provider for San Joaquin County. Energy demand in San Joaquin County has steadily increased and is experiencing the fastest growing customer demand in PG&E's Stockton Division due to new residential development and growth in the agriculture and industrial sectors (PG&E 2016). In 2020, total electricity consumption in the County was estimated at 5,736.91 gigawatt hours (CEC 2021). PG&E has a variety of renewable and non-renewable sources and operates a natural gas storage facility south of the project site on McDonald Island. Existing energy usage near and in the project area is limited. Agricultural equipment (such as combine harvesters, planters, and tractors used to cultivate crops) does not rely on electricity to operate.

3.4.7.1.1 Regulatory Setting

The Clean Energy and Pollution Reduction Act (Senate Bill [SB] 350), enacted in 2015, established clean energy, clean air, and greenhouse gas (GHG) reduction goals, including reducing GHG to 40% below 1990 levels by 2030 and to 80% below 1990 levels by 2050. The California Energy Commission is working with other state agencies to implement the SB 350. The bill increases California's renewable electricity procurement goal from 33% by 2020 to 50% by 2030. In addition, SB 350 requires California to double statewide energy efficiency savings in electricity and natural gas end use by 2030.

The California Renewables Portfolio Standard Program (SB 100), enacted in 2018, set a goal of powering all retail electricity sold in California and state agency electricity needs with renewable and zero-carbon resources (such as solar and wind energy) that do not emit climate-altering GHGs by 2045. SB 100 updates the state's Renewables Portfolio Standard to ensure that by 2030 at least 60% of California's electricity is renewable. It also requires the Energy Commission, Public Utilities Commission, and CARB to use programs under existing laws to achieve 100% clean electricity and issue a joint policy report on SB 100 by 2021 and every 4 years thereafter.

The 2016 San Joaquin County General Plan includes energy conservation and efficiency measures (San Joaquin County 2016). Goal NCR-5 of the plan is to "increase energy independence through the use of renewable energy sources and improved energy conservation and efficiency."

Policy NCR-5.2 of the 2016 San Joaquin County General Plan specifies that for alternative energy, the "County shall encourage residents, businesses, and energy providers to develop and use alternative, renewable energy sources, including but not limited to, biomass, solar, wind, and geothermal."

3.4.7.2 Proposed Action Impact Evaluation

Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less than Significant Impact. The proposed action involves the use of heavy equipment, motor vehicles, and vessels, all powered by non-renewable petroleum-based fuel sources. As such, construction activities would use equipment that consumes fossil fuels, but would not require any unusual or excessive equipment or practices compared to projects of similar type and size. The proposed action would comply with all federal, state, and local regulations related to energy usage and fuel consumption. Impacts would be less than significant.

Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Less than Significant Impact. The two state plans discussed in Section 3.4.6.2 pertain to procurement and retail of renewable energy and energy efficiency. The proposed action would not require the procurement or retail sale of electricity; therefore, construction and operation of the proposed action would not conflict with or obstruct these plans. The 2016 San Joaquin County General Plan encourages renewable energy and energy efficiency at the local level. As mentioned previously, construction activities would use equipment that consumes fossil fuels, but would not require any unusual or excessive equipment or practices compared to projects of similar type and size. Therefore, the proposed action would not conflict with the 2016 San Joaquin County General Plan.

3.4.7.3 No Action Alternative Impact Evaluation

No Impact. Under the No Action Alternative, energy usage for agriculture purposes would continue at the project site. Consistent with existing conditions, energy usage would not be wasteful, inefficient, or unnecessary. The currently authorized DMPSs that are already a part of the USACE's O&M program would be used for dredged material placement. Therefore, under the No Action Alternative, there would be no energy impacts beyond those previously occurring through agricultural uses at the site.

3.4.8 Geology and Soils

3.4.8.1 Affected Environment

3.4.8.1.1 Soils

The proposed DMPS has been mapped by the Natural Resources Conservation Service as underlain by Rindge muck and Venice mucky silt loam with 0% to 2% slopes (Appendix E). Both of these soil types are peat soils characterized as deep, poorly drained organic soil commonly found in freshwater marshes, sloughs, and drainage channels (NRCS 2016).

3.4.8.1.2 Fault Rupture

Surface fault rupture is defined as slip on a fault plane that has propagated to the Earth's surface and caused a rupture or disturbance. Fault rupture usually follows pre-existing faults, which are zones of weakness. The project site is not located within an Alquist-Priolo Earthquake Fault Zone (USGS 2021). However, numerous active and potentially active faults have been identified in the vicinity of the project site. The nearest active faults are the Great Valley 6 (Midland) Fault, the Great Valley 5 (Pittsburg) Fault, and the Clayton Fault, which are respectively located 6.7 miles, 21.4 miles, and 22.0 miles west of McDonald Island (USGS 2021).

3.4.8.1.3 Ground Shaking

Ground shaking is the most widespread effect of earthquakes. The estimated likelihood of a magnitude 6.7 or greater earthquake in greater San Francisco Bay area before 2044 is 72% (Field and 2014 Working Group on California Earthquake Probabilities 2015). For individual faults in proximity to the project site, forecasted probabilities include 0.35% for the Great Valley 6 (Midland) fault (6.7 miles from project site; the closest earthquake fault to the project site) and 0.71% for the Clayton Fault[1] (22.0 miles from project site; Field and 2014 Working Group on California Earthquake Probabilities 2015). The project site's setback from active earthquake faults would help mitigate impacts related to ground shaking. The project site is within a region designated as having a moderately low level of earthquake hazard. Such regions are distant from known, active faults and will experience lower levels of shaking less frequently. In most earthquakes, only weaker, masonry buildings would be damaged. However, very infrequent earthquakes could still cause strong shaking at the proposed site (California Department of Conservation 2016).

[1] No data was available for the Great Valley 5 (Pittsburg) Fault.

3.4.8.1.4 Liquefaction

Liquefaction normally occurs under saturated conditions in soils such as sand in which the strength is purely frictional. Primary factors that trigger liquefaction are moderate to strong ground shaking (seismic source); relatively clean, loose granular soils (primarily poorly graded sands and silty sands); and saturated soil conditions (shallow groundwater). Because of the increasing overburden pressure with depth, liquefaction of granular soils is generally limited to the upper 50 feet of a soil profile. However, liquefaction has occurred in soils other than clean sand. The portion of San Joaquin County that includes the project site is likely to have areas with moderate to high susceptibility for liquefaction (San Joaquin County 2016).

3.4.8.1.5 Lateral Spreading

During an earthquake, lateral spreading usually takes place along weak shear zones that have formed within a liquefiable soil layer. Lateral spreading has generally been observed to take place in the direction of a free face (i.e., retaining wall, slope, and channel) but has also been observed to a lesser extent on ground surfaces with very gentle slopes. As noted, the project site may be susceptible to liquefaction and therefore may also be susceptible to lateral spreading. However, this susceptibility is reduced because of the flat topographic conditions of the project site.

3.4.8.1.6 Slope Failure and Slope Stability

Earthquakes can cause significant slope stress, potentially resulting in earthquake-induced landslides. Landslides most commonly occur in areas with steep slopes or within slide-prone geologic units that contain excessive amounts of water. Other factors that affect slope stability include site geology, climate, and human activity. The proposed DMPS is mostly leveled, and steep slopes are not present on the project site. Therefore, this area is not likely to be susceptible to seismic-induced slope failure.

3.4.8.1.7 Expansive Soils

Expansive soils are high in clay content and increase and decrease in volume upon wetting and drying, respectively. The change in volume exerts stress on buildings and other loads placed on these soils. Expansive soils are common throughout California and can cause damage to foundations and slabs unless properly treated during construction. Grading, site preparations, and backfill operations associated with subsurface structures can often eliminate the potential for expansion. The soils underlying the proposed DMPS is not considered to be expansive (San Joaquin County Community Development Department and NRCS 2015).

3.4.8.1.8 Subsidence and Settlement

Land surface subsidence can result from both natural and artificial phenomena, including tectonic deformation, consolidation, hydrocompaction, collapse of underground cavities, oxidation of organic-rich soils, rapid sedimentation, and the withdrawal of groundwater. Expansive soils and materials are more susceptible to subsidence, including estuarine sediments, organic detritus, or thick organic deposits. Settlement occurs when ground shaking reduces the amount of pressure existing between soil particles, resulting in a reduction of the volume of the soil. Areas are susceptible to differential settlement if they are underlain by compressible sediments, such as poorly engineered artificial fill. Differential settlement

can damage structures, pipelines, and other subsurface entities. Earthquakes and seismic activity can accelerate and accentuate settlement.

McDonald Island is within a mapped area of land subsidence from peat loss (USGS 2018; San Joaquin County Community Development and NRCS 2015), and it is estimated that the islands in the Delta are subsiding at an average rate of 2.2 centimeters per year (Deverel et al. 2010). Potentially expansive clay loams mapped as occurring at the project site may be susceptible subsidence, as would any areas underlain by artificial fill, which is commonly present on Delta islands.

3.4.8.1.9 Erosion

The project site is within a Mediterranean climate, which is exemplified by moist winters and dry summers. Therefore, during the winter the project area is more prone to water erosion, while in the summer the project area is more prone to wind erosion.

The proposed DMPS is largely leveled and would not be susceptible to erosion. The levee surrounding McDonald Island is susceptible to erosion from the San Joaquin River. Operation and maintenance of the levee system is managed by RD2030. RD2030 performs routine maintenance activities, including weekly inspections of the levee system, and is responsible for the implementation of an Emergency Operations Plan in the case of levee failure (RD2030 2015). The proposed DMPS includes a few open, channelized, earthen stormwater drainage ditches, but do not exhibit evidence of current erosion.

3.4.8.2 Proposed Action Impact Evaluation

Would the project expose people or structures to 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? strong seismic ground shaking; seismic-related ground failure, including liquefaction; or landslides?

Less than Significant Impact. The project site is not located within a currently designated Alquist-Priolo Earthquake Fault Zone, and no known surface expression of active faults is believed to cross the site; therefore, fault rupture through the project site is not anticipated.

In the event of a major earthquake, San Joaquin County could experience strong ground shaking, which has the potential to damage buildings and structures. Proposed action improvements would be limited to containment berm construction. Containment berms would not be particularly susceptible to ground shaking-induced damage, although damage remains a possibility in the event of a large earthquake. The proposed improvements would be constructed in adherence with applicable seismic standards and would not increase the potential for human injury or loss of life. Therefore, the proposed action would result in less than significant impacts related to seismic ground shaking.

Soils potentially susceptible to liquefaction may be present within the project site. Seismic-induced liquefaction within the proposed DMPS or surrounding areas would not result in significant damage to

structures or injury to individuals, as the project site lacks significant development and is rarely visited. The proposed action would not exacerbate existing liquefaction hazards or result in increased potential for human injury or loss of life. Therefore, the proposed action would result in less than significant impacts related to liquefaction.

The proposed DMPS is largely leveled, and therefore not susceptible to slope failure. Although the proposed action would construct new sloped berms, they would be modest in height. Such changes would not increase the potential for human injury or loss of life. Therefore, the proposed action would result in less than significant impacts related to landslides.

Would the project result in substantial soil erosion or the loss of topsoil?

Less than Significant Impact. The proposed placement site is largely flat, and existing slopes are mostly vegetated with corn crops and therefore protected from erosion. The potential for substantial soil erosion is therefore considered minimal. Best management practices (BMPs) for controlling erosion would be implemented during construction and maintenance of the proposed containment berms. RD2030 monitors and maintains the perimeter of McDonald Island to address any erosion from the San Joaquin River. Proposed action activities would not exacerbate the potential for shoreline erosion. Therefore, the proposed action would result in less than significant impacts related to erosion.

Topsoil within the proposed DMPS would be covered by dredged material. This would constitute a benefit from increased soil availability. The additional soil would be used throughout the property for levee maintenance or to supplement local soils for agricultural purposes. Therefore, the proposed action would result in less than significant impacts related to loss of topsoil.

Would the 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 an on-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Less than Significant Impact. The proposed action would have no effect on the potential for off-site landslides and would result in less than significant impacts related to on-site or off-site landslides.

As described previously, soils underlying the project site may be susceptible to liquefaction and, therefore, would be susceptible to lateral spreading. Similar to liquefaction, lateral spreading effects would likely be minimal within the proposed DMPS, as the site lacks significant development and is rarely visited. These conditions would not change with implementation of the proposed action. Therefore, the proposed action would result in less than significant impacts related to lateral spreading and liquefaction.

The project site is within an area susceptible to subsidence. Projected subsidence of 2.2 centimeters per year would result in a negligible decrease in the containment berms' capacity. The proposed action would not exacerbate the potential for settlement and would not result in increased exposure of individuals to settlement hazards. Therefore, the proposed action would result in less than significant impacts related to subsidence and settlement.

Would the 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?

No Impact. The project site is not located on expansive soil and would not entail construction of any buildings or structures which would be susceptible to damage from expansion of underlying soils. Therefore, there would be no impact.

Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?

No Impact. The proposed action would not require the use of septic tanks or alternative wastewater disposal systems or affect any such systems. Therefore, the proposed action would have no impact related to septic tanks and alternative wastewater disposal systems.

Would the project Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

No Impact. The proposed action is not expected to disturb unique geological or paleontological resources. Given the very low likelihood that any fossil that is scientifically significant is present at the project site, the proposed action would have no impacts on unique paleontological resources or geologic features.

3.4.8.3 No Action Alternative Impact Evaluation

No Impact. Under the No Action Alternative, McDonald Island would continue to be used for agricultural purposes. The currently authorized DMPSs that are already a part of the USACE's O&M program would be used for dredged material placement. Therefore, under the No Action Alternative, there would be no impacts to geology and soils beyond those previously occurring through agricultural uses at the site or analyzed as part of the USACE's O&M program.

3.4.9 Greenhouse Gas Emissions

3.4.9.1 Affected Environment

Global climate change results from GHG emissions caused by several activities, including fossil fuel combustion, deforestation, and land use change. GHGs play a critical role in the Earth's radiation budget by trapping infrared radiation emitted from the Earth's surface, which otherwise escapes to space. The most prominent GHGs contributing to this process include carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Certain refrigerants, including chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), and hydrofluorocarbons (HFCs), also contribute to climate change. The greenhouse effect keeps the Earth's atmosphere near the surface warmer than it would be otherwise and allows for successful habitation by humans and other forms of life.

Global warming potential (GWP) is a measure of how much a given mass of GHG contributes to global warming. A relative scale is used to compare the gas in question to carbon dioxide (whose GWP is defined

as 1). In this analysis, CH_4 is assumed to have a GWP of 21 and N_2O is assumed to have a GWP of 310. Refrigerants have GWPs ranging from 76 to 12,240. Consequently, using each pollutant's GWP, emissions of CO_2, CH_4, N_2O, CFCs, HCFCs, and HFCs can be converted into CO_2 equivalents (CO_2e).

Fossil fuel combustion removes carbon stored underground and releases it into the atmosphere. Emissions of GHGs are responsible for the enhancement of the greenhouse effect and contribute to what is termed "global warming," a trend of unnatural warming of the Earth's natural climate. Global warming is the increase in average global temperatures of the Earth's surface and atmosphere. The natural balance of GHGs in the atmosphere regulates the Earth's temperature; without this natural greenhouse effect, the Earth's surface would be approximately 60°F cooler (USGCRP 2018).

Increased concentrations of GHGs in the Earth's atmosphere increase the absorption of radiation and further warm the lower atmosphere. This process increases evaporation rates and temperatures near the surface. Climate change is a global problem, and GHGs are global pollutants, unlike criteria pollutants (such as O_3, CO, and PM) and TACs, which are pollutants of regional and local concern.

Recent environmental changes linked to global warming include rising temperatures, shrinking glaciers, thawing permafrost, a lengthened growing season, and shifts in plant and animal ranges (CCCC 2018; USGCRP 2018; IPCC 2021). In California, an assessment of climate change impacts predicts that temperatures will increase between 5.6°F to 8.8°F by 2100, based on low and high global GHG emission scenarios (CCCC 2018). Predictions of long-term negative environmental impacts in California include worsening of air quality problems; an increase in the frequency of heat waves; a reduction in municipal water supply from the Sierra snowpack; sea level rise; an increase in wildfires; damage to marine and terrestrial ecosystems; and an increase in the incidence of infectious diseases, asthma, and other human health problems (CCCC 2018).

3.4.9.2 Regulatory Setting

3.4.9.2.1 Federal

In 2016, the Council on Environmental Quality (CEQ) released final guidance for federal agencies on how to consider the impacts of their actions on global climate change as part of their NEPA reviews, *Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews* (Goldfuss 2016). The guidance was withdrawn on March 28, 2017, under Executive Order 13873. The guidance is currently under review for revision and update; however, in the interim, CEQ has advised federal agencies to "consider all available tools and resources in assessing GHG emissions and climate change effects of their proposed actions, including, as appropriate and relevant, the 2016 GHG Guidance" (86 Federal Register 10252). The 2016 GHG guidance encourages federal agencies undertaking NEPA review to follow the "rule of reason" and use their "expertise and experience" to decide whether and to what degree the agency will analyze particular effects of GHG emissions. The 2016 GHG guidance does not set standards or significance thresholds.

In the absence of an adopted GHG standard, the USACE will not propose a new standard for GHG emissions anticipated to result from the proposed action. Calculations of potential GHG emissions (CO_2) from the proposed action are provided in Table 10. Given the short-term, temporary nature of the proposed action and the estimated emissions calculations, the proposed action would not result in significant GHG emissions, and further analysis is not needed.

The federal government administers a wide array of programs designed to reduce the United States' GHG emissions. These programs focus on energy efficiency, renewable energy, non-CO_2 gases, and implementation of technologies designed to achieve GHG reductions.

In the 2007 Massachusetts v. Environmental Protection Agency case, the U.S. Supreme Court gave USEPA the authority to regulate GHGs as air pollutants under the CAA. The USEPA published the "Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act" on December 15, 2009 (74 Federal Register 66495).

USEPA set GHG emissions thresholds to define when permits under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities. This final rule tailors the requirements of these CAA permitting programs to limit covered facilities to the nation's largest GHG emitters: power plants; refineries; and cement production facilities. Although not directly applicable to Phases I or II, this rule highlights USEPA's effort to regulate GHG emissions.

In 2005, USEPA's Renewable Fuel Standard established the first renewable fuel volume mandate in the United States. The original Renewable Fuel Standard program required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012. The program was expanded in 2007 and currently requires that 36 billion gallons of renewable fuel be blended into gasoline by 2022. This program, although not directly relevant to proposed action activities, serves to highlight the developing GHG regulatory framework.

3.4.9.2.2 State

Executive Order S-3-05, signed by then-Governor Schwarzenegger on June 1, 2005, established the following GHG reduction targets for California: 1) by 2010, reduce GHG emissions to 2000 levels; 2) by 2020, reduce GHG emissions to 1990 levels; and 3) by 2050, reduce GHG emissions to 80% below 1990 levels. Executive Order S-3-05 also called for the California Environmental Protection Agency to prepare biennial reports on 1) progress made towards achieving these goals; 2) impacts to California from global warming; and 3) mitigation and adaptation plans to combat these impacts. The most recent of these Climate Action Team reports was completed in December 2010 (CAT 2010).

The California Global Warming Solutions Act of 2006, widely known as AB 32, required CARB to develop and enforce regulations for the reporting and verification of statewide GHG emissions. CARB was directed to set a GHG emission limit, based on 1990 levels, to be achieved by 2020. The bill set a timeline for adopting a scoping plan for achieving GHG reductions in a technologically and economically feasible manner. AB 32 also required CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions.

On December 11, 2008, CARB adopted the AB 32 Scoping Plan, which set forth the framework for meeting the state's GHG reduction goal set by Executive Order S-3-05. On October 20, 2011, CARB adopted the final cap-and-trade regulation. CARB also approved an adaptive management plan that monitors the progress of reductions and recommends corrective actions if progress is not as planned or there are unintended consequences in other environmental areas (e.g., concentration of local criteria pollutants).

In 2014, CARB adopted an update to the 2008 Scoping Plan, which builds upon the initial scoping plan with new strategies and recommendations. The 2008 Scoping Plan and 2014 Scoping Plan Update require that reductions in GHG emissions come from virtually all sectors of the economy and be accomplished from a combination of policies, regulations, market approaches, incentives, and voluntary efforts. These efforts target GHG emission reductions from cars and trucks, electricity production, fuels, and other sources.

The CARB prepared an update to the 2014 Scoping Plan Update designed to reduce GHG emissions 40% below 1990 inventory levels by 2030 (CARB 2017). The 2030 Plan is slated to be updated in 2022.

3.4.9.2.3 Local

SJVAPCD adopted the Climate Change Action Plan (CCAP) in August 2008 to assist lead agencies in assessing and reducing the impacts of project-specific GHG emissions on global climate change. The CCAP relies on the use of performance-based standards, otherwise known as Best Performance Standards (BPS), to assess the significance of project-specific GHG emissions on global climate change. Projects implementing BPS are determined to have a less than significant impact. Otherwise, demonstration of a 29% reduction in GHG emissions from BAU is required to classify a project's impact as less than significant. In 2009, SJVAPCD adopted its Final Staff Report, Climate Change Action Plan: Addressing GHG Emissions Impacts under CEQA. SJVAPCD was not able to determine a specific quantitative level of GHG emissions increase above which a project would have a significant impact on the environment, and below which it would have an insignificant impact. SJVAPCD staff concluded that impacts of project-specific emissions on global climatic change are cumulative in nature, and the significance thereof should be examined in that context. SJVAPCD requires all projects to reduce their GHG emissions, whether through project design elements or mitigation. Projects achieving performance-based standards that have been demonstrated to be BPS would be considered to have a less-than-significant cumulative impact on global climate change (SJVAPCD 2009).

3.4.9.3 Proposed Action Impact Evaluation

SB 97 identifies the need to analyze greenhouse gas emissions as a part of the CEQA process. In determining the significance of a project's impacts, the lead agency may consider a project's consistency with the state's long-term climate goals or strategies, provided that substantial evidence supports the agency's analysis of how those goals or strategies address the project's incremental contribution to climate change and its conclusion that the project's incremental contribution is consistent with those plans, goals, or strategies. (CEQA Guidelines Section 15064.4[b][3])

The Port generally adopts SJVAPCD thresholds related to emission sources as most GHG sources at the Port also result in Climate Action Plan (CAP) emissions. As discussed in Section 3.4.8.2.3, SJVAPCD has established GHG thresholds for projects subject to CEQA based on achieving performance-based

standards that have been demonstrated to be BPS. For projects implementing SJVAPCD's BPS, quantification of project-specific GHGs is not required (SJVAPCD 2009). SJVAPCD's BPS generally apply to projects with stationary industrial emission sources and land use and development projects. For development projects, BPS includes project design elements, land use decisions, and technologies that reduce GHG emissions. Project proponents can reduce GHG emissions from energy consumption through building designs that increase energy efficiency, water conservation, and the use of energy efficient appliances. For other projects, including commercial facilities like port terminals, and projects not implementing BPS, SJVAPCD requires project-specific GHG emissions be quantified and compared to a 29% reduction in GHG emissions as compared to BAU standard to determine significance (SJVAPCD 2009). The City's CAP also relies on a 29% reduction from 2020 levels as compared with the BAU goal. However, the BAU approach has been effectively rendered unusable after the California Supreme Court's 2015 ruling in Center for Biological Diversity v. California Department of Fish and Wildlife. In addition, the City's CAP is not consistent with larger state goals, namely the latest adopted CARB Scoping Plan 2030 (CARB 2017) which is currently being updated further with adoption expected in 2022.

Several California Air Districts, including BAAQMD, have established a GHG threshold of 1,100 metric tons (MT) of CO_2e per year for land use plans and 10,000 MT per year for stationary sources. However, the proposed action is neither a land use plan nor a stationary source. The South Coast Air Quality Management District (SCAQMD) has established thresholds specific to residential, commercial, and industrial development as recommended by a 2008 work group effort to identify potential GHG emissions thresholds that achieve broader CARB goals to reduce GHG emissions. The work group's findings are detailed in the "Interim Greenhouse Gas Emissions Significance Thresholds" guidance document, which outlines an approach to developing a quantitative threshold and includes substantial evidence supporting the approaches (SCAQMD 2008). The interim guidance has not been updated.

The current interim thresholds comprise the following tiered approach:

- Tier 1 consists of evaluating whether or not the project qualifies for any applicable exemption under CEQA.
- Tier 2 consists of determining whether the proposed action is consistent with a GHG reduction plan. If a project is consistent with a qualifying local GHG reduction plan, it does not have significant GHG emissions.
- Tier 3 consists of screening values, which the lead agency can choose but must be consistent with all projects within its jurisdiction. A project's construction emissions are averaged over 30 years and are added to the project's operational emissions. If a project's emissions are below one of the following screening thresholds, then the proposed action is less than significant:
  - All land use types: 3,000 MT of CO_2e per year
  - Based on land use type: residential: 3,500 MT of CO_2e per year; commercial: 1,400 MT of CO_2e; or mixed use: 3,000 MT of CO_2e
  - Industrial (stationary) projects: 10,000 MT of CO_2e per year
- Tier 4 has the following options:
  - Option 1: Reduce business-as-usual (BAU) emissions by a certain percentage; this percentage is currently undefined.

  - Option 2: Early implementation of applicable Assembly Bill (AB) 32 Scoping Plan measures
  - Option 3: 2020 target: 3.0 MT of CO_2e/service population (SP)/year for projects and 4.1 MT of CO_2e/SP/year for plans
- Tier 5 involves mitigation offsets to achieve target significance threshold.

The SCAQMD's draft thresholds use the Executive Order S-3-05 Year 2050 goal as the basis for the Tier 3 screening level. Achieving the Executive Order objective would contribute to worldwide efforts to cap CO_2 concentrations at 450 parts per million (ppm), thus stabilizing the global climate (SCAQMD 2008).

For the purposes of CEQA, and until statewide guidance is adopted, the Port will use the Tier 3 quantitative thresholds recommended in the SCAQMD's Interim Thresholds document:

- Industrial Projects: 10,000 MT of CO_2e per year
  - Consistent with SCAQMD, projects are considered "Industrial Projects" if the facility includes stationary sources of GHG emissions requiring a permit from an air district
- Residential, Commercial (may also include industrial) building structures that attract or generate mobile source emissions, and Mixed-Use Projects (including industrial parks, warehouses):
  - Residential: 3,500 MT of CO_2e per year
  - Commercial: 1,400 MT of CO_2e
  - Mixed use: 3,000 MT of CO_2e
- Construction GHG emissions, amortized over the life of a project, are required to be included in a project's annual GHG emissions totals for both categories (SCAQMD 2008).

This analysis also considers the proposed action's consistency with applicable provisions of the plans, goals, or strategies identified in Section 3.4.8.2 and the proposed action's broader impact on climate change.

Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less than Significant Impact: The lead agency has discretion to select the model or methodology it considers most appropriate to enable decision-makers to intelligently consider a project's incremental contribution to climate change. (CEQA Guidelines Section 15064.4[c]). As discussed previously, the Port and USACE will use SCAQMD's Tier 3 quantitative thresholds to determine whether GHG emissions generated either directly or indirectly may have a significant impact. The proposed action is considered a "Residential, Commercial, and Mixed-Use Project" with a threshold of 3,000 MT of CO_2e per year.

Table 9 shows the total GHG emissions from construction, as estimated using CalEEMod (see Appendix D for full CalEEMod results). Construction emissions are assumed to occur in 2022.

Table 9
Proposed Action Greenhouse Gas Emissions (Metric Tons per Year)

Source Category	CO_2
2022 Construction	394
Significance Threshold	3,000
Exceed Threshold?	No

The proposed action's total GHG emissions would equal 394 metric tons of CO_2e per year, which is well below the 3,000 metric tons per year (mty) threshold. There would be no new sources of emissions during operations as a result of the proposed action. Therefore, impacts are considered less than significant.

Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less than Significant Impact. As previously discussed, there are numerous statewide regulations and initiatives related to overall GHG reductions. The proposed action is expected to comply will all initiatives and plans targeting mobile sources including using low carbon fuels were available. In addition, the proposed action is subject to future state and local requirements imposed by CARB's 2017 Climate Change Scoping Plan Update and the 2022 Climate Change Scoping Plan Update (in development). The 2022 Scoping Plan Update will assess progress towards achieving the SB 32 2030 target and lay out a path to achieve carbon neutrality by midcentury.

While construction would result in direct emissions, the overall project would reduce GHG emissions. The proposed action would alleviate the need for the landowners to truck soil on site, resulting in lower GHG emissions, and would beneficially reuse dredged material around the project area to improve soil quality and support crop growth, which would also lower GHG emissions through sequestration. In addition, the proposed action would maintain the channel and facilitate the movement of existing vessels, which is more efficient mode of transportation compared to truck and rail. Therefore, impact of the proposed action would be considered less than significant.

3.4.9.4 No Action Alternative Impact Evaluation

No Impact. Under the No Action Alternative, McDonald Island would continue to be used for agricultural purposes. The currently authorized DMPSs that are already a part of the USACE's O&M program would be used for dredged material placement. Therefore, under the No Action Alternative, there would be no impacts to GHG emissions beyond those previously occurring through agricultural uses at the site.

3.4.10 Hydrology and Water Quality

3.4.10.1 Affected Environment

3.4.10.1.1 Surface and Stormwater

The project site contains two human-made irrigation ditches at the proposed DMPS. Other irrigation ditches are located throughout McDonald Island to convey water to the agricultural fields. Stormwater within the project site is currently generally conveyed to surrounding drainage ditches. Irrigation water is drawn by multiple siphons from the rivers, canals and sloughs surrounding the island at numerous locations. If drainage ditches reach a high level, stormwater may be pumped to the San Joaquin River.

3.4.10.1.2 Flood Hazards

San Joaquin County maintains Flood Insurance Risk Maps (FIRMs) as required by the Federal Emergency Management Agency. These FIRMs indicate potential of flooding for various locations. As identified in the FIRM for the project area, the proposed DMPS is within Special Flood Hazard Areas subject to inundation by a 1% annual chance flood (100-year flood; FEMA 2009).

Upstream dam failures could cause flooding in the project site. The proposed DMPS is within a potential dam failure inundation area (San Joaquin County Geographic Information Systems 2014). San Joaquin County has adopted a Flood and Dam Failure Hazard Annex to address potential emergency situations associated with flooding, dam failure, and levee failure (San Joaquin County 2019a). This plan is an extension of the San Joaquin County Emergency Operations Plan (San Joaquin County 2019b).

McDonald Island is surrounded by levees on all sides. Heavy rains could cause stress to the levee system and overtopping, breach, or erosion could result in the failure of the levee system. According to a report prepared by the Delta Stewardship Council, out of 13.8 miles of levees that surround McDonald Island, 5.1 miles (37%) do not currently meet Public Law 84-99 (PL 84-99) requirements (Delta Stewardship Council 2017). PL 84-99 is a federal program that establishes guidelines for levee design geometry, construction, operations, and maintenance. The report also estimates a flooding probability for McDonald Island of 3.9%. RD2030, which covers McDonald Island, maintains an Emergency Operations Plan that is specific to emergency response to flood events on McDonald Island (Kjeldsen, Sinnock, & Neudeck, Inc., 2015). This plan contains standards for inspection, routine preparedness, and actions to take in case of a flood hazard emergency.

The project site is located far enough inland that the threat of tsunami waves reaching the proposed DMPS is not likely. Seiche waves (waves which typically form in enclosed or semi-enclosed waterbodies such as a lake or reservoir and triggered by unusual tides, winds or currents, or earthquake ground motions) have never been recorded in San Joaquin County (San Joaquin County 2016).

3.4.10.1.3 Groundwater

The project site is located within the San Joaquin Valley Groundwater Basin, which is a subsection of the Greater Central Valley Basin (California Department of Water Resources 2011). Groundwater in the basin is recharged by local precipitation and through percolation from the surrounding surface waters. Groundwater overdraft conditions have existed in the San Joaquin County Basin since the 1920s, although elevations have recovered and stayed relatively constant since 1999 (Stockton Port District 2012).

Delta islands typically contain extensive networks of drainage ditches to prevent flooding and maintain groundwater levels deep enough for agricultural crops to grow. The accumulated agricultural drainage is pumped through or over the levees into stream channels. Without this drainage, Delta islands would become flooded (USGS 2000). McDonald Island contains this type of drainage ditch network. Stormwater within the project site is generally conveyed to surrounding drainage ditches, where water is able to percolate into the groundwater table.

3.4.10.1.4 Regulatory Setting

3.4.10.1.4.1 Clean Water Act

The Clean Water Act (CWA) is the principal statute governing water quality on a national level. The CWA sets water quality standards that states use to regulate discharge of pollutants into the nation's waters. The statute employs a variety of regulatory and non-regulatory tools to reduce pollutant discharges into waterways. It mandates permits for wastewater and stormwater discharges, regulates publicly owned works that treat municipal and industrial wastewater, requires states to establish site-specific water quality standards for navigable bodies of water, and regulates other activities that affect water quality. Under the CWA, state governments are generally responsible for ensuring that minimum federal requirements are met and for establishing and implementing water quality standards for waters within their borders. In California, water quality control planning and programs are managed by the California State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCBs).

Important applicable sections of the CWA are as follows:

- Sections 303 and 304 provide for water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for any federal permit that proposes an activity that may result in a discharge to waters of the United States to obtain certification from the state that the discharge will comply with other provisions of the CWA. Certification is provided by the RWQCB.
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the United States. This permit program is administered by USACE.

3.4.10.1.4.2 National Flood Insurance Program

The National Flood Insurance Program, administered by the Federal Emergency Management Agency (FEMA), requires that local governments covered by federal flood insurance pass and enforce a floodplain management ordinance that specifies minimum requirements for any construction within the 100-year flood zone. FEMA is responsible for preparing maps delineating these areas.

3.4.10.1.4.3 California Fish and Game Code

Section 5650 of the Fish and Game Code prohibits discharge of harmful materials to waters of the state. It is unlawful to deposit in, permit to pass into, or place where it can pass into California waters, any petroleum, acid, coal or oil tar, lampblack, aniline, asphalt, bitumen, or residuary product of petroleum; any carbonaceous material or substance; any refuse, liquid or solid, from a refinery, gas house, tannery, distillery, chemical works, mill, or factory of any kind; any sawdust, shavings, slabs, or edgings; any factory refuse, lime, or slag; any cocculus indicus; or any substance or material deleterious to fish, plant, mammal, or bird life. Fish and Game Code 5655 requires that parties responsible for polluting waters of the state pay for removal costs and environmental damages.

Fish and Game Code 1600–1607 require CDFW notification for any activity that could affect the bank or bed of any stream that has value to fish and wildlife. After notification, the CDFW has the responsibility for preparation of a Streambed Alteration Agreement, in consultation with the project proponent. CDFW does

not currently employ a formal definition of watercourses under its jurisdiction. CDFW has jurisdiction over alterations to any channel with a definable bank and bed that is capable of accommodating water flow. Wetlands need not be present to establish CDFW jurisdiction. CDFW jurisdiction generally extends to work conducted within the 100-year floodplain.

3.4.10.1.4.4 Porter-Cologne Water Quality Control Act

The Porter-Cologne Act (Division 7 of the California Water Code) is the primary state regulation that addresses water quality standards. Under the act, SWRCB has the ultimate authority over water rights and water quality policy. The act also established nine RWQCBs to oversee water quality on a day-to-day basis at the regional level. The state and regional boards regulate all pollutant or nuisance discharges that may affect either surface water or groundwater. Jurisdictional resources in the project area are expected to be under the jurisdiction of the Central Valley Regional Water Quality Control Board (CVRWQCB). Under oversight by USEPA, SWRCB, and CVRWQCB have the responsibility for establishing regulatory standards and objectives for water quality.

3.4.10.2 Proposed Action Impact Evaluation

Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Less than Significant Impact. Construction activities associated with the proposed action would directly disturb soils within the proposed DMPS. The proposed action would adhere to the requirements of the National Pollutant Discharge Elimination System Construction Stormwater General Permit in order to avoid significant water quality impacts during construction. Dredge slurry drying would occur via evaporation or groundwater recharge within the proposed DMPS, or through discharge to Columbia Cut, if needed. To allow for water from the dredged slurry to decant into Columbia Cut, a pipe may be installed spanning from the DMPS to the banks of the waterway. Any discharge of decanted water to Columbia Cut would occur in compliance with water quality standards outlined in the USACE O&M program's Memorandum of Understanding with the Central Valley Regional Water Quality Control Board (CVRWQCB Resolution R5-2019-0041) (USACE and CVRWQCB 2019) Therefore, the proposed action would result in less than significant water quality impacts.

Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

No Impact. The proposed action would not result in construction of any impermeable surfaces that would interfere with groundwater recharge or groundwater supplies. Percolation into the underlying groundwater table would continue to occur. The groundwater table below the project area would largely be unaffected, although water contained in dredged slurry could nominally increase groundwater recharge. The proposed action would not require use of groundwater supplies. Therefore, the proposed action would result in no impact related to groundwater supplies or recharge.

Would the 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 result in substantial erosion or siltation on- or off-site; substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or impede or redirect flood flows?

Less than Significant Impact. The proposed action would not increase impervious surfaces or otherwise increase runoff. The proposed containment berm would confine stormwater and dredged slurry within the DMPS footprint, and water within would either evaporate; percolate into the groundwater table; or be conveyed via pump to Columbia Cut. This is a minor change from existing conditions. Any discharge to Columbia Cut would occur in compliance with CVRWQCB requirements, including requirements related to erosion and siltation. These changes to drainage patterns would not affect erosion, and the proposed action would not result in any land use changes that would increase the likelihood of erosion. BMPs would be implemented during construction to prevent erosion. Drainage patterns would remain unaffected, and stormwater would continue to flow towards the existing drainage/irrigation ditches.

On-site flooding is unlikely, as the containment berms have been engineered to contain water. The proposed action would not contribute additional surface runoff or flow that could result in off-site flooding. As previously noted, discharge of water from the proposed DMPS to Columbia Cut (if needed) would be conducted by USACE in compliance with CVRWQCB requirements, including requirements related to pollution and water quality. No other drainage pattern changes would occur. The proposed action would not result in any land use changes that would increase the likelihood of flooding. Impacts would be considered less than significant.

Would the project, in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

No Impact. The project area is within the dam inundation zone for several dams, and levee systems protect the project site from inundation. There is a low probability for failure of existing dams and levees, and existing inspection and response plans are in place to address these hazards. The project site is located within a flood hazard area, but there would be no risk of release of pollutants since the dredged slurry contained within the containment berm would be directly from the San Joaquin River. The project site is not located within a Tsunami Inundation Hazard Zone or subject to seiches. For these reasons, there would be no impact.

Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less than Significant Impact. As previously described, the proposed action would result in only less than significant water quality or groundwater impacts and would not require use of groundwater supplies. Therefore, there would be a less than significant impact.

3.4.10.3 No Action Alternative Impact Evaluation

No Impact. Under the No Action Alternative, McDonald Island would continue to be used for agricultural purposes. The currently authorized DMPSs that are already a part of the USACE's O&M program would be used for dredged material placement. Therefore, under the No Action Alternative, there would be no impacts to hydrology and water quality beyond those previously occurring through agricultural uses at the site or analyzed as part of the USACE's O&M program.

3.4.11 Noise

3.4.11.1 Affected Environment

The main sources of noise in the vicinity of the project site include vessel traffic along the DWSC, as well as the intermittent operation of agricultural equipment and vehicular or truck traffic along the roads located in or adjacent to the agricultural fields, all associated with planting, cultivation, harvesting, packing, and crop transportation. The nearest residential area is located 3,500 feet to the north of the proposed DMPS; the nearest sensitive receptors, including potential agricultural workers and recreational users of Whiskey Slough, are assumed to be located 1,000 feet from the project site.

3.4.11.1.1 Regulatory Setting

Sound is what we hear and is defined as the energy of a vibrating object transmitted by pressure waves through a medium, such as air or water, to the human ear. Noise is most simply defined as unwanted sound. The difference between sound and noise depends upon the listener and the circumstances. A given noise may be more or less tolerable depending on the duration exposure, as well as the time of day which the noise occurs. For example, the sound of a distant train horn during the day may be considered background noise but could disrupt sleep at night.

Sound is measured in decibels (dB) and accounts for variations such as frequency and amplitude, using a relative scale adjusted to the human range for hearing (referred to as the A-weighted decibel [dBA]). More specifically, the dBA measures sound reflective of how the average human ear responds to sound; the range of human hearing typically ranges from 0 dBA (the threshold of hearing) to about 140 dBA (the threshold for pain). Acceptable noise levels during the day are higher than during the night, and industrial land use in urban areas will have a higher limit than residential land use in rural areas.

Noise can be generated by both mobile (i.e., cars) and stationary (i.e., operational machinery) sources. Mobile sources typically attenuate at a rate of 3.0 to 4.5 dBA per doubling of distance, depending on the ground surface and obstructions between the noise source and the receiver. Hard and flat surfaces, such as concrete or asphalt, typically have an attenuation rate of 3.0 dBA per doubling of distance. Soft surfaces, such as uneven or vegetated terrain, typically have an attenuation rate of 4.5 dBA per doubling of distance. Noise generated by stationary sources typically attenuates at a rate of 6.0 to 7.5 dBA per doubling of distance.

OSHA has established acceptable occupational noise exposure levels (29 CFR 1910.95). These regulations state that employees shall not be exposed to occupational noise levels greater than 90 dB without adequate hearing protection. If occupational noise levels exceed 85 dB, the employer must establish a

hearing conservation program as described under 29 CFR 1910.95(c–o). For occupational noise exposure levels greater than 90 dB, the daily period of noise exposure must be decreased from 8 hours, as described under 29 CFR 1910.95(b).

The USEPA Office of Noise Abatement and Control was established to coordinate federal noise control activities and issued the Noise Control Act of 1972 (42 United States Code 4901 et seq.), establishing programs and guidelines to identify and address the effects of noise on public health and welfare and the environment. USEPA determined in 1981 that subjective issues such as noise would be better addressed at lower levels of government, and responsibilities for regulating noise control policies were transferred to state and local governments in 1982.

The State of California General Plan Guidelines, published by OPR, provide guidance for the acceptability of projects within areas that are exposed to specific noise levels. For areas zoned for industrial, manufacturing, utilities, and agricultural land uses, the normally acceptable level of community noise exposure is less than 75 community noise equivalent level (CNEL) with 70 to 80 CNEL considered conditionally acceptable (OPR 2017). The guidelines also present adjustment factors that may be used to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution.

The Public Health and Safety Element of the 2016 San Joaquin County General Plan provides noise standards for various land uses from both transportation and non-transportation sources (San Joaquin County 2016). The policy document stipulated that for new or existing residential areas affected by non-transportation sources, noise limits are 50 dBA equivalent sound level (Leq) (hourly) during daytime (7:00 a.m. to 10:00 p.m.) and 45 dBA Leq (hourly) during nighttime (10:00 p.m. to 7:00 a.m.), but Section 9-1025.9 of the San Joaquin County Ordinance Code exempts construction activities conducted between 6:00 a.m. and 9:00 p.m. from County noise standards.

3.4.11.2 Proposed Action Impact Evaluation

The following assumptions were used in this analysis:

- **Construction.** Berm construction activities would span approximately 12 weeks and are expected to occur between August and October 2022. Construction would occur up to 7 days per week between 6:00 a.m. to 9:00 p.m. Construction equipment would include scrapers, a backhoe, a bulldozer, a water truck, and a compactor. Construction equipment would access the site (once at the start of construction) by driving onto McDonald Island via Zuckerman Bridge located on the southeast corner of the island.
- **Operations.** Maintenance dredging of the Stockton DWSC was previously assessed as part of the 1980 EIS (USACE 1980). Proposed action operations would not involve any new equipment beyond the scope of analysis included in the 1980 EIS; therefore, a quantitative noise analysis for operations is not required.
- Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less than Significant Impact. Table 10 presents the typical noise levels from equipment to be used during construction of the proposed action.

Table 10
Proposed Construction Equipment

Type of Equipment	Typical Sound Level at 50 feet (dBA)	Calculated Maximum Sound Level at 300 feet (dBA)
Backhoe	80	68
Compactor	83	
Dozer	85	
Scraper	85	
Truck	84	

Note:
Source: FHWA 2006

To calculate construction noise, construction equipment was input into the FHWA Roadway Construction Noise Model (FHWA 2006), a computer program that enables the prediction of construction noise levels for a variety of operations based on a compilation of empirical data and the application of acoustical propagation formulas. To be conservative, no shielding was assumed.

As shown in Table 11, at 800 feet from the construction site, the model shows that the maximum sound level from construction equipment would be 59.5 dBA, which is within the acceptable range for residential uses (the nearest residential area is 3,500 feet to the north of the DMPS; the nearest sensitive receptors, including potential agricultural workers and recreational users of Whiskey Slough, are assumed to be located 1,000 feet from the project site). Consistent with the County's ordinance, construction would not occur between the hours of 9:00 p.m. and 6:00 a.m. Therefore, the proposed action construction would not exceed noise level standards from applicable ordinances.

Table 11
Proposed Action Construction Noise at 800 Feet from Closest Residence

Equipment	Calculated (dBA)		Noise Limits (dBA) – State of California		Noise Limit Exceedances (dBA)	
	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}
Backhoe	53.5	49.5	80	60	None	None
Compactor (ground)	59.1	52.2	80	60	None	None
Flat Bed Truck	50.2	46.2	80	60	None	None
Dozer	57.6	53.6	80	60	None	None
Scraper	59.5	55.5	80	60	None	None
Total	**59.5**	**59.4**	80	60	None	None

Notes:
The L_{max} noise limit is representative of the maximum volume permitted by the County for industrial uses.
Evening and night noise has not been analyzed because construction would not occur between 9:00 p.m. and 6:00 a.m.

There would be no new sources of operational noise as part of the proposed action. Therefore, proposed action operations would not exceed noise level standards from applicable ordinances, and impacts are considered less than significant.

Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Less than Significant Impact. Unless heavy construction activities are conducted extremely close (within a few feet) to neighboring structures, vibrations from construction activities rarely reach levels that damage structures. Typical vibration levels associated with construction equipment are provided in Table 12. Heavy equipment (e.g., a large bulldozer) generates vibrations levels of 0.089 inch per second peak particle velocity (PPV) at a distance of 25 feet.

Table 12
Vibration Velocities for Construction Equipment

Equipment	PPV at 25 feet (inches per second)
Loaded Trucks	0.076
Jackhammer	0.035
Small Bulldozer Backhoe	0.003
Heavy equipment (e.g., a large bulldozer)	0.089

Note:
Source: FTA 2006a

The construction vibration damage criterion for buildings that are extremely susceptible to vibration damage is 0.12 inch per second PPV. This is the strictest PPV vibration threshold established by the Federal Transit Administration (FTA). The nearest building to heavy equipment is approximately 3,500 feet away (residence located to the north of the proposed DMPS), and the typical vibration level from heavy equipment at this distance would be less than 0.07 inch per second PPV. Heavy equipment vibration would not exceed the FTA damage criteria. Therefore, the proposed action would result in a less than significant impact related to construction vibration. There would be no new sources of vibration as part of the proposed action operations.

For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The closest airport (or airstrip) is the Kingdon Airpark, located approximately 8.5 miles northeast. Therefore, the proposed action would not expose people residing or working in the area to excessive noise levels associated with public airport activities or airstrips.

3.4.11.3 No Action Alternative Impact Evaluation

No Impact. Under the No Action Alternative, McDonald Island would continue to be used for agricultural purposes. The currently authorized DMPSs that are already a part of the USACE's O&M program would be used for dredged material placement. Therefore, under the No Action Alternative, there would be no noise impacts beyond those previously occurring through agricultural uses at the project site or analyzed as part of the USACE's O&M program.

4 Cumulative and Growth-Inducing Effects

4.1 Cumulative Effects

Section 15130 of the CEQA Guidelines describes when a cumulative impact analysis is warranted and the elements necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts under CEQA, from Section 15355 of the CEQA Guidelines, is 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 probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time. (14 CFR 15355)

The definition of cumulative impacts under NEPA, from 40 CFR 1508.1(g)(3), is as follows:

> effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.

To analyze cumulative impacts, a cumulative impacts region for which impacts of the proposed action and other past, proposed, and reasonably foreseeable actions would be cumulatively recorded or experienced must be identified. The region where cumulative impacts may occur includes McDonald Island and the immediate surrounding area. Projects considered in the cumulative analysis are identified in Table 13.

Table 13
Related Present and Future Projects Considered in the Cumulative Impact Analysis

Reference Number	Project Name	Location	Project Description	Project Status
1	PG&E Company Line 057A-1 McDonald Island to Palm Tract Pipeline Decommissioning Project	McDonald Island, Bacon Island, Mildred Island, Palm Tract	Removal of submerged pipeline segments between McDonald Island and Palm Tract	Notice of Determination issued on December 8, 2021

Reference Number	Project Name	Location	Project Description	Project Status
2	USGS Monitoring Network Sacramento-San Joaquin Delta and Suisun Bay Project	Various locations in the Sacramento-San Joaquin Delta, four proposed locations off the coast of McDonald Island	Upgrades and maintenance of USGS monitoring stations, installation of pilings to support new infrastructure	Environmental Assessment completed in Fall 2021; once approved work would be completed over 5 years
3	Ongoing Stockton Deep Water Ship Channel O&M Program	From the Carquinez Strait to Stockton	Annual maintenance dredging of the Stockton DWSC by the USACE	1980 EIS completed in 1980; maintenance dredging completed on an annual basis. While the McDonald Island DMPS IS/MND-EA is a supplement to the 1980 EIS, the program is included here for a comprehensive evaluation of potential cumulative effects.

This section addresses the additive effects of the proposed action evaluated in this IS/MND-EA. Resource areas where the proposed action would result in no impact (such as those summarized in Section 3.3) are not discussed, as such resource areas would not result in cumulative impacts. The No Action Alternative is not considered in this analysis, because it would not contribute to any potentially significant cumulative environmental effects. As discussed in the following subsections, past, present, and reasonably foreseeable projects described in Table 13 are unlikely to result in significantly cumulative effects at McDonald Island.

4.1.1 Aesthetics

Potential temporary visual changes resulting from containment berm construction, truck traffic on Zuckerman Road, and pipeline placement in the Stockton DWSC would not jeopardize visual resources in the project area. The projects described in Table 13 may also result in temporary visual changes, although the viewsheds for those projects would not overlap with the viewshed of the proposed action. Therefore, the proposed action would be unlikely to contribute to any significant cumulative impacts.

4.1.2 Agriculture and Forestry

The proposed action would not conflict with agricultural activities or require the conversion of farmland or forest land. None of the projects in Table 13 would result in significant impacts to agriculture or forestry resources in the vicinity of McDonald Island. Therefore, the proposed action would not contribute to any significant cumulative impact.

4.1.3 Air Quality

The proposed action would generate short-term air emissions from construction equipment, trucks, and vehicles used during project construction. These emissions have the potential to combine with other area emissions from vessels, farm equipment, and mobile vehicles in the area, such as those identified in Table 13. However, the proposed action's construction emissions are well below applicable limits and are temporary in nature. Therefore, the proposed action is unlikely to contribute to any significant cumulative impacts.

4.1.4 Biological Resources

The proposed action was designed to avoid wetland impacts. The potentially significant impacts to special status species and habitats from the proposed action would be avoided through implementation of mitigation measures MM-BIO-1 through MM-BIO-3, reducing the proposed action's contribution to a less than significant level. The other projects in Table 13 would be required to implement avoidance and minimization measures similar to those of the proposed action to comply with the federal ESA and California ESA. Specifically, the USACE's O&M program (Project 3) is required to be conducted during approved work windows to protect special status species, and it is anticipated that the PG&E and U.S. Geological Survey (USGS) projects (Projects 1 and 2, respectively) would also be required to comply with work windows to ensure work is completed at the least impactful time possible to potentially present special status species. Therefore, the proposed action would be unlikely to contribute to any significant cumulative impacts.

4.1.5 Cultural Resources and Tribal Cultural Resources

Ground disturbance is expected to occur within the limits of previously deposited dredged material. The proposed action is not expected to encounter native sediments that might contain archaeological materials or human remains, and would not affect historic structures. Therefore, the proposed action would be unlikely to contribute to any significant cumulative impacts.

4.1.6 Energy

The proposed action's energy use would be limited to the temporary use of construction equipment and would not conflict with or obstruct state or local plans for renewable energy or energy efficiency. The projects described in Table 13 are not permanent operations or stationary sources and are expected to avoid significant energy impacts as well. Therefore, the proposed action would be unlikely to contribute to any significant cumulative impacts related to energy usage.

4.1.7 Geology and Soils

Construction of the proposed action would not increase the potential for impacts to geology and soils on McDonald Island. The projects listed in Table 13 are all in water and thus would not result in impacts to geology and soils. Therefore, the proposed action would be unlikely to contribute to any significant cumulative impacts related to geology and soils.

4.1.8 Greenhouse Gas Emissions

All GHG emissions contribute to global GHG emissions and the resulting effects of climate change regardless of the location of the source. Therefore, all past and present projects that emit GHGs act cumulatively to contribute to climate change. For these reasons, the state of California has enacted a series of regulations to reduce emissions statewide. For purposes of this analysis, a significant cumulative impact is identified if a project would result in GHG emissions that exceed the 3,000 mty threshold or conflict with an applicable plan, policy, or regulation adopted to reduce the emissions of GHG, both of which were developed to comply with state reduction goals. The proposed action's GHG emissions are well under the threshold and are temporary in nature. In addition, the proposed action would not conflict with an applicable plan, policy, or regulation. Therefore, the proposed action would not result in significant cumulative GHG emissions.

4.1.9 Hydrology and Water Quality

The proposed action involves earthwork and soil disturbance within the proposed DMPS. Compliance with the applicable regulations would ensure that the proposed action does not increase the potential for impacts associated with these activities. The projects listed in Table 13 would be required to implement avoidance and minimization measures similar to those of the proposed action to comply with CVRWQCB requirements for in-water construction projects. Therefore, the proposed action would be unlikely to contribute to any significant cumulative impacts related to hydrology and water quality.

4.1.10 Noise

The proposed action would generate short-term noise from construction equipment, trucks, and vehicles used during project construction. These sources of noise have the potential to combine with other area emissions from vessels, farm equipment, and mobile vehicles in the area, such as those from the projects listed in Table 13. However, based on noise modeling, the noise levels expected from the proposed action are well below applicable limits and temporary in nature. Given the distance of the proposed action to the projects listed in Table 13, the proposed action would be unlikely to contribute to any significant cumulative impacts related to noise.

4.2 Growth-Inducing Effects

The proposed action would not induce growth in or near the project area. The O&M program would continue to be implemented as envisioned in the 1980 EIS (USACE 1980). The proposed action would not result in increased maintenance dredging volumes within the Stockton DWSC overall, but would provide an opportunity to remove sediment from much-needed reaches of the Stockton DWSC. Therefore, the proposed action would not contribute to growth-inducing effects within the vicinity of the project area beyond those analyzed in the 1980 EIS.

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Figures

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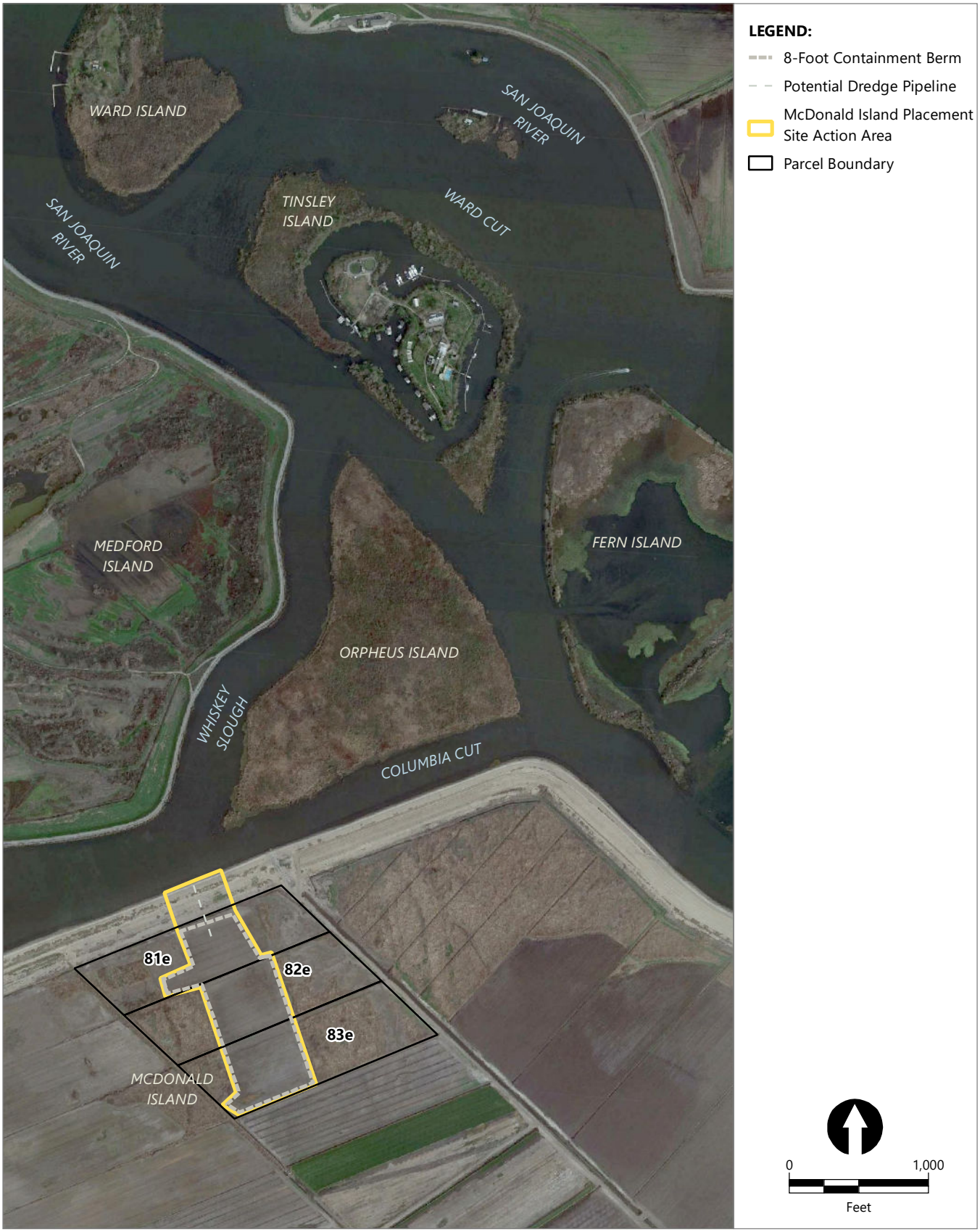
ANCHOR QEA

Figure 1
Vicinity Map
McDonald Island Placement Site
Port of Stockton



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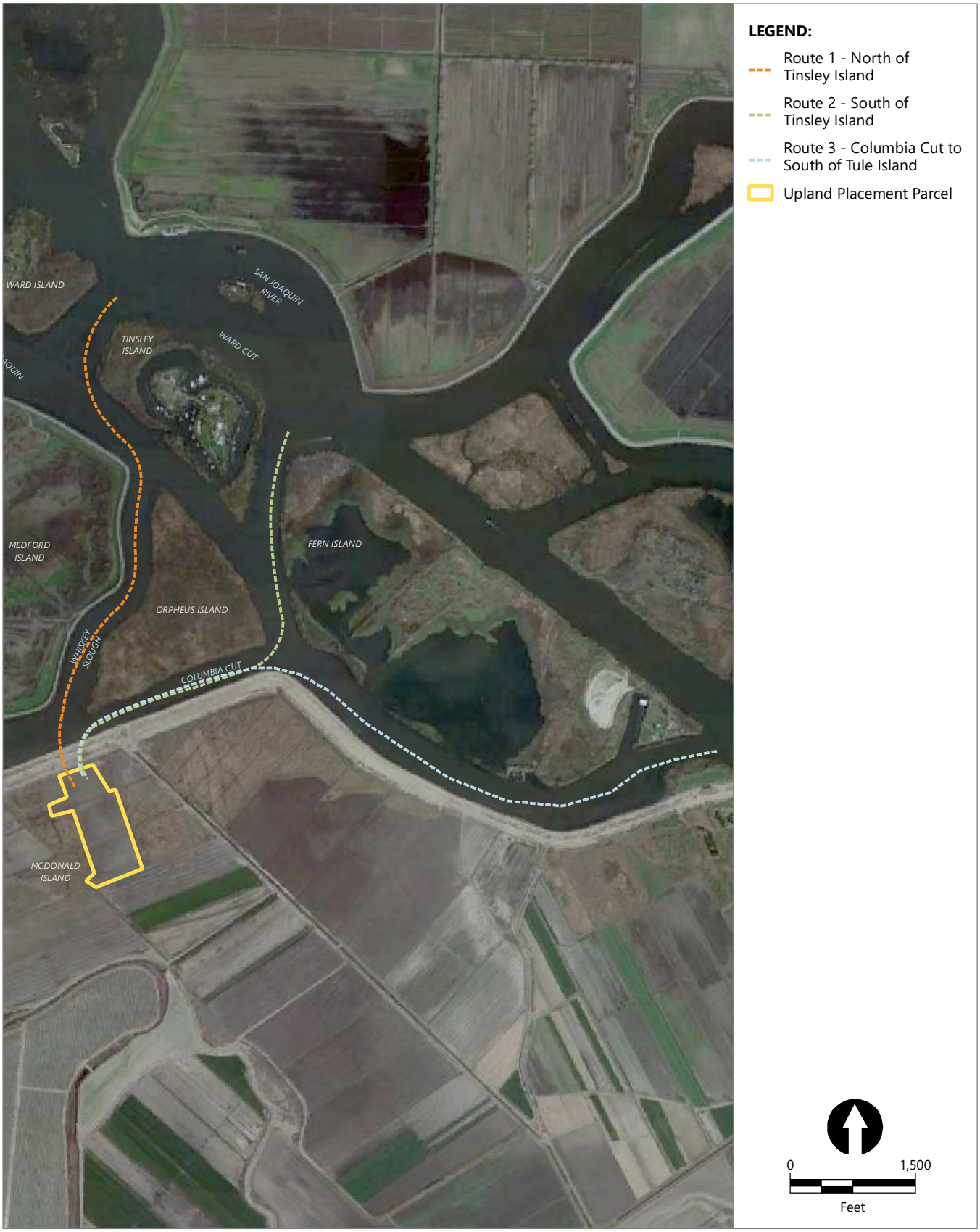
ANCHOR QEA

Figure 2
Project Area
McDonald Island Placement Site
Port of Stockton



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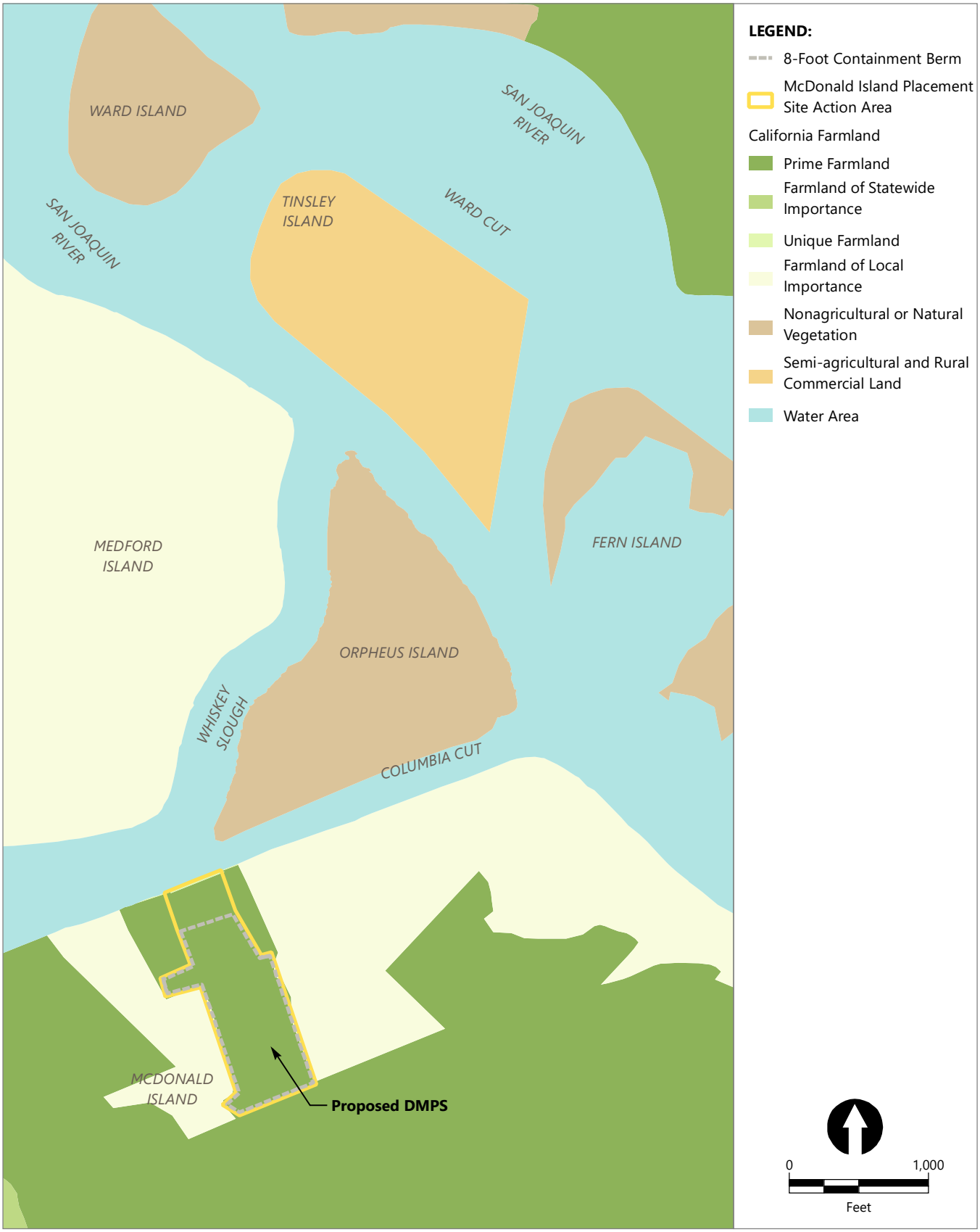
ANCHOR QEA

Figure 3
Dredged Material Pipeline Route Options
McDonald Island Placement Site
Port of Stockton



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ANCHOR QEA

Figure 4
Farmland Designation
McDonald Island Placement Site
Port of Stockton

Appendix A
List of Document Preparers

APPENDIX A: LIST OF DOCUMENT PREPARERS

The following team members participated in the preparation, review, and editing of this Draft IS/MND-EA.

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Appendix B
List of Interested Parties

Agency/Organization/Public	First name	Last name
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California Air Resources Board	Trish	Johnson
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City of Stockton		
City of Stockton Building Department		
Environmental Health Department		
San Joaquin County		
San Joaquin County Department of Environmental Health		
US Army Corps of Engineers, SF District		
San Joaquin Valley Air Pollution Control District		
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San Joaquin Valley Air Pollution Control District	Jessica	Olsen
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Little Manilla Rising	Dillon	Delvo
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	Ector	Olivares
	Ed	Ward
	Espe	Vielma
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Sierra Club	Mary	Elizabeth

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Mccormick & Baxter Creos Co

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Muwekma Ohlone Indian Tribe of the SF Bay Area	Monica	Arellano
North Valley Yokuts Tribe	Katherine	Perez
Wilton Rancheria	Jesus	Tarango
Wilton Rancheria	Steven	Hutchason
Wilton Rancheria	Dahlton	Brown
Tule River Indian Tribe	Neil	Peyron

Appendix C
CEQA Checklist Table

	Except as provided in Public Resources Code Section 21099, would the project:	Potentially Significant Impact	Less Than Significant Impact After Mitigation	Less Than Significant Impact	No Impact
	Aesthetics				
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 along a scenic highway?	☐	☐	☐	☒
c.	In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d.	Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	☐	☐	☐	☒
	Agricultural and Forestry Resources				
	In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project, and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:	**Potentially Significant Impact**	**Less Than Significant Impact After Mitigation**	**Less Than Significant Impact**	**No Impact**
a.	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☒	☐	☐
b.	Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract?	☐	☒	☐	☐

Except as provided in Public Resources Code Section 21099, would the project:		Potentially Significant Impact	Less Than Significant Impact After Mitigation	Less Than Significant Impact	No Impact
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?	☐	☒	☐	☐
Air Quality					
When available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:		**Potentially Significant Impact**	**Less Than Significant Impact After Mitigation**	**Less Than Significant Impact**	**No Impact**
a.	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b.	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c.	Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d.	Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐
Biological Resources					
Would the project:		**Potentially Significant Impact**	**Less Than Significant Impact After Mitigation**	**Less Than Significant Impact**	**No Impact**
a.	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐

Except as provided in Public Resources Code Section 21099, would the project:		Potentially Significant Impact	Less Than Significant Impact After Mitigation	Less Than Significant Impact	No Impact
b.	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
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 native 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?	☐	☐	☐	☒

Cultural Resources

Would the project:		Potentially Significant Impact	Less Than Significant Impact After Mitigation	Less Than Significant Impact	No Impact
a.	Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	☐	☐	☐	☒
b.	Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☐	☒	☐
c.	Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☒	☐

Except as provided in Public Resources Code Section 21099, would the project:		Potentially Significant Impact	Less Than Significant Impact After Mitigation	Less Than Significant Impact	No Impact
Energy					
Would the project:		**Potentially Significant Impact**	**Less Than Significant Impact After Mitigation**	**Less Than Significant Impact**	**No Impact**
a.	Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b.	Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐
Geology and Soils					
Would the project:		**Potentially Significant Impact**	**Less Than Significant Impact After Mitigation**	**Less Than Significant Impact**	**No Impact**
a.	Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
	i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
	ii. Strong seismic ground shaking?	☐	☐	☒	☐
	iii. Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
	iv. Landslides?	☐	☐	☐	☒
b.	Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c.	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?	☐	☐	☒	☐
d.	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?	☐	☐	☐	☒

Except as provided in Public Resources Code Section 21099, would the project:		Potentially Significant Impact	Less Than Significant Impact After Mitigation	Less Than Significant Impact	No Impact
e.	Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f.	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
Greenhouse Gas Emissions					
Would the project:		**Potentially Significant Impact**	**Less Than Significant Impact After Mitigation**	**Less Than Significant Impact**	**No Impact**
a.	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b.	Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐
Hydrology and Water Quality					
Would the project:		**Potentially Significant Impact**	**Less Than Significant Impact After Mitigation**	**Less Than Significant Impact**	**No Impact**
a.	Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water 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 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:	☐	☐	☒	☐
	i. Result in a 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?				

Except as provided in Public Resources Code Section 21099, would the project:		Potentially Significant Impact	Less Than Significant Impact After Mitigation	Less Than Significant Impact	No Impact
	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?				
	iv. Impede or redirect flood flows?				
d.	In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e.	Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

Noise

Would the project result in:		Potentially Significant Impact	Less Than Significant Impact After Mitigation	Less Than Significant Impact	No Impact
a.	Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b.	Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c.	Be located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, be within 2 miles of a public airport or public use airport, and expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Tribal Cultural Resources

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:		Potentially Significant Impact	Less Than Significant Impact After Mitigation	Less than Significant Impact	No Impact
a.	Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?	☐	☐	☐	☒

	Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	**Potentially Significant Impact**	**Less Than Significant Impact After Mitigation**	**Less than Significant Impact**	**No Impact**
b.	A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in Public Resources Code Section 5024.1(c)? In applying the criteria set forth in Public Resource Code Section 5024.1(c), the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒

Appendix D
Air Quality and Greenhouse Gas Modeling

Port of Stockton Berm Construction - San Joaquin County, Annual

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

Port of Stockton Berm Construction

San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	15.91	User Defined Unit	15.91	693,099.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2023
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Based on Tule Island DMPS run. Dredged Material Placement Site. Berm construction encompasses 15.91 acres, estimated from GIS

Construction Phase - No Demolition, Building Construction, Paving, or Architectural Coating. Assume 12 weeks of construction, single phase, all grading. The default equipment list for grading matches the client's email more than for Site Preparation.

Off-road Equipment - Match Project Spec. CalEEMod doesn't have Water Trucks, so model as Off-Highway Truck.
Compactors modeled as Plate Compactor.
Multiple scrapers --> 2, CalEEMod Default

Trips and VMT - 8 construction workers per day * 2 one way trips/round trip.

Grading -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	30.00	84.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	PhaseEndDate	9/9/2022	10/23/2022

Port of Stockton Berm Construction - San Joaquin County, Annual

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

tblFleetMix	HHD	0.02	0.06
tblFleetMix	LDA	0.53	0.56
tblFleetMix	LDT1	0.05	0.03
tblFleetMix	LDT2	0.17	0.18
tblFleetMix	LHD1	0.03	0.02
tblFleetMix	LHD2	6.3850e-003	4.5350e-003
tblFleetMix	MCY	0.02	4.9830e-003
tblFleetMix	MDV	0.16	0.12
tblFleetMix	MH	3.7070e-003	7.6700e-004
tblFleetMix	MHD	0.01	0.02
tblFleetMix	OBUS	4.7900e-004	1.1920e-003
tblFleetMix	SBUS	1.1350e-003	6.0600e-004
tblFleetMix	UBUS	3.2900e-004	1.4070e-003
tblLandUse	LandUseSquareFeet	0.00	693,099.00
tblLandUse	LotAcreage	0.00	15.91
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	8.00	15.00
tblOffRoadEquipment	UsageHours	8.00	15.00
tblOffRoadEquipment	UsageHours	8.00	15.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	WorkerTripNumber	15.00	16.00
tblVehicleEF	HHD	0.02	0.78
tblVehicleEF	HHD	6.9400e-003	0.01
tblVehicleEF	HHD	0.00	0.08
tblVehicleEF	HHD	7.33	1.84
tblVehicleEF	HHD	0.22	0.59
tblVehicleEF	HHD	1.4930e-003	1.44

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

tblVehicleEF	HHD	1,205.55	5,450.81
tblVehicleEF	HHD	1,351.03	1,512.40
tblVehicleEF	HHD	0.02	4.56
tblVehicleEF	HHD	6.01	15.64
tblVehicleEF	HHD	2.40	1.80
tblVehicleEF	HHD	2.34	20.31
tblVehicleEF	HHD	2.5260e-003	5.1010e-003
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	0.03	5.9270e-003
tblVehicleEF	HHD	0.00	3.4000e-005
tblVehicleEF	HHD	2.4170e-003	4.8800e-003
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.9190e-003	8.8920e-003
tblVehicleEF	HHD	0.03	5.6700e-003
tblVehicleEF	HHD	0.00	3.1000e-005
tblVehicleEF	HHD	1.0000e-006	5.3000e-005
tblVehicleEF	HHD	4.1000e-005	2.1290e-003
tblVehicleEF	HHD	0.50	0.49
tblVehicleEF	HHD	1.0000e-006	2.9000e-005
tblVehicleEF	HHD	0.02	0.08
tblVehicleEF	HHD	1.8000e-005	1.5700e-004
tblVehicleEF	HHD	1.0000e-006	0.03
tblVehicleEF	HHD	0.01	0.05
tblVehicleEF	HHD	0.01	0.01
tblVehicleEF	HHD	0.00	6.9000e-005
tblVehicleEF	HHD	1.0000e-006	5.3000e-005
tblVehicleEF	HHD	4.1000e-005	2.1290e-003
tblVehicleEF	HHD	0.57	0.56

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

tblVehicleEF	HHD	1.0000e-006	2.9000e-005
tblVehicleEF	HHD	0.03	0.10
tblVehicleEF	HHD	1.8000e-005	1.5700e-004
tblVehicleEF	HHD	1.0000e-006	0.04
tblVehicleEF	HHD	0.03	0.73
tblVehicleEF	HHD	6.9410e-003	0.01
tblVehicleEF	HHD	0.00	0.07
tblVehicleEF	HHD	7.24	1.34
tblVehicleEF	HHD	0.22	0.60
tblVehicleEF	HHD	1.3770e-003	1.33
tblVehicleEF	HHD	1,190.55	5,774.65
tblVehicleEF	HHD	1,351.03	1,512.40
tblVehicleEF	HHD	0.02	4.56
tblVehicleEF	HHD	5.73	16.15
tblVehicleEF	HHD	2.29	1.72
tblVehicleEF	HHD	2.34	20.30
tblVehicleEF	HHD	2.2260e-003	4.3010e-003
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	0.03	5.9270e-003
tblVehicleEF	HHD	0.00	3.4000e-005
tblVehicleEF	HHD	2.1300e-003	4.1150e-003
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.9190e-003	8.8920e-003
tblVehicleEF	HHD	0.03	5.6700e-003
tblVehicleEF	HHD	0.00	3.1000e-005
tblVehicleEF	HHD	3.0000e-006	1.2900e-004
tblVehicleEF	HHD	4.8000e-005	2.3740e-003
tblVehicleEF	HHD	0.53	0.46

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

tblVehicleEF	HHD	1.0000e-006	5.9000e-005
tblVehicleEF	HHD	0.02	0.08
tblVehicleEF	HHD	1.8000e-005	1.5500e-004
tblVehicleEF	HHD	1.0000e-006	0.03
tblVehicleEF	HHD	0.01	0.05
tblVehicleEF	HHD	0.01	0.01
tblVehicleEF	HHD	0.00	6.7000e-005
tblVehicleEF	HHD	3.0000e-006	1.2900e-004
tblVehicleEF	HHD	4.8000e-005	2.3740e-003
tblVehicleEF	HHD	0.60	0.53
tblVehicleEF	HHD	1.0000e-006	5.9000e-005
tblVehicleEF	HHD	0.03	0.10
tblVehicleEF	HHD	1.8000e-005	1.5500e-004
tblVehicleEF	HHD	1.0000e-006	0.04
tblVehicleEF	HHD	0.02	0.84
tblVehicleEF	HHD	6.9400e-003	0.01
tblVehicleEF	HHD	0.00	0.08
tblVehicleEF	HHD	7.47	2.54
tblVehicleEF	HHD	0.22	0.59
tblVehicleEF	HHD	1.6190e-003	1.56
tblVehicleEF	HHD	1,226.26	5,003.60
tblVehicleEF	HHD	1,351.03	1,512.40
tblVehicleEF	HHD	0.02	4.56
tblVehicleEF	HHD	6.41	14.95
tblVehicleEF	HHD	2.45	1.84
tblVehicleEF	HHD	2.34	20.32
tblVehicleEF	HHD	2.9410e-003	6.2060e-003
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.04	0.04

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

tblVehicleEF	HHD	0.03	5.9270e-003
tblVehicleEF	HHD	0.00	3.4000e-005
tblVehicleEF	HHD	2.8140e-003	5.9370e-003
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.9190e-003	8.8920e-003
tblVehicleEF	HHD	0.03	5.6700e-003
tblVehicleEF	HHD	0.00	3.1000e-005
tblVehicleEF	HHD	0.00	2.0000e-005
tblVehicleEF	HHD	4.4000e-005	2.1730e-003
tblVehicleEF	HHD	0.46	0.53
tblVehicleEF	HHD	0.00	1.3000e-005
tblVehicleEF	HHD	0.02	0.08
tblVehicleEF	HHD	1.9000e-005	1.7400e-004
tblVehicleEF	HHD	1.0000e-006	0.04
tblVehicleEF	HHD	0.01	0.05
tblVehicleEF	HHD	0.01	0.01
tblVehicleEF	HHD	0.00	7.1000e-005
tblVehicleEF	HHD	0.00	2.0000e-005
tblVehicleEF	HHD	4.4000e-005	2.1730e-003
tblVehicleEF	HHD	0.52	0.61
tblVehicleEF	HHD	0.00	1.3000e-005
tblVehicleEF	HHD	0.03	0.10
tblVehicleEF	HHD	1.9000e-005	1.7400e-004
tblVehicleEF	HHD	1.0000e-006	0.04
tblVehicleEF	LDA	1.9660e-003	3.5490e-003
tblVehicleEF	LDA	0.05	5.1990e-003
tblVehicleEF	LDA	0.55	0.50
tblVehicleEF	LDA	2.19	1.15
tblVehicleEF	LDA	253.77	242.88

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

tblVehicleEF	LDA	52.83	55.66
tblVehicleEF	LDA	0.03	0.05
tblVehicleEF	LDA	0.18	0.07
tblVehicleEF	LDA	1.3190e-003	1.5990e-003
tblVehicleEF	LDA	1.8160e-003	2.2780e-003
tblVehicleEF	LDA	1.2150e-003	1.4730e-003
tblVehicleEF	LDA	1.6700e-003	2.0950e-003
tblVehicleEF	LDA	0.05	0.04
tblVehicleEF	LDA	0.10	0.10
tblVehicleEF	LDA	0.04	0.03
tblVehicleEF	LDA	7.3600e-003	8.9230e-003
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	0.22	0.07
tblVehicleEF	LDA	2.5100e-003	2.4310e-003
tblVehicleEF	LDA	5.2300e-004	5.7600e-004
tblVehicleEF	LDA	0.05	0.04
tblVehicleEF	LDA	0.10	0.10
tblVehicleEF	LDA	0.04	0.03
tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	0.24	0.08
tblVehicleEF	LDA	2.2660e-003	4.0360e-003
tblVehicleEF	LDA	0.04	4.2770e-003
tblVehicleEF	LDA	0.67	0.61
tblVehicleEF	LDA	1.77	0.93
tblVehicleEF	LDA	276.49	265.04
tblVehicleEF	LDA	52.03	55.66
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.17	0.06

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

tblVehicleEF	LDA	1.3190e-003	1.5990e-003
tblVehicleEF	LDA	1.8160e-003	2.2780e-003
tblVehicleEF	LDA	1.2150e-003	1.4730e-003
tblVehicleEF	LDA	1.6700e-003	2.0950e-003
tblVehicleEF	LDA	0.13	0.10
tblVehicleEF	LDA	0.12	0.12
tblVehicleEF	LDA	0.09	0.06
tblVehicleEF	LDA	8.3560e-003	0.01
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	0.18	0.06
tblVehicleEF	LDA	2.7350e-003	2.6540e-003
tblVehicleEF	LDA	5.1500e-004	5.7200e-004
tblVehicleEF	LDA	0.13	0.10
tblVehicleEF	LDA	0.12	0.12
tblVehicleEF	LDA	0.09	0.06
tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	0.20	0.06
tblVehicleEF	LDA	1.8430e-003	3.3780e-003
tblVehicleEF	LDA	0.06	6.0450e-003
tblVehicleEF	LDA	0.51	0.47
tblVehicleEF	LDA	2.64	1.39
tblVehicleEF	LDA	246.62	235.90
tblVehicleEF	LDA	53.66	55.66
tblVehicleEF	LDA	0.04	0.05
tblVehicleEF	LDA	0.20	0.07
tblVehicleEF	LDA	1.3190e-003	1.5990e-003
tblVehicleEF	LDA	1.8160e-003	2.2780e-003
tblVehicleEF	LDA	1.2150e-003	1.4730e-003

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

tblVehicleEF	LDA	1.6700e-003	2.0950e-003
tblVehicleEF	LDA	0.02	0.01
tblVehicleEF	LDA	0.10	0.10
tblVehicleEF	LDA	0.02	0.01
tblVehicleEF	LDA	7.0010e-003	8.4990e-003
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.26	0.08
tblVehicleEF	LDA	2.4400e-003	2.3610e-003
tblVehicleEF	LDA	5.3100e-004	5.8000e-004
tblVehicleEF	LDA	0.02	0.01
tblVehicleEF	LDA	0.10	0.10
tblVehicleEF	LDA	0.02	0.01
tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.28	0.09
tblVehicleEF	LDT1	4.8590e-003	9.9070e-003
tblVehicleEF	LDT1	0.08	0.02
tblVehicleEF	LDT1	1.03	1.22
tblVehicleEF	LDT1	2.45	3.17
tblVehicleEF	LDT1	299.13	305.18
tblVehicleEF	LDT1	64.07	69.68
tblVehicleEF	LDT1	0.09	0.13
tblVehicleEF	LDT1	0.28	0.18
tblVehicleEF	LDT1	1.7940e-003	2.4130e-003
tblVehicleEF	LDT1	2.5880e-003	3.4720e-003
tblVehicleEF	LDT1	1.6510e-003	2.2220e-003
tblVehicleEF	LDT1	2.3800e-003	3.1930e-003
tblVehicleEF	LDT1	0.15	0.15
tblVehicleEF	LDT1	0.23	0.31

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

tblVehicleEF	LDT1	0.10	0.10
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	0.10	0.19
tblVehicleEF	LDT1	0.39	0.22
tblVehicleEF	LDT1	2.9600e-003	3.0660e-003
tblVehicleEF	LDT1	6.3400e-004	7.5300e-004
tblVehicleEF	LDT1	0.15	0.15
tblVehicleEF	LDT1	0.23	0.31
tblVehicleEF	LDT1	0.10	0.10
tblVehicleEF	LDT1	0.03	0.04
tblVehicleEF	LDT1	0.10	0.19
tblVehicleEF	LDT1	0.43	0.24
tblVehicleEF	LDT1	5.5440e-003	0.01
tblVehicleEF	LDT1	0.06	0.01
tblVehicleEF	LDT1	1.25	1.45
tblVehicleEF	LDT1	1.98	2.54
tblVehicleEF	LDT1	322.48	331.81
tblVehicleEF	LDT1	63.07	69.68
tblVehicleEF	LDT1	0.08	0.12
tblVehicleEF	LDT1	0.25	0.17
tblVehicleEF	LDT1	1.7940e-003	2.4130e-003
tblVehicleEF	LDT1	2.5880e-003	3.4720e-003
tblVehicleEF	LDT1	1.6510e-003	2.2220e-003
tblVehicleEF	LDT1	2.3800e-003	3.1930e-003
tblVehicleEF	LDT1	0.36	0.38
tblVehicleEF	LDT1	0.28	0.38
tblVehicleEF	LDT1	0.22	0.22
tblVehicleEF	LDT1	0.02	0.03
tblVehicleEF	LDT1	0.10	0.18

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

tblVehicleEF	LDT1	0.32	0.18
tblVehicleEF	LDT1	3.1910e-003	3.3360e-003
tblVehicleEF	LDT1	6.2400e-004	7.4100e-004
tblVehicleEF	LDT1	0.36	0.38
tblVehicleEF	LDT1	0.28	0.38
tblVehicleEF	LDT1	0.22	0.22
tblVehicleEF	LDT1	0.03	0.04
tblVehicleEF	LDT1	0.10	0.18
tblVehicleEF	LDT1	0.36	0.20
tblVehicleEF	LDT1	4.5830e-003	9.5090e-003
tblVehicleEF	LDT1	0.09	0.02
tblVehicleEF	LDT1	0.98	1.16
tblVehicleEF	LDT1	2.97	3.84
tblVehicleEF	LDT1	291.79	296.79
tblVehicleEF	LDT1	65.10	69.68
tblVehicleEF	LDT1	0.10	0.14
tblVehicleEF	LDT1	0.31	0.20
tblVehicleEF	LDT1	1.7940e-003	2.4130e-003
tblVehicleEF	LDT1	2.5880e-003	3.4720e-003
tblVehicleEF	LDT1	1.6510e-003	2.2220e-003
tblVehicleEF	LDT1	2.3800e-003	3.1930e-003
tblVehicleEF	LDT1	0.05	0.05
tblVehicleEF	LDT1	0.24	0.33
tblVehicleEF	LDT1	0.04	0.04
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	0.13	0.23
tblVehicleEF	LDT1	0.46	0.25
tblVehicleEF	LDT1	2.8870e-003	2.9820e-003
tblVehicleEF	LDT1	6.4400e-004	7.6400e-004

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

tblVehicleEF	LDT1	0.05	0.05
tblVehicleEF	LDT1	0.24	0.33
tblVehicleEF	LDT1	0.04	0.04
tblVehicleEF	LDT1	0.03	0.03
tblVehicleEF	LDT1	0.13	0.23
tblVehicleEF	LDT1	0.50	0.28
tblVehicleEF	LDT2	3.3120e-003	5.3140e-003
tblVehicleEF	LDT2	0.07	7.4880e-003
tblVehicleEF	LDT2	0.78	0.70
tblVehicleEF	LDT2	2.82	1.60
tblVehicleEF	LDT2	319.90	343.42
tblVehicleEF	LDT2	68.88	78.26
tblVehicleEF	LDT2	0.07	0.08
tblVehicleEF	LDT2	0.30	0.12
tblVehicleEF	LDT2	1.3670e-003	1.6230e-003
tblVehicleEF	LDT2	1.8580e-003	2.3700e-003
tblVehicleEF	LDT2	1.2580e-003	1.4920e-003
tblVehicleEF	LDT2	1.7080e-003	2.1790e-003
tblVehicleEF	LDT2	0.09	0.06
tblVehicleEF	LDT2	0.14	0.13
tblVehicleEF	LDT2	0.07	0.05
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	0.06	0.07
tblVehicleEF	LDT2	0.33	0.10
tblVehicleEF	LDT2	3.1650e-003	3.4390e-003
tblVehicleEF	LDT2	6.8200e-004	8.1000e-004
tblVehicleEF	LDT2	0.09	0.06
tblVehicleEF	LDT2	0.14	0.13
tblVehicleEF	LDT2	0.07	0.05

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

tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	0.06	0.07
tblVehicleEF	LDT2	0.37	0.11
tblVehicleEF	LDT2	3.7990e-003	6.0260e-003
tblVehicleEF	LDT2	0.06	6.1580e-003
tblVehicleEF	LDT2	0.94	0.84
tblVehicleEF	LDT2	2.27	1.29
tblVehicleEF	LDT2	342.55	373.99
tblVehicleEF	LDT2	67.81	78.26
tblVehicleEF	LDT2	0.07	0.07
tblVehicleEF	LDT2	0.27	0.11
tblVehicleEF	LDT2	1.3670e-003	1.6230e-003
tblVehicleEF	LDT2	1.8580e-003	2.3700e-003
tblVehicleEF	LDT2	1.2580e-003	1.4920e-003
tblVehicleEF	LDT2	1.7080e-003	2.1790e-003
tblVehicleEF	LDT2	0.21	0.14
tblVehicleEF	LDT2	0.17	0.15
tblVehicleEF	LDT2	0.15	0.10
tblVehicleEF	LDT2	0.02	0.01
tblVehicleEF	LDT2	0.06	0.07
tblVehicleEF	LDT2	0.28	0.08
tblVehicleEF	LDT2	3.3890e-003	3.7470e-003
tblVehicleEF	LDT2	6.7100e-004	8.0400e-004
tblVehicleEF	LDT2	0.21	0.14
tblVehicleEF	LDT2	0.17	0.15
tblVehicleEF	LDT2	0.15	0.10
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	0.06	0.07
tblVehicleEF	LDT2	0.30	0.09

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

tblVehicleEF	LDT2	3.1130e-003	5.0610e-003
tblVehicleEF	LDT2	0.08	8.7060e-003
tblVehicleEF	LDT2	0.73	0.66
tblVehicleEF	LDT2	3.40	1.92
tblVehicleEF	LDT2	312.78	333.78
tblVehicleEF	LDT2	69.99	78.26
tblVehicleEF	LDT2	0.08	0.08
tblVehicleEF	LDT2	0.33	0.14
tblVehicleEF	LDT2	1.3670e-003	1.6230e-003
tblVehicleEF	LDT2	1.8580e-003	2.3700e-003
tblVehicleEF	LDT2	1.2580e-003	1.4920e-003
tblVehicleEF	LDT2	1.7080e-003	2.1790e-003
tblVehicleEF	LDT2	0.03	0.02
tblVehicleEF	LDT2	0.15	0.13
tblVehicleEF	LDT2	0.03	0.02
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	0.07	0.08
tblVehicleEF	LDT2	0.39	0.12
tblVehicleEF	LDT2	3.0940e-003	3.3420e-003
tblVehicleEF	LDT2	6.9300e-004	8.1500e-004
tblVehicleEF	LDT2	0.03	0.02
tblVehicleEF	LDT2	0.15	0.13
tblVehicleEF	LDT2	0.03	0.02
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	0.07	0.08
tblVehicleEF	LDT2	0.42	0.13
tblVehicleEF	LHD1	4.3270e-003	4.7920e-003
tblVehicleEF	LHD1	9.9620e-003	0.02
tblVehicleEF	LHD1	0.01	0.02

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

tblVehicleEF	LHD1	0.16	0.14
tblVehicleEF	LHD1	0.95	1.19
tblVehicleEF	LHD1	0.92	2.30
tblVehicleEF	LHD1	9.48	9.36
tblVehicleEF	LHD1	769.58	687.22
tblVehicleEF	LHD1	9.79	28.26
tblVehicleEF	LHD1	0.09	0.09
tblVehicleEF	LHD1	1.45	2.02
tblVehicleEF	LHD1	0.29	0.93
tblVehicleEF	LHD1	1.0650e-003	1.0540e-003
tblVehicleEF	LHD1	0.01	0.01
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	2.2200e-004	8.3900e-004
tblVehicleEF	LHD1	1.0190e-003	1.0090e-003
tblVehicleEF	LHD1	2.5290e-003	2.5660e-003
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	2.0400e-004	7.7200e-004
tblVehicleEF	LHD1	2.3910e-003	3.0000e-003
tblVehicleEF	LHD1	0.08	0.10
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.0780e-003	1.3550e-003
tblVehicleEF	LHD1	0.12	0.15
tblVehicleEF	LHD1	0.22	0.31
tblVehicleEF	LHD1	0.07	0.24
tblVehicleEF	LHD1	9.2000e-005	9.3000e-005
tblVehicleEF	LHD1	7.4840e-003	6.7310e-003
tblVehicleEF	LHD1	9.7000e-005	3.2600e-004
tblVehicleEF	LHD1	2.3910e-003	3.0000e-003
tblVehicleEF	LHD1	0.08	0.10

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

tblVehicleEF	LHD1	0.03	0.02
tblVehicleEF	LHD1	1.0780e-003	1.3550e-003
tblVehicleEF	LHD1	0.15	0.18
tblVehicleEF	LHD1	0.22	0.31
tblVehicleEF	LHD1	0.08	0.26
tblVehicleEF	LHD1	4.3400e-003	4.7920e-003
tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	0.16	0.14
tblVehicleEF	LHD1	0.97	1.21
tblVehicleEF	LHD1	0.85	2.12
tblVehicleEF	LHD1	9.48	9.36
tblVehicleEF	LHD1	769.62	687.22
tblVehicleEF	LHD1	9.66	28.26
tblVehicleEF	LHD1	0.09	0.09
tblVehicleEF	LHD1	1.37	1.92
tblVehicleEF	LHD1	0.27	0.87
tblVehicleEF	LHD1	1.0650e-003	1.0540e-003
tblVehicleEF	LHD1	0.01	0.01
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	2.2200e-004	8.3900e-004
tblVehicleEF	LHD1	1.0190e-003	1.0090e-003
tblVehicleEF	LHD1	2.5290e-003	2.5660e-003
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	2.0400e-004	7.7200e-004
tblVehicleEF	LHD1	5.8090e-003	7.2710e-003
tblVehicleEF	LHD1	0.09	0.11
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	2.1970e-003	2.7480e-003

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

tblVehicleEF	LHD1	0.12	0.15
tblVehicleEF	LHD1	0.22	0.30
tblVehicleEF	LHD1	0.07	0.22
tblVehicleEF	LHD1	9.2000e-005	9.3000e-005
tblVehicleEF	LHD1	7.4850e-003	6.7310e-003
tblVehicleEF	LHD1	9.6000e-005	3.2300e-004
tblVehicleEF	LHD1	5.8090e-003	7.2710e-003
tblVehicleEF	LHD1	0.09	0.11
tblVehicleEF	LHD1	0.03	0.02
tblVehicleEF	LHD1	2.1970e-003	2.7480e-003
tblVehicleEF	LHD1	0.15	0.18
tblVehicleEF	LHD1	0.22	0.30
tblVehicleEF	LHD1	0.07	0.25
tblVehicleEF	LHD1	4.3140e-003	4.7920e-003
tblVehicleEF	LHD1	9.7730e-003	0.02
tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	0.16	0.14
tblVehicleEF	LHD1	0.93	1.17
tblVehicleEF	LHD1	0.99	2.49
tblVehicleEF	LHD1	9.48	9.36
tblVehicleEF	LHD1	769.55	687.22
tblVehicleEF	LHD1	9.92	28.26
tblVehicleEF	LHD1	0.09	0.09
tblVehicleEF	LHD1	1.48	2.07
tblVehicleEF	LHD1	0.31	0.99
tblVehicleEF	LHD1	1.0650e-003	1.0540e-003
tblVehicleEF	LHD1	0.01	0.01
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	2.2200e-004	8.3900e-004

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

tblVehicleEF	LHD1	1.0190e-003	1.0090e-003
tblVehicleEF	LHD1	2.5290e-003	2.5660e-003
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	2.0400e-004	7.7200e-004
tblVehicleEF	LHD1	8.3300e-004	1.0530e-003
tblVehicleEF	LHD1	0.08	0.11
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	5.0200e-004	6.3500e-004
tblVehicleEF	LHD1	0.12	0.15
tblVehicleEF	LHD1	0.24	0.34
tblVehicleEF	LHD1	0.07	0.25
tblVehicleEF	LHD1	9.2000e-005	9.3000e-005
tblVehicleEF	LHD1	7.4840e-003	6.7300e-003
tblVehicleEF	LHD1	9.8000e-005	3.3000e-004
tblVehicleEF	LHD1	8.3300e-004	1.0530e-003
tblVehicleEF	LHD1	0.08	0.11
tblVehicleEF	LHD1	0.03	0.02
tblVehicleEF	LHD1	5.0200e-004	6.3500e-004
tblVehicleEF	LHD1	0.15	0.18
tblVehicleEF	LHD1	0.24	0.34
tblVehicleEF	LHD1	0.08	0.28
tblVehicleEF	LHD2	2.7990e-003	3.1750e-003
tblVehicleEF	LHD2	7.8830e-003	8.8300e-003
tblVehicleEF	LHD2	7.8150e-003	7.1090e-003
tblVehicleEF	LHD2	0.13	0.12
tblVehicleEF	LHD2	0.75	0.68
tblVehicleEF	LHD2	0.54	1.12
tblVehicleEF	LHD2	14.86	14.48
tblVehicleEF	LHD2	765.13	708.21

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

tblVehicleEF	LHD2	6.73	22.05
tblVehicleEF	LHD2	0.12	0.11
tblVehicleEF	LHD2	1.37	1.22
tblVehicleEF	LHD2	0.17	0.45
tblVehicleEF	LHD2	1.5210e-003	1.3310e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	1.1400e-004	3.9000e-004
tblVehicleEF	LHD2	1.4550e-003	1.2730e-003
tblVehicleEF	LHD2	2.7300e-003	2.7110e-003
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	1.0500e-004	3.5900e-004
tblVehicleEF	LHD2	1.2760e-003	1.0900e-003
tblVehicleEF	LHD2	0.04	0.03
tblVehicleEF	LHD2	0.02	0.01
tblVehicleEF	LHD2	5.7800e-004	5.1600e-004
tblVehicleEF	LHD2	0.13	0.12
tblVehicleEF	LHD2	0.11	0.08
tblVehicleEF	LHD2	0.04	0.10
tblVehicleEF	LHD2	1.4200e-004	1.4100e-004
tblVehicleEF	LHD2	7.3700e-003	6.8800e-003
tblVehicleEF	LHD2	6.7000e-005	2.4100e-004
tblVehicleEF	LHD2	1.2760e-003	1.0900e-003
tblVehicleEF	LHD2	0.04	0.03
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	5.7800e-004	5.1600e-004
tblVehicleEF	LHD2	0.15	0.14
tblVehicleEF	LHD2	0.11	0.08
tblVehicleEF	LHD2	0.04	0.10

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

tblVehicleEF	LHD2	2.8070e-003	3.1750e-003
tblVehicleEF	LHD2	7.9580e-003	8.9560e-003
tblVehicleEF	LHD2	7.3850e-003	6.7210e-003
tblVehicleEF	LHD2	0.13	0.12
tblVehicleEF	LHD2	0.76	0.69
tblVehicleEF	LHD2	0.50	1.04
tblVehicleEF	LHD2	14.86	14.48
tblVehicleEF	LHD2	765.14	708.21
tblVehicleEF	LHD2	6.66	22.05
tblVehicleEF	LHD2	0.12	0.11
tblVehicleEF	LHD2	1.30	1.16
tblVehicleEF	LHD2	0.16	0.42
tblVehicleEF	LHD2	1.5210e-003	1.3310e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	1.1400e-004	3.9000e-004
tblVehicleEF	LHD2	1.4550e-003	1.2730e-003
tblVehicleEF	LHD2	2.7300e-003	2.7110e-003
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	1.0500e-004	3.5900e-004
tblVehicleEF	LHD2	3.1050e-003	2.6350e-003
tblVehicleEF	LHD2	0.05	0.04
tblVehicleEF	LHD2	0.02	0.01
tblVehicleEF	LHD2	1.1820e-003	1.0430e-003
tblVehicleEF	LHD2	0.13	0.12
tblVehicleEF	LHD2	0.11	0.08
tblVehicleEF	LHD2	0.04	0.09
tblVehicleEF	LHD2	1.4200e-004	1.4100e-004
tblVehicleEF	LHD2	7.3700e-003	6.8800e-003

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

tblVehicleEF	LHD2	6.6000e-005	2.3900e-004
tblVehicleEF	LHD2	3.1050e-003	2.6350e-003
tblVehicleEF	LHD2	0.05	0.04
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	1.1820e-003	1.0430e-003
tblVehicleEF	LHD2	0.15	0.14
tblVehicleEF	LHD2	0.11	0.08
tblVehicleEF	LHD2	0.04	0.10
tblVehicleEF	LHD2	2.7910e-003	3.1750e-003
tblVehicleEF	LHD2	7.8120e-003	8.7120e-003
tblVehicleEF	LHD2	8.2440e-003	7.5010e-003
tblVehicleEF	LHD2	0.13	0.12
tblVehicleEF	LHD2	0.74	0.68
tblVehicleEF	LHD2	0.59	1.21
tblVehicleEF	LHD2	14.86	14.48
tblVehicleEF	LHD2	765.12	708.21
tblVehicleEF	LHD2	6.81	22.05
tblVehicleEF	LHD2	0.12	0.11
tblVehicleEF	LHD2	1.39	1.24
tblVehicleEF	LHD2	0.18	0.47
tblVehicleEF	LHD2	1.5210e-003	1.3310e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	1.1400e-004	3.9000e-004
tblVehicleEF	LHD2	1.4550e-003	1.2730e-003
tblVehicleEF	LHD2	2.7300e-003	2.7110e-003
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	1.0500e-004	3.5900e-004
tblVehicleEF	LHD2	4.4800e-004	3.9000e-004

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

tblVehicleEF	LHD2	0.04	0.04
tblVehicleEF	LHD2	0.02	0.01
tblVehicleEF	LHD2	2.7000e-004	2.4300e-004
tblVehicleEF	LHD2	0.13	0.12
tblVehicleEF	LHD2	0.12	0.09
tblVehicleEF	LHD2	0.04	0.10
tblVehicleEF	LHD2	1.4200e-004	1.4100e-004
tblVehicleEF	LHD2	7.3700e-003	6.8800e-003
tblVehicleEF	LHD2	6.7000e-005	2.4300e-004
tblVehicleEF	LHD2	4.4800e-004	3.9000e-004
tblVehicleEF	LHD2	0.04	0.04
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	2.7000e-004	2.4300e-004
tblVehicleEF	LHD2	0.15	0.14
tblVehicleEF	LHD2	0.12	0.09
tblVehicleEF	LHD2	0.05	0.11
tblVehicleEF	MCY	0.33	0.43
tblVehicleEF	MCY	0.26	0.16
tblVehicleEF	MCY	21.26	21.25
tblVehicleEF	MCY	8.97	10.12
tblVehicleEF	MCY	213.77	169.78
tblVehicleEF	MCY	62.25	46.81
tblVehicleEF	MCY	1.18	1.18
tblVehicleEF	MCY	0.27	0.32
tblVehicleEF	MCY	1.8690e-003	1.8660e-003
tblVehicleEF	MCY	2.9640e-003	3.4980e-003
tblVehicleEF	MCY	1.7490e-003	1.7470e-003
tblVehicleEF	MCY	2.7930e-003	3.2980e-003
tblVehicleEF	MCY	1.30	1.32

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

tblVehicleEF	MCY	0.86	0.88
tblVehicleEF	MCY	0.67	0.68
tblVehicleEF	MCY	2.24	2.25
tblVehicleEF	MCY	0.58	0.60
tblVehicleEF	MCY	1.96	2.23
tblVehicleEF	MCY	2.1150e-003	2.1090e-003
tblVehicleEF	MCY	6.1600e-004	6.9900e-004
tblVehicleEF	MCY	1.30	1.32
tblVehicleEF	MCY	0.86	0.88
tblVehicleEF	MCY	0.67	0.68
tblVehicleEF	MCY	2.75	2.75
tblVehicleEF	MCY	0.58	0.60
tblVehicleEF	MCY	2.14	2.42
tblVehicleEF	MCY	0.32	0.42
tblVehicleEF	MCY	0.22	0.14
tblVehicleEF	MCY	21.00	20.99
tblVehicleEF	MCY	7.94	9.02
tblVehicleEF	MCY	213.08	169.78
tblVehicleEF	MCY	59.55	46.81
tblVehicleEF	MCY	1.02	1.02
tblVehicleEF	MCY	0.25	0.29
tblVehicleEF	MCY	1.8690e-003	1.8660e-003
tblVehicleEF	MCY	2.9640e-003	3.4980e-003
tblVehicleEF	MCY	1.7490e-003	1.7470e-003
tblVehicleEF	MCY	2.7930e-003	3.2980e-003
tblVehicleEF	MCY	3.43	3.46
tblVehicleEF	MCY	1.27	1.28
tblVehicleEF	MCY	1.74	1.76
tblVehicleEF	MCY	2.17	2.17

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tblVehicleEF	MCY	0.56	0.58
tblVehicleEF	MCY	1.64	1.87
tblVehicleEF	MCY	2.1090e-003	2.1020e-003
tblVehicleEF	MCY	5.8900e-004	6.7000e-004
tblVehicleEF	MCY	3.43	3.46
tblVehicleEF	MCY	1.27	1.28
tblVehicleEF	MCY	1.74	1.76
tblVehicleEF	MCY	2.66	2.67
tblVehicleEF	MCY	0.56	0.58
tblVehicleEF	MCY	1.78	2.03
tblVehicleEF	MCY	0.34	0.45
tblVehicleEF	MCY	0.30	0.19
tblVehicleEF	MCY	23.03	23.02
tblVehicleEF	MCY	10.40	11.68
tblVehicleEF	MCY	216.96	169.78
tblVehicleEF	MCY	65.78	46.81
tblVehicleEF	MCY	1.28	1.28
tblVehicleEF	MCY	0.29	0.34
tblVehicleEF	MCY	1.8690e-003	1.8660e-003
tblVehicleEF	MCY	2.9640e-003	3.4980e-003
tblVehicleEF	MCY	1.7490e-003	1.7470e-003
tblVehicleEF	MCY	2.7930e-003	3.2980e-003
tblVehicleEF	MCY	0.35	0.35
tblVehicleEF	MCY	0.93	0.95
tblVehicleEF	MCY	0.21	0.21
tblVehicleEF	MCY	2.36	2.36
tblVehicleEF	MCY	0.68	0.70
tblVehicleEF	MCY	2.34	2.64
tblVehicleEF	MCY	2.1470e-003	2.1410e-003

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

tblVehicleEF	MCY	6.5100e-004	7.3700e-004
tblVehicleEF	MCY	0.35	0.35
tblVehicleEF	MCY	0.93	0.95
tblVehicleEF	MCY	0.21	0.21
tblVehicleEF	MCY	2.89	2.89
tblVehicleEF	MCY	0.68	0.70
tblVehicleEF	MCY	2.55	2.87
tblVehicleEF	MDV	4.3410e-003	0.01
tblVehicleEF	MDV	0.09	0.02
tblVehicleEF	MDV	0.91	1.14
tblVehicleEF	MDV	3.37	3.23
tblVehicleEF	MDV	404.13	475.21
tblVehicleEF	MDV	86.70	107.57
tblVehicleEF	MDV	0.10	0.15
tblVehicleEF	MDV	0.39	0.29
tblVehicleEF	MDV	1.4420e-003	1.6860e-003
tblVehicleEF	MDV	1.9330e-003	2.4330e-003
tblVehicleEF	MDV	1.3300e-003	1.5550e-003
tblVehicleEF	MDV	1.7770e-003	2.2380e-003
tblVehicleEF	MDV	0.11	0.09
tblVehicleEF	MDV	0.18	0.21
tblVehicleEF	MDV	0.09	0.08
tblVehicleEF	MDV	0.02	0.03
tblVehicleEF	MDV	0.08	0.12
tblVehicleEF	MDV	0.45	0.25
tblVehicleEF	MDV	3.9950e-003	4.7590e-003
tblVehicleEF	MDV	8.5800e-004	1.1330e-003
tblVehicleEF	MDV	0.11	0.09
tblVehicleEF	MDV	0.18	0.21

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

tblVehicleEF	MDV	0.09	0.08
tblVehicleEF	MDV	0.03	0.04
tblVehicleEF	MDV	0.08	0.12
tblVehicleEF	MDV	0.50	0.27
tblVehicleEF	MDV	4.9840e-003	0.01
tblVehicleEF	MDV	0.08	0.02
tblVehicleEF	MDV	1.10	1.38
tblVehicleEF	MDV	2.70	2.61
tblVehicleEF	MDV	428.35	516.37
tblVehicleEF	MDV	85.38	107.57
tblVehicleEF	MDV	0.09	0.13
tblVehicleEF	MDV	0.36	0.27
tblVehicleEF	MDV	1.4420e-003	1.6860e-003
tblVehicleEF	MDV	1.9330e-003	2.4330e-003
tblVehicleEF	MDV	1.3300e-003	1.5550e-003
tblVehicleEF	MDV	1.7770e-003	2.2380e-003
tblVehicleEF	MDV	0.26	0.22
tblVehicleEF	MDV	0.20	0.24
tblVehicleEF	MDV	0.19	0.16
tblVehicleEF	MDV	0.02	0.03
tblVehicleEF	MDV	0.08	0.12
tblVehicleEF	MDV	0.38	0.20
tblVehicleEF	MDV	4.2350e-003	5.1740e-003
tblVehicleEF	MDV	8.4500e-004	1.1210e-003
tblVehicleEF	MDV	0.26	0.22
tblVehicleEF	MDV	0.20	0.24
tblVehicleEF	MDV	0.19	0.16
tblVehicleEF	MDV	0.03	0.04
tblVehicleEF	MDV	0.08	0.12

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tblVehicleEF	MDV	0.41	0.22
tblVehicleEF	MDV	4.0850e-003	9.9200e-003
tblVehicleEF	MDV	0.10	0.02
tblVehicleEF	MDV	0.86	1.08
tblVehicleEF	MDV	4.08	3.89
tblVehicleEF	MDV	396.52	462.24
tblVehicleEF	MDV	88.07	107.57
tblVehicleEF	MDV	0.11	0.16
tblVehicleEF	MDV	0.43	0.33
tblVehicleEF	MDV	1.4420e-003	1.6860e-003
tblVehicleEF	MDV	1.9330e-003	2.4330e-003
tblVehicleEF	MDV	1.3300e-003	1.5550e-003
tblVehicleEF	MDV	1.7770e-003	2.2380e-003
tblVehicleEF	MDV	0.04	0.03
tblVehicleEF	MDV	0.18	0.22
tblVehicleEF	MDV	0.04	0.03
tblVehicleEF	MDV	0.02	0.02
tblVehicleEF	MDV	0.09	0.15
tblVehicleEF	MDV	0.53	0.29
tblVehicleEF	MDV	3.9200e-003	4.6280e-003
tblVehicleEF	MDV	8.7200e-004	1.1440e-003
tblVehicleEF	MDV	0.04	0.03
tblVehicleEF	MDV	0.18	0.22
tblVehicleEF	MDV	0.04	0.03
tblVehicleEF	MDV	0.03	0.04
tblVehicleEF	MDV	0.09	0.15
tblVehicleEF	MDV	0.58	0.32
tblVehicleEF	MH	0.01	0.03
tblVehicleEF	MH	0.02	0.03

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

tblVehicleEF	MH	1.26	2.43
tblVehicleEF	MH	2.10	5.92
tblVehicleEF	MH	1,562.95	1,226.01
tblVehicleEF	MH	18.35	58.28
tblVehicleEF	MH	1.80	1.70
tblVehicleEF	MH	0.24	0.88
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.04	0.04
tblVehicleEF	MH	2.5700e-004	1.1190e-003
tblVehicleEF	MH	3.2960e-003	3.2330e-003
tblVehicleEF	MH	0.04	0.03
tblVehicleEF	MH	2.3700e-004	1.0290e-003
tblVehicleEF	MH	0.97	1.20
tblVehicleEF	MH	0.07	0.08
tblVehicleEF	MH	0.29	0.35
tblVehicleEF	MH	0.08	0.11
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	0.10	0.34
tblVehicleEF	MH	0.02	0.01
tblVehicleEF	MH	1.8200e-004	6.8600e-004
tblVehicleEF	MH	0.97	1.20
tblVehicleEF	MH	0.07	0.08
tblVehicleEF	MH	0.29	0.35
tblVehicleEF	MH	0.11	0.16
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	0.11	0.38
tblVehicleEF	MH	0.01	0.04
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	1.30	2.53

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

tblVehicleEF	MH	1.90	5.32
tblVehicleEF	MH	1,563.03	1,226.01
tblVehicleEF	MH	18.01	58.28
tblVehicleEF	MH	1.69	1.58
tblVehicleEF	MH	0.22	0.82
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.04	0.04
tblVehicleEF	MH	2.5700e-004	1.1190e-003
tblVehicleEF	MH	3.2960e-003	3.2330e-003
tblVehicleEF	MH	0.04	0.03
tblVehicleEF	MH	2.3700e-004	1.0290e-003
tblVehicleEF	MH	2.41	2.97
tblVehicleEF	MH	0.08	0.10
tblVehicleEF	MH	0.56	0.68
tblVehicleEF	MH	0.09	0.12
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	0.09	0.32
tblVehicleEF	MH	0.02	0.01
tblVehicleEF	MH	1.7800e-004	6.7600e-004
tblVehicleEF	MH	2.41	2.97
tblVehicleEF	MH	0.08	0.10
tblVehicleEF	MH	0.56	0.68
tblVehicleEF	MH	0.11	0.16
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	0.10	0.35
tblVehicleEF	MH	0.01	0.03
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	1.22	2.34
tblVehicleEF	MH	2.31	6.55

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

tblVehicleEF	MH	1,562.88	1,226.01
tblVehicleEF	MH	18.69	58.28
tblVehicleEF	MH	1.86	1.76
tblVehicleEF	MH	0.26	0.94
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.04	0.04
tblVehicleEF	MH	2.5700e-004	1.1190e-003
tblVehicleEF	MH	3.2960e-003	3.2330e-003
tblVehicleEF	MH	0.04	0.03
tblVehicleEF	MH	2.3700e-004	1.0290e-003
tblVehicleEF	MH	0.33	0.40
tblVehicleEF	MH	0.08	0.10
tblVehicleEF	MH	0.15	0.18
tblVehicleEF	MH	0.08	0.11
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	0.10	0.37
tblVehicleEF	MH	0.02	0.01
tblVehicleEF	MH	1.8500e-004	6.9700e-004
tblVehicleEF	MH	0.33	0.40
tblVehicleEF	MH	0.08	0.10
tblVehicleEF	MH	0.15	0.18
tblVehicleEF	MH	0.11	0.15
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	0.11	0.40
tblVehicleEF	MHD	2.3970e-003	0.02
tblVehicleEF	MHD	1.4950e-003	4.3270e-003
tblVehicleEF	MHD	6.3930e-003	0.05
tblVehicleEF	MHD	0.36	0.29
tblVehicleEF	MHD	0.23	0.36

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

tblVehicleEF	MHD	0.79	4.98
tblVehicleEF	MHD	80.93	165.70
tblVehicleEF	MHD	1,077.92	1,198.07
tblVehicleEF	MHD	6.20	46.73
tblVehicleEF	MHD	0.45	0.46
tblVehicleEF	MHD	1.58	1.19
tblVehicleEF	MHD	1.87	12.86
tblVehicleEF	MHD	3.9200e-004	1.3000e-004
tblVehicleEF	MHD	7.8570e-003	3.1870e-003
tblVehicleEF	MHD	8.6000e-005	7.3600e-004
tblVehicleEF	MHD	3.7500e-004	1.2400e-004
tblVehicleEF	MHD	7.5140e-003	3.0440e-003
tblVehicleEF	MHD	7.9000e-005	6.7700e-004
tblVehicleEF	MHD	4.2900e-004	1.0920e-003
tblVehicleEF	MHD	0.02	0.04
tblVehicleEF	MHD	0.01	0.02
tblVehicleEF	MHD	1.8600e-004	4.8800e-004
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	0.01	0.02
tblVehicleEF	MHD	0.04	0.30
tblVehicleEF	MHD	7.6600e-004	1.5900e-003
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	6.1000e-005	5.5400e-004
tblVehicleEF	MHD	4.2900e-004	1.0920e-003
tblVehicleEF	MHD	0.02	0.04
tblVehicleEF	MHD	0.02	0.03
tblVehicleEF	MHD	1.8600e-004	4.8800e-004
tblVehicleEF	MHD	0.02	0.06
tblVehicleEF	MHD	0.01	0.02

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

tblVehicleEF	MHD	0.04	0.32
tblVehicleEF	MHD	2.2720e-003	0.01
tblVehicleEF	MHD	1.5300e-003	4.4100e-003
tblVehicleEF	MHD	6.0360e-003	0.05
tblVehicleEF	MHD	0.32	0.20
tblVehicleEF	MHD	0.23	0.36
tblVehicleEF	MHD	0.73	4.59
tblVehicleEF	MHD	80.61	175.65
tblVehicleEF	MHD	1,077.93	1,198.07
tblVehicleEF	MHD	6.09	46.73
tblVehicleEF	MHD	0.44	0.47
tblVehicleEF	MHD	1.50	1.13
tblVehicleEF	MHD	1.86	12.81
tblVehicleEF	MHD	3.3400e-004	1.0900e-004
tblVehicleEF	MHD	7.8570e-003	3.1870e-003
tblVehicleEF	MHD	8.6000e-005	7.3600e-004
tblVehicleEF	MHD	3.1900e-004	1.0500e-004
tblVehicleEF	MHD	7.5140e-003	3.0440e-003
tblVehicleEF	MHD	7.9000e-005	6.7700e-004
tblVehicleEF	MHD	1.0700e-003	2.7100e-003
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	0.01	0.02
tblVehicleEF	MHD	4.0300e-004	1.0400e-003
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	0.01	0.02
tblVehicleEF	MHD	0.03	0.28
tblVehicleEF	MHD	7.6400e-004	1.6840e-003
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	6.0000e-005	5.4800e-004

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

tblVehicleEF	MHD	1.0700e-003	2.7100e-003
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	0.02	0.03
tblVehicleEF	MHD	4.0300e-004	1.0400e-003
tblVehicleEF	MHD	0.02	0.06
tblVehicleEF	MHD	0.01	0.02
tblVehicleEF	MHD	0.04	0.31
tblVehicleEF	MHD	2.5150e-003	0.02
tblVehicleEF	MHD	1.4620e-003	4.2460e-003
tblVehicleEF	MHD	6.7520e-003	0.06
tblVehicleEF	MHD	0.41	0.39
tblVehicleEF	MHD	0.22	0.35
tblVehicleEF	MHD	0.86	5.40
tblVehicleEF	MHD	81.44	152.24
tblVehicleEF	MHD	1,077.92	1,198.07
tblVehicleEF	MHD	6.31	46.73
tblVehicleEF	MHD	0.47	0.44
tblVehicleEF	MHD	1.60	1.21
tblVehicleEF	MHD	1.87	12.91
tblVehicleEF	MHD	4.7100e-004	1.5800e-004
tblVehicleEF	MHD	7.8570e-003	3.1870e-003
tblVehicleEF	MHD	8.6000e-005	7.3600e-004
tblVehicleEF	MHD	4.5100e-004	1.5100e-004
tblVehicleEF	MHD	7.5140e-003	3.0440e-003
tblVehicleEF	MHD	7.9000e-005	6.7700e-004
tblVehicleEF	MHD	1.4000e-004	3.6300e-004
tblVehicleEF	MHD	0.02	0.04
tblVehicleEF	MHD	0.01	0.02
tblVehicleEF	MHD	8.1000e-005	2.1600e-004

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

tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	0.04	0.31
tblVehicleEF	MHD	7.7100e-004	1.4630e-003
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	6.2000e-005	5.6200e-004
tblVehicleEF	MHD	1.4000e-004	3.6300e-004
tblVehicleEF	MHD	0.02	0.04
tblVehicleEF	MHD	0.02	0.03
tblVehicleEF	MHD	8.1000e-005	2.1600e-004
tblVehicleEF	MHD	0.02	0.06
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	0.04	0.34
tblVehicleEF	OBUS	8.6700e-003	0.01
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	0.03	0.03
tblVehicleEF	OBUS	0.51	0.25
tblVehicleEF	OBUS	1.19	0.75
tblVehicleEF	OBUS	3.07	6.35
tblVehicleEF	OBUS	67.47	64.81
tblVehicleEF	OBUS	1,534.72	1,290.18
tblVehicleEF	OBUS	22.19	70.64
tblVehicleEF	OBUS	0.24	0.12
tblVehicleEF	OBUS	1.21	0.72
tblVehicleEF	OBUS	0.71	1.97
tblVehicleEF	OBUS	8.0000e-005	1.1000e-005
tblVehicleEF	OBUS	6.2710e-003	2.1740e-003
tblVehicleEF	OBUS	2.4500e-004	9.0400e-004
tblVehicleEF	OBUS	7.7000e-005	1.1000e-005

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

tblVehicleEF	OBUS	5.9750e-003	2.0510e-003
tblVehicleEF	OBUS	2.2500e-004	8.3100e-004
tblVehicleEF	OBUS	2.7280e-003	1.8080e-003
tblVehicleEF	OBUS	0.03	0.02
tblVehicleEF	OBUS	0.05	0.03
tblVehicleEF	OBUS	9.4700e-004	6.7000e-004
tblVehicleEF	OBUS	0.06	0.05
tblVehicleEF	OBUS	0.12	0.05
tblVehicleEF	OBUS	0.14	0.39
tblVehicleEF	OBUS	6.4400e-004	6.3100e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	2.2000e-004	8.1800e-004
tblVehicleEF	OBUS	2.7280e-003	1.8080e-003
tblVehicleEF	OBUS	0.03	0.02
tblVehicleEF	OBUS	0.06	0.04
tblVehicleEF	OBUS	9.4700e-004	6.7000e-004
tblVehicleEF	OBUS	0.08	0.06
tblVehicleEF	OBUS	0.12	0.05
tblVehicleEF	OBUS	0.15	0.43
tblVehicleEF	OBUS	8.7450e-003	0.01
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	0.02	0.03
tblVehicleEF	OBUS	0.50	0.24
tblVehicleEF	OBUS	1.23	0.77
tblVehicleEF	OBUS	2.78	5.75
tblVehicleEF	OBUS	66.77	67.63
tblVehicleEF	OBUS	1,534.78	1,290.18
tblVehicleEF	OBUS	21.69	70.64
tblVehicleEF	OBUS	0.23	0.13

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

tblVehicleEF	OBUS	1.12	0.67
tblVehicleEF	OBUS	0.69	1.90
tblVehicleEF	OBUS	7.1000e-005	9.0000e-006
tblVehicleEF	OBUS	6.2710e-003	2.1740e-003
tblVehicleEF	OBUS	2.4500e-004	9.0400e-004
tblVehicleEF	OBUS	6.8000e-005	9.0000e-006
tblVehicleEF	OBUS	5.9750e-003	2.0510e-003
tblVehicleEF	OBUS	2.2500e-004	8.3100e-004
tblVehicleEF	OBUS	6.7190e-003	4.4100e-003
tblVehicleEF	OBUS	0.04	0.02
tblVehicleEF	OBUS	0.05	0.03
tblVehicleEF	OBUS	1.8230e-003	1.2740e-003
tblVehicleEF	OBUS	0.06	0.05
tblVehicleEF	OBUS	0.12	0.05
tblVehicleEF	OBUS	0.13	0.36
tblVehicleEF	OBUS	6.3800e-004	6.5800e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	2.1500e-004	8.0700e-004
tblVehicleEF	OBUS	6.7190e-003	4.4100e-003
tblVehicleEF	OBUS	0.04	0.02
tblVehicleEF	OBUS	0.06	0.04
tblVehicleEF	OBUS	1.8230e-003	1.2740e-003
tblVehicleEF	OBUS	0.08	0.07
tblVehicleEF	OBUS	0.12	0.05
tblVehicleEF	OBUS	0.14	0.40
tblVehicleEF	OBUS	8.5800e-003	0.01
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	0.03	0.03
tblVehicleEF	OBUS	0.51	0.25

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

tblVehicleEF	OBUS	1.16	0.73
tblVehicleEF	OBUS	3.37	6.96
tblVehicleEF	OBUS	68.44	60.91
tblVehicleEF	OBUS	1,534.66	1,290.18
tblVehicleEF	OBUS	22.69	70.64
tblVehicleEF	OBUS	0.26	0.12
tblVehicleEF	OBUS	1.25	0.75
tblVehicleEF	OBUS	0.73	2.04
tblVehicleEF	OBUS	9.3000e-005	1.3000e-005
tblVehicleEF	OBUS	6.2710e-003	2.1740e-003
tblVehicleEF	OBUS	2.4500e-004	9.0400e-004
tblVehicleEF	OBUS	8.9000e-005	1.3000e-005
tblVehicleEF	OBUS	5.9750e-003	2.0510e-003
tblVehicleEF	OBUS	2.2500e-004	8.3100e-004
tblVehicleEF	OBUS	9.9300e-004	6.8200e-004
tblVehicleEF	OBUS	0.03	0.02
tblVehicleEF	OBUS	0.05	0.03
tblVehicleEF	OBUS	5.0000e-004	3.5800e-004
tblVehicleEF	OBUS	0.06	0.05
tblVehicleEF	OBUS	0.13	0.06
tblVehicleEF	OBUS	0.15	0.42
tblVehicleEF	OBUS	6.5400e-004	5.9400e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	2.2500e-004	8.2800e-004
tblVehicleEF	OBUS	9.9300e-004	6.8200e-004
tblVehicleEF	OBUS	0.03	0.02
tblVehicleEF	OBUS	0.06	0.04
tblVehicleEF	OBUS	5.0000e-004	3.5800e-004
tblVehicleEF	OBUS	0.08	0.06

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

tblVehicleEF	OBUS	0.13	0.06
tblVehicleEF	OBUS	0.16	0.45
tblVehicleEF	SBUS	0.02	0.83
tblVehicleEF	SBUS	4.4790e-003	0.01
tblVehicleEF	SBUS	1.4640e-003	0.07
tblVehicleEF	SBUS	1.09	6.22
tblVehicleEF	SBUS	0.27	0.74
tblVehicleEF	SBUS	0.21	6.35
tblVehicleEF	SBUS	334.62	1,220.88
tblVehicleEF	SBUS	1,115.37	1,103.64
tblVehicleEF	SBUS	1.28	41.30
tblVehicleEF	SBUS	3.47	10.53
tblVehicleEF	SBUS	5.46	4.19
tblVehicleEF	SBUS	0.82	14.34
tblVehicleEF	SBUS	3.4220e-003	0.01
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.03	0.02
tblVehicleEF	SBUS	1.4000e-005	6.3300e-004
tblVehicleEF	SBUS	3.2740e-003	9.6820e-003
tblVehicleEF	SBUS	2.8830e-003	2.7090e-003
tblVehicleEF	SBUS	0.03	0.02
tblVehicleEF	SBUS	1.3000e-005	5.8200e-004
tblVehicleEF	SBUS	1.6700e-004	3.1840e-003
tblVehicleEF	SBUS	1.0730e-003	0.03
tblVehicleEF	SBUS	0.10	0.74
tblVehicleEF	SBUS	6.4000e-005	1.1510e-003
tblVehicleEF	SBUS	0.09	0.11
tblVehicleEF	SBUS	2.5570e-003	0.01
tblVehicleEF	SBUS	8.0030e-003	0.32

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

tblVehicleEF	SBUS	3.1690e-003	0.01
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	1.3000e-005	5.2200e-004
tblVehicleEF	SBUS	1.6700e-004	3.1840e-003
tblVehicleEF	SBUS	1.0730e-003	0.03
tblVehicleEF	SBUS	0.14	1.06
tblVehicleEF	SBUS	6.4000e-005	1.1510e-003
tblVehicleEF	SBUS	0.10	0.13
tblVehicleEF	SBUS	2.5570e-003	0.01
tblVehicleEF	SBUS	8.7630e-003	0.35
tblVehicleEF	SBUS	0.02	0.83
tblVehicleEF	SBUS	4.4910e-003	0.01
tblVehicleEF	SBUS	1.2050e-003	0.06
tblVehicleEF	SBUS	1.05	6.09
tblVehicleEF	SBUS	0.27	0.76
tblVehicleEF	SBUS	0.14	4.46
tblVehicleEF	SBUS	344.72	1,281.31
tblVehicleEF	SBUS	1,115.37	1,103.64
tblVehicleEF	SBUS	1.18	41.30
tblVehicleEF	SBUS	3.55	10.86
tblVehicleEF	SBUS	5.19	3.98
tblVehicleEF	SBUS	0.82	14.30
tblVehicleEF	SBUS	2.8940e-003	8.5310e-003
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.03	0.02
tblVehicleEF	SBUS	1.4000e-005	6.3300e-004
tblVehicleEF	SBUS	2.7690e-003	8.1620e-003
tblVehicleEF	SBUS	2.8830e-003	2.7090e-003
tblVehicleEF	SBUS	0.03	0.02

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

tblVehicleEF	SBUS	1.3000e-005	5.8200e-004
tblVehicleEF	SBUS	4.0700e-004	7.7810e-003
tblVehicleEF	SBUS	1.1390e-003	0.03
tblVehicleEF	SBUS	0.10	0.74
tblVehicleEF	SBUS	1.2100e-004	2.1900e-003
tblVehicleEF	SBUS	0.09	0.11
tblVehicleEF	SBUS	2.1830e-003	9.9370e-003
tblVehicleEF	SBUS	6.5760e-003	0.26
tblVehicleEF	SBUS	3.2650e-003	0.01
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	1.2000e-005	4.9100e-004
tblVehicleEF	SBUS	4.0700e-004	7.7810e-003
tblVehicleEF	SBUS	1.1390e-003	0.03
tblVehicleEF	SBUS	0.14	1.06
tblVehicleEF	SBUS	1.2100e-004	2.1900e-003
tblVehicleEF	SBUS	0.10	0.13
tblVehicleEF	SBUS	2.1830e-003	9.9370e-003
tblVehicleEF	SBUS	7.2000e-003	0.28
tblVehicleEF	SBUS	0.02	0.84
tblVehicleEF	SBUS	4.4680e-003	0.01
tblVehicleEF	SBUS	1.7110e-003	0.08
tblVehicleEF	SBUS	1.15	6.41
tblVehicleEF	SBUS	0.27	0.73
tblVehicleEF	SBUS	0.27	8.34
tblVehicleEF	SBUS	320.68	1,137.43
tblVehicleEF	SBUS	1,115.37	1,103.64
tblVehicleEF	SBUS	1.39	41.30
tblVehicleEF	SBUS	3.36	10.06
tblVehicleEF	SBUS	5.56	4.28

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

tblVehicleEF	SBUS	0.82	14.37
tblVehicleEF	SBUS	4.1510e-003	0.01
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.03	0.02
tblVehicleEF	SBUS	1.4000e-005	6.3300e-004
tblVehicleEF	SBUS	3.9720e-003	0.01
tblVehicleEF	SBUS	2.8830e-003	2.7090e-003
tblVehicleEF	SBUS	0.03	0.02
tblVehicleEF	SBUS	1.3000e-005	5.8200e-004
tblVehicleEF	SBUS	6.4000e-005	1.2030e-003
tblVehicleEF	SBUS	1.0770e-003	0.03
tblVehicleEF	SBUS	0.10	0.74
tblVehicleEF	SBUS	3.4000e-005	6.1700e-004
tblVehicleEF	SBUS	0.09	0.11
tblVehicleEF	SBUS	3.2980e-003	0.01
tblVehicleEF	SBUS	9.3680e-003	0.37
tblVehicleEF	SBUS	3.0380e-003	0.01
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	1.4000e-005	5.5500e-004
tblVehicleEF	SBUS	6.4000e-005	1.2030e-003
tblVehicleEF	SBUS	1.0770e-003	0.03
tblVehicleEF	SBUS	0.14	1.07
tblVehicleEF	SBUS	3.4000e-005	6.1700e-004
tblVehicleEF	SBUS	0.10	0.13
tblVehicleEF	SBUS	3.2980e-003	0.01
tblVehicleEF	SBUS	0.01	0.40
tblVehicleEF	UBUS	2.41	1.38
tblVehicleEF	UBUS	7.0140e-003	0.07
tblVehicleEF	UBUS	17.99	8.32

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

tblVehicleEF	UBUS	0.56	13.20
tblVehicleEF	UBUS	1,535.40	1,955.80
tblVehicleEF	UBUS	6.10	108.79
tblVehicleEF	UBUS	0.49	8.32
tblVehicleEF	UBUS	0.05	15.08
tblVehicleEF	UBUS	0.09	0.59
tblVehicleEF	UBUS	0.02	0.01
tblVehicleEF	UBUS	4.1460e-003	0.14
tblVehicleEF	UBUS	6.0000e-005	1.1320e-003
tblVehicleEF	UBUS	0.04	0.25
tblVehicleEF	UBUS	6.0460e-003	3.0000e-003
tblVehicleEF	UBUS	3.9580e-003	0.13
tblVehicleEF	UBUS	5.5000e-005	1.0410e-003
tblVehicleEF	UBUS	2.8700e-004	4.9820e-003
tblVehicleEF	UBUS	2.7000e-003	0.07
tblVehicleEF	UBUS	1.4100e-004	2.0150e-003
tblVehicleEF	UBUS	0.04	0.62
tblVehicleEF	UBUS	8.7400e-004	0.01
tblVehicleEF	UBUS	0.03	0.91
tblVehicleEF	UBUS	6.4800e-003	0.01
tblVehicleEF	UBUS	6.0000e-005	1.3230e-003
tblVehicleEF	UBUS	2.8700e-004	4.9820e-003
tblVehicleEF	UBUS	2.7000e-003	0.07
tblVehicleEF	UBUS	1.4100e-004	2.0150e-003
tblVehicleEF	UBUS	2.47	2.07
tblVehicleEF	UBUS	8.7400e-004	0.01
tblVehicleEF	UBUS	0.03	1.00
tblVehicleEF	UBUS	2.41	1.39
tblVehicleEF	UBUS	6.2160e-003	0.06

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

tblVehicleEF	UBUS	17.99	8.40
tblVehicleEF	UBUS	0.46	10.60
tblVehicleEF	UBUS	1,535.41	1,955.80
tblVehicleEF	UBUS	5.91	108.79
tblVehicleEF	UBUS	0.49	7.86
tblVehicleEF	UBUS	0.05	14.97
tblVehicleEF	UBUS	0.09	0.59
tblVehicleEF	UBUS	0.02	0.01
tblVehicleEF	UBUS	4.1460e-003	0.14
tblVehicleEF	UBUS	6.0000e-005	1.1320e-003
tblVehicleEF	UBUS	0.04	0.25
tblVehicleEF	UBUS	6.0460e-003	3.0000e-003
tblVehicleEF	UBUS	3.9580e-003	0.13
tblVehicleEF	UBUS	5.5000e-005	1.0410e-003
tblVehicleEF	UBUS	7.2500e-004	0.01
tblVehicleEF	UBUS	3.4270e-003	0.09
tblVehicleEF	UBUS	2.9900e-004	4.2250e-003
tblVehicleEF	UBUS	0.04	0.63
tblVehicleEF	UBUS	8.1300e-004	0.01
tblVehicleEF	UBUS	0.03	0.80
tblVehicleEF	UBUS	6.4800e-003	0.01
tblVehicleEF	UBUS	5.9000e-005	1.2790e-003
tblVehicleEF	UBUS	7.2500e-004	0.01
tblVehicleEF	UBUS	3.4270e-003	0.09
tblVehicleEF	UBUS	2.9900e-004	4.2250e-003
tblVehicleEF	UBUS	2.47	2.08
tblVehicleEF	UBUS	8.1300e-004	0.01
tblVehicleEF	UBUS	0.03	0.88
tblVehicleEF	UBUS	2.41	1.38

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

tblVehicleEF	UBUS	7.7860e-003	0.08
tblVehicleEF	UBUS	17.98	8.24
tblVehicleEF	UBUS	0.68	15.88
tblVehicleEF	UBUS	1,535.40	1,955.80
tblVehicleEF	UBUS	6.28	108.79
tblVehicleEF	UBUS	0.49	8.50
tblVehicleEF	UBUS	0.06	15.20
tblVehicleEF	UBUS	0.09	0.59
tblVehicleEF	UBUS	0.02	0.01
tblVehicleEF	UBUS	4.1460e-003	0.14
tblVehicleEF	UBUS	6.0000e-005	1.1320e-003
tblVehicleEF	UBUS	0.04	0.25
tblVehicleEF	UBUS	6.0460e-003	3.0000e-003
tblVehicleEF	UBUS	3.9580e-003	0.13
tblVehicleEF	UBUS	5.5000e-005	1.0410e-003
tblVehicleEF	UBUS	1.0200e-004	1.8080e-003
tblVehicleEF	UBUS	2.7370e-003	0.07
tblVehicleEF	UBUS	6.7000e-005	1.0150e-003
tblVehicleEF	UBUS	0.04	0.61
tblVehicleEF	UBUS	1.0930e-003	0.02
tblVehicleEF	UBUS	0.03	1.02
tblVehicleEF	UBUS	6.4800e-003	0.01
tblVehicleEF	UBUS	6.2000e-005	1.3690e-003
tblVehicleEF	UBUS	1.0200e-004	1.8080e-003
tblVehicleEF	UBUS	2.7370e-003	0.07
tblVehicleEF	UBUS	6.7000e-005	1.0150e-003
tblVehicleEF	UBUS	2.47	2.06
tblVehicleEF	UBUS	1.0930e-003	0.02
tblVehicleEF	UBUS	0.04	1.12

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

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.2555	2.5710	1.7675	4.4600e-003	0.6914	0.1073	0.7986	0.2854	0.0987	0.3842	0.0000	391.2109	391.2109	0.1240	1.8000e-004	394.3649
Maximum	**0.2555**	**2.5710**	**1.7675**	**4.4600e-003**	**0.6914**	**0.1073**	**0.7986**	**0.2854**	**0.0987**	**0.3842**	**0.0000**	**391.2109**	**391.2109**	**0.1240**	**1.8000e-004**	**394.3649**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.2555	2.5710	1.7675	4.4600e-003	0.6914	0.1073	0.7986	0.2854	0.0987	0.3842	0.0000	391.2105	391.2105	0.1240	1.8000e-004	394.3645
Maximum	**0.2555**	**2.5710**	**1.7675**	**4.4600e-003**	**0.6914**	**0.1073**	**0.7986**	**0.2854**	**0.0987**	**0.3842**	**0.0000**	**391.2105**	**391.2105**	**0.1240**	**1.8000e-004**	**394.3645**

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**8-1-2022**	**9-30-2022**	2.0526	2.0526
		Highest	2.0526	2.0526

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.1888	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.8000e-004	2.8000e-004	0.0000	0.0000	3.0000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.1888**	**0.0000**	**1.5000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.8000e-004**	**2.8000e-004**	**0.0000**	**0.0000**	**3.0000e-004**

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

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.1888	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.8000e-004	2.8000e-004	0.0000	0.0000	3.0000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.1888**	**0.0000**	**1.5000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.8000e-004**	**2.8000e-004**	**0.0000**	**0.0000**	**3.0000e-004**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	8/1/2022	10/23/2022	7	84	Assume all 84 days of Grading

Acres of Grading (Site Preparation Phase): 0

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Acres of Grading (Grading Phase): 393.75

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	0	8.00	158	0.38
Grading	Graders	0	8.00	187	0.41
Grading	Off-Highway Trucks	1	15.00	402	0.38
Grading	Plate Compactors	1	15.00	8	0.43
Grading	Rubber Tired Dozers	1	15.00	247	0.40
Grading	Scrapers	2	15.00	367	0.48
Grading	Tractors/Loaders/Backhoes	1	15.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	6	16.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

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

3.2 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6830	0.0000	0.6830	0.2832	0.0000	0.2832	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2527	2.5689	1.7436	4.3900e-003		0.1072	0.1072		0.0987	0.0987	0.0000	384.5177	384.5177	0.1238	0.0000	387.6132
Total	**0.2527**	**2.5689**	**1.7436**	**4.3900e-003**	**0.6830**	**0.1072**	**0.7902**	**0.2832**	**0.0987**	**0.3819**	**0.0000**	**384.5177**	**384.5177**	**0.1238**	**0.0000**	**387.6132**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7700e-003	2.0900e-003	0.0239	7.0000e-005	8.3200e-003	4.0000e-005	8.3600e-003	2.2100e-003	4.0000e-005	2.2500e-003	0.0000	6.6932	6.6932	1.7000e-004	1.8000e-004	6.7517
Total	**2.7700e-003**	**2.0900e-003**	**0.0239**	**7.0000e-005**	**8.3200e-003**	**4.0000e-005**	**8.3600e-003**	**2.2100e-003**	**4.0000e-005**	**2.2500e-003**	**0.0000**	**6.6932**	**6.6932**	**1.7000e-004**	**1.8000e-004**	**6.7517**

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

3.2 Grading - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6830	0.0000	0.6830	0.2832	0.0000	0.2832	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2527	2.5689	1.7436	4.3900e-003		0.1072	0.1072		0.0987	0.0987	0.0000	384.5173	384.5173	0.1238	0.0000	387.6128
Total	**0.2527**	**2.5689**	**1.7436**	**4.3900e-003**	**0.6830**	**0.1072**	**0.7902**	**0.2832**	**0.0987**	**0.3819**	**0.0000**	**384.5173**	**384.5173**	**0.1238**	**0.0000**	**387.6128**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7700e-003	2.0900e-003	0.0239	7.0000e-005	8.3200e-003	4.0000e-005	8.3600e-003	2.2100e-003	4.0000e-005	2.2500e-003	0.0000	6.6932	6.6932	1.7000e-004	1.8000e-004	6.7517
Total	**2.7700e-003**	**2.0900e-003**	**0.0239**	**7.0000e-005**	**8.3200e-003**	**4.0000e-005**	**8.3600e-003**	**2.2100e-003**	**4.0000e-005**	**2.2500e-003**	**0.0000**	**6.6932**	**6.6932**	**1.7000e-004**	**1.8000e-004**	**6.7517**

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.561380	0.034626	0.184829	0.116141	0.016642	0.004535	0.016185	0.056706	0.001192	0.001407	0.004983	0.000606	0.000767

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

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.1888	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.8000e-004	2.8000e-004	0.0000	0.0000	3.0000e-004
Unmitigated	3.1888	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.8000e-004	2.8000e-004	0.0000	0.0000	3.0000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.4819					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.7069					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.8000e-004	2.8000e-004	0.0000	0.0000	3.0000e-004
Total	**3.1888**	**0.0000**	**1.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.8000e-004**	**2.8000e-004**	**0.0000**	**0.0000**	**3.0000e-004**

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

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.4819					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.7069					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.8000e-004	2.8000e-004	0.0000	0.0000	3.0000e-004
Total	**3.1888**	**0.0000**	**1.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.8000e-004**	**2.8000e-004**	**0.0000**	**0.0000**	**3.0000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

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

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

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

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

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

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Table 1
Land Use Summary
McDonald Island DMPS
Stockton, California

Land Use[1]	CalEEMod Land Use[2]	Size	Units
Berm Construction Area	User Defined Industrial	693,099	ft^2

Notes:

1. Land uses analyzed based on information provided by the Project sponsor. The site location is shown in Figure 01.

2. CalEEMod does not contain a default equivalent Land Use to Berm Construction area, used User Defined Industrial

Abbreviations:

ft^2 - square feet

Table 2
Construction Phasing Schedule
McDonald Island DMPS
Stockton, California

Construction Phase[1]	Construction Subphase[1]	Start Date	End Date	Number of Work Days	Days per Week	Hours per Day
Grading	Grading	8/1/2022	10/23/2022	84	7	15

Notes:

[1.] All construction phasing information provided by the Project sponsor. Construction occurs 7 days per week, 15 hours per day

Table 3
Construction Equipment
McDonald Island DMPS
Stockton, California

Construction Phase	Construction Subphase	CalEEMod Equipment[2]	Fuel[3]	Number[1]	Daily Usage[4] (hours/day)	Horsepower[1]	Unmitigated Tier[5]
Grading	Grading	Rubber Tired Dozers	Diesel	1	15	247	No Specific Tier
		Scrapers	Diesel	2	15	367	No Specific Tier
		Tractors/Loaders/Backhoes	Diesel	1	15	97	No Specific Tier
		Off-Highway Trucks	Diesel	1	15	402	No Specific Tier
		Plate Compactors	Diesel	1	15	8	No Specific Tier

Notes:

1. Equipment lists were provided by the Project sponsor.
2. CalEEMod equipment types are assigned using CalEEMod User's Guide Appendix D. Water trucks are modeled as Off-Highway Trucks
3. All equipment is conservatively assumed to be diesel-fueled.
4. Construction activities are assumed to occur during 6AM to 9PM hours, per the Project Sponsor
5. The unmitigated tier is assumed to be consistent with the fleet average tier.

Abbreviations:

CalEEMod - California Emissions Estimator Model

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod®), Version 2020.4.0. Available online at http://www.ca
San Joaquin County. 2020. Development Title, Section 9-1025-9. Available online at: https://library.municode.com/ca/san_joaquin_county/codes/development_title?

Table 4
Construction Trips
McDonald Island DMPS
Stockton, California

Trip Data

Construction Phase	Construction Subphase	Year	Days	Trip Rates[1] (one way trips/day)		Trip Rates (one way trips/phase)	Trip Lengths[2] (miles/one way trip)
				Worker Trips	Vendor Trips	Hauling Trips	Worker Trips
Grading	Grading	2022	84	16	0	0	16.8

EMFAC Data[3]

Trip Type	EMFAC Settings	Fleet Mix	Fuel Type
Worker	San Joaquin County Calendar Year 2022 Annual Season Aggregated Model Year EMFAC2007 Vehicle Categories	50% LDA, 25% LDT1, 25% LDT2	Gasoline

Notes:

1. Worker trip rates were provided by the Project sponsor. The Grading phase has 8 workers per day. Each worker is assumed to make 2 one-way trips per day to and from the Project site. There are no Vendor or Hauling Trips per the Project Sponsor.
2. Worker trip lengths are based on CalEEMod Appendix D defaults for San Joaquin County (rural).
3. Emissions were calculated in CalEEMOD, which uses EMFAC2011 Emissions Inventory with the specified settings and fleet and fuel assumptions.

Abbreviations:

CalEEMod - California Emissions Estimator Model
EMFAC2021 - California Air Resources Board EMission FACtor model
LDA - light-duty automobiles
LDT - light-duty trucks
HHDT - heavy-heavy duty trucks

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod®), Version 2020.4.0. Available online at http://www.caleemod.com/
California Air Resources Board (ARB) 2021. EMFAC2021. Available at: https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/msei-modeling-tools

Table 5
Summary of Unmitigated Construction CAP and GHG Emissions
McDonald Island DMPS
Stockton, California

Construction Phase	Subphase	Year	Unmitigated Construction CAP Emissions[1]						Unmitigated Construction GHG Emissions[1,2]
			ROG	NOx	CO	SOx	PM_{10}	$PM_{2.5}$	CO_2e
			lb/year						MT/year
Grading	Grading	2022	511	5142	3,535	9	1597	768	394

Summary of Emissions by Year (ton/year)							
Year	ROG	NOx	CO	SOx	PM_{10}	$PM_{2.5}$	CO_2e
	ton/year						MT/year
2022	0.26	2.6	1.8	0.0045	0.80	0.38	394
Threshold[3]	10	10	100	27	15	15	--

Notes:

1. Emissions were estimated using off-road construction equipment emission factors and on-road emission factors from CalEEMod. On-road emission factors from CalEEMod are derived from EMFAC2011, which are more conservative than EMFAC2021 emission factors. Off-road construction equipment use and on-road trips were provided by the Project sponsor, as presented in Tables 3 and 4, respectively. Unmitigated off-road equipment assume a fleet-average tier. On-site water truck emissions are calculated as Off Highway Trucks.
2. Carbon dioxide equivalent emissions were determined using IPCC 5th Assessment Report Global Warming Potentials for CH_4 and N_2O.
3. Annual emissions are compared to the SJVAPCD Thresholds of Significance.

Abbreviations:

CAP - criteria air pollutant
CalEEMod® - California Emissions Estimate Model
CH_4 - methane
CO - carbon monoxide
CO_2 - carbon dioxide
CO_2e - carbon dioxide equivalent
GHG - greenhouse gas
lb - pound
MT- metric tons
N_2O - nitrous oxide
NOx - nitrous oxide
$PM_{2.5}$ - particulate matter less than 2.5 microns in diameter
PM_{10} - particulate matter less than 10 microns in diameter
ROG - reactive organic gases
SOx - sulfur oxide

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod®), Version 2020.4.0. Available online at http://www.caleemod.com/

California Air Resources Board (ARB) 2021. EMFAC2021. Available at: https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/msei-modeling-tools

Intergovernmental Panel on Climate Change (IPCC). 2014. 5th Assessment Report (AR5). Available at: https://www.ipcc.ch/report/ar5/syr/

San Joaquin Valley Air Pollution Control District (SJVAPCD). 2015. Air Quality Thresholds of Significance - Criteria Pollutants. Available at: http://www.valleyair.org/transportation/0714-GAMAQI-Criteria-

Table 6
AERMOD Input Parameters
McDonald Island DMPS
Stockton, California

Parameter	Assumptions
Model Control Options	
Use Regulatory Default	Yes
Urban or Rural Option	Rural
Flagpole Receptor Height	0 meters
Source Options	
Include Building Downwash	No
Receptor Information	
Classifications	Worker
Spacing	20 x 20 meter grid
Meteorological Information	
Meteorological Station[1]	Stockton
Station Base Elevation	10
Meteorological Data Years	2013 - 2017
Output	
Averaging Times	Annual

Notes:

1. Five complete years of pre-processed meteorological data for Stockton was obtained from the San Joaquin Valley Air Pollution Control District.

Reference:

San Joaquin Valley Air Pollution Control District. September 2020. Meteorological data for Stockton. Available online at: http://www.valleyair.org/busind/pto/Tox_Resources/Modeling-Sites/stockton.htm

Table 7
Summary of Modeled Construction Sources
McDonald Island DMPS
Stockton, California

AREAPOLY Sources[1]

Source Group	Source Description	Emission Rate	Release Height	Number of Vertices	Initial Vertical Dimension
		($g/s\text{-}m^2$)	(m)	--	(m)
BERM	Project Construction Area	1.55E-05	5.00	13	1.16

Notes:

1. SJVAPCD does not have guidance on construction modeling, therefore construction equipment parameters used were based on BAAQMD's San Francisco Community Risk Reduction Plan-Health Risk Assessment (CRRP-HRA). According to the CRRP-HRA methodology, release height of a modeled area source representing construction equipment is set to 5 meters and the initial vertical dimension is set to the release height divided by 4.3. The emission rate is set to the unit emission rate of 1 g/s divided by the area of the source. The BERM area source location coincides with the proposed source location shown in Figure 1.

   Construction activities are assumed to occur from 6AM to 9PM, consistent with the performance standards in the San Joaquin County Development Title (Section 9-1025.9).

Abbreviations:

BAAQMD - Bay Area Air Quality Management District

CRRP-HRA - San Francisco Community Risk Reduction Plan - Health Risk Assessment

$g/s\text{-}m^2$ - gram per second per square meter

m - meter

SJVAPCD - San Joaquin Valley Air Pollution Control District

References:

San Francisco Department of Public Health. February 2020. San Francisco Citywide Health Risk Assessment: Technical Support Documentation. Available online at:
https://www.sfdph.org/dph/files/EHSdocs/AirQuality/Air_Pollutant_Exposure_Zone_Technical_Documentation_2020.pdf

Table 8
Modeled Construction Emissions
McDonald Island DMPS
Stockton, California

AREAPOLY Sources[1]

Phase	Subphase	Year	Source Group	Construction Emissions
				Unmitigated
				DPM
				g/s
Grading	Grading	2022	BERM	3.41E-02

Notes:

1. Construction TAC emissions were estimated from on-site off-road emissions and diesel-fueled on-road PM10 exhaust emissions. Off-road DPM emissions were converted from annual lb/yr emissions to g/s emissions assuming 15 hours per day and 84 days per year for 2022.

Abbreviations:

DPM - diesel particulate matter
g/s - gram per second

Table 9
Construction Exposure Parameters
McDonald Island DMPS
Stockton, California

Population	Receptor Age Group	Exposure Parameters						
		Daily Breathing Rate (DBR)[1]	Exposure Duration (ED)	Fraction of Time at Home (FAH)	Exposure Frequency (EF)[2]	Averaging Time (AT)	Model Adjustment Factor (MAF)	Intake Factor, Inhalation (IF_{inh})
		[L/kg-day]	[years]	[unitless]	[days/year]	[days]	[unitless]	[m^3/kg-day]
Offsite Workers[4]	Age 16-70 Years	290	0.2	-	250	25500	1.0	0.0007

Notes:

1. Daily breathing rates for workers are based on SJVAPCD's policy APR-1906 as follows:
   95th percentile long-term 24-hour daily breathing rate for ages 16-70
2. Exposure frequency reflects default exposure frequency from OEHHA 2015.

Calculation:

IF_{inh} = DBR * FAH * EF * ED * CF / AT
CF = 0.001 (m^3/L)
MAF = HR / HS * DR / DS *DF

Abbreviations:

AT - averaging time
BAAQMD - Bay Area Air Quality Management District
DBR - daily breathing rate
ED - exposure duration
EF - exposure frequency
FAH - fraction of time at home
HS - number of hours of source operation per day
DS - number of days of source operation per week
IF_{inh} - intake factor
kg - kilogram
L - liter
m^3 - cubic meter
OEHHA - Office of Environmental Health Hazard Assessment
MAH - model adjusmtent factor
HR - number of hours per day for which long-term concentration is calculated
DR - number of days per week for which annual average concentration is calculated
DF - discount factor, set to 1 because offsite worker's schedule falls entirely within the source schedule

References:

OEHHA. 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. Available at https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf

Table 10
Toxicity Values
McDonald Island DMPS
Stockton, California

Source	Chemical[1]	CAS Number	Cancer Potency Factor	Chronic Noncancer Reference Exposure Level
			$(mg/kg\text{-}day)^{-1}$	$(\mu g/m^3)$
PM_{10}	Diesel PM	9-90-1	1.1	5.0

Notes:

1. Toxicity values are taken from ARB's Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values.

Abbreviations:

ARB - Air Resources Board
Cal/EPA - California Environmental Protection Agency
CAS - chemical abstract services
mg/kg-day - milligrams per kilogram per day
OEHHA - Office of Environmental Health Hazard Assessment
$\mu g/m^3$ - micrograms per cubic meter

Reference:

Cal/EPA. 2020. OEHHA/ARB Consolidated Table of Approved Risk Assessment Health Values. October. Available at: https://ww2.arb.ca.gov/sites/default/files/classic/toxics/healthval/contable.pdf

Table 11
Maximum Project Unmitigated Excess Lifetime Cancer Risk and Chronic HI
McDonald Island DMPS
Stockton, California

Source Category	Excess Lifetime Cancer Risk[1]	Chronic HI[2]
	in a million	unitless ratio
Construction Sources		
Off-Road Construction Equipment	0.80	0.22
Construction Total	**0.80**	**0.22**
Significance Threshold[3]	**20**	**1.00**
Exceeds Threshold?	**No**	**No**
Worker Location[4]		
UTMx	631,861	631,861
UTMy	4,209,498	4,209,498

Notes:

1. Excess lifetime cancer risks were estimated using the following equation:

   $Risk_{inh} = \Sigma C_i \times CF \times IF_{inh} \times CPF_i \times ASF$

   Where:

   $Risk_{inh}$ = Cancer Risk for the Inhalation Pathway (unitless)

   C_i = Annual Average Air Concentration for Chemical "i" ug/m^3

   CF = Conversion Factor (mg/ug)

   IF_{inh} = Intake Factor for Inhalation (m^3/kg-day)

   CPF_i = Cancer Potency Factor $(mg/kg\text{-}day)^{-1}$

   ASF = Age Sensitivity Factor (unitless)

2. Chronic HI for each receptor was estimated using the following equation:

   $HI_{inh} = \Sigma C_i / cREL$

   Where:

   HI_{inh} = Chronic HI for the Inhalation Pathway (unitless)

   C_i = Annual Average Air Concentration for Chemical "i" (ug/m^3)

   cREL = Chronic Reference Exposure Level (ug/m^3)

3. Thresholds of significance are based on information from San Joaquin Valley Air Pollution Control District, Air Quality Thresholds of Significance - Toxic Air Contaminants.

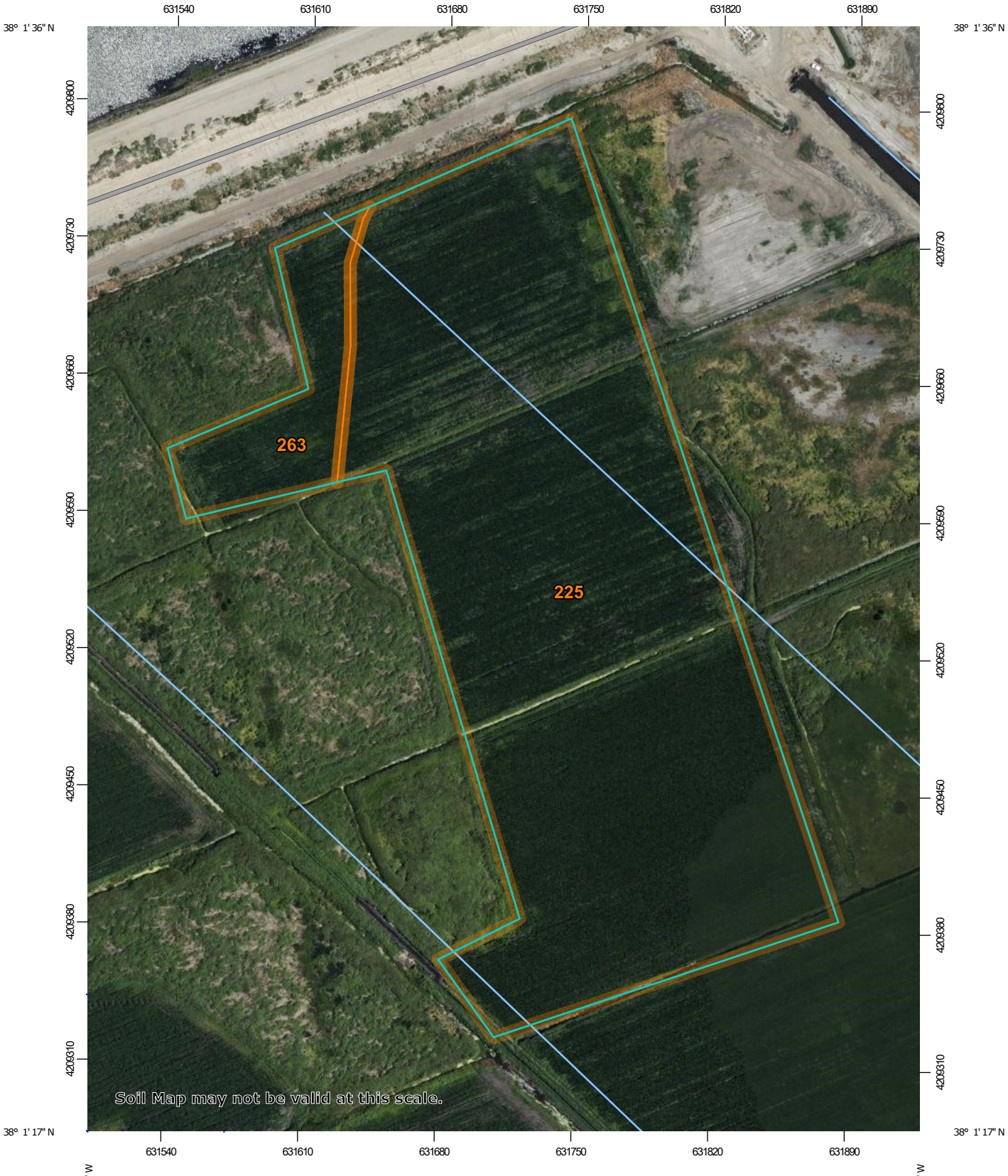
4. There are only worker receptors surrounding the project site

References:

San Joaquin Valley Air Pollution Control District, Air Quality Thresholds of Significance - Toxic Air Contaminants. Available at: http://www.valleyair.org/transportation/0714-GAMAQI-TACs-Thresholds-of-Significance.pdf.

Appendix E
NRCS Soils Map

Soil Map—San Joaquin County, California



Map Scale: 1:2,750 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Joaquin County, California
Survey Area Data: Version 15, Sep 9, 2021

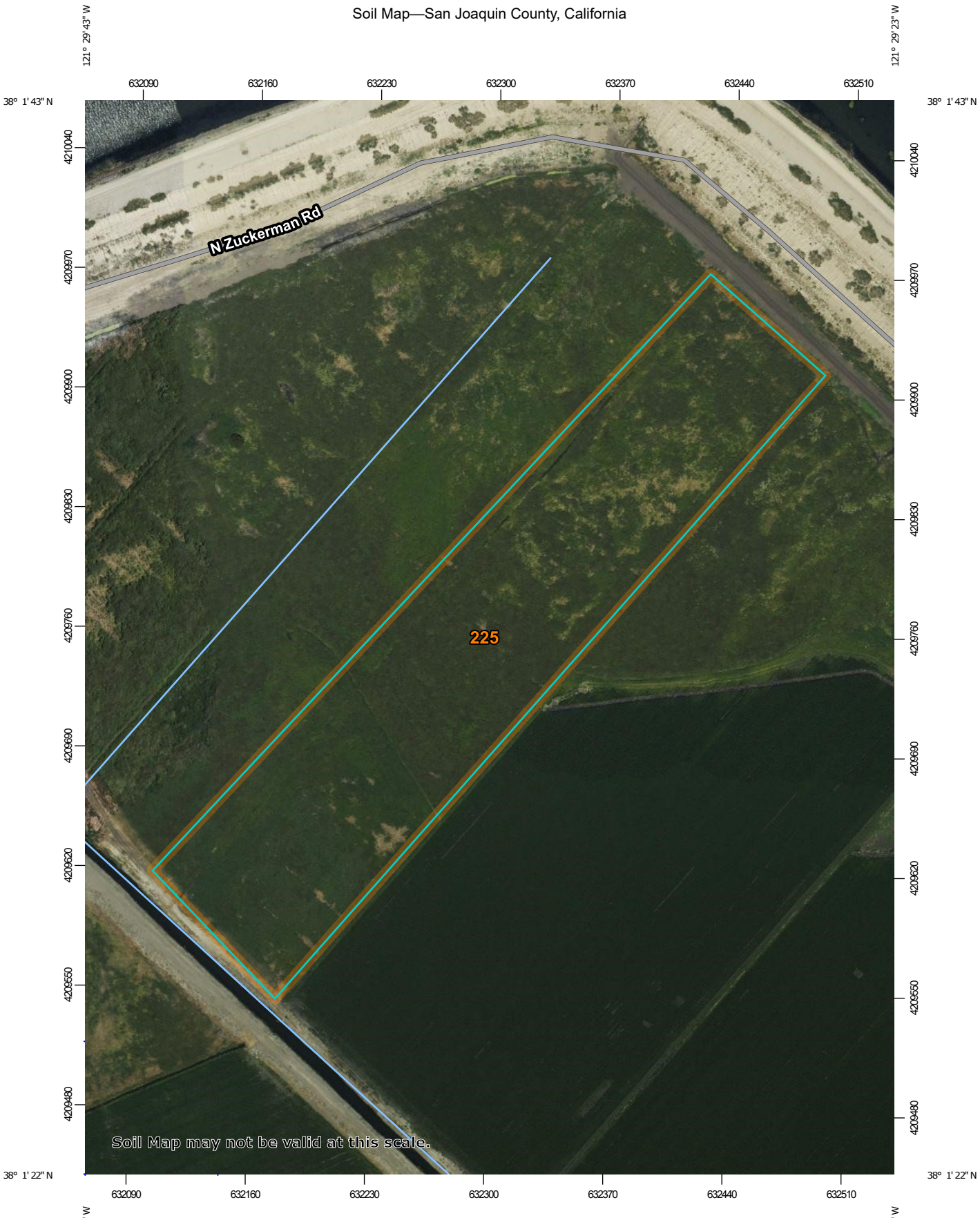
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Data not available.

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
225	Rindge muck, 0 to 2 percent slopes, partially drained, MLRA 16	16.3	91.1%
263	Venice mucky silt loam, partially drained, 0 to 2 percent slopes, overwashed	1.6	8.9%
Totals for Area of Interest		**17.9**	**100.0%**



Map Scale: 1:3,060 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 45 90 180 270

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Joaquin County, California
Survey Area Data: Version 15, Sep 9, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Data not available.

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
225	Rindge muck, 0 to 2 percent slopes, partially drained, MLRA 16	11.6	100.0%
Totals for Area of Interest		**11.6**	**100.0%**